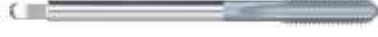




Росcado
Taraudage
Threading
Gewindeschneiden

Machos de máquina / Tarauds machine / Machine taps (M-MF) / Maschinengewindebohrer

Entrada recta (Agujeros Ciegos y pasantes) /
Entrée droite (trous borgnes et débouchants) / Straight flute (through and blind holes) / Gerade Nuten (Durchgangs- und Sacklöcher)

2102	HSSE	DIN 371			M-MF DIN 13	Form. C		Tol. 6H	1,5XD	R	P	166
2101	HSSE	DIN 376/374			M-MF DIN 13	Form. C		Tol. 6H	1,5XD	D	P	167
2102/5	HSSE	DIN 371			M-MF DIN 13	Form. C		Tol. 6H	1,5XD	R	P	169
2101/5	HSSE	DIN 376/374			M-MF DIN 13	Form. C		Tol. 6H	1,5XD	D	P	169
2114	HSSE	DIN 371			M-MF DIN 13	Form. A		Tol. 6H	1,5XD	R	P	170
2113	HSSE	DIN 376/374			M-MF DIN 13	Form. A		Tol. 6H	1,5XD	D	P	170
2190	HSSE	DIN 371			M DIN 13	Form. E		Tol. 6H	1,5XD	R	N	171
2191	HSSE	DIN 376			M DIN 13	Form. E		Tol. 6H	1,5XD	D	N	171
2180	HSSE-PM	DIN 371	TIASIN+		M DIN 13	Form. C		Tol. 6HX	1,5XD	MF	K	172
2179	HSSE-PM	DIN 376	TIASIN+		M DIN 13	Form. C		Tol. 6HX	1,5XD	MF	K	172
2274	HM	DIN 371	TICN+		M DIN 13	Form. D		Tol. 6HX	1,5XD	MF	H	173
2275	HM	DIN 376	TICN+		M DIN 13	Form. D		Tol. 6HX	1,5XD	MF	H	173

Entrada Corregida (Agujeros pasantes) / Entrée corrigée (Trous débouchants) / Spiral point (through holes) / Schälanschnitt (Durchgangslöcher)

2104	HSSE	DIN 371			M-MF DIN 13	Form. B "Gun"		Tol. 6H	3XD	R	P N	174
2103	HSSE	DIN 376/374			M-MF DIN 13	Form. B "Gun"		Tol. 6H	3XD	D	P N	175
2104/5	HSSE	DIN 371			M-MF DIN 13	Form. B "Gun"		Tol. 6H	3XD	R	P N	176
2103/5	HSSE	DIN 376/374			M-MF DIN 13	Form. B "Gun"		Tol. 6H	3XD	D	P N	176
2111	HSSE	DIN 371-L			M DIN 13	Form. B "Gun"		Tol. 6H	3XD	R	P N	177
2272	HSSE	DIN 376			M DIN 13	Form. B "Gun"		Tol. 6H	3XD	D	P N	177
2110	HSSE	DIN 371			M DIN 13	Form. B "Gun"		Tol. 6H +0,1	3XD	R	P N	178

2109	HSSE	DIN 376			M DIN 13	Form. B "Gun"		Tol. 6H +0,1	3XD	D	P	N	178
2168	HSSE	DIN 371			M DIN 13	Form. B "Gun"		Tol. 6G	3XD	R	P	N	179
2169	HSSE	DIN 376			M DIN 13	Form. B "Gun"		Tol. 6G	3XD	D	P	N	179
2407	HSSE	DIN 371			M DIN 13	Form. B "Gun"		Tol. 4H	3XD	R	P	M	180
											K	N	
2408	HSSE	DIN 376			M DIN 13	Form. B "Gun"		Tol. 4H	3XD	D	P	M	180
											K	N	
2250	HSSE	DIN 371	VAP		M DIN 13	Form. B "Gun"		Tol. 6H	3XD	R	P	M	181
											N		
2251	HSSE	DIN 376/374	VAP		M-MF DIN 13	Form. B "Gun"		Tol. 6H	3XD	D	P	M	181
											N		
2116	HSSE	DIN 371	TIN+		M DIN 13	Form. B "Gun"		Tol. 6H	3XD	R	P	M	182
											K	N	
2115	HSSE	DIN 376/374	TIN+		M-MF DIN 13	Form. B "Gun"		Tol. 6H	3XD	D	P	M	182
											K	N	
2254	HSSE-PM	DIN 371	HL		M DIN 13	Form. B "Gun"		Tol. 6HX	3XD	R	P	M	183
											N	S	
2255	HSSE-PM	DIN 376/374	HL		M DIN 13	Form. B "Gun"		Tol. 6HX	3XD	D	P	M	183
											N	S	
2195	HSSE-PM	DIN 371	HL		M DIN 13	Form. B "Gun"		Tol. 6HX	3XD	R	P	M	184
											N	S	
2196	HSSE-PM	DIN 376	HL		M DIN 13	Form. B "Gun"		Tol. 6HX	3XD	D	P	M	184
											N	S	
2126	HSSE-PM	DIN 371	TIAISIN+		M DIN 13	Form. B "Gun"		Tol. 6H	3XD	R	P	K	185
2125	HSSE-PM	DIN 376/374	TIAISIN+		M-MF DIN 13	Form. B "Gun"		Tol. 6H	3XD	D	P	K	185
2176	HSSE-PM	DIN 371	TIAISIN+		M DIN 13	Form. B "Gun"		Tol. 6HX	3XD	R	P	K	186
2175	HSSE-PM	DIN 376	TIAISIN+		M DIN 13	Form. B "Gun"		Tol. 6HX	3XD	D	P	K	186
2133	HSSE	DIN 371			M DIN 13	B-AZ		Tol. 6H	3XD	R	N		187
2132	HSSE	DIN 376			M DIN 13	B-AZ		Tol. 6H	3XD	D	N		187

Forma Helicoidal (Agujeros ciegos) / Forme helicoidale (Trous borgnes) / Spiral fluted (Blind holes) / Spiralförm (Sacklöcher)

2106	HSSE	DIN 371			M-MF DIN 13	Form. C		Tol. 6H		2.5XD	R	P	N	188
2105	HSSE	DIN 376/374			M-MF DIN 13	Form. C		Tol. 6H		2.5XD	D	P	N	189
2106/5	HSSE	DIN 371			M-MF DIN 13	Form. C		Tol. 6H		2.5XD	R	P	N	190
2105/5	HSSE	DIN 376/374			M-MF DIN 13	Form. C		Tol. 6H		2.5XD	D	P	N	190
2112	HSSE	DIN 371-L			M DIN 13	Form. C		Tol. 6H		2.5XD	R	P	N	191
2273	HSSE	DIN 376			M DIN 13	Form. C		Tol. 6H		2.5XD	D	P	N	191
2166	HSSE	DIN 371			M DIN 13	Form. C		Tol. 6H +0,1		2.5XD	R	P	N	192
2165	HSSE	DIN 376			M DIN 13	Form. C		Tol. 6H +0,1		2.5XD	D	P	N	192
2170	HSSE	DIN 371			M DIN 13	Form. C		Tol. 6G		2.5XD	R	P	N	193
2208	HSSE	DIN 376			M DIN 13	Form. C		Tol. 6G		2.5XD	D	P	N	193
2409	HSSE	DIN 371			M DIN 13	Form. C		Tol. 4H		2.5XD	R	P K	M N	194
2410	HSSE	DIN 376/374			M DIN 13	Form. C		Tol. 4H		2.5XD	D	P K	M N	194
2108	HSSE	DIN 371			M DIN 13	Form. C		Tol. 6H		2.5XD	R	P	N	195
2107	HSSE	DIN 376/374			M DIN 13	Form. C		Tol. 6H		2.5XD	D	P	N	195
2252	HSSE	DIN 371	VAP		M DIN 13	Form. C		Tol. 6H		2.5XD	R	P N	M N	196
2253	HSSE	DIN 376/374	VAP		M-MF DIN 13	Form. C		Tol. 6H		2.5XD	D	P N	M N	196
2118	HSSE	DIN 371	TIN+		M DIN 13	Form. C		Tol. 6H		2.5XD	R	P K	M N	197
2117	HSSE	DIN 376/374	TIN+		M-MF DIN 13	Form. C		Tol. 6H		2.5XD	D	P K	M N	197

2256	HSSE-PM	DIN 371	HL		M DIN 13	Form. C		Tol. 6HX		2.5XD	R	MF	P M K N S	198
2257	HSSE-PM	DIN 376/374	HL		M DIN 13	Form. C		Tol. 6HX		2.5XD	D	MF	P M K N S	198
2288	HSSE-PM	DIN 371	HL		M DIN 13	Form. C		Tol. 6HX		2.5XD	R	MF	P M K N S	199
2289	HSSE-PM	DIN 376	HL		M DIN 13	Form. C		Tol. 6HX		2.5XD	D	MF	P M K N S	199
2124	HSSE-PM	DIN 371	TLAISIN+		M DIN 13	Form. C		Tol. 6H		2.5XD	R	MF	P K	200
2123	HSSE-PM	DIN 376/374	TLAISIN+		M-MF DIN 13	Form. C		Tol. 6H		2.5XD	D	MF	P K	200
2178	HSSE-PM	DIN 371	TLAISIN+		M DIN 13	Form. C		Tol. 6HX		2.5XD	R	MF	P K	201
2177	HSSE-PM	DIN 376	TLAISIN+		M DIN 13	Form. C		Tol. 6HX		2.5XD	D	MF	P K	201
2182	HSSE	DIN 371			M DIN 13	Form. C		Tol. 6H		2.5XD	R	MF	N	202
2181	HSSE	DIN 376			M DIN 13	Form. C		Tol. 6H		2.5XD	D	MF	N	202

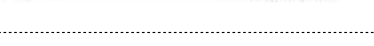
Otros / Autres / Others / Sonstige

2199	HSSE	DIN 357			M DIN 13		16-18h	Tol. 6H		R		P	203
2134	HSSE		NIT		M DIN 13		16-18h	Tol. 6H		D		P	203
2806	HSSE	DIN 13			M DIN 13			Tol. 6H				P N	204
1504	HSS	Hex			M DIN 13			Tol. 6H				P	204
2248	HSS	ISO 529			M DIN 13	Form. B "Gun"		Tol. 6H		3XD		P N	205
2249	HSS	ISO 529			M DIN 13	Form. C		Tol. 6H		2.5XD		P N	205
2266	HSSE	JIS			M DIN 13	Form. B "Gun"		Tol. 6H		3XD	D	P N	206
2267	HSSE	JIS			M DIN 13	Form. C		Tol. 6H		2.5XD	D	P N	206

2268	HSSE	JIS	VAP		M DIN 13	Form. B "Gun"	Tol. 6H	3XD	D	MF	P	N	207
2269	HSSE	JIS	VAP		M DIN 13	Form. C	Tol. 6H	2.5XD	D	MF	P	N	207
2270	HSSE	JIS	TIN		M DIN 13	Form. B "Gun"	Tol. 6H	3XD	D	MF	P	N	208
2271	HSSE	JIS	TIN		M DIN 13	Form. C	Tol. 6H	2.5XD	D	MF	P	N	208

Machos de máquina / Tarauds machine / Machine taps / Maschinengewindebohrer (UNC-UNF-UN-UNS-UNEF)

2148	HSSE	DIN 371			UNC ANGREIPE B1.1	Form. C	Tol. 2B	1.5XD	R		P		209
2147	HSSE	DIN 376			UNC ANGREIPE B1.1	Form. C	Tol. 2B	1.5XD	D		P		209
2147/5	HSSE	DIN 376			UNC ANGREIPE B1.1	Form. C	Tol. 2B	1.5XD	D		P		210
2150	HSSE	DIN 371			UNC ANGREIPE B1.1	Form. B "Gun"	Tol. 2B	3XD	R		P	N	211
2149	HSSE	DIN 376			UNC ANGREIPE B1.1	Form. B "Gun"	Tol. 2B	3XD	D		P	N	211
2262	HSSE	DIN 371	VAP		UNC ANGREIPE B1.1	Form. B "Gun"	Tol. 2B	3XD	R	MF	P	M	212
2263	HSSE	DIN 376	VAP		UNC ANGREIPE B1.1	Form. B "Gun"	Tol. 2B	3XD	D	MF	P	M	212
2234	HSSE	DIN 371	TIN+		UNC ANGREIPE B1.1	Form. B "Gun"	Tol. 2B	3XD	R	MF	P	M	213
2235	HSSE	DIN 376	TIN+		UNC ANGREIPE B1.1	Form. B "Gun"	Tol. 2B	3XD	D	MF	P	M	213
2152	HSSE	DIN 371			UNC ANGREIPE B1.1	Form. C	Tol. 2B	2.5XD	35°	R	P	N	214
2151	HSSE	DIN 376			UNC ANGREIPE B1.1	Form. C	Tol. 2B	2.5XD	35°	D	P	N	214
2264	HSSE	DIN 371	VAP		UNC ANGREIPE B1.1	Form. C	Tol. 2B	2.5XD	35°	R	P	M	215
2265	HSSE	DIN 376	VAP		UNC ANGREIPE B1.1	Form. C	Tol. 2B	2.5XD	35°	D	P	M	215
2236	HSSE	DIN 371	TIN+		UNC ANGREIPE B1.1	Form. C	Tol. 2B	2.5XD	35°	R	P	M	216
2237	HSSE	DIN 376	TIN+		UNC ANGREIPE B1.1	Form. C	Tol. 2B	2.5XD	35°	D	P	M	216

2154	HSSE	DIN 371			UNF ANILASME B1.1	Form. C		Tol. 2B	1,5XD	R	P	217
2153/5	HSSE	DIN 374			UNF ANILASME B1.1	Form. C		Tol. 2B	1,5XD	D	P	217
2156	HSSE	DIN 371			UNF ANILASME B1.1	Form. B "Gun"		Tol. 2B	3XD	R	P N	218
2155	HSSE	DIN 374			UNF ANILASME B1.1	Form. B "Gun"		Tol. 2B	3XD	D	P N	218
2276	HSSE	DIN 371	VAP		UNF ANILASME B1.1	Form. B "Gun"		Tol. 2B	3XD	R MF	P M N	219
2277	HSSE	DIN 374	VAP		UNF ANILASME B1.1	Form. B "Gun"		Tol. 2B	3XD	D MF	P M N	219
2280	HSSE	DIN 371	TIN+		UNF ANILASME B1.1	Form. B "Gun"		Tol. 2B	3XD	R MF	P M K N	220
2281	HSSE	DIN 374	TIN+		UNF ANILASME B1.1	Form. B "Gun"		Tol. 2B	3XD	D MF	P M K N	220
2158	HSSE	DIN 371			UNF ANILASME B1.1	Form. C		Tol. 2B	35° 2,5XD	R	P N	221
2157	HSSE	DIN 374			UNF ANILASME B1.1	Form. C		Tol. 2B	35° 2,5XD	D	P N	221
2278	HSSE	DIN 371	VAP		UNF ANILASME B1.1	Form. C		Tol. 2B	35° 2,5XD	R MF	P M N	222
2279	HSSE	DIN 374	VAP		UNF ANILASME B1.1	Form. C		Tol. 2B	35° 2,5XD	D MF	P M N	222
2282	HSSE	DIN 371	TIN+		UNF ANILASME B1.1	Form. C		Tol. 2B	35° 2,5XD	R MF	P M K N	223
2283	HSSE	DIN 374	TIN+		UNF ANILASME B1.1	Form. C		Tol. 2B	35° 2,5XD	D MF	P M K N	223
2189	HSSE	DIN 374			UNF ANILASME B1.1	Form. C		Tol. 2B	1,5XD	D	P	224
2160	HSSE	DIN 374			UNF ANILASME B1.1	Form. C		Tol. 2B	1,5XD	D	P	224

Machos de máquina / Tarauds machine / Machine taps / Maschinengewindebohrer (BSW-BSF)

2136	HSSE	DIN 371		BSW BS 84	Form. C		1,5XD	R	P	225
2135	HSSE	DIN 376		BSW BS 84	Form. C		1,5XD	D	P	225
2136/5	HSSE	DIN 371		BSW BS 84	Form. C		1,5XD	R	P	226
2135/5	HSSE	DIN 376		BSW BS 84	Form. C		1,5XD	D	P	226
2138	HSSE	DIN 371		BSW BS 84	Form. B "Gun"		3XD	R	P N	227
2137	HSSE	DIN 376		BSW BS 84	Form. B "Gun"		3XD	D	P N	227
2140	HSSE	DIN 371		BSW BS 84	Form. C		2,5XD	R	P N	228
2139	HSSE	DIN 376		BSW BS 84	Form. C		2,5XD	D	P N	228
2141	HSSE	DIN 371		BSF BS 84	Form. C		1,5XD	R	P	229
2142	HSSE	DIN 374		BSF BS 84	Form. C		1,5XD	D	P	229

Machos de máquina / Tarauds machine / Machine taps / Maschinengewindebohrer (G-Rc-NPT)

2144	HSSE	DIN 5156		G ISO 228	Form. C		1,5XD	D	P	230
2144/5	HSSE	DIN 5156		G ISO 228	Form. C		1,5XD	D	P	230
2192	HSSE	DIN 5156		G ISO 228	Form. E		1,5XD	D	N	231
2206	HSSE	DIN 5156		G ISO 228	Form. E		+0,1 1,5XD	D	N	231
2145	HSSE	DIN 5156		G ISO 228	Form. B "Gun"		3XD	D	P N	232
2284	HSSE	DIN 5156		G ISO 228	Form. B "Gun"		3XD	D	P M N	232
2286	HSSE	DIN 5156		G ISO 228	Form. B "Gun"		3XD	D	P M K N	233
2146	HSSE	DIN 5156		G ISO 228	Form. C		2,5XD	D	P N	233
2285	HSSE	DIN 5156		G ISO 228	Form. C		2,5XD	D	P M N	234

P

Aceros
Aciers
Steele
Stähle

M

Aceros Inox
Aciers Inox
Stainless Steels
Edelstahl

K

Fundicion
Fonte
Cast Iron
Gusseisen

N

Metales no ferrosos
Métal non Ferreux
Non Ferrous metals
NE-Metalle

S

Titanio y Superalaciones
Titanium et Superalloys
Titanium and Superalloys
Titan und Superlegierungen

H

Materiales Duros
Matériaux Durs
Hard materials
Hartmaterialien

Machos de máquina / Tarauds machine / Machine taps / Maschinengewindebohrer (G-Rc-NPT)

2287	HSSE	DIN 5156	TIN+		G ISO 228 Form. C 35° 2.5XD D MF	P M K N	234
2159	HSSE	DIN 5156			Rc DIN 2299 Form. C 1.5XD D	P	235
2164	HSSE	DIN 374			NPT ANSI/ASME B1.1 Form. C 1.5XD D	P	235

Machos de máquina / Tarauds machine / Machine taps / Maschinengewindebohrer (TR-VG)

2212	HSSE				Tr DIN 103 Tol. 7H	P N	236
2212/5	HSSE				Tr DIN 103 Tol. 7H LH	P N	236
2163	HSSE	DIN 40433			PG DIN 40433 Form. C 1.5XD D	P	237
2242	HSSE	DIN 371			VG BS 84 Form. C 1.5XD R	P	237

Machos de Laminación / Tarauds à refouler / Forming taps / Gewindeformer

2188	HSSE-PM	DIN 371	TIN+		M DIN 13 Form. C Tol. 6HX A>12% 1.5XD R MF	P M N	238
2187	HSSE-PM	DIN 376	TIN+		M DIN 13 Form. C Tol. 6HX A>12% 1.5XD D MF	P M N	238
2214	HSSE-PM	DIN 371	TIN+		M DIN 13 Form. C Tol. 6HX A>12% 3XD R MF	P M N	239
2213	HSSE-PM	DIN 376	TIN+		M-MF DIN 13 Form. C Tol. 6HX A>12% 3XD D MF	P M N	239
2216	HSSE-PM	DIN 371	TIN+		M DIN 13 Form. C Tol. 6GX A>12% 1.5XD R MF	P M N	240
2215	HSSE-PM	DIN 376	TIN+		M DIN 13 Form. C Tol. 6GX A>12% 1.5XD D MF	P M N	240
2218	HSSE-PM	DIN 371	TIN+		M DIN 13 Form. C Tol. 6GX A>12% 3XD R MF	P M N	241
2217	HSSE-PM	DIN 376	TIN+		M DIN 13 Form. C Tol. 6GX A>12% 3XD D MF	P M N	241

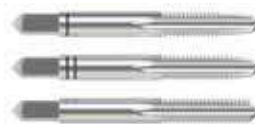
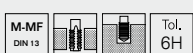
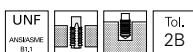
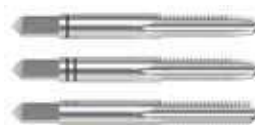
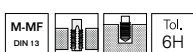
Fresas de roscar de metal duro / Fraises à tarauder en carbure / Solid carbide thread mills / Hartmetall-Gewindefräser

2411	HM		TIALCN		M-MF 15° DIN 8535 HB	P M K N S H	242
2412	HM		TIALCN		G ISO 228 15° DIN 8535 HB	P M K N S H	243

Machos de mano / Tarauds à main / Hands taps / Handgewindebohrer									
2301	HSS	DIN 352 / 2181				P	N		244
2301/5	HSS	DIN 352				P	N		246
2314	HSSE	DIN 352				P			247
2303	HSSE	DIN 352	VAP			P	M		247
2324	HSSE-PM	DIN 352	TAISIN+			P			248
2302	HSSE	DIN 352	TIN+			P	M	N	248
2304	HSS	DIN 352				P	N		249
2304/5	HSS	DIN 352				P	N		250
2305	HSS	DIN 2181				P	N		250
2306	HSS	DIN 5157				P	N		251
2306/5	HSS	DIN 5157				P	N		251
2316	HSS	DIN 5157					N		252
2317	HSS	DIN 5157					N		252

							Pág.
2307	HSS	DIN 352		   	 	253	
2307/5	HSS	DIN 352		    	 	254	
2308	HSS	DIN 2181		   	 	254	
2308/5	HSS	DIN 2181		    	 	255	
2315	HSS	DIN 2181		   	 	255	
2309	HSS	DIN 5157		  	 	256	
2310	HSS	DIN 2181		   	 	256	
2312	HSS	DIN 40432		  	 	257	
2313	HSS	DIN 2181		  	 	257	

Machos Perfil Completo / Taraud Profil Complet / Non Serial Form Taps / Vollprofilgewindebohrer

2321	HSS	DIN 352			P N	258
2322	HSS	DIN 352			P N	258
2323	HSS	DIN 2181			P N	259
2325	HSS	ISO 529			P N	259

NEW

Cojinetes / Filières / Dies / Schneideisen									
2501	HSS	DIN EN22568			M-MF DIN 13	Tol. 6g		P N	260
2501/5	HSS	DIN EN22568			M-MF DIN 13	Tol. 6g	LH	P N	262
2514	HSSE	DIN EN22568	NIT		M DIN 13	Tol. 6g	2,25 mm GUN	P	263
2512	HSSE	DIN EN22568	VAP		M DIN 13	Tol. 6g	2 mm GUN	P M	263
2502	HSS	DIN EN22568			BSW BS 84			P N	264
2502/5	HSS	DIN EN22568			BSW BS 84		LH	P N	264
2503	HSS	DIN EN22568			BSF BS 84			P N	265
2504	HSS	DIN EN24231			G ISO 228			P N	265
2504/5	HSS	DIN EN24231			G ISO 228		LH	P N	266
2522	HSS	DIN EN24231			G ISO 228			N	267
2521	HSS	DIN EN24231			G ISO 228	-0,1	GUN	N	267
2505	HSS	DIN EN22568			UNC ANABASME BL1	Tol. 2A		P N	268
2505/5	HSS	DIN EN22568			UNC ANABASME BL1	Tol. 2A	LH	P N	268
2506	HSS	DIN EN22568			UNF ANABASME BL1	Tol. 2A		P N	269
2506/5	HSS	DIN EN22568			UNF ANABASME BL1	Tol. 2A	LH	P N	269
2507	HSS	DIN EN24230			R DIN 2099			P N	270
2508	HSS	DIN EN22568			UNEF ANABASME BL1	Tol. 2A		P N	270
2520	HSS	DIN EN22568			UN ANABASME BL1	Tol. 2A		P N	271
2510	HSS	DIN 40434			PG DIN 40434			P N	271
2509	HSS	DIN EN24230			NPT ANABASME BL1			P N	272

Machos máquina para insertos / Tarauds machine pour inserts / Machine taps for wire thread inserts / Maschinengewindebohrer für Genwindeinsätze

2701	HSS	ISO 529		EG-M STI	Form. D	Tol. 4H	P	N	273
2702	HSS	ISO 529		EG-UNC STI	Form. D	Tol. 3B	P	N	274
2703	HSS	ISO 529		EG-UNF STI	Form. D	Tol. 3B	P	N	274
2704	HSS	ISO 529		EG-VV STI	Form. D		P	N	275
2715	HSS	ISO 529		EG-G STI	Form. D		P	N	275

Insertos roscados / Filets rapportés / Wire thread inserts / Gewindeeinsätze

2705	HSS	DIN 8140		M DIN 8140	Tol. 6H				276
2706	HSS	DIN 8140		UNC ANSI/ASME B18.29.1	Tol. 2B				277
2707	HSS	DIN 8140		UNF ANSI/ASME B18.29.1	Tol. 2B				278
2708	HSS	DIN 8140		BSW BS 84					279
2716	HSS	DIN 8140		G ISO 229	Tol. 2B				279

Accesorios / Accessoires / Accessories / Zubehör

2709	Insertador / Appareil de pose manuel / Insert Tool / Einsatzwerkzeug				280
2710	Rompe Arrastre / Rupteur / Tang break tool / Zapfenbrecher				281
Estuches / Kits / Sets / Sätze					282

Calibres / Calibres / Gauges / Lehren

2901/1	ISO 1502		CTPNP	M-MF DIN 13	Tol. 6H	PASA NO PASA	287
2901/4	ISO 1502		CTP	M-MF DIN 13	Tol. 6H	PASA	288
2901/5	ISO 1502		CTNP	M-MF DIN 13	Tol. 6H	NO PASA	288
2901/2	ISO 1502		CAP	M-MF DIN 13	Tol. 6G	PASA	289
2901/3	ISO 1502		CANP	M-MF DIN 13	Tol. 6G	NO PASA	290
2902/1	ISO 228-2		CTPNP	G ISO 228	PASA NO PASA		291
2902/4	ISO 228-2		CTP	G ISO 228	PASA		291
2902/5	ISO 228-2		CTNP	G ISO 228	NO PASA		291
2902/2	ISO 228-2		CAP	G ISO 228	PASA		292
2902/3	ISO 228-2		CANP	G ISO 228	NO PASA		292
2903/1	BS 919		CTPNP	BSW BS 84	PASA NO PASA		293
2903/2	BS 919		CAP	BSW BS 84	PASA		293
2903/3	BS 919		CANP	BSW BS 84	NO PASA		293
2904/1	ANSI / ASME B1.2		CTPNP	UNC ANSI/ASME B1.2	PASA NO PASA		294
2904/2	ANSI / ASME B1.2		CAP	UNC ANSI/ASME B1.2	PASA		294
2904/3	ANSI / ASME B1.2		CANP	UNC ANSI/ASME B1.2	NO PASA		294
2905/1	ANSI / ASME B1.2		CTPNP	UNF ANSI/ASME B1.2	PASA NO PASA		295
2905/2	ANSI / ASME B1.2		CAP	UNF ANSI/ASME B1.2	PASA		295
2905/3	ANSI / ASME B1.2		CANP	UNF ANSI/ASME B1.2	NO PASA		296

				Pág.
2906/1	ANSI / ASME B1.20.1		CTPNP NPT PASA ANGREIWE BLU NO PASA	296
2906/2	ANSI / ASME B1.20.1		CAPNP NPT PASA ANGREIWE BLU NO PASA	296
2907/1	DIN 7162		CTL PASA NO PASA	297
2907/4	DIN 7162		CTLP H7 PASA	297
2907/5	DIN 7162		CTLNP H7 NO PASA	298
2907/2	DIN 2250-C		CAL	298

Accesorios / Accessoires / Accessories / Zubehör

2801	Giramachos / Tourne-à-gauche / Tap turners / Windeisen			299
2802	Volvedor / Porte-filières / Tap wrench / Schneideisenhalter			299
2803	Giramacho T / Tourne-à-gauche en T / Tap turner in T/ T-Typ Windeisen			299
2804	Giramacho T / Tourne-à-gauche en T / Tap turner in T/ T-Typ Windeisen			300
2805	Extractor / Extracteur / Extractor / Auszieher			300
2808	Alargador / Adaptateur / Extension piece / Verlängerungsstück			300
2834	Extractor / Extracteur / Extractor / Auszieher			301
2846	Aceite / Huile / Oil / Öl			301
Estuches / Coffrets / Sets / Sätze				302

¿Por qué conformarse con menos?

- La tecnología MICROFINISH consiste en que una vez el macho de roscar es rectificado, se limpia de rebabas y se redondean las aristas de corte.
- Se logra un mayor control y estabilidad del desgaste de la herramienta.
- Ello se traduce en un notable incremento de su rendimiento.
- Y en la mejora de los acabados de la rosca.

Pourquoi se satisfaire de peu?

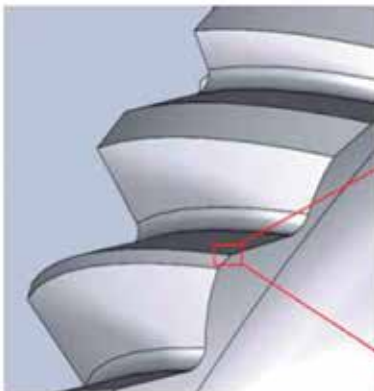
- La technologie MICROFINISH agit après le surfacage du taraud, qui est nettoyé des bavures et dont les arêtes de coupe sont arrondies.
- L'usure de l'outil est alors mieux contrôlée et plus stable.
- Cela se traduit par une augmentation significative de son rendement.
- Et une amélioration des finitions du filetage.

Why settle for less?

- With MICROFINISH technology once the thread of the tap is rectified, it is cleaned from burrs and the cutting edges are rounded.
- Greater control and stability of wear on the tool is achieved.
- This translates into a notable increase in performance.
- And improves the finishes of the thread.

Warum sich mit weniger zufrieden geben?

- Mit der MICROFINISH-Technologie wird das Gewinde nach dem Schleifen von Graten befreit und die Schneidkanten werden abgerundet.
- Hierdurch wird eine bessere Kontrolle und Stabilität des Werkzeugverschleißes erzielt.
- Dies führt zu einer deutlichen Leistungssteigerung.
- Und zu einer Verbesserung der Gewindeoberfläche.



CON MICROFINISH
AVEC MICROFINISH / WITH MICROFINISH /
MIT MICROFINISH



SIN MICROFINISH
SANS MICROFINISH / WITHOUT MICROFINISH /
OHNE MICROFINISH

CON MICROFINISH

AVEC MICROFINISH/ WITH MICROFINISH/
MIT MICROFINISH

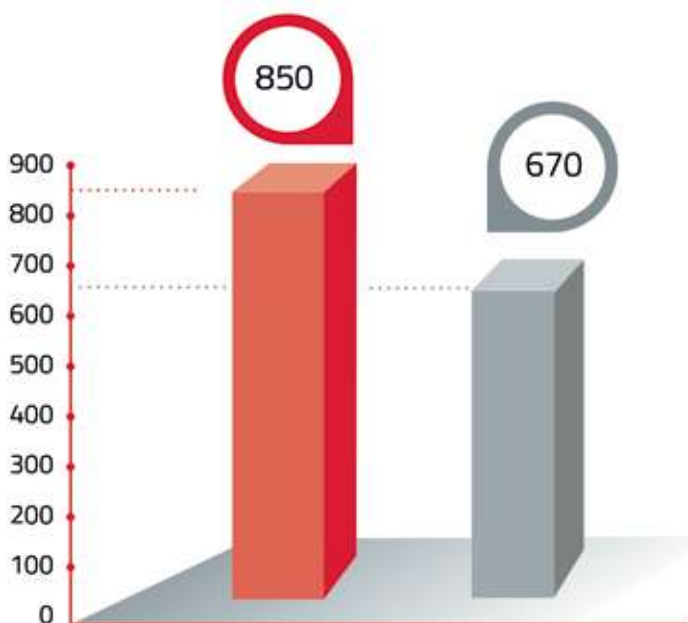
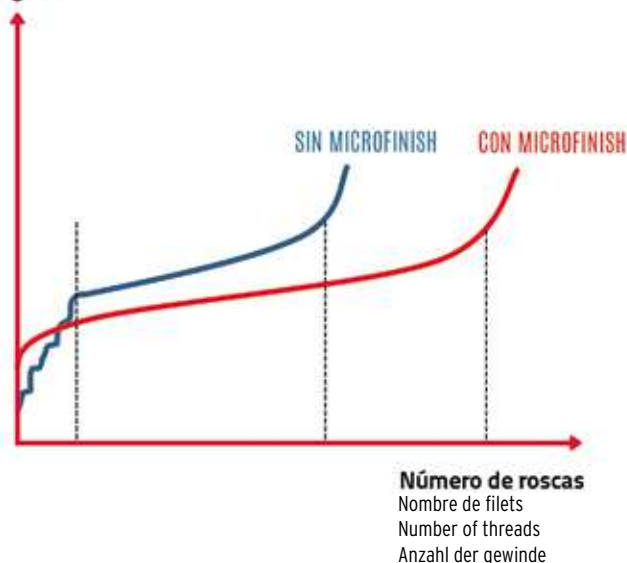


SIN MICROFINISH

SANS MICROFINISH / WITHOUT MICROFINISH/
OHNE MICROFINISH



Desgaste Usure /Wear / Verschleiss



Rosca/Filet/Thread/Gewinde: M6 6H

Material/Matériau/Material/Material: F114 (C45)

Profundidad/Profondeur/Depth/Tiefe: 12mm

Velocidad/Vitesse/Speed/ Geschwindigkeit: 10 m/min

1. UNA ROSCA CON CALIDAD SUPERFICIAL SUPERIOR

Las roscas obtenidas tienen una calidad superficial superior, gracias a dos efectos:

- La geometría redondeada de forma constante a lo largo de todo el filo de corte del macho, permite un corte continuo y homogéneo de la rosca de la pieza.
- La menor rugosidad superficial de la rosca del macho reduce la fricción durante el roscado para obtener a su vez, una rosca con mejor calidad superficial.

2. MAYOR VIDA ÚTIL DE LA HERRAMIENTA

- Gracias a su nuevo acabado redondeado y a que el filo de corte se va desgastando de manera más controlada y constante, se evita el salto de partículas de cualquier forma y tamaño.
- Ello impide que se produzcan roturas prematuras con el uso.

1. UN FILET D'UNE QUALITÉ DE SURFACE SUPÉRIEURE

Les filets obtenus présentent une qualité de surface supérieure, grâce à deux effets :

- La géométrie arrondie de manière constante tout au long du fil de coupe du taraud apporte une coupe continue et homogène sur le filetage de la pièce.
- La plus faible rugosité de surface du taraud réduit la friction lors du taraudage, permettant ainsi d'obtenir un filet de meilleure qualité de surface.

2. UNE DURÉE DE VIE UTILE DE L'OUTIL PROLONGÉE

- Grâce à sa nouvelle finition arrondie et grâce à un fil de coupe qui s'use de manière mieux contrôlée et plus homogène, le décrochement de particules de toute forme et dimension est évité.
- Cela évite les ruptures prématurées à l'usage.

1. A THREAD WITH A HIGHER SURFACE QUALITY

The threads obtained have a superior surface quality, thanks to two effects:

- The constantly rounded geometry along the entire cutting edge of the tap, allows a continuous and homogeneous cutting of the piece's thread.
- The lower surface roughness of the tap's thread reduces friction during threading, which gives a thread with a better surface quality.

2. LONGER TOOL LIFE

- Thanks to its new rounded finishing and the fact that the cutting edge wears out in a more controlled and constant way, the skipping of particles of any shape and size is avoided.
- This avoids premature breakage when using.

1. EIN GEWINDE MIT HERVORRAGENDER OBERFLÄCHENGÜTE

Die hierdurch erzielten Gewinde weisen dank zweier Effekte eine höhere Oberflächenqualität auf:

- Die durchgehend abgerundete Geometrie entlang der gesamten Schneidkante des Gewindebohrers ermöglicht ein kontinuierliches und homogenes Schneiden des Gewindes am Werkstück.
- Die geringere Oberflächenrauheit des Gewindebohrers reduziert die Reibung während des Gewindeschneidens, um so ein Gewinde mit höherer Oberflächenqualität zu erzielen.

2. LÄNGERE NUTZUNGSDAUER DES WERKZEUGS

- Dank der neuen abgerundeten Oberfläche und der kontrollierteren und gleichmäßigeren Abnutzung der Schneidkante wird das Absplintern von Partikeln jeglicher Form und Größe vermieden.
- Dies verhindert vorzeitigen Bruch beim Gebrauch.



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:

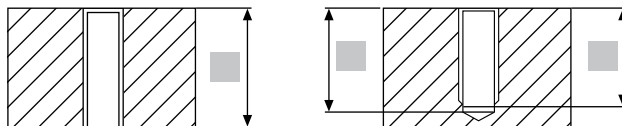
Dureza / Durété / Hardness HB HRc Resistencia / Résistance / Resistance N/mm²

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

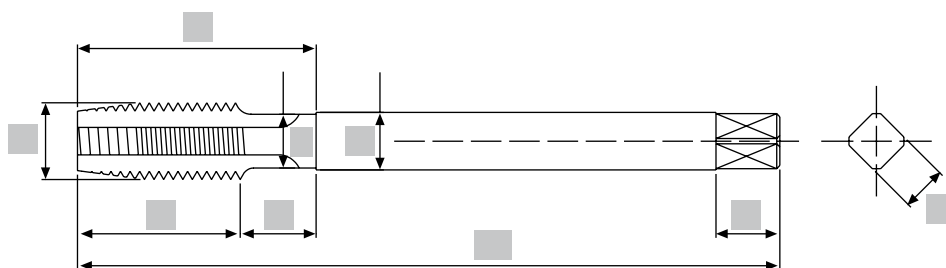
Agujero / Trou / Hole:



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

Entrada: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ Otra
Entrée: A B C D E Autres
Entry: A B C D E Others

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

Superficie / Surface: ☐ Brillante ☐ Recubrimiento
Brillant Revêtement
Brilliant Coating

COMENTARIOS / COMMENTAIRES/ COMMENTS:

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:

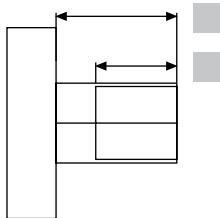
Dureza / Durété / Hardness HB HRC Resistencia / Résistance / Resistance N/mm²

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

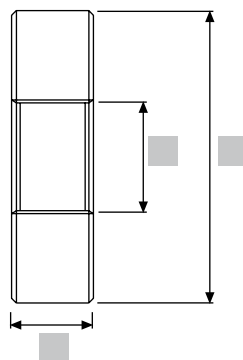
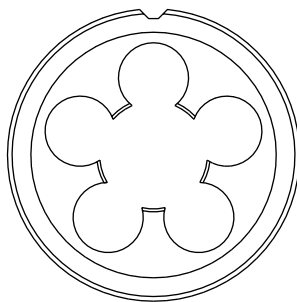
Eje / Axe / Axis:



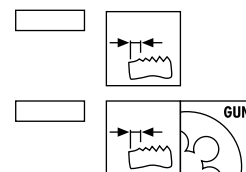
HERRAMIENTA / OUTIL / TOOL

Descripción / Description Tolerancia / Tolérance / Tolerance

Cantidad / Quantité / Quantity Número ranuras / Rainures / Grooves



Entrada / Entrée / Entry



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

Superficie / Surface: ☐ Brillante ☐ Recubrimiento
Brillant Revêtement
Brilliant Coating

COMENTARIOS / COMMENTAIRES/ COMMENTS:

TABLA DE APLICACIONES
GUIDE D'APPLICATION / APPLICATION GUIDE / APPLIKATIONSHANDBUCH

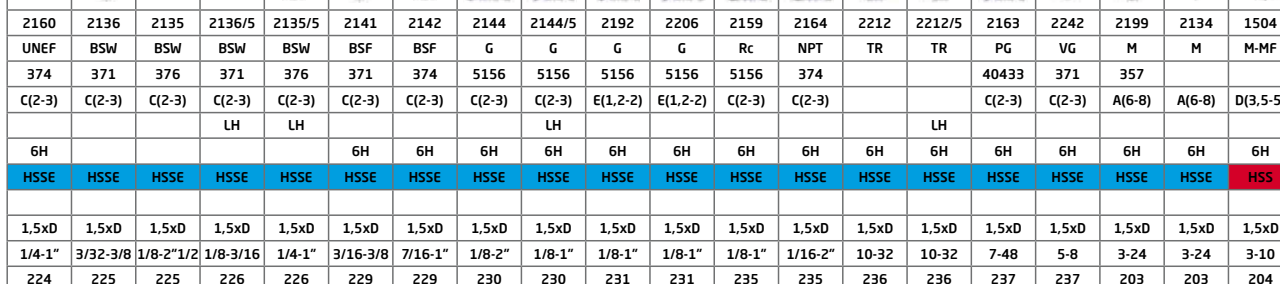
$$n.p.m. = \frac{V_c \times 1.000}{\pi \times \phi}$$



Ref./ Réf. / Ref.	2102	2101	2102/5	2101/5	2114	2113	2190	2191	2180	2179	2274	2275	2148	2147	2147/5	2154	2153/5	2189
Rosca/ Filetage/Thread	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	UNC	UNC	UNC	UNF	UNF	UN
DIN	371	376-374	371	376-374	371	376-374	371	376-374	371	376-374	371	376	371	376-374	376-374	374	374	374
Form.	C(2-3)	C(2-3)	C(2-3)	C(2-3)	A(6-8)	A(6-8)	E(1.5-2)	E(1.5-2)	C(2-3)	C(2-3)	D(2-3)	D(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)
Ejec./Exéc./Exec.			LH	LH											LH		LH	
Tol.	6H	6H	6H	6H	6H	6H	6H	6H	6HX	6HX	6HX	6HX	6H	6H	6H	6H	6H	6H
Mat.	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE-PM	HSSE-PM	HM	HM	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE
Rec./Rev./Coat.									TIAISIN+	TIAISIN+	TICN+	TICN+						
Prof./ Depth	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD	1,5xD
Gama/Gamme/Range	1-10	3-63	3-10	5-30	2-10	3-52	3-10	6-16	3-10	8-20	3-10	12-16	N.4-5/16	1/4-1"1/2	1/4-1"	N.4-5/16	1/4-1"	1"1/8-2"
Pag.	166	167	169	169	170	170	171	171	172	172	173	173	209	209	210	217	217	224

Mat.		Vc (m/min)																	
P.1	<600	15-25	15-25	15-25	15-25	15-25	15-25						15-25	15-25	15-25	15-25	15-25	15-25	15-25
P.2	<800	10-20	10-20	10-20	10-20	10-20	10-20						10-20	10-20	10-20	10-20	10-20	10-20	10-20
P.3	<1000	10-15	10-15	10-15	10-15	10-15	10-15						10-15	10-15	10-15	10-15	10-15	10-15	10-15
P.4	<1200																		
P.5	<1400																		
M.1	<950																		
M.2																			
M.3	<1200																		
M.4																			
K.1	<500								15-30	15-30									
K.2																			
K.3	<800								10-20	10-20									
K.4.1		10-15	10-15	10-15	10-15	10-15	10-15						10-15	10-15	10-15	10-15	10-15	10-15	10-15
K.4.2	<1400																		
N.1.1	Al																		
N.1.2																			
N.1.3																			
N.2.1	Cu							25-35	25-35	35-50	35-50								
N.2.2		10-20	10-20	10-20	10-20	10-20	10-20						10-20	10-20	10-20	10-20	10-20	10-20	10-20
N.2.3																			
N.2.4																			
N.3.1	Mg/Zn																		
N.4.1	Plastic																		
N.4.2																			
N.4.3																			
S.1.1	Ni																		
S.1.2																			
S.2.1	Ti																		
S.2.2																			
S.2.3																			
H.1	50 HRC										3-6	3-6							
H.2	55 HRC										2-5	2-5							
H.3	60 HRC										1-4	1-4							

● Optima / Optimun ○ Alternativo / Alternative

[illegible]

P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundición Fonte Cast Iron Guss Eisen	N	Metales no ferrosos Métal non Ferreux Non Ferrous metals NE-Metalle	S	Titanio y Superalloys Titium et Superalloys Titanium and Superalloys Titan und Superlegierungen	H	Materiales Duros Materiels Durs Hard materials Hartmaterialien
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TABLA DE APLICACIONES
GUIDE D'APPLICATION / APPLICATION GUIDE / APPLIKATIONSHANDBUCH

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

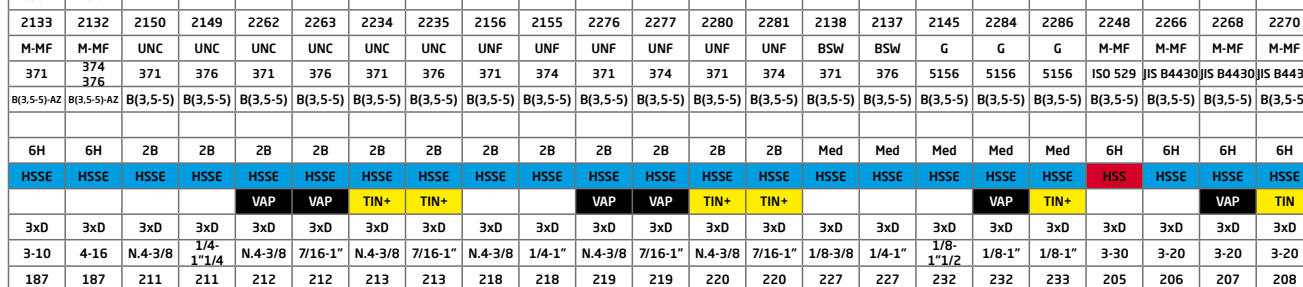


Ref./ Réf. / Ref.	2104	2103	2104/5	2103/5	2111	2272	2110	2109	2168	2169	2407	2408	2250	2251	2116	2115	2254	2255	2195	2196	2126	2125	2176	2175
Rosca/ Filetage/Thread	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF
DIN	371	374 376	371	374 376	371-EL	376-EL	371	374 376	371	374 376	371	376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376
Form.	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	B(3,5-5)	
Ejec./Exéc./Exec.			LH	LH																				
Tol.	6H	6H	6H	6H	6H	6H	6H+01	6H+0.1	6G	6G	4H	4H	6H	6H	6H	6H	6HX	6HX	6HX	6HX	6H	6H	6HX	6HX
Mat.	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
Rec./Rev./Coat.													VAP	VAP	TIN+	TIN+	HL	HL	HL	HL	TIAISIN+	TIAISIN+	TIAISIN+	TIAISIN+
Prof./ Depth	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	3xD	2xD	2xD
Gama/Gamme/Range	2-10	3-52	3-10	20-24	3-12	8-16	3-10	8-16	3-10	8-20	3-10	12	2-10	3-24	2-10	3-24	2-10	8-24	5-10	12-16	3-10	8-24	3-10	8-20
Pag.	174	175	176	176	177	177	178	178	179	179	180	180	181	181	182	182	183	183	184	184	185	185	186	186

Mat.		Vc (m/min)																																																																																																																																																																																																																																																																																																																																																																																																								
P.1 P.2 P.3 P.4 P.5	<600	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	^{0</}

● Optima / Optimun ○ Alternativo / Alternative

P Aceros Aciers Steele Stähle	M Aceros Inox Aciers Inox Stainless Steels Edelstahl	K Fundicion Fonte Cast Iron Gusseisen	N Metales no ferrosos Métal non Ferreaux Non Ferrous metals NE-Metalle	S Titanio y Superalaciones Titanium et Supeallages Titanium and Superalloys Titan und Superlegierungen	H Materiales Duros Materiels Durs Hard materials Hartmaterialien
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P	Aceros Aciers Steels Stähle	M	Aceros Inox Aciers Inox Stainless Steels Edelstahl	K	Fundición Fonte Cast Iron Guss Eisen	N	Metalos no ferrosos Métal non Ferreux Non Ferrous metals NE-Metalle	S	Titanio y Superaloaciones Titanium et Superaliages Titanium and Superalloys Titan und Superalloyierungen	H	Materiales Duros Matièrès Durs Hard materials Hartmaterialien
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TABLA DE APLICACIONES
GUIDE D'APPLICATION / APPLICATION GUIDE / APPLIKATIONSHANDBUCH



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

Ref./ Réf. / Ref.	2106	2105	2106/5	2105/5	2112	2273	2166	2165	2170	2208	2409	2410	2108	2107	2252	2253	2118	2117	2256	2257	2288	2289	2124	2123	2178	2177
Rosca/ Filetage/Thread	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF	M-MF
DIN	371	374 376	371	374 376	371-EL	376-EL	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376	371	374 376
Form.	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)
Ejec./Exéc./Exec.	R35°	R35°	L35°-LH	L35°-LH	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R35°	R15°	R15°	R35°	R35°	R35°	R45°	R45°	R45°	R45°	R45°	R35°	R35°	R15°	R15°
Tol.	6H	6H	6H	6H	6H	6H	6H+0.1	6H+0.1	6G	6G	4H	4H	6H	6H	6H	6H	6H	6H	6H	6HX	6HX	6HX	6H	6H	6HX	6HX
Mat.	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
Rec./Rev./Coat.															VAP	VAP	TIN+	TIN+	HL	HL	HL	HL	TIAISIN+	TIAISIN+	TIAISIN+	TIAISIN+
Prof./ Depth	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	2,5xD	1,5xD	1,5xD	
Gama/Gamme/Range	M2-M10	M3-M52	M3-M10	M10-M24	M3-M12	M8-M16	M3-M10	M8-M16	M3-M10	M8-M20	M3-M10	M12	M2-M10	M4-M36	M2-M10	M3-M24	M2-M10	M3-M24	M2-M10	M8-M24	M5M10	M12-M16	M3-M10	M8-M24	M3-M10	M8-M20
Pag.	188	189	190	190	191	191	192	192	193	193	194	194	195	195	196	196	197	197	198	198	199	199	200	200	201	201

Mat.		Vc (m/min)																																																																																																																																																																																																																																																																																																																																																																																																									
P.1	<600	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	⁰ 15-25	

● Optima / Optimun ○ Alternativo / Alternative



P Aceros
Aciers
Steels
Stähle



M Aceros Inox
Aciers Inox
Stainless Steels
Edelstahl



K Fundicion
Fonte
Cast Iron
Gusseisen



N Metales no ferrosos
Métal non Ferreaux
Non Ferrous metals
NE-Metalle



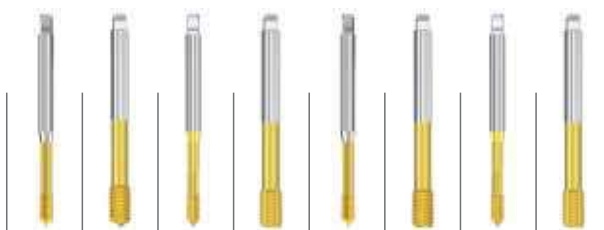
S Titanio y Superalloys
Titanium et Superalloys
Titanium and Superalloys
Titan und Superlegierungen



H Materiales Duros
Materiels Durs
Hard materials
Hartmaterialien

● Optima / Optimun ○ Alternativo / Alternative

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



Ref./ Réf. / Ref.	2188	2187	2214	2213	2216	2215	2218	2217
Rosca/ Filetage/Thread	M	M	M	M	M	M	M	M
DIN	371	374 376	371	374 376	371	374 376	371	374 376
Form.	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)	C(2-3)
Ejec./Exéc./Exec.	A>12%	A>12%	A>12%	A>12%	A>12%	A>12%	A>12%	A>12%
Tol.	6HX	6HX	6HX	6HX	6GX	6GX	6GX	6GX
Mat.	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
Rec./Rev./Coat.	TIN+	TIN+	TIN+	TIN+	TIN+	TIN+	TIN+	TIN+
Prof./ Depth	1.5xD	1.5xD	3xD	3xD	1.5xD	1.5xD	3xD	3xD
Gama/Gamme/Range	M3-M10	M12-M16	M3-M10	M8-M16	M3-M10	M12	M3-M10	M12
Pag.	238	238	239	239	240	240	241	241

Mat.		Vc (m/min)							
P.1	<600	• 25-45	• 25-45	• 25-45	• 25-45	• 25-45	• 25-45	• 25-45	• 25-45
P.2	<800	• 15-40	• 15-40	• 15-40	• 15-40	• 15-40	• 15-40	• 15-40	• 15-40
P.3	<1000	• 15-25	• 15-25	• 15-25	• 15-25	• 15-25	• 15-25	• 15-25	• 15-25
P.4	<1200								
P.5	<1400								
M.1	<950	• 10-25	• 10-25	• 10-25	• 10-25	• 10-25	• 10-25	• 10-25	• 10-25
M.2		• 10-20	• 10-20	• 10-20	• 10-20	• 10-20	• 10-20	• 10-20	• 10-20
M.3	<1200								
M.4									
K.1	<500								
K.2									
K.3	<800								
K.4.1									
K.4.2	<1400								
N.1.1	Al	• 20-40	• 20-40	• 20-40	• 20-40	• 20-40	• 20-40	• 20-40	• 20-40
N.1.2		• 15-30	• 15-30	• 15-30	• 15-30	• 15-30	• 15-30	• 15-30	• 15-30
N.1.3									
N.2.1	Cu	• 15-30	• 15-30	• 15-30	• 15-30	• 15-30	• 15-30	• 15-30	• 15-30
N.2.2									
N.2.3		• 15-30	• 15-30	• 15-30	• 15-30	• 15-30	• 15-30	• 15-30	• 15-30
N.2.4									
N.3.1	Mg/Zn	• 20-40	• 20-40	• 20-40	• 20-40	• 20-40	• 20-40	• 20-40	• 20-40
N.4.1	Plastic								
N.4.2									
N.4.3									
S.1.1	Ni								
S.1.2									
S.2.1	Ti	○ 10-20	○ 10-20	○ 10-20	○ 10-20	○ 10-20	○ 10-20	○ 10-20	○ 10-20
S.2.2									
S.2.3									
H.1	50 HRC								
H.2	55 HRC								
H.3	60 HRC								

● Optima / Optimun ○ Alternativo / Alternative

P

Aceros
Aciers
Steels
Stähle

M

Aceros Inox
Aciers Inox
Stainless Steels
Edelstahl

K

Fundicion
Fonte
Cast Iron
Gussisen

N

Metales no ferrosos
Métal non Ferraux
Non Ferrous metals
NE-Metalle

S

Titanio y Superalaciones
Titanium et Supeallages
Titanium and Superalloys
Titan und Superlegierungen

H

Materiales Duros
Materiels Durs
Hard materials
Hartmaterialien

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



Ref./ Réf. / Ref.	2411	2412
Rosca/ Filetage/Thread	M-MF	G
DIN	6535	6535
Form.		
Ejec./Exéc./Exec.	R15°	R15°
Tol.	h6	h6
Mat.	HM	HM
Rec./Rev./Coat.	TiAlCN	TiAlCN
Prof./ Depth		
Gama/Gamme/Range	M2-M24	G1/16-1"
Pag.	242	243
Mat.	Vc (m/min)	
P.1	<600	150-200
P.2	<800	120-170
P.3	<1000	100-140
P.4	<1200	80-120
P.5	<1400	70-110
M.1	<950	130-180
M.2		90-140
M.3	<1200	80-120
M.4		70-110
K.1	<500	130-180
K.2		120-160
K.3	<800	100-150
K.4.1		100-150
K.4.2	<1400	80-120
N.1.1	Al	500-900
N.1.2		300-500
N.1.3		200-400
N.2.1	Cu	150-250
N.2.2		130-180
N.2.3		100-140
N.2.4		60-80
N.3.1	Mg/Zn	100-140
N.4.1	Plastic	120-170
N.4.2		70-100
N.4.3		
S.1.1	Ni	60-80
S.1.2		50-70
S.2.1	Ti	60-80
S.2.2		50-70
S.2.3		30-50
H.1	50 HRC	60-100
H.2	55 HRC	30-60
H.3	60 HRC	20-40

P Aceros
Aciers
Steele
Stähle

M Aceros Inox
Aciers Inox
Stainless Steels
Edelstahl

K Fundicion
Fonte
Cast Iron
Gusseisen

N Metales no ferrosos
Métal non Ferreux
Non Ferrous metals
NE-Metalle

S Titanio y Superalloys
Titanium et Superalloys
Titanium and Superalloys
Titan und Superlegierungen

H Materiales Duros
Materiels Durs
Hard materials
Hartmaterialien

● Optima / Optimun ○ Alternativa / Alternative

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



Ref./ Réf. / Ref.	2301	2301/5	2314	2303	2324	2302	2304	2304/5	2305	2306	2306/5	2316	2317
Rosca/ Filetage/Thread	M-MF	M	M	M	M	M	BSW	BSW	BSF	G	G	G	G
DIN	352-2181	352	352	352	352	352	352	352	2181	5157	5157	5157	5157
Form.												E(1,5-2)	E(1,5-2)
Ejec./Exéc./Exec.		LH						LH			LH		
Tol.	6H	6H	6HX	6HX	6HX	6H	Med	Med	Med	Med	Med	Med	+0,1
Mat.	HSS	HSS	HSSE	HSSE	HSSE-PM	HSSE	HSS	HSS	HSS	HSS	HSS	HSS	HSS
Rec./Rev./Coat.				VAP	TIALSIN+	TIN+							
Prof./ Depth													
Gama/Gamme/Range	M1-M64	M3-M30	M3-M16	M3-M20	M4-M16	M3-M20	3/32-3"	1/8-1"	3/16-1"1/2	1/8-3"	1/8-1"	1/8-1"	1/8-1"
Pag.	244	246	247	247	248	248	249	250	250	251	251	252	252
Mat.	Vc (m/min)												
P.1	<600	●	●	○	○		●	●	●	●	●	●	
P.2	<800	●	●	●	●	○	●	●	●	●	●	●	
P.3	<1000			●	●	●	○						
P.4	<1200			○	○	●							
P.5	<1400					●							
M.1	<950			○	●		●						
M.2				○	●		●						
M.3	<1200												
M.4													
K.1	<500												
K.2													
K.3	<800												
K.4.1		○	○	○		○	○	○	○	○	○	○	
K.4.2	<1400					○							
N.1.1													
N.1.2	Al	○	○				○	○	○	○	○	○	
N.1.3		●	●				●	●	●	●	●	●	
N.2.1													
N.2.2	Cu											●	●
N.2.3		●	●	○	○	○	●	●	●	●	●	●	
N.2.4													
N.3.1	Mg/Zn												
N.4.1	Plastic												
N.4.2													
N.4.3													
S.1.1	Ni												
S.1.2													
S.2.1				●		●							
S.2.2	Ti												
S.2.3													
H.1	50 HRC												
H.2	55 HRC												
H.3	60 HRC												

● Optima / Optimun ○ Alternativo / Alternative

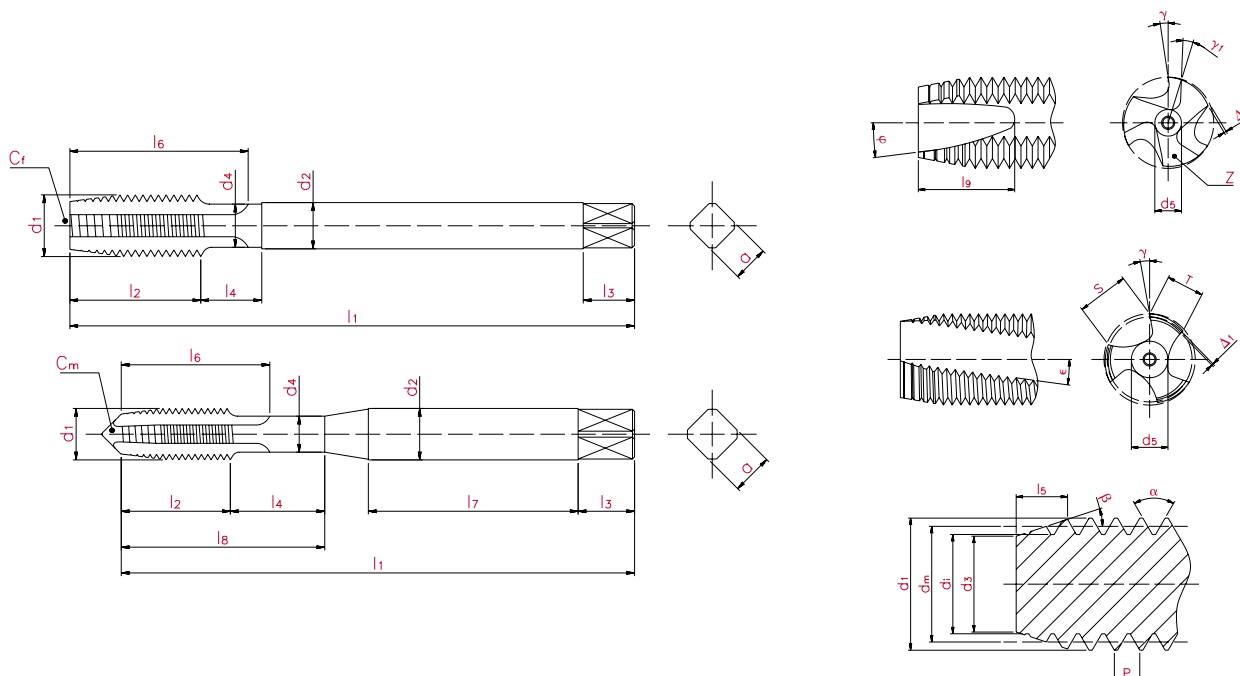
● Optima / Optimun ○ Alternativo / Alternative

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

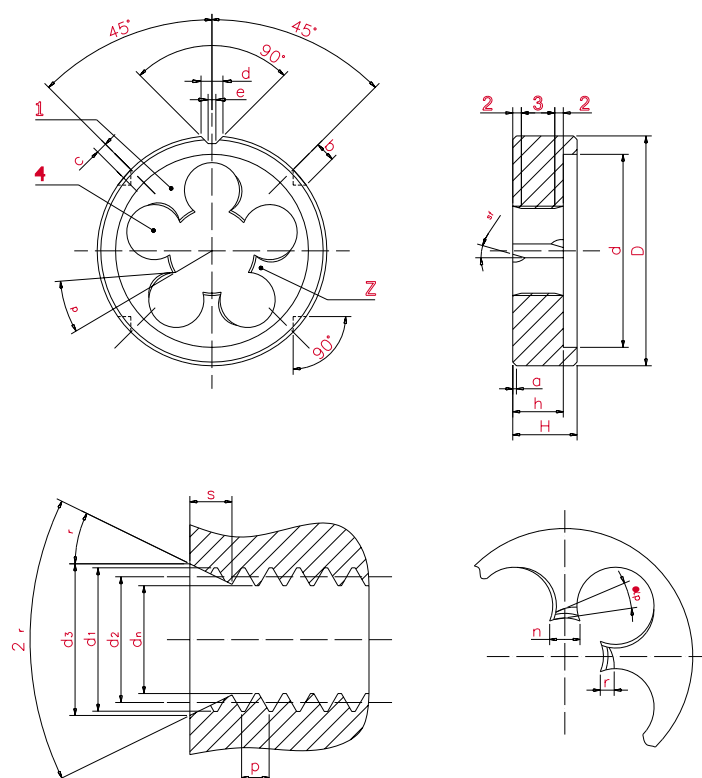
												
Ref./ Réf. / Ref.		2501	2501/5	2514	2512	2502	2502/5	2503	2504	2504/5	2522	2521
Rosca/ Filetage/Thread		M-MF	M	M	M	BSW	BSW	BSF	G	G	G	G
DIN		22568	22568	22568	22568	22568	22568	22568	24231	24231	24231	24231
Form.												
Ejec./Exéc./Exec.			LH				LH			LH		
Tol.		6g	6g	6g	6g	Med	Med	Med	Med	Med	Med	-0,1
Mat.		HSS	HSS	HSSE	HSSE	HSS	HSS	HSS	HSS	HSS	HSS	HSS
Rec./Rev./Coat.				NIT	VAP							
Prof./ Depth												
Gama/Gamme/Range		M1-M64	M3-M30	M3-M16	M3-M20	3/32-2"	1/8-1"	3/16-1"	1/8-2"	1/8-1"	1/8-1"	1/8-1"
Pag.		260	262	263	263	264	264	265	265	266	267	267
Mat.		Vc (m/min)										
P.1	<600	●	●	○	○	●	●	●	●	●		
P.2	<800	●	●	●	●	●	●	●	●	●		
P.3	<1000			●	●							
P.4	<1200			○	○	○						
P.5	<1400											
M.1	<950			○	●							
M.2				○	●							
M.3	<1200											
M.4												
K.1	<500											
K.2												
K.3	<800											
K.4.1												
K.4.2	<1400											
N.1.1												
N.1.2	Al	○	○			○	○	○	○	○		
N.1.3		●	●			●	●	●	●	●		
N.2.1												
N.2.2	Cu										●	●
N.2.3		●	●	○	○	●	●	●	●	●		
N.2.4												
N.3.1	Mg/Zn											
N.4.1	Plastic											
N.4.2												
N.4.3												
S.1.1	Ni											
S.1.2												
S.2.1					●							
S.2.2	Ti											
S.2.3												
H.1	50 HRC											
H.2	55 HRC											
H.3	60 HRC											

● Optima / Optimun ○ Alternativo / Alternative

[illegible]



l1	Longitud total / Longueur totale / Total length
l2	Longitud de rosca / Longueur de filetage / Thread length
l3	Longitud de mango / Longueur de queue / Shank length
l4	Longitud de sangrado / Longueur d'indentation / Neck length
l5	Longitud de entrada / Longueur d'entrée / Chamfer length
l6	Longitud de ranura / Longueur de rainure / Flute Length
l7	Longitud útil de corte / Longueur utile de coupe / Useful length of cut
l8	Longitud de la entrada en hélice / Longueur de l'entrée en hélice / Spiral point length
d1	Diámetro exterior / Diamètre extérieur / External diameter
d2	Diámetro de mango / Diamètre de queue / Shank diameter
d3	Diámetro de entrada / Diamètre d'entrée / Chamfer diameter
d4	Diámetro de sangrado / Diamètre d'indentation / Neck diameter
d5	Diámetro del alma / Diamètre de l'âme / Core diameter
dm	Diámetro medio / Diamètre moyen / Pitch diameter
di	Diámetro interno / Diamètre interne / Internal diameter
α	Cuadrado / Carré / Square
Cm	Punto macho / Pointe mâle / Male point
Cf	Punto hembra / Pointe femelle / Female point
P	Paso de la rosca / Pas de filetage / Pitch of thread
S	Ancho de la ranura / Largeur de la rainure / Flute width
T	Ancho del diente / Largeur de la dent / Width of land
Z	Número de ranuras / Nombre de rainures / Number of flutes
α	Ángulo de flancos / Angle de flancs / Angle of thread
β	Ángulo de la entrada / Angle de l'entrée / Chamfer angle
γ	Ángulo de corte / Angle de coupe / Rake angle
γ1	Ángulo de corte de la entrada corregida / Angle de coupe de l'entrée corrigée / Spiral point rake angle
φ	Ángulo de la entrada corregida / Angle de l'entrée corrigée / Spiral point angle
ε	Ángulo de la ranura / Angle de la rainure / Flute angle
Δ	Ángulo de destalonado de la entrada / Angle de détalonnage de l'entrée / Chamfer relief angle
Δ1	Ángulo de destalonado de flancos / Angle de détalonnage des flancs / Flank relief angle



1	Cuerpo del cojinete / Corps de la filière / Die body
2	Parte cortante - Entrada cónica / Partie coupante - Entrée conique / Cutting part - Conical entry
3	Hilos enteros / Fils entiers / Entire threads
4	Alojamiento para viruta / Logement pour copeau / Void for shavings
d1	Diámetro nominal de rosca / Diamètre nominal de filetage / Nominal diameter of thread
d2	Diámetro de flancos / Diamètre de flancs / Flank Diameter
dn	Diámetro de núcleo / Diamètre du noyau / Nucleus diameter
d3	Diámetro de la entrada cónica / Diamètre de l'entrée conique / Diameter of conical chamfer
P	Paso de la rosca / Pas de filetage / Thread pitch
D	Diámetro exterior del cojinete / Diamètre extérieur de la filière / Exterior diameter of die
d	Diámetro de la parte rebajada / Diamètre de la partie chanfreinée / Diameter of the reduced part
H	Diámetro de sangrado / Diamètre d'indentation / Bled diameter
h	Ancho del cojinete / Largeur de la filière / Die width
Z	Ancho útil del cojinete / Largeur utile de la filière / Useful width of the die
n	Número de dientes / Nombre de dents / Number of teeth
r	Ancho del diente / Largeur de la dent / Tooth width
s	Destalonado de la entrada cónica / Détalonnage de l'entrée conique / Conical chamfer relief
a	Longitud de la entrada cónica / Longueur de l'entrée conique / Conical chamfer length
b	Chaflán / Chanfrein / Bevel
c	Diámetro del agujero de fijación / Diamètre du trou de fixation / Mounting hole diameter
d	Desplazamiento del agujero de fijación / Déplacement du trou de fixation / Mounting hole displacement
e	Ancho de preranura / Largeur de pré-rainure / Pre-groove width
γp	Ángulo de la ranura / Angle de la rainure / Groove angle
χr	Ángulo de desprendimiento (de corte) / Angle de dégagement (de coupe) / Rake angle (of cut)
2χr	Ángulo de la entrada cónica / Angle de l'entrée conique / Conical chamfer angle
αp	Ángulo de destalonado de la entrada cónica / Angle de détalonnage de l'entrée conique / Conical chamfer relief angle
γsf	Ángulo de la entrada en hélice (rompevirutas) / Longueur de l'entrée en hélice (brise-copeaux) / Blade chamfer angle (chip cap)

Tipos de ranuras y entradas para machos de roscar.

Flutes and chamfers types for taps / Types de rainures et entrées pour les tarauds / Arten von Nuten und Fasen für Gewindebohrer.

Ranuras / Flutes / Rainures / Nuten

La norma DIN 2197 tipifica los siguientes tipos de ranura para machos de roscar:

DIN norm 2197 provides regulations for the following types of flute for taps:

La norme DIN 2197 caractérise les types de rainures suivants pour les tarauds:

Die DIN-Norm 2197 definiert folgende Nutenarten für Gewindebohrer:

	Denominación Nomenclature Bezeichnung	Ángulo de hélice Helix angle Angle d'hélice Spiralwinkel Medio/Basic	Formas entrada Chamfer forms Chanfreins Fasen	Descripción Description Description Beschreibung
	L15	15°	D	Ranura en hélice a izquierda para agujeros pasantes Flute on left hand helix for through holes Rainure hélicoïdale à gauche pour les trous débauchants
		0°	A, C, D, E	Ranura recta para agujeros ciegos y pasantes Straight flute for blind and through holes Rainure droite pour trous borgnes et débouchants Linksgedallte Spiralnut für Durchgangslöcher
	Ángulo de hélice en la entrada Spiral point Entrée corrigée	13°	B	Ranura recta con entrada en hélice a izquierda para agujeros pasantes Straight flute with spiral point for through holes Rainure droite avec entrée hélicoïdale gauche pour trous débauchants Gerade Nut für Sack- und Durchgangslöcher
	R15 R25 R35 R45	15° 25° 35° 45°	C, E	Ranura en hélice a derecha para agujeros ciegos Flute on right hand helix for blind holes Rainure hélicoïdale à droite pour trous borgnes Rechtsgedallte Spiralnut für Sacklöcher

Entradas / Chamfers / Chanfreins/ Fasen

La norma DIN 2197 tipifica los siguientes tipos de entrada para machos de roscar:

DIN norm 2197 provides regulations for the following types of chamfer for taps:

La norme DIN 2197 caractérise les types d'entrée suivants pour les tarauds:

Die DIN-Norm 2197 definiert folgende Fasenarten für Gewindebohrer:

Forma / Form A		Para agujeros pasantes cortos. Ranura recta For short through holes. Straight flute Pour les trous débauchants courts. Rainure droite Für kurze Durchgangslöcher. Gerade Nut
Forma / Form B		Para agujeros pasantes medios y materiales de viruta larga. Ranura recta con entrada. For medium through holes and materials producing long chips. Straight with spiral flute. Pour les trous débauchants moyens et les matériaux à copeaux longs. Rainure droite avec entrée. Für mittlere Durchgangslöcher und langspanende Werkstoffe. Gerade Nut mit Fase.
Forma / Form C		Para agujeros ciegos o pasantes y materiales de viruta corta. Ranura recta o helicoidal. For blind or through holes and materials producing short chips. Straight or spiral flute. Pour trous borgnes ou débauchants et matériaux à copeaux courts. Rainure droite ou hélicoïdale. Für Sack- oder Durchgangslöcher und kurzspanende Werkstoffe. Gerade oder spiralförmige Nut.
Forma / Form D		Para agujeros ciegos con salida de rosca larga o pasantes. Ranura recta o helicoidal. For blind holes with deeper previous hole or through holes. Straight or spiral flute. Pour trous borgnes avec un trou antérieur plus profond ou des trous débauchants. Rainure droite ou hélicoïdale. Für Sacklöcher mit langem Gewindeausgang oder Durchgangslöcher. Gerade oder spiralförmige Nut.
Forma / Form E		Para agujeros ciegos con salida de rosca corta. Ranura recta o helicoidal. For blind holes with shorter previous hole. Straight or spiral flute. Pour trous borgnes avec trou précédent plus court. Rainure droite ou hélicoïdale. Für Sacklöcher mit kurzem Gewindeausgang. Gerade oder spiralförmige Nut.



Simbolo Symbol Symbol	Ángulo Angle Winkel	Norm. Standar Norm	Descripción / Description / Beschreibung			
M	60°	DIN 13	Rosca Métrica ISO	Metric ISO thread	Filetage Métrique ISO	Metrisches ISO-Gewinde
M	60°	DIN 158	Rosca Métrica ISO Cónica	Taper metric ISO thread	Filetage Métrique ISO conique	Metrisches kegeliges ISO-Gewinde
EG-M	60°	DIN 8140	PART 2 Rosca Métrica ISO para insertos helicoidal o reductores de roscas	Metric ISO thread for helical coil wire screw thread inserts	Filetage Métrique ISO pour des filets rapportées ou réducteurs de filetage	Metrisches ISO-Gewinde für spiralförmige Gewindeeinsätze oder Gewindereduzierungen
MF	60°	DIN 13	Rosca Métrica Fina ISO	Metric fine ISO thread	Filetage Métrique Fine ISO	Metrisches ISO-Feingewinde
MJ	60°	DIN ISO 5855	Rosca Métrica ISO para aeronáutica	Metric ISO thread for aeronautics	Filetage Métrique ISO pour aéronautique	Metrisches ISO-Gewinde für die Luftfahrt
G	55°	DIN-ISO	228 Rosca ISO para tubos, cilíndrica, no estanca	Pipe parallel ISO thread	Filetage ISO pour des tuyaux non étanche	Zylindrisches, nicht dichtendes ISO-Rohrgewinde
R	55°	DIN 259	Rosca para tubos, cilíndrica, no estanca, antigua	Pipe parallel whitworth thread	Filetage pour des tuyaux non étanche ancien	Altes, zylindrisches, nicht dichtendes Rohrgewinde
Rp	55°	DIN 2999-3858	Rosca interior cilíndrica para tubos	Internal dryseal parallel thread	Filetage intérieur cylindrique pour tuyaux	Zylindrisches Innengewinde für Rohre
Tr	30°	DIN 103	Rosca trapezoidal Métrica ISO	Trapezoidal thread	Filetage trapézoïdal Métrique ISO	Metrisches ISO-Trapezgewinde
S	30°+3°	DIN 513	Rosca Diente de Sierra	Saw form thread	Filetage en dents de scie	Sägewinde
S	45°	DIN 2781	Rosca Diente de Sierra (2)	Saw form thread (2)	Filetage en dents de scie (2)	Sägewinde (2)
Rd	30°	DIN: 405/20400/15403	Rosca Redonda	Rounded thread	Filetage rond	Rundgewinde
E	–	DIN 40400	Rosca lámparas eléctricas	Edison Edison form thread	Filetage de lampe électrique Edison	Elektro-(Edison-)Gewinde
Pg	80°	DIN 40430	Rosca para tubos de conducción eléctrica	Steel conduit thread	Filetage pour conduits électriques	Gewinde für Elektroinstallationsrohre
FG	60°	DIN 79012	Rosca para bicicletas	Bicycle thread	Filetage pour vélos	Farradgewinde
Vg	60°	DIN 7756	Rosca para válvulas	Valves thread	Filetage pour vannes	Ventilgewinde
W	55°	DIN 477	Rosca Whitworth cónica para botellas de gas	Whitworth thread for gas bottles valves	Filetage Whitworth conique pour bouteilles de gaz	Kegeliges Whitworth-Gewinde für Gasflaschenventile
BSW	55°	BS84 (1956)	Rosca Whitworth normal	Whitworth coarse thread	Filetage Whitworth normal	Whitworth-Regelgewinde
BSF	55°	BS84 (1956)	Rosca Whitworth fina	Whitworth fine thread	Filetage fin Whitworth	Whitworth-Feingewinde
BA	47°30'	BS93 (1951)	Rosca Inglesa	British association thread	Filetage anglais	Britisches Gewinde
BSC	60°	BS811 (1950)	Rosca Inglesa para bicicletas	British norm thread for bicycles	Filetage anglais pour vélos	Britisches Fahrradgewinde
G	55°	BS2779 (1973)	Rosca Whitworth para tubos cilíndrica (BSP)	Pipe parallel whitworth thread (BSP)	Filetage de tuyau cylindrique Whitworth (BSP)	Zylindrisches Whitworth-Rohrgewinde (BSP)
Rp	55°	BS21 (1973)	Rosca Whitworth cilíndrica para tubos (BSPP)	Pipe parallel thread (BSPP)	Filetage de tuyau cylindrique Whitworth (BSPP)	Zylindrisches Whitworth-Rohrgewinde (BSPP)
R	55°	BS21 (1985)	Rosca Whitworth cónica exterior para tubos estanca (BSPT)	External dryseal pipe taper thread (BSPT)	Filetage extérieur conique Whitworth (BSPT)	Kegeliges Whitworth-Außengewinde (BSPT)
Rc	55	BS21 (1985)	Rosca Whitworth cónica interior para tubos, estanca (BSPT)	Internal dryseal pipe taper thread (BSPT)	Filetage de tuyau conique intérieur Whitworth, étanche (BSPT)	Kegeliges, dichtendes Whitworth-Rohr-Innengewinde (BSPT)
NC	60°	ANSI B1.1 (1960)	Rosca nacional americana normal	American national coarse thread series	Filetagenational américain normal	Amerikanisches Regelgewinde
UNC	60°	ANSI B1.1 (1982)	Rosca unificada americana normal	Unified coarse thread series	Filetage unifié américain standard	Amerikanisches Einheitsgewinde (UNC)
EG-UNC	60°	MS 33537	Rosca unificada americana normal para insertos helicoidal o reductores de roscas	Unified coarse thread series for helical coil wire screw thread inserts	Filetage unifié américain standard pour filets rapportés ou réducteurs de filetage	Amerikanisches Einheitsgewinde für Gewindeeinsätze oder Gewindereduzierungen
NF	60°	ANSI B1.1 (1960)	Rosca nacional americana fina	American national fine thread series	Filetagenational américain fin	Amerikanisches Feingewinde
UNF	60°	ANSI B1.1 (1982)	Rosca unificada americana fina	Unified fine thread series	Filetageunifié américain fin	Amerikanisches Einheits-Feingewinde (UNF)
NEF	60°	ANSI B1.1 (1960)	Rosca nacional americana extra fina	American national extra fine thread series	Filetagenational américain extra fin	Amerikanisches Extrafeingewinde

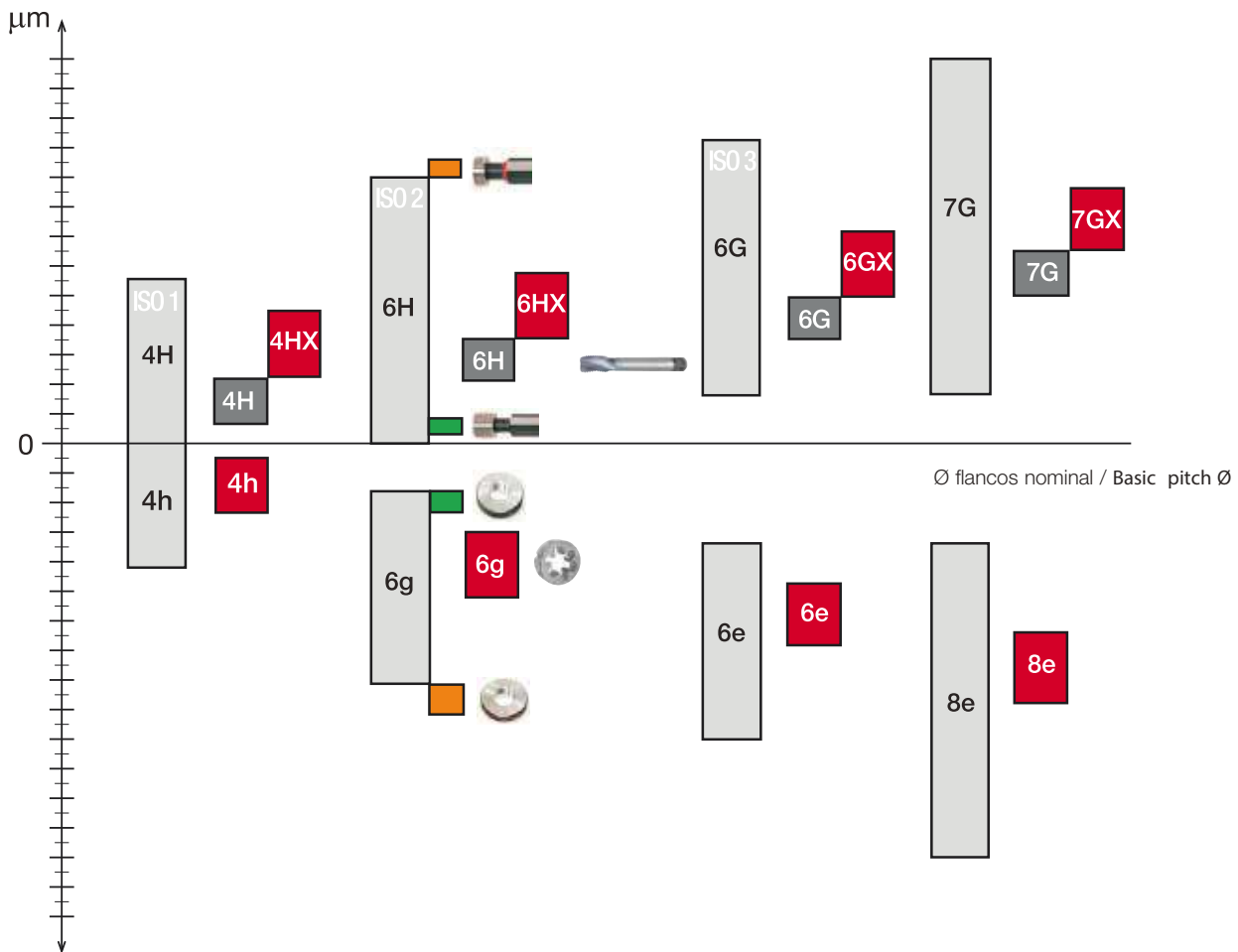
Símbolo Symbol Symbol	Ángulo Angle Winkel	Norm. Standar Norm	Descripción / Description / Beschreibung			
UNEF	60°	ANSI B1.1 (1982)	Rosca unificada americana extra fina	Unified extra fine thread series	Filetage extra fin américain unifié	Amerikanisches Einheits-Extrafeingewinde
N	60°	ANSI B1.1 (1960)	Rosca nacional americana, pasos 8-12-16 Hilos / 1"	American national 8-12-16 T.P.I. pitch series (8N, 12N, 16N)	Filetage national américain, pas 8-12-16 fils / 1"	Amerikanisches Gewinde, Steigungen 8-12-16 Gewinde / 1"
UN	60°	ANSI B1.1 (1982)	Rosca unificada americana, pasos 8-12-16 Hilos/1"	Unified 8-12-16 T.P.I. pitch series	Filetage unifié américain, étapes 8-12-16 Threads / 1"	Amerikanisches Einheitsgewinde, Steigungen 8-12-16 Gewinde / 1"
NS	60°	ANSI B1.1 (1960)	Rosca nacional americana, pasos especiales	American national thread special pitches	Filetagenational américain, emplacements spéciaux	Amerikanisches Gewinde, Sondersteigungen
UNS	60°	ANSI B1.1 (1982)	Rosca unificada americana especial	Unified thread special pitches	Filetageunifié américain spécial	Amerikanisches Spezial-Einheitsgewinde (UNS)
UNM	60°	ASA B1.10 (1958)	Rosca unificada miniatura	Unified miniature thread series	Filetageunifié miniature	Einheits-Miniaturgewinde
UNJ	60°	BS 4084 (1978)	Rosca unif. con radio de fondo controlado 0,15011P A 0,18042P	Unified constant pitch thread series with 0,15011P to 0,18042P controlled root radius	Filetageuniforme avec rayon inférieur contrôlé de 0,15011P à 0,18042P	Einheitsgewinde mit kontrolliertem Bodenradius von 0,15011P bis 0,18042P
UNJC	60°	BS 4084 (1978)	Rosca unificada normal con radio de fondo controlado 0,15011P A 0,18042P	Unified coarse thread series with a 0,15011P to 0,18042P controlled radius	Filetage unitaire standard avec rayon inférieur contrôlé 0,15011P TO 0,18042P	Standard-Einheitsgewinde mit kontrolliertem Bodenradius von 0,15011P bis 0,18042P
UNJF	60°	BS 4084 (1978)	Rosca unificada fina con radio de fondo controlado 0,15011P A 0,18042P	Unified fine thread series with a 0,15011P to 0,18042P controlled root radius	Filetage unifié fin avec rayon inférieur contrôlé 0,15011P TO 0,18042P	Einheits-Feingewinde mit kontrolliertem Bodenradius von 0,15011P bis 0,18042P
UNJEF	60°	BS 4084 (1978)	Rosca unificada extrafina con radio de fondo controlado 0,15011P A 0,18042P	Unified extra fine thread series with a 0,15011P to 0,18042P controlled root radius	Filetage unifié ultrafin avec rayon inférieur contrôlé 0,15011P TO 0,18042P	Einheits-Extrafeingewinde mit kontrolliertem Bodenradius von 0,15011P bis 0,18042P
NH	60°	ANSI B2.4 H28 (1966)	Rosca americana para material contra incendios	American national firehouse and hose coupling thread	Filetageaméricain pour matériel de lutte contre l'incendie	Amerikanisches Gewinde für Brandbekämpfungsgeräte
NPS	60°		Usada para designar los machos NPSC y NPSM	American standard straight pipe thread NPSC & NPSM	Utilisé pour désigner les tarauds NPSC et NPSM	Dient zur Kennzeichnung von NPSC- und NPSM-Gewindebohrern
NPS	60°		Usada para designar los machos NPSC y NPSM	American standard straight pipe thread NPSC & NPSM	Filetage américain cylindrique pour raccords de tuyaux	Zylindrisches amerikanisches Gewinde für Rohrverschraubungen
NPSC	60°	ANSI/ASME B1.20.1 (1983)	Rosca americana cilíndrica para acoplamiento de tubos	American standard straight pipe thread in pipe couplings (marked NPS)	Filetage américain cylindrique étanche pour tuyaux	Dichtendes, zylindrisches amerikanisches Rohrgewinde
NPSF	60°	ANSI B1.20.3 (1976)	Rosca americana estanca cilíndrica para tubos	Dryseal american standard internal straight pipe thread (fuel)	Filetage américain cylindrique pour raccords de tuyaux	Zylindrisches amerikanisches Gewinde für flexible Rohrverschraubungen
NPSH	60°	ANSI/ASME B1.20.1 (1983)	Rosca americana cilíndrica para acoplamiento de tubos flexibles	American standard straight pipe thread for hose couplings	Filetage américain intermédiaire interne cylindrique pour tubes étanches	Mittleres, zylindrisches amerikanisches Innengewinde für Dichtungsschläuche
NPSI	60°	ANSI B1.20.3 - (1976)	Rosca americana intermedia interna cilíndrica para tubos estancos	American standard intermediate internal straight pipe thread	Filetage cylindrique américain pour joints mécaniques	Zylindrisches amerikanisches Rohrgewinde für mechanische Verbindungen
NPSL	60°	ANSI/ASME B1.20.1 (1983)	Rosca americana cilíndrica de tubos para uniones mecánicas	American standard straight pipe thread for loose-fitting mechanical joints	Filetage cylindrique américain pour joints mécaniques	Zylindrisches amerikanisches Rohrgewinde für mechanische Verbindungen
NPSM	60°	ANSI/ASME B1.20.1 (1983)	Rosca americana cilíndrica de tubos para uniones mecánicas	American standard straight pipe thread for free-fitting mechanical joints	Joints mécaniques Filetage cylindrique américain pour joints mécaniques	Zylindrisches amerikanisches Rohrgewinde für mechanische Verbindungen
ANPT	60°	MIL-P-7105	Rosca americana para tubos cónicos en aeronáutica	Aeronautical national form taper pipe thread	Filetage américain pour tubes coniques en aéronautique	Amerikanisches Gewinde für Konusrohre in der Luftfahrt
NPT	60°	ANSI/ASME B1.20.1 (1983)	Rosca americana cónica para tubos	American standard taper pipe thread	Filetage de tuyau américain conique	Kegeliges amerikanisches Rohrgewinde
NPTF	60°	ANSI B1.20.3 (1976)	Rosca americana estanca cónica para tubos (FUEL)	Dryseal american standard taper pipe thread (fuel)	Filetage américain conique étanche pour tuyaux (FUEL)	Kegeliges, dichtendes amerikanisches Rohrgewinde (KRAFTSTOFF)
NPTR	60°	ANSI/ASME B1.20.1 (1983)	Rosca americana cónica para juntas de raíles de ferrocarril	American standard taper pipe thread for rail joint (tap marked NPT)	Filetage américain conique pour les joints de rail de chemin de fer	Kegeliges amerikanisches Gewinde für Schienenstöße
NGO	60°	ANSI/ASME B1.20.1 (1983)	Rosca americana para salidas de gas	National gas outlet thread (specify RH or LH)	Filetageaméricain pour sorties de gaz	Amerikanisches Gewinde für Gasauslässe
NGS	60°	ANSI/ASME B1.20.1 (1983)	Rosca americana GAS cilíndrica	National gas straight thread	Filetage américain GAS cylindrique	Amerikanisches zylindrisches GAS-Gewinde



Simbolo Symbol Symbol	Ángulo Angle Winkel	Norm. Standar Norm	Descripción / Description / Beschreibung			
NGT	60°	ANSI B57.1(1977)	Rosca americana GAS cónica	National gas taper thread (see also «SGT»)	Filetage américain GAS cylindrique	Kegeliges amerikanisches GAS-Gewinde
PTF	60°	ANSI B1.20.3-(1976)	Rosca cónica para tubos SAE corta y estanca	Dryseal SAE short taper pipe thread	Filetage conique pour tubes courts et étanches SAE	Kegeliges Gewinde für kurze und dichtende SAE-Rohre
ACME-C	29°	ANSI B1.5 (1977)	Rosca trapezoidal americana centralizada	Acme thread centralizing	Filetage trapézoïdal américain centralisé	Amerikanisches Trapezgewinde, selbstzentrierend
ACME-G	29°	ANSI B1.5 (1977)	Rosca trapezoidal americana para usos generales	Acme thread general purpose	Filetage trapézoïdal américain à des fins générales	Amerikanisches Trapezgewinde für allgemeine Zwecke
STUB-ACME	29°	ANSI B1.8 (1977)	Rosca trapezoidal americana truncada	Stub Acme thread	Filetage trapézoïdal américain tronqué	Amerikanisches Trapezgewinde, abgeflacht
AMO	55°	ANSI B1.11(1958)	Rosca americana para objetivos de microscopios	American standard microscope objective thread	Filetage américain pour objectifs de microscope	Amerikanisches Gewinde für Mikroskopobjektive
N-BUTT	45°+5°	ANSI B1.9 (1973)	Rosca americana BUTTRESS diente de sierra	American BUTTRESS thread	Dent de scie à filetage américain BUTTRESS	Amerikanisches Sägewinde BUTTRESS
V	60°		Rosca en "V" con cresta y fondos truncados 60°	«V» thread with truncated crest and root (flatted to the user's specifications)	Filetage en "V" avec crête et bas tronqués	"V"-Gewinde mit abgeflachtem Grat und Boden
SB			Roscas para fabricantes de estufas	Manufacturers stovebolt standards thread	Filetage pour les fabricants de poêles	Gewinde für Ofenhersteller
STI	60°		Rosca especial para insertos helicoil o reductores de roscas	Special thread for helical coil wire screw thread inserts	Filetage spécial pour inserts hélicoïdaux ou réducteurs de filetage	Spezialgewinde für spiralförmige Gewindeeinsätze oder Gewindereduzierungen
SGT	60°	ANSI B57.1(1977)	Rosca cónica GAS especial	Special gas taper thread	Filetage conique spécial GAS	"Kegeliges GAS-Spezialgewinde
SPL-PTF	60°	ANSI B1.20.3 (1976)	Rosca estanca especial GAS cónica	Dryseal special taper pipe thread	Filetage spécial étanche Conical GAS	Kegeliges, dichtendes GAS-Spezialgewinde
API	60°		Inst. americano del petróleo. Rosca americana cónica para instalaciones petrolíferas	American national taper form thread for petroleum installations	American Petroleum Inst. Filetage de discussion	American Petroleum Institute (API). Kegeliges amerikanisches Gewinde für die Erdölindustrie

Tolerancia del diámetro de flancos para roscas Métricas. Tolerance zones of the pitch diameter for Metric threads. /Tolérance de diamètre de flanc pour les filetages métriques. /Toleranzen des Flankendurchmessers für metrische Gewinde.

Amplitud de campo de tolerancia /Tolerance zones of the pitch diameter /Largeur du champ de tolérance /Toleranzfeldbreite



Rosca interior /Internal threads /Filetage intérieur /Innengewinde

- **Tolerancia de diámetro en los flancos de la rosca interior según DIN ISO 865-1.** / Pitch diameter tolerance of the internal thread acc. DIN ISO 865-1. / Tolérance de diamètre sur les flancs du filetage intérieur selon DIN ISO 865-1. / Durchmessertoleranz an den Flanken des Innengewindes gemäß DIN ISO 865-1.
- **Tolerancia de diámetro en los flancos del macho de rosca según DIN EN 22857 (DIN 7G según DIN 802-4).** / Pitch diameter tolerance of the tap acc. DIN EN 22857 (DIN 7G according to DIN 802-4). / Tolérance de diamètre sur les flancs du taraud selon DIN EN 22857 (DIN 7G selon DIN 802-4). / Durchmessertoleranz an den Flanken des Gewindebohrers gemäß DIN EN 22857 (DIN 7G gemäß DIN 802-4).
- **Tolerancia de diámetro en los flancos del macho con sobre-medida según norma HEPYC.** Pitch diameter tolerance of the tap according to HEPYC standards. / Tolérance de diamètre sur les flancs du mâle avec surdimensionnement selon la norme HEPYC. / Durchmessertoleranz an den Flanken des Gewindebohrers mit Übermaß gemäß HEPYC-Norm.
- **Tolerancia de diámetro en los flancos del calibre tampón de rosca no pasa según DIN ISO 1502.** / Pitch diameter tolerance of the no-go thread plug gauge acc. DIN ISO 1502. / La tolérance de diamètre sur les flancs de la jauge tampon de filetage ne satisfait pas à la norme DIN ISO 1502. / Die Durchmessertoleranz an den Flanken des Gewindelehndorns entspricht nicht der DIN ISO 1502.
- **Tolerancia de diámetro en los flancos del calibre tampón de rosca pasa según DIN ISO 1502.** / Pitch diameter tolerance of the go thread plug gauge according to DIN ISO 1502. / La tolérance de diamètre sur les flancs de la jauge tampon de filetage est conforme à la norme DIN ISO 1502. / Die Durchmessertoleranz an den Flanken des Gewindelehndorns entspricht der DIN ISO 1502.

Rosca exterior /External thread /Filetage externe /Außengewinde

- **Tolerancia de diámetro en los flancos de la rosca exterior según DIN ISO 865-1.** / Pitch diameter tolerance of the external thread acc. DIN ISO 865-1. / Tolérance de diamètre sur les flancs du filetage extérieur selon DIN ISO 865-1. / Durchmessertoleranz an den Flanken des Außengewindes gemäß DIN ISO 865-1.
- **Tolerancia de diámetro en los flancos del cojinete según norma HEPYC.** / Pitch diameter tolerance of the die according to HEPYC standards. / Tolérance de diamètre sur les flancs de roulement selon la norme HEPYC. / Durchmessertoleranz an den Flanken des Gewindebohrers gemäß HEPYC-Norm.
- **Tolerancia de diámetro en los flancos del calibre anillo de rosca no pasa según DIN ISO 1502.** / Pitch diameter tolerance of the no-go thread ring gauge according to DIN ISO 1502. / La tolérance de diamètre sur les flancs de la jauge à bague filetée ne satisfait pas à la norme DIN ISO 1502. / Die Durchmessertoleranz an den Flanken des Gewindelehrrings entspricht nicht der DIN ISO 1502.
- **Tolerancia de diámetro en los flancos del anillo calibre de rosca pasa según DIN ISO 1502.** / Pitch diameter tolerance of the go thread ring gauge according to DIN ISO 1502. / La tolérance de diamètre sur les flancs de la bague de jauge de filetage est conforme à la norme DIN ISO 1502. / Die Durchmessertoleranz an den Flanken des Gewindelehrrings entspricht der DIN ISO 1502.

Tolerancias para el cálculo de roscas métricas de los machos de roscar

Tolerances of metric thread tap pitch diameter / Tolérances pour le calcul des filetages métriques des tarauds
 / Toleranzen zur Berechnung der metrischen Gewinde von Gewindebohrern

Ø Rosca Thread Ø D mm.		Paso Pictch P mm.	µm							
			ISO 1 - 4H		ISO 2 - 6H		ISO 3 - 6G		7G	
Desde/From	Hasta/up to		Es	Ei	Es	Ei	Es	Ei	Es	Ei
0,99	1,4	0,2	+15	+3	+25	+15	-	-	-	-
		0,25	+17	+6	+28	+17	-	-	-	-
		0,3	+18	+6	+30	+18	-	-	-	-
1,4	2,8	0,2	+16	+6	+26	+16	-	-	-	-
		0,25	+18	+6	+30	+18	-	-	-	-
		0,35	+20	+6	+34	+20	-	-	-	-
		0,4	+21	+7	+35	+21	+49	+35	-	-
		0,45	+23	+8	+38	+23	+56	+38	-	-
2,8	5,6	0,35	+21	+6	+36	+21	-	-	-	-
		0,5	+24	+8	+40	+24	+56	+40	+72	+56
		0,6	+27	+9	+48	+27	+63	+45	+81	+63
		0,7 0,75	+29	+10	+48	+29	+67	+48	+86	+67
		0,8	+30	+10	+50	+30	+70	+50	+90	+70
5,6	11,2	0,5	+27	+9	+45	+27	+63	+45	+81	+63
		0,75	+32	+11	+53	+32	+74	+53	+95	+74
		1	+35	+11	+59	+35	+83	+59	+107	+83
		1,25	+38	+13	+63	+38	+88	+63	+113	+88
		1,5	+42	+14	+70	+42	+98	+70	+126	+98
11,2	22,4	0,5	+29	+10	+48	+29	+67	+48	+86	+67
		0,75	+34	+12	+56	+34	+78	+56	+100	+78
		1	+35	+11	+59	+35	+83	+59	+107	+83
		1,25	+42	+14	+70	+42	+98	+70	+126	+98
		1,5	+45	+15	+75	+45	+105	+75	+135	+105
		1,75	+48	+16	+80	+48	+112	+80	+144	+112
		2	+51	+17	+85	+51	+119	+85	+153	+119
		2,5	+54	+17	+90	+54	+126	+90	+162	+126
22,4	45	0,5	+30	+10	+50	+30	+70	+50	+90	+70
		0,75	+36	+12	+60	+36	+84	+60	+108	+84
		1	+40	+14	+66	+40	+92	+66	+118	+92
		1,5	+48	+16	+80	+48	+112	+80	+144	+112
		2	+54	+18	+90	+54	+126	+90	+162	+126
		3	+64	+22	+106	+64	+148	+106	+190	+148
		3,5	+67	+22	+112	+67	+157	+112	+202	+157
		4	+71	+24	+118	+71	+165	+118	+212	+165
4,5	+75	+25	+125	+75	+175	+125	+225	+175		
45	90	0,5	+34	+12	+56	+34	+78	+56	+100	+78
		0,75	+38	+13	+63	+38	+88	+63	+113	+88
		1	+45	+15	+75	+45	+105	+75	+135	+105
		1,5	+51	+17	+85	+51	+119	+85	+153	+119
		2	+57	+19	+95	+57	+133	+95	+171	+133
		3	+67	+22	+112	+67	+157	+112	+202	+157
		4	+75	+25	+125	+75	+175	+125	+225	+175
		5	+80	+27	+133	+80	+186	+133	+239	+186
5,5	+84	+28	+140	+84	+196	+140	+252	+196		
6	+90	+30	+150	+90	+210	+150	+270	+210		

Fórmula para el cálculo de medidas / Size formula calculation:

Tolerancias Métricas / Metric tolerances

Ø flancos/pitch min. = Ø flancos nominal / Basic pitch Ø + Ei (mm.)
 Ø flancos/pitch max. = Ø flancos nominal / Basic pitch Ø + Es (mm.)

Ø exterior min. = Ø nominal/Basic pitch Ø + Es (mm.)
 Ø exterior max. = Ø exterior min. + 0,030 (mm.)

Tolerancia del diámetro de flancos de los machos de roscar / Tolerances of thread tap pitch diameter /
Tolérance du diamètre des flancs des tarauds/ Toleranzen des Flankendurchmessers von Gewindebohrern

M

Ø Rosca Thread Ø D mm.			Paso Pitch P mm.	Ø Flancos nominal Basic pitchØ mm.	Ø Rosca Thread Ø D mm.			Paso Pitch P mm.	Ø Flancos nominal Basic pitchØ mm.	Ø Rosca Thread Ø D mm.			Paso Pitch P mm.	Ø Flancos nominal Basic pitchØ mm.
Serie 1	Serie 2	Serie 3			Serie 1	Serie 2	Serie 3			Serie 1	Serie 2	Serie 3		
M1*	M1,1*		0,25	0,838	M8		M7	1	6,350	M36	M39		4	33,402
M1,2*			0,25	0,938			M9	1,25	7,188				4	36,402
			0,25	1,038				1,25	8,188	M42			4,5	39,077
	M1,4*		0,3	1,205	M10		M11	1,5	9,026		M45		4,5	42,077
M1,6			0,35	1,373				1,5	0,026	M48			5	44,752
	M1,8		0,35	1,573	M12			1,75	10,863		M52		5	48,752
M2			0,4	1,740		M14		2	12,701	M56			5,5	52,428
M2,5	M2,2		0,45	1,908	M16	M18		2	14,701		M60		5,5	56,428
			0,45	2,208				2,5	16,376	M64			6	60,103
M3			0,5	2,675	M20			2,5	18,376		M68		6	64,103
M4	M3,5		0,6	3,110		M22		2,5	20,376					
			0,7	3,545	M24			3	22,051					
	M4,5		0,75	4,013		M27		3	25,051					
M5			0,8	4,480	M30			3,5	27,727					
M6			1	5,350		M33		3,5	30,727					

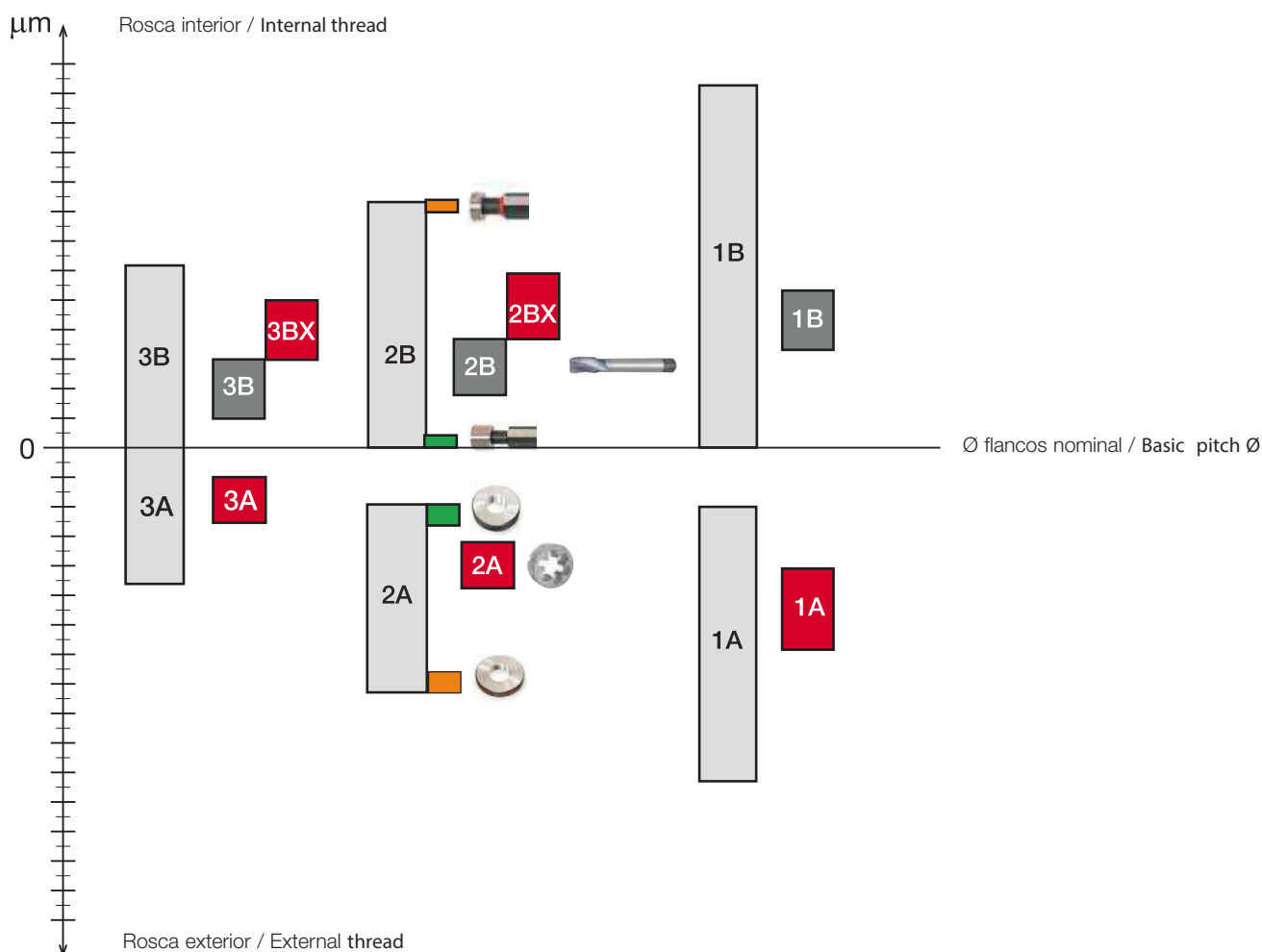
MF

Ø Rosca Thread Ø D mm.			Paso Pitch P mm.	Ø Flancos nominal Basic pitch Ø mm.	Ø Rosca Thread Ø D mm.			Paso Pitch P mm.	Ø Flancos nominal Basic pitch Ø mm.	Ø Rosca Thread Ø D mm.			Paso Pitch P mm.	Ø Flancos nominal Basic pitch Ø mm.
Serie 1	Serie 2	Serie 3			Serie 1	Serie 2	Serie 3			Serie 1	Serie 2	Serie 3		
M1*			0,2	0,870			M28	2	26,701			M62	3	60,051
M1,2*	M1,1*		0,2	0,970	M30			1	29,350			M62	4	59,402
			0,2	1,070	M30			1,5	29,026	M64			1,5	63,026
	M1,4*		0,2	1,270	M30			2	28,701	M64			2	62,701
M1,6	M1,8		0,2	1,470	M30			3	28,051	M64			3	62,051
			0,2	1,670			M32	1,5	31,026	M64			4	61,402
M2			0,25	1,838			M32	2	30,701			M65	1,5	64,026
M2,5	M2,2		0,25	2,038		M33		1,5	32,026			M65	2	63,701
			0,35	2,273		M33		2	31,701			M65	3	63,051
M3			0,35	2,773		M33		3	31,051			M65	4	62,402
M4	M3,5		0,35	3,237			M35	1,5	34,026		M68		1,5	67,026
			0,5	3,675	M36			1,5	35,026		M68		2	66,701
M5	M4,5		0,5	4,175	M36			2	34,701		M68		2	66,051
			0,5	4,675	M36			3	34,051		M68		3	65,402
		M5,5	0,5	5,175			M38	1,5	37,026			M70	4	69,026
M6			0,5	5,675		M39		1,5	38,026			M70	2	68,701
M6		M7	0,75	5,513		M39		2	37,701			M70	3	68,051
			0,75	6,513		M39		3	37,051			M70	4	67,402
M8			0,5	7,675			M40	1,5	39,026			M70	6	66,103
M8			0,75	7,531			M40	2	38,701	M72			1,5	71,026
M8			1	7,350			M40	3	38,051	M72			2	70,701
M10		M9	1	8,350	M42			1,5	41,026	M72			3	70,051
M10			0,75	9,513	M42			2	40,701	M72			4	69,402
M10			1	9,350	M42			3	40,051	M72			6	68,103
M10		M11	1,25	3,188	M42			4	39,402			M75	1,5	74,026
M12			1	10,350		M45		1,5	44,026			M75	2	73,701
			1	11,350		M45		2	43,701			M75	3	73,051
M12			1,25	11,188		M45		3	43,051			M75	4	72,402
M12			1,5	11,026		M45		4	42,402			M75	1,5	75,026
	M14		1	13,350	M48			1,5	47,026		M76		2	74,701
			1,25	13,188				2	46,701				3	74,051
	M14		1,5	13,026	M48			3	76,051		M76		4	73,402
	M14		1	14,350	M48			4	45,402		M76		6	72,103
		M15	1,25	14,350							M76			
M16		M15	1,5	14,026			M50	1,5	49,026	M80			1,5	79,026
			1	15,350			M50	2	48,701	M80			2	78,701
M16			1,5	15,026			M50	3	48,051	M80			3	78,051
		M17	1	16,350				1,5	51,026	M80			4	77,402
	M18	M17	1,5	16,026		M52		2	50,701	M80			6	76,103
			1	17,350		M52		3	50,051		M85		2	83,701
	M18		1,5	17,026		M52		4	79,402		M85		3	83,051
M20	M18		2	16,701			M55	1,5	54,026		M85		4	82,402
			1	19,350			M55	2	53,701		M85		6	81,103
M20			1,5	19,026			M55	3	53,051	M90			2	88,701
M20			2	18,701			M55	4	52,402	M90			3	88,051
	M22		1	21,350	M56			1,5	55,026	M90			4	87,402
			1,5	21,026	M56			2	54,701	M90			6	86,103
M24	M22		2	20,701	M56			3	54,051		M95		2	93,701
			1	23,350	M56			4	53,402		M95		3	93,051
M24			1,5	23,026			M58	1,5	57,026		M95		4	92,402
M24			2	22,701			M58	2	56,701		M95		6	91,103
		M25	1	24,350			M58	3	56,051	M100			2	98,701
		M25	1,5	24,026				4	55,402				3	98,051
	M27	M25	2	23,701		M60	M58	1,5	59,026	M100			4	97,402
			1	26,350		M60		2	58,701	M100			6	96,103
	M27		1,5	26,026		M60		3	58,051		M105		2	103,701
	M27		2	25,701		M60		4	57,402		M105		3	103,051
		M28	1	27,350			M62	1,5	61,026		M105		4	102,402
		M28	1,5	27,026			M62	2	60,701		M105		6	101,103



Tolerancia del diámetro de flancos para roscas Americanas. Tolerance zones of the pitch diameter for Unified threads.

Amplitud de campo de tolerancia / Tolerance zones of the pitch diameter / Largeur du champ de tolérance / Toleranzfeldbreite



Rosca interior / Internal threads / Filetage intérieur / Innengewinde

Tolerancia de diámetro en los flancos de la rosca interior según ASME B1.1
Pitch diameter tolerance of the internal thread acc. ASME B1.1
Tolérance de diamètre sur les flancs du filetage intérieur selon ASME B1.1
Durchmessertoleranz an den Flanken des Innengewindes nach ASME B1.1

Tolerancia de diámetro en los flancos del macho con sobre-medida según norma HEPYC.
Pitch diameter tolerance of the tap according to HEPYC standards.
Tolérance de diamètre sur les flancs du taraud avec surdimensionnement selon la norme HEPYC / Durchmessertoleranz an den Flanken des Gewindebohrers mit Übermaß gemäß HEPYC-Norm

Tolerancia de diámetro en los flancos del calibre tampón de rosca no pasa según DIN ISO 1502
Pitch diameter tolerance of the no-go thread plug gauge acc. DIN ISO 1502
La tolérance de diamètre sur les flancs du calibre tampon de filetage ne passe pas selon DIN ISO 1502 / Durchmessertoleranz an den Flanken des Gewindelehndorns entspricht nicht der DIN ISO 1502

Tolerancia de diámetro en los flancos del calibre tampón de rosca pasa según DIN ISO 1502
Pitch diameter tolerance of the go thread plug gauge acc. DIN ISO 1502.
La tolérance de diamètre sur les flancs du calibre tampon de filetage est conforme à la norme DIN ISO 1502 / Durchmessertoleranz an den Flanken des Gewindelehndorns entspricht der DIN ISO 1502

Rosca exterior / External thread / Filetage externe / Außengewinde

Tolerancia de diámetro en los flancos de la rosca exterior según ASME B1.1
Pitch diameter tolerance of the external thread acc. ASME B1.1 /
Tolérance de diamètre sur les flancs du filetage extérieur selon ASME B1.1 / Durchmessertoleranz an den Flanken des Außengewindes nach ASME B1.1

Tolerancia de diámetro en los flancos del cojinete según norma HEPYC
Pitch diameter tolerance of the die according to HEPYC standards. / Tolérance de diamètre sur les flancs de roulement selon la norme HEPYC / Durchmessertoleranz an den Flanken der Schneidbacken gemäß HEPYC-Norm

Tolerancia de diámetro en los flancos del calibre anillo de rosca no pasa según ANSI/ASME B1.2
Pitch diameter tolerance of the no-go thread ring gauge acc. ANSI/ASME B1.2 / La tolérance de diamètre sur les flancs de la jauge à bague fileté ne passe pas selon ANSI / ASME B1.2 / Durchmessertoleranz an den Flanken des Gewindelehrrings entspricht nicht der ANSI/ASME B1.2

Tolerancia de diámetro en los flancos del anillo calibre de rosca pasa según ANSI/ASME B1.2
Pitch diameter tolerance of the go thread ring gauge acc. ANSI/ASME B1.2 / Tolérance de diamètre sur les flancs de la bague La jauge de filetage passe selon ANSI / ASME B1.2 / Durchmessertoleranz an den Flanken des Gewindelehrrings entspricht der ANSI/ASME B1.2

Clases de tolerancias para el cálculo de roscas Americanas

Tolerances to calculate Unified and american threads / Classes de tolérance pour le calcul des filetages Américains / Toleranzklassen zur Berechnung von amerikanischen Gewinden

Tolerancia de machos recomendados para clase 2, 3, 2B y 3B, UNC, UNF

Recommended tap for class of thread 2, 3, 2B y 3B, UNC, UNF

Tolérance des tarauds recommandée pour les classes 2, 3, 2B et 3B, UNC, UNF

Empfohlene Gewindetoleranzen für die Klassen 2, 3, 2B und 3B, UNC, UNF

Ø Rosca Thread Ø D inch.	Paso / Pitch tpi.		Clase Class 2	Clase Class 3	Clase normal Normal Class 2B	Clase Class 3B
	NC UNC	NF UNF				
Nº0	..	80	GH1	GH1	GH2	GH1
Nº1	64	..	GH1	GH1	GH2	GH1
Nº1	..	72	GH1	GH1	GH2	GH1
Nº2	56	..	GH1	GH1	GH2	GH1
Nº2	..	64	GH1	GH1	GH2	GH1
Nº3	48	..	GH1	GH1	GH2	GH1
Nº3	..	56	GH1	GH1	GH2	GH1
Nº4	40	..	GH2	GH1	GH2	GH2
Nº4	..	48	GH1	GH1	GH2	GH1
Nº5	40	..	GH2	GH1	GH2	GH2
Nº5	..	44	GH1	GH1	GH2	GH2
Nº6	32	..	GH2	GH1	GH3	GH2
Nº6	..	40	GH2	GH1	GH2	GH2
Nº8	32	..	GH2	GH1	GH3	GH2
Nº8	..	36	GH2	GH1	GH2	GH2
Nº10	24	..	GH3	GH1	GH3	GH3
Nº10	..	32	GH2	GH1	GH3	GH2
Nº12	24	..	GH3	GH1	GH3	GH3
Nº12	..	28	GH3	GH1	GH3	GH3
1/4	20	..	GH3	GH2	GH5	GH3
1/4	..	28	GH3	GH1	GH4	GH3
5/16	18	..	GH3	GH2	GH5	GH3
5/16	..	24	GH3	GH1	GH4	GH3
3/8	16	..	GH3	GH2	GH5	GH3
3/8	..	24	GH3	GH1	GH4	GH3
7/16	14	..	GH5	GH3	GH5	GH3
7/16	..	20	GH3	GH1	GH5	GH3
1/2	13	..	GH5	GH3	GH5	GH3
1/2	..	20	GH3	GH1	GH5	GH3
9/16	12	..	GH5	GH3	GH5	GH3
9/16	..	18	GH3	GH2	GH5	GH3
5/8	11	..	GH5	GH3	GH5	GH3
5/8	..	18	GH3	GH2	GH5	GH3
3/4	10	..	GH5	GH3	GH5	GH5
3/4	..	16	GH3	GH2	GH5	GH3
7/8	9	..	GH6	GH4	GH6	GH4
7/8	..	14	GH4	GH2	GH6	GH4
1"	8	..	GH6	GH4	GH6	GH4
1"	..	12	GH4	GH2	GH6	GH4
1"	..	..	GH4	GH2	GH6	GH4
1" 1/8	7	..	GH8	GH4	GH8	GH4
1" 1/8	..	12	GH4	GH4	GH6	GH4
1" 1/4	7	..	GH8	GH4	GH8	GH4
1" 1/4	..	12	GH4	GH4	GH6	GH4
1" 3/8	6	..	GH8	GH4	GH8	GH4
1" 3/8	..	12	GH4	GH4	GH6	GH4
1" 1/2	6	..	GH8	GH4	GH8	GH4
1" 1/2	..	12	GH4	GH4	GH6	GH4

Fórmula para el cálculo de medidas / Size formula calculation:

Tolerancias Métricas / Metric tolerances

$\varnothing$ flancos/pitch max.= $\varnothing$ flancos nominal / Basic pitch $\varnothing$ + (n°GH x 0,0127) (mm.)

$\varnothing$ flancos/pitch min.= $\varnothing$ flancos /pitch max- 0,0127 (mm.) $\varnothing$ + Ei (mm.)



Tolerancia del diámetro de flancos de los machos de roscar / Tolerances of thread tap pitch diameter /
Tolérance du diamètre des flancs des tarauds / Toleranz des Flankendurchmessers des Gewindebohrers

UNC

Ø Rosca Thread Ø D inch.	Paso Pitch P tpi	Ø Flancos nominal Basic pitchØ mm.	Ø Rosca Thread Ø D inch.	Paso Pitch P tpi	Ø Flancos nominal Basic pitchØ mm.
Nº 1	64	1,598	1	8	23,338
Nº 2	56	1,890	1 1/8	7	26,218
Nº 3	48	2,172	1 1/4	7	29,393
Nº 4	40	2,433	1 3/8	6	32,174
Nº 5	40	2,764	1 1/2	6	35,349
Nº 6	32	2,990	1 3/4	5	41,151
Nº 8	32	3,650	2	4,5	47,135
Nº 10	24	4,138	2 1/4	4,5	53,485
Nº 12	24	4,798	2 1/2	4	59,375
1/4	20	5,524	2 3/4	4	65,725
5/16	18	7,021	3	4	72,075
3/8	16	8,494	3 1/4	4	78,425
7/16	14	9,934	3 1/2	4	84,775
1/2	13	11,430	3 3/4	4	91,125
9/16	12	12,913	4	4	97,475
5/8	11	14,376			
3/4	10	17,399			
7/8	9	20,391			

UNF

Ø Rosca Thread Ø D inch.	Paso Pitch P tpi	Ø Flancos nominal Basic pitchØ mm.	Ø Rosca Thread Ø D inch.	Paso Pitch P tpi	Ø Flancos nominal Basic pitchØ mm.
Nº 0	80	1,318	3/8	24	8,837
Nº 1	72	1,626	7/16	20	10,287
Nº 2	64	1,928	1/2	20	11,874
Nº 3	56	2,220	9/16	18	13,371
Nº 4	48	2,502	5/8	18	14,958
Nº 5	44	2,799	3/4	16	18,019
Nº 6	40	3,094	7/8	14	21,046
Nº 8	36	3,708	1	12	24,026
Nº 10	32	4,310	1 1/8	12	27,201
Nº 12	28	4,897	1 1/4	12	30,376
1/4	28	5,761	1 3/8	12	33,551
5/16	24	7,249	1 1/2	12	36,726

- Roscas más usuales en pulgadas.
Filetages les plus courants en pouces.
Most common threads in inches.
Gängigste Gewinde in Zoll.

Ø	BSW W 55°	BSF 55°	BSP GAS 55°	BSB BRASS 55°	UNC 60°	SAE UNF 60°	UNEF NEF 60°	NPS NPT API 60°	UN 60°						UNS 60°				
Nº 0	-	-	-	-	-	80	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 1	-	-	-	-	64	72	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 2	-	-	-	-	56	64	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 3	-	-	-	-	48	56	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 4	-	-	-	-	40	48	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 5	-	-	-	-	40	44	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 6	-	-	-	-	32	40	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 8	-	-	-	-	32	36	-	-	-	-	-	-	-	-	-	-	-	-	-
Nº 10	-	-	-	-	24	32	-	-	-	-	-	-	-	-	28	36	40	48	56
Nº 12	-	-	-	-	24	28	32	-	-	-	-	-	-	-	36	40	48	56	-
1/16	60	-	-	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	-
3/32	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/8	40	-	28	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	-
5/32	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3/16	24	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/32	24	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/4	20	26	19	26	20	28	32	18	-	-	-	-	-	-	24	27	36	40	48
9/32	20	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/16	18	22	-	26	18	24	32	-	20	28	-	-	-	-	27	36	40	48	-
3/8	16	20	19	26	16	24	32	18	20	28	-	-	-	-	18	27	36	40	-
7/16	14	18	-	26	14	20	28	-	16	32	-	-	-	-	18	24	27	-	-
1/2	12	16	14	26	13	20	28	14	16	32	-	-	-	-	12	14	18	24	27
9/16	12	16	-	26	12	18	24	-	16	20	28	32	-	-	14	27	-	-	-
5/8	11	14	14	26	11	18	24	14	12	16	20	28	32	-	14	27	-	-	-
11/16	11	14	-	-	-	-	24	-	12	16	20	28	32	-	-	-	-	-	-
3/4	10	12	14	26	10	16	20	14	12	28	32	-	-	-	14	18	24	27	-
13/16	10	12	-	-	-	-	20	-	12	16	28	32	-	-	-	-	-	-	-
7/8	9	11	14	26	9	14	20	-	12	16	28	32	-	-	10	18	24	27	-
15/16	-	-	-	-	-	-	20	-	16	28	32	-	-	-	-	-	-	-	-
1"	8	10	11	26	8	12	20	11,5	16	28	16	-	28	-	10	14	18	24	27
1" 1/16	-	-	-	-	-	-	18	-	8	16	20	28	-	-	-	-	-	-	-
1" 1/8	7	9	11	26	7	12	18	-	8	16	20	28	-	-	10	14	24	-	-
1" 3/16	-	-	-	-	-	-	18	-	8	16	20	28	-	-	-	-	-	-	-
1" 1/4	7	9	11	26	7	12	18	11,5	8	16	20	28	-	-	10	14	24	-	-
1" 5/16	-	-	-	-	-	-	18	-	8	16	20	28	-	-	-	-	-	-	-
1" 3/8	6	8	11	26	6	12	18	-	6	8	12	16	20	28	10	14	24	-	-
1" 7/16	-	-	-	-	-	-	18	-	8	16	20	28	-	-	-	-	-	-	-
1" 1/2	6	8	11	26	6	12	18	11,5	6	8	16	20	-	-	10	14	24	-	-
1" 9/16	-	-	-	-	-	-	18	-	6	8	12	16	20	-	-	-	-	-	-
1" 5/8	5	8	11	26	-	-	18	-	6	8	12	16	20	-	10	14	24	-	-
1" 11/16	-	-	-	-	-	-	18	-	6	8	12	16	20	-	-	-	-	-	-
1" 3/4	5	7	11	26	5	-	-	-	6	8	12	16	20	-	10	14	24	-	-
1" 13/16	-	-	-	-	-	-	-	-	6	8	12	16	20	-	-	-	-	-	-
1" 7/8	4,5	-	-	26	-	-	-	-	6	8	12	16	20	-	10	14	24	-	-
1" 15/16	-	-	-	-	-	-	-	-	6	8	12	16	20	-	-	-	-	-	-
2"	4,5	7	11	26	4,5	-	-	11,5	6	8	12	16	20	-	10	14	24	-	-

► **Equivalencias en mm de los diámetros de las siguientes roscas.**

Équivalences en mm des diamètres des filetages suivants.

Equivalents in mm of the diameters of the following threads.

Äquivalenzen in mm der folgenden Gewindedurchmesser.



UNC/UNF

ROSCA	Ø NOMINAL
Nº 0	1,524
Nº 1	1,854
Nº 2	2,184
Nº 3	2,515
Nº 4	2,845
Nº 5	3,175
Nº 6	3,505
Nº 8	4,166
Nº 10	4,826
Nº 12	5,486



BSW/BSF - UNC/UNF

BSP (GAS)

NPS/NPT

PG

3/32 = 2,381 mm	5/8 = 15,875 mm	G1/8 = 9,728 mm	G1 3/8 = 44,323 mm	1/8 = 10,287 mm	PG7 = 12,50 mm
1/8 = 3,175 mm	3/4 = 19,050 mm	G1/4 = 13,157 mm	G1 1/2 = 47,803 mm	1/4 = 13,716 mm	PG9 = 15,20 mm
5/32 = 3,969 mm	7/8 = 22,225 mm	G3/8 = 16,662 mm	G1 5/8 = 51,988 mm	3/8 = 17,145 mm	PG11 = 18,60 mm
3/16 = 4,762 mm	1" = 25,400 mm	G1/2 = 20,955 mm	G1 3/4 = 53,746 mm	1/2 = 21,336 mm	PG13,5 = 20,40 mm
7/32 = 5,556 mm	1 1/8 = 28,575 mm	G5/8 = 22,911 mm	G2" = 59,614 mm	3/4 = 26,670 mm	PG16 = 22,50 mm
1/4 = 6,350 mm	1 1/4 = 31,750 mm	G3/4 = 26,441 mm	G2 1/4 = 65,710 mm	1" = 33,401 mm	PG21 = 28,30 mm
9/32 = 7,144 mm	1 3/8 = 34,925 mm	G7/8 = 30,201 mm	G2 3/8 = 69,390 mm	1 1/4 = 42,164 mm	PG29 = 37,00 mm
5/16 = 7,938 mm	1 1/2 = 38,100 mm	G1" = 33,249 mm	G2 1/2 = 75,184 mm	1 1/2 = 48,260 mm	PG36 = 47,00 mm
3/8 = 9,525 mm	1 5/8 = 41,275 mm	G1 1/8 = 37,897 mm	G2 3/4 = 81,534 mm	2" = 60,325 mm	PG42 = 54,00 mm
7/16 = 11,112 mm	1 3/4 = 44,450 mm	G1 1/4 = 41,910 mm	G3" = 87,844 mm	2 1/2 = 73,025 mm	PG48 = 59,30 mm
1/2 = 12,700 mm	1 7/8 = 47,625 mm			3" = 88,900 mm	
9/16 = 14,288 mm	2" = 50,800 mm				

► **Equivalencia del paso en hilos por pulgada a mm.**

Équivalence du pas en fils par pouce en mm.

Equivalents of pitch in threads per inch to mm.

Äquivalenz der Gewindesteigung pro Zoll zu mm



PASO h/1"	EQUIV. mm	PASO h/1"	EQUIV. mm	PASO h/1"	EQUIV. mm	PASO h/1"	EQUIV. mm	PASO h/1"	EQUIV. mm
PAS h/1"	ÉQUIV. mm	PAS h/1"	ÉQUIV. mm	PAS h/1"	ÉQUIV. mm	PAS h/1"	ÉQUIV. mm	PAS h/1"	ÉQUIV. mm
PITCH h/1"	EQUIV. mm	PITCH h/1"	EQUIV. mm	PITCH h/1"	EQUIV. mm	PITCH h/1"	EQUIV. mm	PITCH h/1"	EQUIV. mm
80	0,317	44	0,577	26	0,976	16	1,587	9	2,822
72	0,352	40	0,636	24	1,058	14	1,814	8	3,174
64	0,396	36	0,705	22	1,154	13	1,953	7	3,628
60	0,423	32	0,793	20	1,270	12	2,116	6	4,233
56	0,453	28	0,907	19	1,336	11,5	2,208	5	5,080
48	0,523	27	0,940	18	1,411	11	2,309	4,5	5,644

► **Equivalencia de las roscas PG a MF.**

Équivalence du pas PG à MF.

Equivalents of threads PG to MF.

Äquivalenz von Gewinden PG zu MF.



PG	MF	PG	MF
7 x 20 h.	12 x 1,50	21 x 16 h.	32 x 1,50
9 x 18 h.	16 x 1,50	29 x 16 h.	40 x 1,50
11 x 18 h.	20 x 1,50	36 x 16 h.	50 x 1,50
13,5 x 18 h.	20 x 1,50	48 x 16 h.	63 x 1,50
16 x 18 h.	25 x 1,50		

M		MF		MF		MF	
d1 x p (mm)		d1 x p (mm)		d1 x p (mm)		d1 x p (mm)	
Øa		Øa		Øa		Øa	
M 1 x 0,25	0,75	M 1 x 0,2	0,80	M 18 x 2	16,00	M 42 x 1,5	40,50
M 1,1 x 0,25	0,85	M 1,1 x 0,2	0,90	M 19 x 1	18,00	M 42 x 2	40,00
M 1,2 x 0,25	0,95	M 1,2 x 0,2	1,00	M 19 x 1,25	17,75	M 42 x 3	39,00
M 1,4 x 0,3	1,10	M 1,4 x 0,2	1,20	M 19 x 1,5	17,50	M 44 x 1,5	42,50
M 1,6 x 0,35	1,25	M 1,6 x 0,2	1,40	M 20 x 1	19,00	M 45 x 1,5	43,50
M 1,7 x 0,35	1,30	M 1,7 x 0,2	1,50	M 20 x 1,25	18,75	M 45 x 2	43,00
M 1,8 x 0,35	1,45	M 1,8 x 0,2	1,60	M 20 x 1,5	18,50	M 45 x 3	42,00
M 2 x 0,4	1,60	M 2 x 0,25	1,75	M 20 x 2	18,00	M 45 x 4	41,00
M 2,2 x 0,45	1,75	M 2,2 x 0,25	1,95	M 21 x 1	20,00	M 48 x 1,5	46,50
M 2,3 x 0,4	1,90	M 2,3 x 0,25	2,05	M 21 x 1,25	19,75	M 48 x 2	46,00
M 2,5 x 0,45	2,05	M 2,5 x 0,35	2,15	M 21 x 1,5	19,50	M 48 x 3	45,00
M 2,6 x 0,45	2,10	M 2,6 x 0,35	2,25	M 22 x 1	21,00	M 48 x 4	44,00
M 3 x 0,5	2,50	M 3 x 0,35	2,65	M 22 x 1,25	20,75	M 50 x 1,5	48,50
M 3,5 x 0,6	2,90	M 3,5 x 0,35	3,15	M 22 x 1,5	20,50	M 50 x 2	48,00
M 4 x 0,7	3,30	M 4 x 0,35	3,65	M 22 x 2	20,00	M 50 x 3	47,00
M 4,5 x 0,75	3,70	M 4 x 0,5	3,50	M 23 x 1	22,00	M 52 x 1,5	50,50
M 5 x 0,8	4,20	M 4,5 x 0,5	4,00	M 23 x 1,5	21,50	M 52 x 2	50,00
M 6 x 1	5,00	M 5 x 0,5	4,50	M 24 x 1	23,00	M 52 x 3	49,00
M 7 x 1	6,00	M 5,5 x 0,5	5,00	M 24 x 1,25	22,75	M 52 x 4	48,00
M 8 x 1,25	6,80	M 6 x 0,5	5,50	M 24 x 1,5	22,50	M 56 x 1,5	54,50
M 9 x 1,25	7,80	M 6 x 0,75	5,20	M 24 x 2	22,00	M 56 x 2	54,00
M 10 x 1,5	8,50	M 7 x 0,5	6,50	M 25 x 1	24,00	M 56 x 3	53,00
M 11 x 1,5	9,50	M 7 x 0,75	6,20	M 25 x 1,25	23,75	M 56 x 4	52,00
M 12 x 1,75	10,20	M 8 x 0,5	7,50	M 25 x 1,5	23,50	M 60 x 1,5	58,50
M 14 x 2	12,00	M 8 x 0,75	7,20	M 25 x 2	23,00	M 60 x 2	58,00
M 16 x 2	14,00	M 8 x 1	7,00	M 26 x 1	25,00	M 60 x 3	57,00
M 18 x 2,5	15,50	M 9 x 0,75	8,20	M 26 x 1,5	24,50	M 60 x 4	56,00
M 20 x 2,5	17,50	M 9 x 1	8,00	M 26 x 2	24,00	M 63 x 1,5	61,50
M 22 x 2,5	19,50	M 10 x 0,5	9,50	M 27 x 1	26,00		
M 24 x 3	21,00	M 10 x 0,75	9,20	M 27 x 1,5	25,50		
M 27 x 3	24,00	M 10 x 1	9,00	M 27 x 2	25,00		
M 30 x 3,5	26,50	M 10 x 1,25	8,80	M 28 x 1	27,00		
M 33 x 3,5	29,50	M 11 x 0,75	10,20	M 28 x 1,5	26,50		
M 36 x 4	32,00	M 11 x 1	10,00	M 28 x 2	26,00		
M 39 x 4	35,00	M 11 x 1,25	9,75	M 30 x 1	29,00		
M 42 x 4,5	37,50	M 12 x 0,75	11,25	M 30 x 1,5	28,50		
M 45 x 4,5	40,50	M 12 x 1	11,00	M 30 x 2	28,00		
M 48 x 5	43,00	M 12 x 1,25	10,80	M 30 x 3	27,00		
M 52 x 5	47,00	M 12 x 1,5	10,50	M 32 x 1	31,00		
M 56 x 5,5	50,50	M 13 x 0,75	12,25	M 32 x 1,5	30,50		
M 60 x 5,5	54,50	M 13 x 1	12,00	M 32 x 2	30,00		
M 64 x 6	58,00	M 13 x 1,25	11,75	M 33 x 1	32,00		
M 68 x 6	62,00	M 13 x 1,5	11,50	M 33 x 1,5	31,50		
		M 14 x 0,75	13,25	M 33 x 2	31,00		
		M 14 x 1	13,00	M 33 x 3	30,00		
		M 14 x 1,25	12,80	M 34 x 1,5	32,50		
		M 14 x 1,5	12,50	M 34 x 2	32,00		
		M 15 x 1	14,00	M 35 x 1,5	33,50		
		M 15 x 1,25	13,75	M 36 x 1,5	34,50		
		M 15 x 1,5	13,50	M 36 x 2	34,00		
		M 16 x 1	15,00	M 36 x 3	33,00		
		M 16 x 1,25	14,75	M 38 x 1,5	36,50		
		M 16 x 1,5	14,50	M 38 x 2	36,00		
		M 17 x 1	16,00	M 39 x 1,5	37,50		
		M 17 x 1,25	15,75	M 39 x 2	37,00		
		M 17 x 1,5	15,50	M 39 x 3	36,00		
		M 18 x 1	17,00	M 40 x 1,5	38,50		
		M 18 x 1,25	16,75	M 40 x 2	38,00		
		M 18 x 1,5	16,50	M 40 x 3	37,00		

M		BSW	
d1 x p (mm)		d1 (") - p (tpi)	
Øa		Øa	
M 3 x 0,6	2,40	W 1/16 - 60	1,15
M 3,5 x 0,75	2,75	W 3/32 - 48	1,80
M 4 x 0,75	3,25	W 1/8 - 40	2,50
M 4 x 0,8	3,20	W 5/32 - 32	3,10
M 5 x 0,9	4,10	W 3/16 - 24	3,60
M 5 x 1	4,00	W 7/32 - 24	4,40
M 5,5 x 0,9	4,60	W 1/4 - 20	5,10
M 6 x 1,25	4,75	W 9/32 - 20	5,90
M 8 x 1,5	6,50	W 5/16 - 18	6,50
M 13 x 1,75	11,25	W 3/8 - 16	7,90
M 15 x 2	13,00	W 7/16 - 14	9,30
		W 1/2 - 12	10,50
		W 9/16 - 12	12,00
		W 5/8 - 11	13,50
		W 11/16 - 11	15,00
		W 3/4 - 10	16,50
		W 13/16 - 10	18,00
		W 7/8 - 9	19,25
		W 1" - 8	22,00
		W 1"1/8 - 7	24,75
		W 1"1/4 - 7	27,75
		W 1"3/8 - 6	30,50
		W 1"1/2 - 6	33,50
		W 1"5/8 - 5	35,50
		W 1"3/4 - 5	39,00
		W 1"7/8 - 4,5	41,50

BSW				
d1 (") - p (tpi)				Ø a
W	2"	-	4,5	44,50
W	2" 1/4	-	4	50,00
W	2" 1/2	-	4	56,50
W	2" 3/4	-	3,5	62,00
W	3"	-	3,5	68,50

UNC				
d1 (") - p (tpi)				Ø a
UNC	1" 3/4	-	5	39,50
UNC	2"	-	4,5	45,00
UNC	2" 1/4	-	4,5	51,50
UNC	2" 1/2	-	4	57,25
UNC	2" 3/4	-	4	63,50
UNC	3"	-	4	70,00

UNEF				
d1 (") - p (tpi)				Ø a
UNEF	1" 7/16	-	18	35,10
UNEF	1" 1/2	-	18	36,70
UNEF	1" 9/16	-	18	38,30
UNEF	1" 5/8	-	18	39,90

BSF				
d1 (") - p (tpi)				Ø a
BSF	3/16	-	32	4,00
BSF	7/32	-	28	4,50
BSF	1/4	-	26	5,20
BSF	9/32	-	26	6,00
BSF	5/16	-	22	6,60
BSF	3/8	-	20	8,10
BSF	7/16	-	18	9,50
BSF	1/2	-	16	11,00
BSF	9/16	-	16	12,50
BSF	5/8	-	14	14,00
BSF	11/16	-	14	15,60
BSF	3/4	-	12	16,50
BSF	13/16	-	12	18,25
BSF	7/8	-	11	19,50
BSF	1"	-	10	22,50
BSF	1" 1/8	-	9	25,50
BSF	1" 1/4	-	9	28,75
BSF	1" 3/8	-	8	31,50
BSF	1" 1/2	-	8	34,50
BSF	1" 5/8	-	8	37,50
BSF	1" 3/4	-	7	40,50
BSF	2"	-	7	46,50

UNF				
d1 (") - p (tpi)				Ø a
UNF	N.0	-	80	1,30
UNF	N.1	-	72	1,60
UNF	N.2	-	64	1,90
UNF	N.3	-	56	2,10
UNF	N.4	-	48	2,40
UNF	N.5	-	44	2,70
UNF	N.6	-	40	3,00
UNF	N.8	-	36	3,50
UNF	N.10	-	32	4,10
UNF	N.12	-	28	4,70
UNF	1/4	-	28	5,50
UNF	5/16	-	24	6,90
UNF	3/8	-	24	8,50
UNF	7/16	-	20	9,90
UNF	1/2	-	20	11,50
UNF	9/16	-	18	12,90
UNF	5/8	-	18	14,50
UNF	3/4	-	16	17,50
UNF	7/8	-	14	20,40
UNF	1"	-	12	23,25
UNF	1" 1/8	-	12	26,50
UNF	1" 1/4	-	12	29,50
UNF	1" 3/8	-	12	32,75
UNF	1" 1/2	-	12	36,00

G (BSP)			
dl (") - p (tpi)			Ø a
G1/16	-	28	6,80
G1/8	-	28	8,80
G1/4	-	19	11,80
G3/8	-	19	15,25
G1/2	-	14	19,00
G5/8	-	14	21,00
G3/4	-	14	24,50
G7/8	-	14	28,25
G1 "	-	11	30,75
G1 " 1/8	-	11	35,30
G1 " 1/4	-	11	39,25
G1 " 3/8	-	11	41,90
G1 " 1/2	-	11	45,25
G1 " 3/4	-	11	51,30
G2 "	-	11	57,00
G2 " 1/4	-	11	63,10
G2 " 1/2	-	11	72,60
G2 " 3/4	-	11	79,10
G3 "	-	11	85,50
G3 " 1/4	-	11	91,50
G3 " 1/2	-	11	97,70
G3 " 3/4	-	11	104,00
G4 "	-	11	110,50

UNC				
d1 (") - p (tpi)				Ø a
UNC	N.1	-	64	1,50
UNC	N.2	-	56	1,80
UNC	N.3	-	48	2,10
UNC	N.4	-	40	2,30
UNC	N.5	-	40	2,60
UNC	N.6	-	32	2,85
UNC	N.8	-	32	3,50
UNC	N.10	-	24	3,90
UNC	N.12	-	24	4,50
UNC	1/4	-	20	5,20
UNC	5/16	-	18	6,60
UNC	3/8	-	16	8,00
UNC	7/16	-	14	9,40
UNC	1/2	-	13	10,75
UNC	9/16	-	12	12,20
UNC	5/8	-	11	13,50
UNC	3/4	-	10	16,50
UNC	7/8	-	9	19,50
UNC	1"	-	8	22,25
UNC	1" 1/8	-	7	25,00
UNC	1" 1/4	-	7	28,25
UNC	1" 3/8	-	6	30,75
UNC	1" 1/2	-	6	34,00

UNEF				
d1 (") - p (tpi)				Ø a
UNEF	N.12	-	32	4,70
UNEF	1/4	-	32	5,55
UNEF	5/16	-	32	7,15
UNEF	3/8	-	32	8,70
UNEF	7/16	-	28	10,20
UNEF	1/2	-	28	11,80
UNEF	9/16	-	24	13,20
UNEF	5/8	-	24	14,80
UNEF	11/16	-	24	16,40
UNEF	3/4	-	20	17,80
UNEF	13/16	-	20	19,40
UNEF	7/8	-	20	20,95
UNEF	15/16	-	20	22,50
UNEF	1"	-	20	24,10
UNEF	1" 1/16	-	18	25,60
UNEF	1" 1/8	-	18	27,15
UNEF	1" 3/16	-	18	28,75
UNEF	1" 1/4	-	18	30,35
UNEF	1" 5/16	-	18	31,90
UNEF	1" 3/8	-	18	33,60

BA				
d1 (") - p (tpi)				Ø a
BA 7	2,5	-	0,48	2,00
BA 8	2,2	-	0,43	1,80
BA 9	1,9	-	0,39	1,50
BA 10	1,7	-	0,35	1,30
BA 11	1,5	-	0,31	1,20
BA 12	1,3	-	0,28	1,00
BA 13	1,2	-	0,25	0,95
BA 14	1	-	0,23	0,75

PG				
d1 (") - p (tpi)				Ø a
Pg 7	12,5	-	20	11,40
Pg 9	15,2	-	18	14,00
Pg 11	18,6	-	18	17,25
Pg 13,5	20,4	-	18	19,00
Pg 16	22,5	-	18	21,25
Pg 21	28,3	-	16	26,75
Pg 29	37,0	-	16	35,50
Pg 36	47,0	-	16	45,50
Pg 42	54,0	-	16	52,50
Pg 48	59,3	-	16	58,00

UN				
dl (") - p (tpi)				Øa
UN	1" 1/8	-	8	25,40
UN	1" 1/4	-	8	28,50
UN	1" 3/8	-	8	31,75
UN	1" 1/2	-	8	35,00
UN	1" 5/8	-	8	38,10
UN	1" 3/4	-	8	41,25
UN	2"	-	8	47,63
UN	2" 1/4	-	8	54,00
UN	2" 1/2	-	8	60,35
UN	2" 3/4	-	8	66,70
UN	3"	-	8	73,05

Rp				
dl (") - p (tpi)				Øa
Rp1/16	-	28		6,60
Rp1/8	-	28		8,60
Rp1/4	-	19		11,50
Rp3/8	-	19		15,00
Rp1/2	-	14		18,50
Rp3/4	-	14		24,00
Rp1"	-	11		30,25
Rp1" 1/4	-	11		39,00
Rp1" 1/2	-	11		45,00
Rp2"	-	11		56,50
Rp2" 1/2	-	11		72,25
Rp3"	-	11		85,00

NPT							
dl (") - p (tpi)				L min	Øa	Øa + Øb	
NPT	1/16	-	27	12,00	6,20	6,00	6,39
NPT	1/8	-	27	12,00	8,50	8,30	8,74
NPT	1/4	-	18	17,50	11,00	10,70	11,36
NPT	3/8	-	18	17,60	14,50	14,20	14,80
NPT	1/2	-	14	22,80	17,80	17,40	18,32
NPT	3/4	-	14	23,00	23,00	22,50	23,67
NPT	1 "	-	11,5	27,40	29,00	28,50	29,69
NPT	1 " 1/4	-	11,5	28,00	37,50	37,00	38,45
NPT	1 " 1/2	-	11,5	28,40	44,00	43,50	44,52
NPT	2 "	-	11,5	28,00	56,00	55,50	56,56
NPT	2 " 1/2	-	8	40,80	66,50	66,00	67,62
NPT	3 "	-	8	43,00	82,50	82,00	83,53

NPSM				
dl (") - p (tpi)				Øa
NPSM	1/8	-	27	9,10
NPSM	1/4	-	18	12,00
NPSM	3/8	-	18	15,50
NPSM	1/2	-	14	19,00
NPSM	3/4	-	14	24,50
NPSM	1"	-	11,5	30,50
NPSM	1" 1/4	-	11,5	39,25
NPSM	1" 1/2	-	11,5	45,50
NPSM	2"	-	11,5	57,50
NPSM	2" 1/2	-	8	69,00
NPSM	3"	-	8	85,00

NPTF							
d1 (") - p (tpi)				L min	Øa	Øa + Øb	
NPTF	1/16	-	27	12,00	6,20	6,00	6,41
NPTF	1/8	-	27	12,00	8,50	8,30	8,76
NPTF	1/4	-	18	17,50	11,00	10,70	11,40
NPTF	3/8	-	18	17,60	14,50	14,20	14,84
NPTF	1/2	-	14	22,80	17,80	17,40	18,33
NPTF	3/4	-	14	23,00	23,00	22,50	23,68
NPTF	1"	-	11,5	27,40	29,00	28,50	29,72
NPTF	1" 1/4	-	11,5	28,00	37,50	37,00	38,48
NPTF	1" 1/2	-	11,5	28,40	44,00	43,50	44,55
NPTF	2"	-	11,5	28,00	56,00	55,50	56,59
NPTF	2" 1/2	-	8	40,80	66,50	66,00	67,67
NPTF	3"	-	8	43,00	82,50	82,00	83,58

M (Laminación)				
Laminage/Lamination				Øa ± 0,02
M	3	x	0,5	2,76
M	4	x	0,7	3,67
M	5	x	0,8	4,62
M	6	x	1	5,52
M	8	x	1,25	7,40
M	10	x	1,5	9,28
M	12	x	1,75	11,16
M	14	x	2	13,04
M	16	x	2	15,03

RC							
dl (") - p (tpi)				L min	Ø a	Ø a + Ø b	
Rc	1/16	-	28	10,10	6,30	6,00	6,50
Rc	1/8	-	28	10,10	8,30	8,00	8,50
Rc	1/4	-	19	15,00	11,00	10,70	11,35
Rc	3/8	-	19	15,40	14,50	14,15	14,85
Rc	1/2	-	14	20,50	18,10	17,60	18,50
Rc	3/4	-	14	21,80	23,50	23,00	24,00
Rc	1 "	-	11	26,00	29,60	29,00	30,20
Rc	1 " 1/4	-	11	28,30	38,10	37,50	38,80
Rc	1 " 1/2	-	11	28,30	44,00	43,35	44,70
Rc	2 "	-	11	32,70	55,60	54,90	56,50

BA				
dl (") - p (tpi)				Øa
BA 0	6	-	1	5,10
BA 1	5,3	-	0,9	4,50
BA 2	4,7	-	0,81	4,00
BA 3	4,1	-	0,73	3,40
BA 4	3,6	-	0,66	3,00
BA 5	3,2	-	0,59	2,60
BA 6	2,8	-	0,53	2,30



Taladrado / Perçage / Drilling / Bohren



Taladrado+escariado / Perçage+alésage /
Drilling+reaming / Bohren+reihen

M		MF		MF		MF	
d1 x p (mm)		d1 x p (mm)		d1 x p (mm)		d1 x p (mm)	
Øa		Øa		Øa		Øa	
M 1 x 0,25	0,97	M 2 x 0,25	1,97	M 21 x 1	20,88	M 48 x 1,5	47,85
M 1,1 x 0,25	1,07	M 2,2 x 0,25	2,17	M 21 x 1,25	20,87	M 48 x 2	47,82
M 1,2 x 0,25	1,17	M 2,3 x 0,25	2,27	M 21 x 1,5	20,85	M 48 x 3	47,76
M 1,4 x 0,3	1,36	M 2,5 x 0,35	2,44	M 22 x 1	21,88	M 48 x 4	47,70
M 1,6 x 0,35	1,54	M 2,6 x 0,35	2,54	M 22 x 1,25	21,87	M 50 x 1,5	49,85
M 1,7 x 0,35	1,64	M 3 x 0,35	2,94	M 22 x 1,5	21,85	M 50 x 2	49,82
M 1,8 x 0,35	1,74	M 3,5 x 0,35	3,44	M 22 x 2	21,82	M 50 x 3	49,76
M 2 x 0,4	1,93	M 4 x 0,35	3,94	M 23 x 1	22,88	M 52 x 1,5	51,85
M 2,2 x 0,45	2,13	M 4 x 0,5	3,93	M 23 x 1,5	22,85	M 52 x 2	51,82
M 2,3 x 0,4	2,23	M 4,5 x 0,5	4,42	M 24 x 1	23,88	M 52 x 3	51,76
M 2,5 x 0,45	2,43	M 5 x 0,5	4,93	M 24 x 1,25	23,87	M 52 x 4	51,70
M 2,6 x 0,45	2,53	M 5,5 x 0,5	5,42	M 24 x 1,5	23,85	M 56 x 1,5	55,85
M 3 x 0,5	2,92	M 6 x 0,5	5,93	M 24 x 2	23,82	M 56 x 2	55,82
M 3,5 x 0,6	3,41	M 6 x 0,75	5,90	M 25 x 1	24,88	M 56 x 3	55,76
M 4 x 0,7	3,91	M 7 x 0,5	6,92	M 25 x 1,25	24,87	M 56 x 4	55,70
M 4,5 x 0,75	4,41	M 7 x 0,75	6,90	M 25 x 1,5	24,85	M 60 x 1,5	59,75
M 5 x 0,8	4,90	M 8 x 0,5	7,93	M 25 x 2	24,82	M 60 x 2	59,82
M 6 x 1	5,88	M 8 x 0,75	7,90	M 26 x 1	25,88	M 60 x 3	59,76
M 7 x 1	6,88	M 8 x 1	7,88	M 26 x 1,5	25,85	M 60 x 4	59,70
M 8 x 1,25	7,87	M 9 x 0,75	8,90	M 26 x 2	25,82	M 63 x 1,5	62,85
M 9 x 1,25	8,87	M 9 x 1	8,88	M 27 x 1	26,88		
M 10 x 1,5	9,85	M 10 x 0,5	9,93	M 27 x 1,5	26,85		
M 11 x 1,5	10,85	M 10 x 0,75	9,90	M 27 x 2	26,82		
M 12 x 1,75	11,83	M 10 x 1	9,88	M 28 x 1	27,88		
M 14 x 2	13,82	M 10 x 1,25	9,86	M 28 x 1,5	27,85		
M 16 x 2	15,82	M 11 x 0,75	10,90	M 28 x 2	27,82		
M 18 x 2,5	17,79	M 11 x 1	10,88	M 30 x 1	29,88		
M 20 x 2,5	19,79	M 11 x 1,25	10,87	M 30 x 1,5	29,85		
M 22 x 2,5	21,79	M 12 x 0,75	11,90	M 30 x 2	29,82		
M 24 x 3	23,77	M 12 x 1	11,88	M 30 x 3	29,76		
M 27 x 3	26,77	M 12 x 1,25	11,86	M 32 x 1	31,88		
M 30 x 3,5	29,73	M 12 x 1,5	11,85	M 32 x 1,5	31,85		
M 33 x 3,5	32,73	M 13 x 0,75	12,90	M 32 x 2	31,82		
M 36 x 4	35,70	M 13 x 1	12,88	M 33 x 1	32,88		
M 39 x 4	38,70	M 13 x 1,25	12,87	M 33 x 1,5	32,85		
M 42 x 4,5	41,69	M 13 x 1,5	12,85	M 33 x 2	32,82		
M 45 x 4,5	44,69	M 14 x 0,75	13,90	M 33 x 3	32,76		
M 48 x 5	47,66	M 14 x 1	13,88	M 34 x 1,5	33,85		
M 52 x 5	51,66	M 14 x 1,25	13,86	M 34 x 2	33,82		
M 56 x 5,5	55,65	M 14 x 1,5	13,85	M 35 x 1,5	34,85		
M 60 x 5,5	59,65	M 15 x 1	14,88	M 36 x 1,5	35,85		
M 64 x 6	63,62	M 15 x 1,25	14,87	M 36 x 2	35,82		
M 68 x 6	67,62	M 15 x 1,5	14,85	M 36 x 3	35,76		
		M 16 x 1	15,88	M 38 x 1,5	37,85		
		M 16 x 1,25	15,87	M 38 x 2	37,82		
		M 16 x 1,5	15,85	M 39 x 1,5	38,85		
		M 17 x 1,25	16,87	M 39 x 2	38,82		
		M 17 x 1,5	16,85	M 39 x 3	38,76		
		M 18 x 1	17,88	M 40 x 1,5	39,85		
		M 18 x 1,25	17,85	M 40 x 2	39,82		
		M 18 x 1,5	17,85	M 40 x 3	39,76		
		M 18 x 2	17,82	M 42 x 1,5	41,85		
		M 19 x 1	18,88	M 42 x 2	41,82		
		M 19 x 1,25	18,87	M 42 x 3	41,76		
		M 19 x 1,5	18,85	M 44 x 1,5	43,75		
		M 20 x 1	19,88	M 45 x 1,5	44,85		
		M 20 x 1,25	19,87	M 45 x 2	44,82		
		M 20 x 1,5	19,85	M 45 x 3	44,76		
		M 20 x 2	19,82	M 45 x 4	44,70		

M		BSW	
d1 x p (mm)		d1 (") - p (tpi)	
Øa		Øa	
M 3 x 0,6	2,40	W 1/16 - 60	1,49
M 3,5 x 0,75	2,75	W 3/32 - 48	2,28
M 4 x 0,75	3,25	W 1/8 - 40	3,06
M 4 x 0,8	3,20	W 5/32 - 32	3,85
M 5 x 0,9	4,10	W 3/16 - 24	4,63
M 5 x 1	4,00	W 7/32 - 24	5,42
M 5,5 x 0,9	4,60	W 1/4 - 20	6,18
M 6 x 1,25	4,75	W 5/16 - 18	7,78
M 8 x 1,5	6,50	W 3/8 - 16	9,35
M 13 x 1,75	11,25	W 7/16 - 14	10,90
M 15 x 2	13,00	W 1/2 - 12	12,47
		W 9/16 - 12	13,92
		W 5/8 - 11	15,66
		W 11/16 - 11	17,20
		W 3/4 - 10	18,80
		W 7/8 - 9	21,92
		W 1" - 8	25,11
		W 1"1/8 - 7	28,28
		W 1"1/4 - 7	31,45
		W 1"3/8 - 6	34,57
		W 1"1/2 - 6	37,76
		W 1"5/8 - 5	40,91
		W 1"3/4 - 5	44,05
		W 1"7/8 - 4,5	47,27
		W 2" - 4,5	50,38
		W 2"1/4 - 4	56,90
		W 2"1/2 - 4	63,20
		W 2"3/4 - 3,5	69,60
		W 3" - 3,5	76,20



UNC	
d1 (") - p (tpi)	Øa
UNC N.1- 64	1,79
UNC N.2- 56	2,12
UNC N.3- 48	2,44
UNC N.4- 40	2,76
UNC N.5- 40	3,09
UNC N.6- 32	3,41
UNC N.8- 32	4,07
UNC N.10- 24	4,71
UNC N.12- 24	5,37
UNC 1/4- 20	6,22
UNC 5/16- 18	7,8
UNC 3/8- 16	9,37
UNC 7/16- 14	10,95
UNC 1/2- 13	12,52
UNC 9/16- 12	14,10
UNC 5/8- 11	15,68
UNC 3/4- 10	18,84
UNC 7/8- 9	22,00
UNC 1" - 8	25,16
UNC 1" 1/8- 7	28,31
UNC 1" 1/4- 7	31,49
UNC 1" 3/8- 6	34,63
UNC 1" 1/2- 6	37,81
UNC 1" 3/4- 5	44,12
UNC 2" - 4,5	50,45
UNC 2" 1/4- 4,5	56,80
UNC 2" 1/2- 4	63,10
UNC 2" 3/4- 4	69,45
UNC 3" - 4	75,80

UNF	
d1 (") - p (tpi)	Øa
UNF N.0- 80	1,47
UNF N.1- 72	1,79
UNF N.2- 64	2,12
UNF N.3- 56	2,44
UNF N.4- 48	2,77
UNF N.5- 44	3,10
UNF N.6- 40	3,42
UNF N.8- 36	4,08
UNF N.10- 32	4,73
UNF N.12- 28	5,38
UNF 1/4- 28	6,24
UNF 5/16- 24	7,82
UNF 3/8- 24	9,41
UNF 7/16- 20	10,98
UNF 1/2- 20	12,56
UNF 9/16- 18	14,14
UNF 5/8- 18	15,73
UNF 3/4- 16	18,89
UNF 7/8- 14	22,05
UNF 1" - 12	25,21
UNF 1" 1/8- 12	28,38
UNF 1" 1/4- 12	31,56
UNF 1" 3/8- 12	34,73
UNF 1" 1/2- 12	37,91

UNEF	
d1 (") - p (tpi)	Øa
UNEF N.12- 32	5,39
UNEF 1/4- 32	6,25
UNEF 5/16- 32	7,84
UNEF 3/8- 32	9,42
UNEF 7/16- 28	11,00
UNEF 1/2- 28	12,59
UNEF 9/16- 24	14,18
UNEF 5/8- 24	15,75
UNEF 3/4- 20	18,91
UNEF 7/8- 20	22,09
UNEF 1" - 20	25,26
UNEF 1" 1/8- 18	28,40
UNEF 1" 1/4- 18	31,59
UNEF 1" 3/8- 18	34,76
UNEF 1" 1/2- 18	37,94

G (BSP)	
d1 (") - p (tpi)	Øa
G 1/16- 28	7,61
G 1/8- 28	9,62
G 1/4- 19	13,03
G 3/8- 19	16,53
G 1/2- 14	20,81
G 5/8- 14	22,77
G 3/4- 14	26,30
G 7/8- 14	30,06
G 1" - 11	33,07
G 1" 1/8- 11	37,71
G 1" 1/4- 11	41,73
G 1" 3/8- 11	44,14
G 1" 1/2- 11	47,62
G 1" 3/4- 11	53,56
G 2" - 11	59,43
G 2" 1/4- 11	65,49
G 2" 1/2- 11	74,94
G 2" 3/4- 11	81,27
G 3" - 11	87,57
G 3" 1/4- 11	93,68
G 3" 1/2- 11	100,01
G 3" 3/4- 11	106,35
G 4" - 11	112,68

BA	
d1 (") - p (tpi)	Øa
BA 0 6-1	5,93
BA 1 5,3- 0,9	5,23
BA 2 4,7- 0,81	4,64
BA 3 4,1- 0,73	4,04
BA 4 3,6- 0,66	3,55
BA 5 3,2- 0,59	3,15
BA 6 2,8- 0,53	2,76
BA 7 2,5- 0,48	2,46
BA 8 2,2- 0,43	2,16

PG	
d1 (") - p (tpi)	Øa
Pg 7 12,5- 20	12,40
Pg 9 15,2- 18	15,10
Pg 11 18,6- 18	18,50
Pg 13,5 20,4- 18	20,30
Pg 16 22,5- 18	22,40
Pg 21 28,3- 16	28,15
Pg 29 37,0- 16	36,85
Pg 36 47,0- 16	46,85
Pg 42 54,0- 16	53,85
Pg 48 59,3- 16	59,15

NPSM	
d1 (") - p (tpi)	Øa
NPSM 1/8- 27	4,99
NPSM 1/4- 18	13,24
NPSM 3/8- 18	16,70
NPSM 1/2- 14	20,77
NPSM 3/4- 14	26,13
NPSM 1" - 11,5	32,68
NPSM 1" 1/4- 11,5	41,45
NPSM 1" 1/2- 11,5	47,52
NPSM 2" - 11,5	59,56

NPT		
d1 (") - p (tpi)	L min	Øa
NPT 1/16- 27	8,40	7,58
NPT 1/8- 27	8,50	9,93
NPT 1/4- 18	12,70	13,18
NPT 3/8- 18	12,90	16,60
NPT 1/2- 14	16,80	20,63
NPT 3/4- 14	17,10	25,95
NPT 1" - 11,5	21,30	32,51
NPT 1" 1/4- 11,5	21,90	41,23
NPT 1" 1/2- 11,5	22,30	47,30
NPT 2" - 11,5	23,10	59,31

NPTF		
d1 (") - p (tpi)	L min	Øa
NPTF 1/16- 27	8,40	7,58
NPTF 1/8- 27	8,50	9,93
NPTF 1/4- 18	12,70	13,18
NPTF 3/8- 18	12,90	16,60
NPTF 1/2- 14	16,80	20,63
NPTF 3/4- 14	17,10	25,95
NPTF 1" - 11,5	21,30	32,51
NPTF 1" 1/4- 11,5	21,90	41,23
NPTF 1" 1/2- 11,5	22,30	47,30
NPTF 2" - 11,5	23,10	59,31

R		
d1 (") - p (tpi)	L min	Øa
R 1/8- 28	8,20	9,48
R 1/4- 19	12,10	12,78
R 3/8- 19	12,50	16,26
R 1/2- 14	16,40	20,44
R 3/4- 14	17,70	25,85
R 1" - 11	20,90	32,60
R 1" 1/4- 11	23,20	41,12
R 1" 1/2- 11	23,20	47,01
R 2" - 11	27,50	58,62



	0	1	2	3	4	5	6	7	8	9
	mm.									
0	0	25,4	50,8	76,2	101,6	127	152,4	177,8	203,2	228,6
1/64	0,397	25,797	51,197	76,597	101,997	127,397	152,797	178,197	203,597	228,997
1/32	0,794	26,194	51,594	76,994	102,394	127,794	153,194	178,594	203,994	229,394
3/64	1,191	26,591	51,991	77,391	102,791	128,191	153,591	178,991	204,391	229,791
1/16	1,588	26,988	52,388	77,788	103,188	128,588	153,988	179,388	204,788	230,188
5/64	1,984	27,384	52,784	78,184	103,584	128,984	154,384	179,784	205,184	230,584
3/32	2,381	27,781	53,181	78,581	103,981	129,381	154,781	180,181	205,581	230,981
7/64	2,778	28,178	53,578	78,978	104,378	129,778	155,178	180,578	205,978	231,378
1/8	3,175	28,575	53,975	79,375	104,775	130,175	155,575	180,975	206,375	231,775
9/64	3,572	28,972	54,372	79,772	105,172	130,572	155,972	181,372	206,772	232,172
5/32	3,969	29,369	54,769	80,169	105,569	130,969	156,369	181,769	207,169	232,569
11/64	4,366	29,766	55,166	80,566	105,966	131,366	156,766	182,166	207,566	232,966
3/16	4,763	30,163	55,563	80,963	106,363	131,763	157,163	182,563	207,963	233,363
13/64	5,159	30,559	55,959	81,359	106,759	132,159	157,559	182,959	208,359	233,759
7/32	5,556	30,956	56,356	81,756	107,156	132,556	157,956	183,356	208,756	234,156
15/64	5,953	31,353	56,753	82,153	107,553	132,953	158,353	183,753	209,153	234,553
1/4	6,350	31,750	57,150	82,550	107,950	133,350	158,750	184,150	209,550	234,950
17/64	6,747	32,147	57,547	82,947	108,347	133,747	159,147	184,547	209,947	235,347
9/32	7,144	32,544	57,944	83,344	108,744	134,144	159,544	184,944	210,344	235,744
19/64	7,541	32,941	58,341	83,741	109,141	134,541	159,941	185,341	210,741	236,141
5/16	7,938	33,338	58,738	84,138	109,538	134,938	160,338	185,738	211,138	236,538
21/64	8,334	33,734	59,134	84,534	109,934	135,334	160,734	186,134	211,534	236,934
11/32	8,731	34,131	59,531	84,931	110,331	135,731	161,131	186,531	211,931	237,331
23/64	9,128	34,528	59,928	85,328	110,728	136,128	161,528	186,928	212,328	237,728
3/8	9,525	34,925	60,325	85,725	111,125	136,525	161,925	187,325	212,725	238,125
25/64	9,922	35,322	60,722	86,122	111,522	136,922	162,322	187,722	213,122	238,522
13/32	10,319	35,719	61,119	86,519	111,919	137,319	162,719	188,119	213,519	238,919
27/64	10,716	36,116	61,516	86,916	112,316	137,716	163,116	188,516	213,916	239,316
7/16	11,113	36,513	61,913	87,313	112,713	138,113	163,513	188,913	214,313	239,713
29/64	11,509	36,909	62,309	87,709	113,109	138,509	163,909	189,309	214,709	240,109
15/32	11,906	37,306	62,706	88,106	113,506	138,906	164,306	189,706	215,106	240,506
31/64	12,303	37,703	63,103	88,503	113,903	139,303	164,703	190,103	215,503	240,903
1/2	12,700	38,100	63,500	88,900	114,300	139,700	165,100	190,500	215,900	241,300
33/64	13,097	38,497	63,897	89,297	114,697	140,097	165,497	190,897	216,297	241,697
17/32	13,494	38,894	64,294	89,694	115,094	140,494	165,894	191,294	216,694	242,094
35/64	13,891	39,291	64,691	90,091	115,491	140,891	166,291	191,691	217,091	242,491
9/16	14,288	39,688	65,088	90,488	115,888	141,288	166,688	192,088	217,488	242,888
37/64	14,684	40,084	65,484	90,884	116,284	141,684	167,084	192,484	217,884	243,284
19/32	15,081	40,481	65,881	91,281	116,681	142,081	167,481	192,881	218,281	243,681
39/64	15,478	40,878	66,278	91,678	117,078	142,478	167,878	193,278	218,678	244,078
5/8	15,875	41,275	66,675	92,075	117,475	142,875	168,275	193,675	219,075	244,475
41/64	16,272	41,672	67,072	92,472	117,872	143,272	168,672	194,072	219,472	244,872
21/32	16,669	42,069	67,469	92,869	118,269	143,669	169,069	194,469	219,869	245,269
43/64	17,066	42,466	67,866	93,266	118,666	144,066	169,466	194,866	220,266	245,666
11/16	17,463	42,863	68,263	93,663	119,063	144,463	169,863	195,263	220,663	246,063
45/64	17,859	43,259	68,659	94,059	119,459	144,859	170,259	195,659	221,059	246,459
23/32	18,256	43,656	69,056	94,456	119,856	145,256	170,656	196,056	221,456	246,856
47/64	18,653	44,053	69,453	94,853	120,253	145,653	171,053	196,453	221,853	247,253
3/4	19,050	44,450	69,850	95,250	120,650	146,050	171,450	196,850	222,250	247,650
49/64	19,447	44,847	70,247	95,647	121,047	146,447	171,847	197,247	222,647	248,047
25/32	19,844	45,244	70,644	96,044	121,444	146,844	172,244	197,644	223,044	248,444
51/64	20,241	45,641	71,041	96,441	121,841	147,241	172,641	198,041	223,441	248,841
13/16	20,638	46,038	71,438	96,838	122,238	147,638	173,038	198,438	223,838	249,238
53/64	21,034	46,434	71,834	97,234	122,634	148,034	173,434	198,834	224,234	249,634
27/32	21,431	46,831	72,231	97,631	123,031	148,431	173,831	199,231	224,631	250,031
55/64	21,828	47,228	72,628	98,028	123,428	148,828	174,228	199,628	225,028	250,428
7/8	22,225	47,625	73,025	98,425	123,825	149,225	174,625	200,025	225,425	250,825
57/64	22,622	48,022	73,422	98,822	124,222	149,622	175,022	200,422	225,822	251,222
29/32	23,019	48,419	73,819	99,219	124,619	150,019	175,419	200,819	226,219	251,619
59/64	23,416	48,816	74,216	99,616	125,016	150,416	175,816	201,216	226,616	252,016
15/16	23,813	49,213	74,613	100,013	125,413	150,813	176,213	201,613	227,013	252,413
61/64	24,209	49,609	75,009	100,409	125,809	151,209	176,609	202,009	227,409	252,809
31/32	24,606	50,006	75,406	100,806	126,206	151,606	177,006	202,406	227,806	253,206
63/64	25,003	50,403	75,803	101,203	126,603	152,003	177,403	202,803	228,203	253,603

Ej.: 2" 1/8 = 53,975 mm										
	0	1	2	3	4	5	6	7	8	9
	mm.									
0	0	25,4		76,2	101,6	127	152,4	177,8	203,2	228,6
1/64	0,397	25,797		76,597	101,997	127,397	152,797	178,197	203,597	228,997
1/32	0,794	26,194		76,994	102,394	127,794	153,194	178,594	203,994	229,394
3/64	1,191	26,591		77,391	102,791	128,191	153,591	178,991	204,391	229,791
1/16	1,588	26,988		77,788	103,188	128,588	153,988	179,388	204,788	230,188
5/64	1,984	27,384		78,184	103,584	128,984	154,384	179,784	205,184	230,584
3/32	2,381	27,781		78,581	103,981	129,381	154,781	180,181	205,581	230,981
7/64	2,778	28,178		78,978	104,378	129,778	155,178	180,578	205,978	231,378
1/8			53,975	79,375	104,775	130,175	155,575	180,975	206,375	231,775
9/64	3,572	28,972		79,772	105,172	130,572	155,972	181,372	206,772	232,172
5/32	3,969	29,369		80,169	105,569	130,969	156,369	181,769	207,169	232,569
11/64	4,366	29,766		80,566	105,966	131,366	156,766	182,166	207,566	232,966

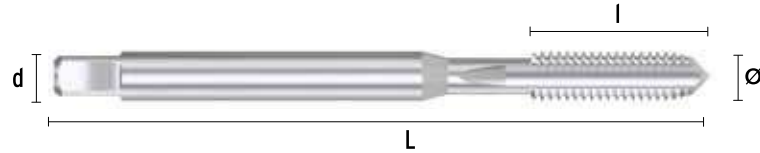
TABLA DE DATOS TÉCNICOS PARA LA INSTALACIÓN DE INSERTOS ROSCADOS / INFORMATION TECHNIQUE POUR L' INSTALLATION DE FILETS RAPPORTES / TECHNICAL DATA SHEET FOR THE INSTALLATION OF WIRE THREAD INSERTS / TABELLE DER TECHNISCHEN DATEN ZUM EINSETZEN VON GEWINDEEINSÄTZEN

Taladro										Rosca										Inserto									
Rosca	D	p	Diam. (Dt)	Longitud mínima (Lt) mm					Diam.ext. (Dr ext.) min.*	Diam.int. (Dr int.) min.*	Diam.int. (Dr int.) max.*	Longitud mínima (Lt) mm					Diam.ext. (Dr ext.) min.*	Diam.int. (Dr int.) min.*	Longitud (W) nº de hilos (min-max)										
			mm	1xd	1,5xd	2xd	2,5xd	3xd	mm	mm	mm	1xd	1,5xd	2xd	2,5xd	3xd	mm	mm	1xd	1,5xd	2xd	2,5xd	3xd						
M 2	0,40	2,10	3,80	4,80	5,80	6,80	7,80	2,52	2,09	2,18	2,00	3,00	4,00	5,00	6,00	2,60	2,80	3,0 - 3,3	5,2 - 5,7	7,4 - 8,1	9,6 - 10,5	11,8 - 13,0							
M 2,5	0,45	2,60	4,52	5,77	7,02	8,27	9,52	3,08	2,60	2,70	2,50	3,75	5,00	6,25	7,50	3,20	3,70	3,1 - 3,8	5,2 - 6,5	7,4 - 9,2	9,5 - 11,9	11,7 - 14,6							
M 3	0,50	3,20	5,25	6,75	8,25	9,75	11,25	3,65	3,11	3,22	3,00	4,50	6,00	7,50	9,00	3,80	4,35	3,4 - 4,3	5,8 - 7,2	8,2 - 10,1	10,5 - 12,8	12,9 - 16,0							
M 3,5	0,60	3,70	6,20	7,95	9,70	11,45	13,20	4,28	3,63	3,76	3,50	5,25	7,00	8,75	10,50	4,55	4,75	3,4 - 4,3	5,8 - 7,2	8,2 - 10,1	10,5 - 12,8	12,9 - 16,0							
M 4	0,70	4,20	7,15	9,15	11,15	13,15	15,15	4,91	4,15	4,29	4,00	6,00	8,00	10,00	12,00	5,05	5,60	3,4 - 4,0	5,7 - 6,8	8,1 - 9,6	10,5 - 12,3	12,8 - 15,1							
M 5	0,80	5,20	8,60	11,10	13,60	16,10	18,60	6,04	5,17	5,33	5,00	7,50	10,00	12,50	15,00	6,25	6,80	3,9 - 4,5	6,5 - 7,6	9,2 - 10,6	11,8 - 13,7	14,4 - 16,7							
M 6	1,00	6,30	10,50	13,50	16,50	19,50	22,50	7,30	6,22	6,41	6,00	9,00	12,00	15,00	18,00	7,40	7,95	3,8 - 4,3	6,4 - 7,2	9,1 - 10,1	11,7 - 13,1	14,3 - 16,0							
M 7	1,00	7,30	11,50	15,00	18,50	22,00	25,50	8,30	7,22	7,41	7,00	10,50	14,00	17,50	21,00	8,65	9,20	4,6 - 5,3	7,7 - 8,7	10,7 - 12,1	13,7 - 15,6	16,7 - 19,0							
M 8	1,25	8,30	13,62	17,62	21,62	25,62	29,62	9,62	8,27	8,48	8,00	12,00	16,00	20,00	24,00	9,80	10,35	4,2 - 4,8	7,1 - 7,8	9,9 - 10,9	12,8 - 14,1	15,6 - 17,2							
M 8	1,00	8,30	12,50	16,50	20,50	24,50	28,50	9,30	8,22	8,41	8,00	12,00	16,00	20,00	24,00	9,70	10,25	5,6 - 6,1	9,1 - 10,1	12,5 - 13,8	16,0 - 17,7	19,5 - 21,5							
M 9	1,25	9,30	14,62	19,12	23,62	28,12	32,62	10,62	9,27	9,48	9,00	13,50	18,00	22,50	27,00	10,85	11,10	5,1 - 5,5	8,4 - 9,0	11,7 - 12,5	15,0 - 16,1	18,3 - 19,6							
M 10	1,50	10,40	16,75	21,75	26,75	31,75	36,75	11,95	10,32	10,56	10,00	15,00	20,00	25,00	30,00	11,95	12,50	4,6 - 5,3	7,7 - 8,2	10,8 - 11,5	13,8 - 14,7	16,9 - 18,0							
M 10	1,25	10,30	15,62	20,62	25,62	30,62	35,62	11,62	10,27	10,48	10,00	15,00	20,00	25,00	30,00	12,10	12,65	5,6 - 6,1	9,2 - 10,0	12,7 - 13,8	16,3 - 17,7	19,8 - 22,0							
M 10	1,00	10,30	14,50	19,50	24,50	29,50	34,50	11,30	10,22	10,41	10,00	15,00	20,00	25,00	30,00	12,10	12,50	7,3 - 8,1	11,7 - 12,9	16,1 - 17,8	20,5 - 22,6	24,9 - 27,5							
M 11	1,50	11,40	17,75	23,25	28,75	34,25	39,75	12,95	11,33	11,56	11,00	16,50	22,00	27,50	33,00	13,10	13,50	5,2 - 5,6	8,6 - 9,2	12,0 - 12,8	15,4 - 16,4	18,7 - 20,0							
M 12	1,75	12,40	19,87	25,87	31,87	37,87	43,87	14,27	12,38	12,64	12,00	18,00	24,00	30,00	36,00	14,30	15,00	4,8 - 5,2	7,9 - 8,5	11,1 - 11,9	14,2 - 15,2	17,3 - 18,6							
M 12	1,50	12,40	18,75	24,75	30,75	36,75	42,75	14,10	12,32	12,56	12,00	18,00	24,00	30,00	36,00	14,25	14,95	5,6 - 6,1	9,2 - 10,0	12,7 - 13,8	16,2 - 17,7	19,8 - 21,5							
M 12	1,25	12,30	17,62	23,62	29,62	35,62	41,62	13,62	12,27	12,48	12,00	18,00	24,00	30,00	36,00	14,30	15,00	7,0 - 7,9	11,2 - 12,5	15,5 - 17,2	19,7 - 21,8	23,9 - 26,5							
M 12	1,00	12,30	16,50	22,50	28,50	34,50	40,50	13,30	12,22	12,41	12,00	18,00	24,00	30,00	36,00	14,40	14,80	9,3 - 10,3	14,7 - 16,1	20,0 - 21,9	25,4 - 27,8	30,8 - 33,6							
M 14	2,00	14,50	23,00	30,00	37,00	44,00	51,00	16,60	14,43	14,73	14,00	21,00	28,00	35,00	42,00	16,65	17,35	5,0 - 5,5	8,2 - 8,9	11,4 - 12,3	14,6 - 15,8	17,9 - 19,2							
M 14	1,50	14,50	20,75	27,75	34,75	41,75	48,75	15,95	14,35	14,64	14,00	21,00	28,00	35,00	42,00	15,96	16,64	6,9 - 7,7	11,1 - 12,2	15,3 - 16,7	19,4 - 21,2	23,6 - 25,7							
M 14	1,25	14,40	19,62	26,62	33,62	40,62	47,62	15,62	14,27	14,48	14,00	21,00	28,00	35,00	42,00	15,74	16,00	8,6 - 9,5	13,6 - 14,9	18,6 - 20,4	23,6 - 25,8	28,6 - 31,2							
M 14	1,00	14,40	18,50	25,50	32,50	39,50	46,50	15,30	14,22	14,41	14,00	21,00	28,00	35,00	42,00	15,35	15,65	11,1 - 12,2	17,4 - 18,9	23,7 - 25,7	30,0 - 32,5	36,2 - 39,3							
M 16	2,00	16,50	25,00	33,00	41,00	49,00	57,00	18,60	16,43	16,73	16,00	24,00	32,00	40,00	48,00	18,90	19,60	5,9 - 6,5	9,5 - 10,2	13,2 - 14,2	16,9 - 18,1	20,5 - 22,0							
M 16	1,50	16,50	22,75	30,75	38,75	46,75	54,75	17,95	16,32	16,56	16,00	24,00	32,00	40,00	48,00	18,10	18,40	8,0 - 8,9	12,8 - 13,9	17,5 - 19,2	22,3 - 24,3	27,0 - 29,4							
M 18	2,50	18,50	29,25	38,25	47,25	56,25	65,25	21,25	18,54	18,90	18,00	27,00	36,00	45,00	54,00	21,30	22,00	5,1 - 5,7	8,5 - 9,2	11,8 - 12,7	15,2 - 16,3	18,5 - 19,8							
M 18	2,00	18,50	27,00	36,00	45,00	54,00	63,00	20,60	18,43	18,73	18,00	27,00	36,00	45,00	54,00	20,80	21,45	6,6 - 7,3	10,8 - 11,7	15,0 - 16,0	19,1 - 20,4	23,1 - 24,7							
M 18	1,50	18,50	24,75	33,75	42,75	51,75	60,75	19,95	18,32	18,56	18,00	27,00	36,00	45,00	54,00	20,15	20,80	9,2 - 10,3	14,5 - 16,1	20,0 - 21,9	25,4 - 27,8	30,8 - 33,6							
M 20	2,50	20,50	31,25	41,25	51,25	61,25	71,25	23,25	20,54	20,90	20,00	30,00	40,00	50,00	60,00	23,55	24,40	5,8 - 6,5	9,5 - 10,4	13,2 - 14,4	16,8 - 18,3	20,5 - 22,2							
M 20	2,00	20,50	29,00	39,00	49,00	59,00	69,00	22,60	20,43	20,73	20,00	30,00	40,00	50,00	60,00	22,80	23,45	7,5 - 8,3	12,0 - 13,1	16,5 - 18,0	21,2 - 22,8	25,7 - 27,7							
M 20	1,50	20,50	26,75	36,75	46,75	56,75	66,75	21,95	20,32	20,56	20,00	30,00	40,00	50,00	60,00	22,20	22,80	10,4 - 11,6	16,3 - 18,1	22,3 - 24,6	28,2 - 31,1	34,2 - 37,6							
M 22	2,50	22,50	33,25	44,25	55,25	66,25	77,25	25,25	22,54	22,90	22,00	33,00	44,00	55,00	66,00	25,90	26,90	6,4 - 7,3	10,4 - 11,6	14,4 - 16,0	18,4 - 20,3	22,4 - 24,7							
M 22	2,00	22,50	31,00	42,00	53,00	64,00	75,00	24,60	22,43	22,73	22,00	33,00	44,00	55,00	66,00	24,85	26,80	8,4 - 9,3	13,3 - 14,6	18,3 - 20,0	23,3 - 25,3	28,3 - 30,6							
M 22	1,50	22,50	28,75	39,75	50,75	61,75	72,75	23,95	22,32	22,56	22,00	33,00	44,00	55,00	66,00	24,20	26,80	11,5 - 12,9	18,0 - 20,1	24,3 - 27,2	31,0 - 34,4	37,5 - 41,5							
M 24	3,00	24,75	37,50	49,50	61,50	73,50	85,50	27,90	24,65	25,05	24,00	36,00	48,00	60,00	72,00	27,43	29,00	5,8 - 6,5	9,6 - 10,4	13,3 - 14,4	17,0 - 18,3	20,8 - 22,2							
M 24	2,00	24,50	33,00	45,00	57,00	69,00	81,00	26,60	24,43	24,73	24,00	36,00	48,00	60,00	72,00	26,80	29,10	9,1 - 10,3	14,5 - 16,1	19,8 - 21,9	25,2 - 27,8	30,5 - 33,6							
M 24	1,50	24,50	30,75	42,75	54,75	66,75	78,75	26,02	24,33	24,56	24,00	36,00	48,00	60,00	72,00	26,20	26,80	12,9 - 14,2	20,1 - 22,0	27,3 - 29,9	34,5 - 37,7	41,7 - 45,5							
UNC N.2	56	2,30	4,22	5,31	6,40	7,50	8,58	2,84	2,28	2,44	2,18	3,27	4,36	5,46	6,55	2,79	3,02	2,7 - 3,2	4,7 - 5,5	6,8 - 7,9	8,9 - 10,2	11,0 - 12,6							
UNC N.4	40	3,00	5,69	7,11	8,53	9,95	11,38	3,67	3,00	3,15	2,84	4,26	5,68	7,11	8,53	3,65	4,03	2,3 - 3,2	4,2 - 5,1	6,1 - 7,2	8,0 - 9,3	9,8 - 11,5							
UNC N.5	40	3,40	6,02	7,62	9,19	10,79	12,37	4,00	3,33	3,48	3,17	4,74	6,35	7,92	9,52	4,01	4,04	2,8 - 3,4	4,9 - 5,8	7,1 - 8,2	9,2 - 10,6	11,4 - 13,1							
UNC N.6	32	3,70	7,09	8,84	10,60	12,34	14,10	4,54	3,68	3																			

2102 **HSSE DIN 371** **M-MF**
DIN 13 **Form.**
C **Tol.**
6H **1,5XD** **R**

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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M1,0	0,25	69,54	40	6	2,10	2,5
M1,1	0,25	69,54	40	6	2,10	2,5
M1,2	0,25	49,74	40	6	2,10	2,5
M1,4	0,30	49,74	40	7	2,10	2,5
M1,6	0,35	48,85	40	8	2,10	2,5
M1,7	0,35	44,64	40	8	2,10	2,5
M1,8	0,35	45,89	40	8	2,10	2,5
M2,0	0,40	21,34	45	10	2,10	2,8
M2,2	0,45	22,06	45	10	2,10	2,8
M2,3	0,40	22,06	45	10	2,10	2,8
M2,5	0,45	21,34	50	9	2,10	2,8
M2,6	0,45	21,34	50	9	2,10	2,8
M3,0	0,35	32,43	56	11	2,70	3,5
M3,0	0,50	14,12	56	11	2,70	3,5
*M3,0	0,60	24,57	56	11	2,70	3,5

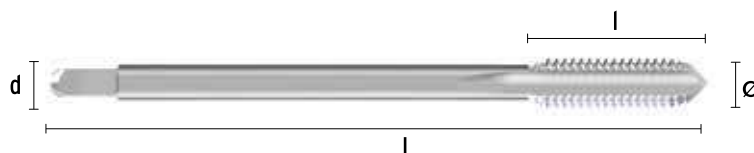
Ø	P	€	L mm	I mm	∠ mm	d mm
M3,5	0,60	19,38	56	12	3,00	4,0
*M3,5	0,75	28,01	56	11	3,00	4,0
M4,0	0,50	30,60	63	13	3,40	4,5
M4,0	0,70	14,45	63	13	3,40	4,5
M4,5	0,75	26,72	70	14	4,90	6,0
M5,0	0,50	31,45	70	14	4,90	6,0
*M5,0	0,75	32,12	70	16	4,90	6,0
M5,0	0,80	14,49	70	16	4,90	6,0
M6,0	0,75	26,99	80	14	4,90	6,0
M6,0	1,00	16,46	80	19	4,90	6,0
M7,0	1,00	20,65	80	18	5,50	7,0
M8,0	0,75	31,54	80	18	6,20	8,0
M8,0	1,25	18,50	90	22	6,20	8,0
M9,0	1,25	31,19	90	22	7,00	9,0
M10,0	1,50	20,73	100	24	8,00	10,0

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

2101 **HSSE DIN 376/374** **M-MF** **DIN 13** **Form.** **C** **Tol.** **6H** **1,5XD** **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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	14,39	56	11	1,80	2,2
M4,0	0,70	14,99	63	13	2,10	2,8
M5,0	0,80	15,04	70	16	2,70	3,5
M6,0	1,00	17,08	80	19	3,40	4,5
M8,0	1,00	24,49	90	20	4,90	6,0
M8,0	1,25	19,20	90	22	4,90	6,0
*M9,0	0,75	44,85	90	22	5,50	7,0
M9,0	1,00	37,35	90	20	5,50	7,0
*M9,0	1,25	31,19	90	20	5,50	7,0
M10,0	0,75	48,36	90	18	5,50	7,0
M10,0	1,00	27,19	90	20	5,50	7,0
M10,0	1,25	31,11	100	20	5,50	7,0
M10,0	1,50	21,52	100	24	5,50	7,0
M11,0	1,00	47,75	90	20	6,20	8,0
*M11,0	1,25	47,75	90	22	6,20	8,0
M11,0	1,50	39,26	100	24	6,20	8,0
M12,0	1,00	37,14	100	20	7,00	9,0
M12,0	1,25	37,55	100	20	7,00	9,0
M12,0	1,50	33,59	100	22	7,00	9,0
M12,0	1,75	27,72	110	29	7,00	9,0
*M13,0	0,75	127,67	100	22	9,00	11,0
*M13,0	1,25	68,97	100	22	9,00	11,0
*M13,0	1,50	68,97	100	22	9,00	11,0
*M13,0	1,75	68,97	110	27	9,00	11,0
*M14,0	0,75	127,67	100	22	9,00	11,0
M14,0	1,00	59,71	100	20	9,00	11,0
M14,0	1,25	49,09	100	20	9,00	11,0
M14,0	1,50	38,72	100	20	9,00	11,0
M14,0	2,00	38,41	110	30	9,00	11,0
M15,0	1,00	76,89	100	20	9,00	12,0
*M15,0	1,50	68,27	100	22	9,00	12,0
*M15,0	2,00	83,55	110	30	9,00	12,0
M16,0	1,00	72,46	100	20	9,00	12,0

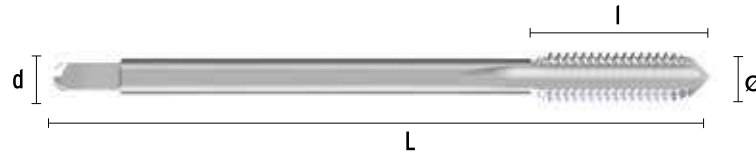
Ø	P	€	L mm	I mm	∠ mm	d mm
*M16,0	1,25	79,04	100	22	9,00	12,0
M16,0	1,50	44,21	100	22	9,00	12,0
M16,0	2,00	45,14	110	30	9,00	12,0
*M17,0	1,25	144,12	100	22	9,00	12,0
*M17,0	1,50	144,12	100	22	9,00	12,0
M18,0	1,00	81,14	110	24	11,00	14,0
M18,0	1,50	63,36	110	25	11,00	14,0
M18,0	2,00	91,14	125	34	11,00	14,0
M18,0	2,50	65,08	125	34	11,00	14,0
*M19,0	1,25	189,24	110	25	11,00	14,0
*M19,0	1,50	189,34	110	25	11,00	14,0
M20,0	1,00	107,11	125	24	12,00	16,0
M20,0	1,25	189,35	125	25	12,00	16,0
M20,0	1,50	71,75	125	25	12,00	16,0
M20,0	2,00	94,03	140	27	12,00	16,0
M20,0	2,50	69,16	140	34	12,00	16,0
*M21,0	1,00	274,90	125	25	12,00	16,0
*M21,0	1,25	274,90	125	25	12,00	16,0
*M21,0	1,50	201,82	125	25	12,00	16,0
M22,0	1,00	120,09	125	24	14,50	18,0
*M22,0	1,25	189,35	125	25	14,50	18,0
M22,0	1,50	86,36	125	24	14,50	18,0
M22,0	2,00	120,09	140	27	14,50	18,0
M22,0	2,50	87,67	140	34	14,50	18,0
*M23,0	1,00	274,78	125	25	14,50	18,0
*M23,0	1,50	274,78	125	25	14,50	18,0
M24,0	1,00	130,92	140	27	14,50	18,0
*M24,0	1,25	274,90	140	28	14,50	18,0
M24,0	1,50	106,19	140	27	14,50	18,0
M24,0	2,00	134,27	140	27	14,50	18,0
M24,0	3,00	105,00	160	38	14,50	18,0
M25,0	1,00	355,62	140	28	14,50	18,0
M25,0	1,50	165,28	140	27	14,50	18,0

(continúa Ref.2101 / suite Réf.2101 / Ref.2101 cont'd)

2101 **HSSE DIN 376/374** M-MF
DIN 13 Form. **C** Tol. **6H** **1,5XD** **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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	l mm	mm	d mm
*M25,0	2,00	355,62	140	28	14,50	18,0
*M26,0	2,00	355,62	140	28	14,50	18,0
M27,0	1,50	156,42	140	27	16,00	20,0
M27,0	2,00	187,20	140	27	16,00	20,0
M27,0	3,00	131,05	160	38	16,00	20,0
M28,0	1,50	156,42	140	27	16,00	20,0
M28,0	2,00	355,62	140	27	16,00	20,0
M30,0	1,50	163,03	150	27	18,00	22,0
M30,0	2,00	201,82	150	27	18,00	22,0
M30,0	3,50	167,94	180	40	18,00	22,0
M32,0	1,50	206,24	150	27	18,00	22,0
*M33,0	1,00	436,69	160	30	20,00	25,0
M33,0	1,50	226,03	160	30	20,00	25,0
M33,0	2,00	380,89	160	30	20,00	25,0
*M33,0	3,00	418,79	180	50	20,00	25,0
M33,0	3,50	201,82	180	45	20,00	25,0
*M34,0	2,00	479,31	170	30	22,00	28,0
M35,0	1,50	264,89	170	30	22,00	28,0
M36,0	1,50	258,34	170	30	22,00	28,0
M36,0	2,00	348,93	170	30	22,00	28,0
M36,0	3,00	400,29	200	50	22,00	28,0
M36,0	4,00	257,94	200	50	22,00	28,0
M38,0	1,50	275,41	170	30	22,00	28,0
*M38,0	2,00	564,51	170	30	22,00	28,0

Ø	P	€	L mm	l mm	mm	d mm
M39,0	1,50	417,37	170	30	24,00	32,0
M39,0	2,00	417,37	170	30	24,00	32,0
M39,0	3,00	565,15	200	50	24,00	32,0
M39,0	4,00	329,33	200	55	24,00	32,0
M40,0	1,50	360,26	170	30	24,00	32,0
M40,0	2,00	418,48	170	30	24,00	32,0
*M40,0	3,00	418,48	200	60	24,00	32,0
M42,0	1,50	365,67	170	30	24,00	32,0
M42,0	2,00	478,71	170	30	24,00	32,0
M42,0	3,00	478,71	200	50	24,00	32,0
M42,0	4,50	423,34	200	60	24,00	32,0
M45,0	1,50	452,73	180	30	29,00	36,0
M45,0	2,00	574,77	180	30	29,00	36,0
M45,0	3,00	574,77	200	50	29,00	36,0
M45,0	4,50	462,59	220	60	29,00	36,0
M48,0	1,50	462,59	190	30	29,00	36,0
M48,0	2,00	696,60	190	30	29,00	36,0
M48,0	3,00	696,56	225	50	29,00	36,0
M48,0	5,00	568,79	250	65	29,00	36,0
M50,0	1,50	540,96	190	30	29,00	36,0
M52,0	1,50	547,61	190	32	32,00	40,0
M52,0	2,00	836,69	190	32	32,00	40,0
M52,0	5,00	582,54	250	65	32,00	40,0
*M63,0	1,50	1.255,08	275	40	32,00	40,0

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

2102/5 **HSSE DIN 371** Izquierda a gauche / lefthand **M** **DIN 13** Form. **C** Tol. **6H** **1,5XD** **R**

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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



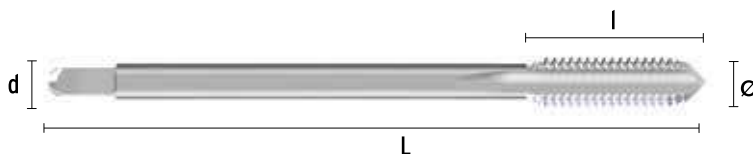
Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	29,33	56	10	2,70	3,5
M4,0	0,70	29,93	63	12	3,40	4,5
M5,0	0,80	30,06	70	14	4,90	6,0

Ø	P	€	L mm	I mm	mm	d mm
M6,0	1,00	34,12	80	18	4,90	6,0
M8,0	1,25	38,42	90	20	6,20	8,0
M10,0	1,50	43,03	100	20	8,00	10,0

2101/5 **HSSE DIN 376/374** Izquierda a gauche lefthand **M-MF** **DIN 13** Form. **C** Tol. **6H** **1,5XD** **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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	mm	d mm
*M5,0	0,80	30,06	70	14	2,70	3,5
*M8,0	1,25	38,42	90	20	4,90	6,0
*M9,0	1,25	62,40	90	20	5,50	7,0
M12,0	1,75	55,46	110	24	7,00	9,0
M14,0	2,00	76,79	110	25	9,00	11,0
M16,0	2,00	90,27	110	32	9,00	12,0

Ø	P	€	L mm	I mm	mm	d mm
M18,0	2,50	136,43	125	32	11,00	14,0
M20,0	2,50	144,90	140	32	12,00	16,0
M22,0	2,50	175,38	140	32	14,50	18,0
M24,0	3,00	210,02	160	38	14,50	18,0
*M30,0	3,50	335,85	180	40	18,00	22,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2114 **HSSE DIN 371** **M-MF** **DIN 13** **Form.** **A** **Tol.** **6H** **1,5XD** **R**

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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	∅ mm	d mm
*M2,0	0,40	22,64	45	8	2,10	2,8
*M2,3	0,40	23,34	45	9	2,10	2,8
*M2,5	0,45	22,64	50	9	2,10	2,8
*M2,6	0,45	22,64	50	9	2,10	2,8
M3,0	0,50	16,14	56	11	2,70	3,5
*M3,5	0,60	20,55	56	12	3,00	4,0
M4,0	0,70	16,47	63	13	3,40	4,5

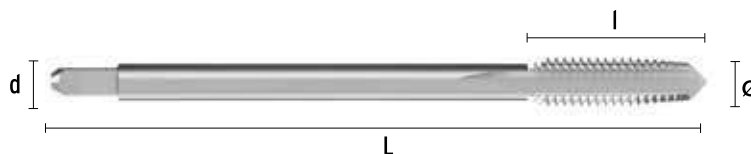
Ø	P	€	L mm	I mm	∅ mm	d mm
M4,5	0,75	28,30	70	14	4,90	6,0
M5,0	0,80	16,54	70	16	4,90	6,0
M6,0	1,00	18,78	80	19	4,90	6,0
M7,0	1,00	21,47	80	16	5,50	7,0
M8,0	1,25	21,11	90	19	6,20	8,0
*M9,0	1,25	33,07	90	19	7,00	9,0
M10,0	1,50	23,64	100	22	8,00	10,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2113 **HSSE DIN 376/374** **M-MF** **DIN 13** **Form.** **A** **Tol.** **6H** **1,5XD** **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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	∅ mm	d mm
*M3,0	0,50	16,14	56	11	1,80	2,2
*M3,5	0,60	20,55	56	13	2,10	2,8
M4,0	0,70	16,47	63	13	2,10	2,8
M5,0	0,80	16,54	70	16	2,70	3,5
M6,0	1,00	18,78	80	19	3,40	4,5
M8,0	1,25	21,11	90	22	4,90	6,0
*M9,0	1,25	33,07	90	22	5,50	7,0
M10,0	1,50	23,64	100	24	5,50	7,0
*M11,0	1,50	41,65	100	24	6,20	8,0
M12,0	1,75	30,53	110	29	7,00	9,0
*M13,0	1,75	73,11	110	29	9,00	11,0
M14,0	2,00	39,92	110	30	9,00	11,0

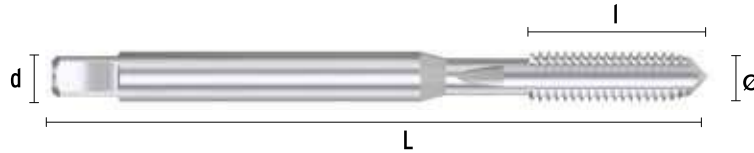
Ø	P	€	L mm	I mm	∅ mm	d mm
*M15,0	2,00	88,52	110	30	9,00	12,0
M16,0	2,00	46,89	110	32	9,00	12,0
M18,0	2,50	72,28	125	34	11,00	14,0
M20,0	2,50	76,78	140	34	12,00	16,0
M22,0	2,50	92,88	140	34	14,50	18,0
M24,0	3,00	111,28	160	38	14,50	18,0
*M27,0	3,00	138,83	160	38	16,00	20,0
*M30,0	3,50	177,94	180	45	18,00	22,0
*M33,0	3,50	213,83	180	50	20,00	25,0
*M42,0	4,50	448,57	200	60	24,00	32,0
*M45,0	4,50	490,12	220	65	29,00	36,0
*M48,0	5,00	602,66	250	70	29,00	36,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2190 **HSSE DIN 371** **M** **Form. E** **Tol. 6H** **1,5XD** **R**

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							

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



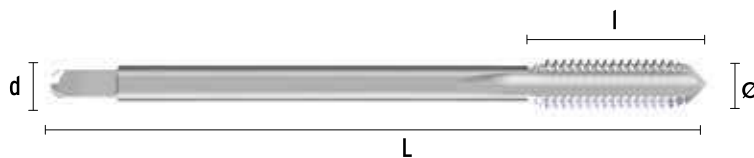
Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	16,39	56	11	2,70	3,5
M4,0	0,70	16,73	63	13	3,40	4,5
M5,0	0,80	16,80	70	16	4,90	6,0

Ø	P	€	L mm	I mm	mm	d mm
M6,0	1,00	19,11	80	19	4,90	6,0
M8,0	1,25	24,50	90	22	6,20	8,0
M10,0	1,50	31,61	100	24	8,00	10,0

2191 **HSSE DIN 376** **M** **Form. E** **Tol. 6H** **1,5XD** **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
										• 25-35							

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



Ø	P	€	L mm	I mm	mm	d mm
M6,0	1,00	19,11	80	19	3,40	4,5
M8,0	1,25	24,50	90	22	4,90	6,0
M10,0	1,50	31,61	100	24	5,50	7,0

Ø	P	€	L mm	I mm	mm	d mm
M12,0	1,75	42,10	110	29	7,00	9,0
M14,0	2,00	49,50	110	30	9,00	11,0
M16,0	2,00	59,38	110	32	9,00	12,0

2180 **HSSE-PM DIN 371** **M** **DIN 13** **Form. C** **Tol. 6HX** **1,5XD** **R** **TIALSIN+**

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
						● 15-30	● 10-20			○ 35-50							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	29,44	56	10	2,70	3,5
M4,0	0,70	30,04	63	12	3,40	4,5
M5,0	0,80	30,04	70	14	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M6,0	1,00	31,85	80	18	4,90	6,0
M8,0	1,25	37,95	90	20	6,20	8,0
M10,0	1,50	45,93	100	20	8,00	10,0

2179 **HSSE-PM DIN 376** **M** **DIN 13** **Form. C** **Tol. 6HX** **1,5XD** **D** **TIALSIN+**

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
						● 15-30	● 10-20			○ 35-50							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M8,0	1,25	37,95	90	20	4,90	6,0
M10,0	1,50	45,93	100	20	5,50	7,0
M12,0	1,75	57,83	110	24	7,00	9,0
M14,0	2,00	73,71	110	25	9,00	11,0

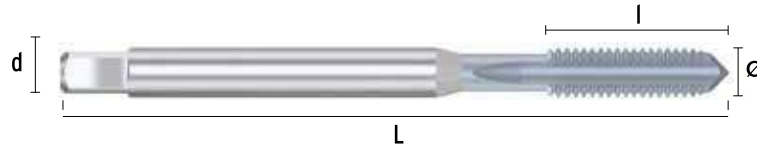
Ø	P	€	L mm	I mm	∠ mm	d mm
M16,0	2,00	85,00	110	32	9,00	12,0
M18,0	2,50	142,69	125	32	11,00	14,0
M20,0	2,50	161,23	140	32	12,00	16,0

2274 **HM DIN 371** **M** **DIN 13** **Form. D** **Tol. 6HX** **1,5XD** **R** **TICN+**

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
															3-6	2-5	1-4

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

MICRO FINISH
 TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	122,46	56	10	2,70	3,5
M4,0	0,70	126,38	63	12	3,40	4,5
M5,0	0,80	130,15	70	14	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M6,0	1,00	145,43	80	18	4,90	6,0
M8,0	1,25	176,04	90	20	6,20	8,0
M10,0	1,50	305,47	100	20	8,00	10,0

2275 **HM DIN 376** **M** **DIN 13** **Form. D** **Tol. 6HX** **1,5XD** **D** **TICN+**

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
															3-6	2-5	1-4

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

MICRO FINISH
 TECHNOLOGY



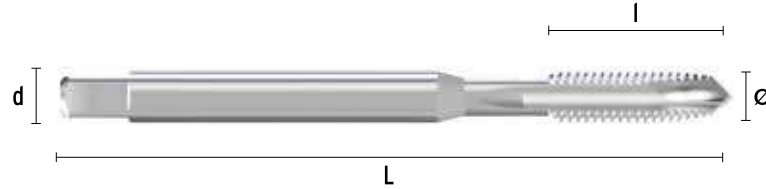
Ø	P	€	L mm	I mm	∠ mm	d mm
M12,0	1,75	519,56	110	24	7,00	9,0
M14,0	2,00	519,56	110	25	9,00	11,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M16,0	2,00	631,81	110	32	9,00	12,0

2104 **HSSE DIN 371** **M-MF** **DIN 13** **Form. B** **"Gun"** **Tol. 6H** **3XD** **R**

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	mm	d mm
M2,0	0,40	23,33	45	10	2,10	2,8
M2,2	0,45	23,33	45	10	2,10	2,8
M2,3	0,40	23,33	45	10	2,10	2,8
M2,5	0,45	23,21	50	9	2,10	2,8
M2,6	0,45	23,21	50	9	2,10	2,8
M3,0	0,35	23,21	56	10	2,70	3,5
M3,0	0,50	15,93	56	10	1,80	2,2
*M3,0	0,60	27,43	56	10	2,70	3,5
M3,5	0,35	27,43	56	10	3,00	4,0
M3,5	0,60	21,18	56	12	3,00	4,0
M4,0	0,50	33,68	63	12	3,00	4,0
M4,0	0,70	16,28	63	12	3,40	4,5

Ø	P	€	L mm	I mm	mm	d mm
*M4,0	0,75	24,15	63	13	3,40	4,5
M4,5	0,75	29,63	70	14	4,90	6,0
M5,0	0,50	33,36	70	14	4,90	6,0
M5,0	0,80	16,93	70	14	4,90	6,0
M6,0	0,75	32,15	80	14	4,90	6,0
M6,0	1,00	17,90	80	18	4,90	6,0
M7,0	1,00	24,30	80	18	5,50	7,0
M8,0	0,75	35,07	80	18	6,20	8,0
M8,0	1,25	19,75	90	20	6,20	8,0
M9,0	1,25	31,80	90	20	7,00	9,0
M10,0	1,50	24,22	100	20	8,00	10,0

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

2103

HSSE DIN 376/374

M-MF
DIN 13

Form.
B
"Gun"



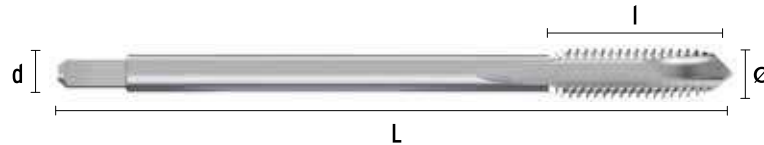
Tol.
6H

3XD

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	16,53	56	11	1,80	2,2
*M3,5	0,60	21,19	56	13	2,10	2,8
M4,0	0,70	16,90	63	12	2,10	2,8
*M4,5	0,75	29,63	70	16	2,70	3,5
M5,0	0,80	16,93	70	14	2,70	3,5
M6,0	1,00	18,58	80	18	3,40	4,5
*M7,0	1,00	24,30	80	18	4,30	5,5
M8,0	1,00	26,92	90	20	4,90	6,0
M8,0	1,25	20,49	90	20	4,90	6,0
M9,0	1,00	41,06	90	20	5,50	7,0
M10,0	0,75	49,36	90	18	5,50	7,0
M10,0	1,00	30,00	90	20	5,50	7,0
M10,0	1,25	35,73	100	20	5,50	7,0
M10,0	1,50	25,14	100	20	5,50	7,0
M11,0	1,00	52,57	90	20	6,20	8,0
M11,0	1,50	43,19	100	22	6,20	8,0
M12,0	1,00	40,87	100	20	7,00	9,0
M12,0	1,25	41,32	100	20	7,00	9,0
M12,0	1,50	36,89	100	20	7,00	9,0
M12,0	1,75	32,09	110	24	7,00	9,0
*M13,0	1,25	75,82	100	22	9,00	11,0
*M13,0	1,50	75,82	100	22	9,00	11,0
*M13,0	1,75	75,87	110	27	9,00	11,0
M14,0	1,00	65,67	100	20	9,00	11,0
M14,0	1,25	53,58	100	20	9,00	11,0
M14,0	1,50	42,63	100	20	9,00	11,0
M14,0	2,00	42,25	110	25	9,00	11,0
M15,0	1,00	84,39	100	20	9,00	12,0
*M15,0	1,50	75,06	100	22	9,00	12,0
*M15,0	2,00	91,89	110	30	9,00	12,0
M16,0	1,00	79,67	100	20	9,00	12,0
*M16,0	1,25	88,33	100	22	9,00	12,0
M16,0	1,50	53,12	100	20	9,00	12,0
M16,0	2,00	51,91	110	32	9,00	12,0
M18,0	1,00	89,19	110	24	11,00	14,0
M18,0	1,50	69,71	110	24	11,00	14,0
M18,0	2,00	100,29	125	27	11,00	14,0
M18,0	2,50	70,53	125	32	11,00	14,0
M20,0	1,00	117,85	125	24	12,00	16,0
M20,0	1,50	78,88	125	24	12,00	16,0
M20,0	2,00	103,40	140	27	12,00	16,0
M20,0	2,50	76,09	140	32	12,00	16,0
M22,0	1,00	132,10	125	24	14,50	18,0
M22,0	1,50	94,99	125	24	14,50	18,0
M22,0	2,00	132,10	140	27	14,50	18,0
M22,0	2,50	96,44	140	32	14,50	18,0
M24,0	1,00	164,57	140	27	14,50	18,0
M24,0	1,50	116,77	140	27	14,50	18,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M24,0	2,00	147,68	140	27	14,50	18,0
M24,0	3,00	114,85	160	38	14,50	18,0
M25,0	1,50	181,45	140	27	14,50	18,0
*M25,0	2,00	391,18	140	28	14,50	18,0
M26,0	1,50	150,18	140	27	14,50	18,0
*M26,0	2,00	391,18	140	28	14,50	18,0
M27,0	1,50	171,66	140	27	16,00	20,0
M27,0	2,00	204,70	140	27	16,00	20,0
M27,0	3,00	143,67	160	38	16,00	20,0
M28,0	1,50	171,66	140	27	16,00	20,0
M28,0	2,00	391,18	140	27	16,00	20,0
M30,0	1,50	179,39	150	27	18,00	22,0
M30,0	2,00	221,98	150	27	18,00	22,0
M30,0	3,50	184,61	180	40	18,00	22,0
M32,0	1,50	226,75	150	27	18,00	22,0
M33,0	1,50	245,39	160	30	20,00	25,0
M33,0	2,00	418,91	160	30	20,00	25,0
M33,0	3,50	232,22	180	45	20,00	25,0
*M34,0	1,50	284,16	170	30	22,00	28,0
M35,0	1,50	300,27	170	30	22,00	28,0
M36,0	1,50	284,16	170	30	22,00	28,0
M36,0	2,00	383,80	170	30	22,00	28,0
M36,0	3,00	440,31	200	50	22,00	28,0
M36,0	4,00	283,71	200	50	22,00	28,0
M38,0	1,50	310,26	170	30	22,00	28,0
M38,0	2,00	620,99	170	30	22,00	28,0
M39,0	1,50	553,87	170	30	24,00	32,0
M39,0	2,00	560,27	170	30	24,00	32,0
M39,0	3,00	746,99	170	30	24,00	32,0
M39,0	4,00	362,27	200	55	24,00	32,0
M40,0	1,50	396,35	170	30	24,00	32,0
M40,0	2,00	422,10	170	30	24,00	32,0
*M40,0	3,00	489,52	200	60	24,00	32,0
M42,0	1,50	402,90	170	30	24,00	32,0
M42,0	2,00	601,33	170	30	24,00	32,0
M42,0	3,00	601,33	170	30	24,00	32,0
M42,0	4,50	465,74	200	60	24,00	32,0
M45,0	1,50	493,34	180	30	29,00	36,0
M45,0	2,00	601,33	180	30	29,00	36,0
M45,0	3,00	559,76	200	50	29,00	36,0
M45,0	4,50	508,78	220	60	29,00	36,0
M48,0	1,50	666,80	190	30	29,00	36,0
M48,0	2,00	672,18	190	30	29,00	36,0
M48,0	3,00	640,20	225	50	29,00	36,0
M48,0	5,00	625,64	250	65	29,00	36,0
M50,0	1,50	601,29	190	30	29,00	36,0
M52,0	5,00	640,45	250	65	32,00	40,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

P

Aceros
Aciers
Steele
Stähle

M

Aceros Inox
Aciers Inox
Stainless Steels
Edelstahl

K

Fundición
Fonte
Cast Iron
Gusseisen

N

Metales no ferrosos
Métal non Ferreux
Non Ferrous metals
NE-Metalle

S

Titanio y Superalloys
Titanium et Superalloys
Titanium and Superalloys
Titan und Superlegierungen

H

Materiales Duros
Matériels Durs
Hard materials
Hartmaterialien

2104/5 **HSSE DIN 371** Izquierda a gauche / lefthand M-MF DIN 13 Form. B "Gun" LH Tol. 6H 3XD R

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	31,94	56	11	2,70	3,5
M4,0	0,70	32,31	63	13	3,40	4,5
M5,0	0,80	34,06	70	16	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M6,0	1,00	34,06	80	19	4,90	6,0
M8,0	1,25	39,79	90	22	6,20	8,0
M10,0	1,50	50,95	100	24	8,00	10,0

2103/5 **HSSE DIN 376/374** Izquierda a gauche / lefthand M-MF DIN 13 Form. B "Gun" LH Tol. 6H 3XD 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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M8,0	1,00	53,83	90	22	4,90	6,0
M10,0	1,00	59,98	90	22	4,90	7,0
M10,0	1,25	71,46	100	24	5,50	7,0
M12,0	1,25	82,63	100	22	7,00	9,0
M12,0	1,75	71,98	110	29	7,00	9,0
M16,0	1,50	106,24	100	22	9,00	12,0
M16,0	2,00	105,34	110	30	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M18,0	1,50	139,40	110	25	11,00	14,00
M20,0	1,50	157,76	125	25	12,00	16,00
M20,0	2,00	206,80	140	27	12,00	16,00
M20,0	2,50	153,24	140	34	12,00	16,00
M22,0	2,00	264,20	140	27	14,50	18,00
M24,0	2,00	295,35	140	27	14,50	18,00
M24,0	3,00	202,28	160	38	14,50	18,00

2111

HSSE DIN 371-EL



M
DIN 13

Form.
B
"Gun"



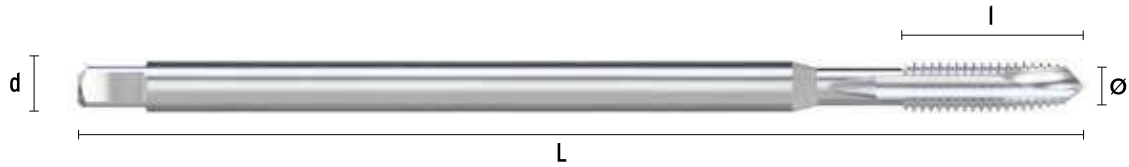
Tol.
6H

3XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	38,03	100	10	2,70	3,5
M4,0	0,70	38,03	125	12	3,40	4,5

Ø	P	€	L mm	I mm	∠ mm	d mm
M5,0	0,80	42,94	140	14	4,90	6,0
M6,0	1,00	42,94	160	18	4,90	6,0

2272

HSSE DIN 376-EL



M
DIN 13

Form.
B
"Gun"



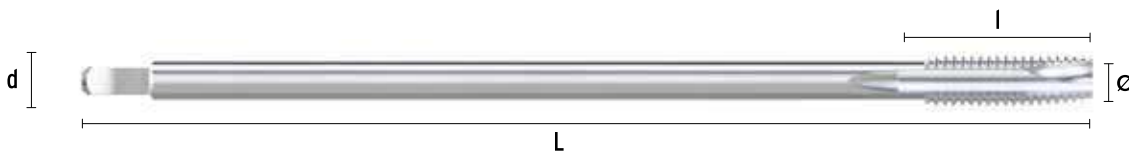
Tol.
6H

3XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M8,0	1,25	67,61	180	20	4,90	6,0
M10,0	1,50	82,96	200	20	5,50	7,0
M12,0	1,75	106,51	220	24	7,00	9,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M16,0	2,00	155,97	220	32	9,00	12,0
M20,0	2,50	175,49	250	32	12,00	16,0

2110

HSSE DIN 371

M
DIN 13

Form. B
"Gun"

Tol. 6H +0,1

3XD

R

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
M3,0	0,50	26,28	56	11	2,70	3,5
M4,0	0,70	26,83	63	13	3,40	4,5
M5,0	0,80	26,91	70	14	4,90	6,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M6,0	1,00	30,58	80	16	4,90	6,0
M8,0	1,25	34,42	90	18	6,20	8,0
M10,0	1,50	43,34	100	22	8,00	10,0

2109

HSSE DIN 376

M
DIN 13

Form. B
"Gun"

Tol. 6H +0,1

3XD

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
M8,0	1,25	34,42	90	20	4,90	6,0
M10,0	1,50	43,34	100	22	5,50	7,0
M12,0	1,75	55,34	110	27	7,00	9,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M14,0	2,00	69,47	110	30	9,00	11,0
M16,0	2,00	84,05	110	30	9,00	12,0

2168

HSSE DIN 371

M
DIN 13

Form.
B
"Gun"



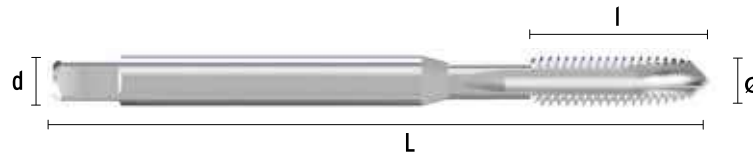
Tol.
6G

3XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
M3,0	0,50	25,98	56	10	2,70	3,5
M4,0	0,70	25,98	63	12	3,40	4,5
M5,0	0,80	25,98	70	14	4,90	6,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M6,0	1,00	26,20	80	18	4,90	6,0
M8,0	1,25	31,43	90	20	6,20	8,0
M10,0	1,50	36,94	100	20	8,00	10,0

2169

HSSE DIN 376

M
DIN 13

Form.
B
"Gun"



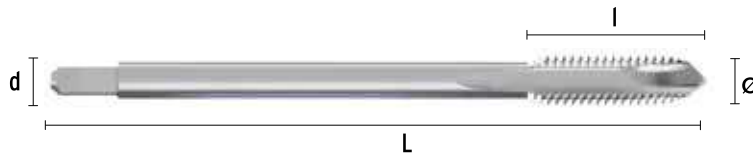
Tol.
6G

3XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
M8,0	1,25	31,43	90	20	4,90	6,0
M10,0	1,50	36,94	100	20	5,50	7,0
M12,0	1,75	46,17	110	24	7,00	9,0
M14,0	2,00	57,90	110	25	9,00	11,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M16,0	2,00	70,04	110	32	9,00	12,0
M18,0	2,50	96,21	125	32	11,00	14,0
M20,0	2,50	100,57	140	32	12,00	16,0

2407 HSSE DIN 371

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



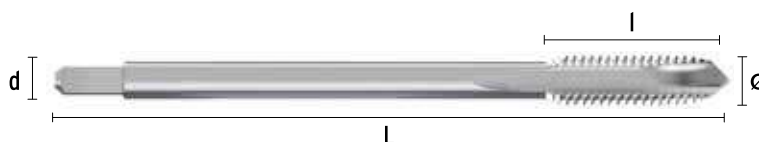
Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	23,98	56	11	2,70	3,5
M4,0	0,70	24,48	63	13	3,40	4,5
M5,0	0,80	24,61	70	16	4,90	6,0

Ø	P	€	L mm	I mm	mm	d mm
M6,0	1,00	27,32	80	19	4,90	6,0
M8,0	1,25	30,72	90	22	6,20	8,0
M10,0	1,50	37,70	100	24	8,00	10,0

2408 HSSE DIN 376

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	mm	d mm
M12,0	1,75	46,50	110	29	7,00	9,0

2250 **HSSE DIN 371** M Form. B "Gun" Tol. 6H 3XD R VAP

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
● 10-25	○ 10-15			○ 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



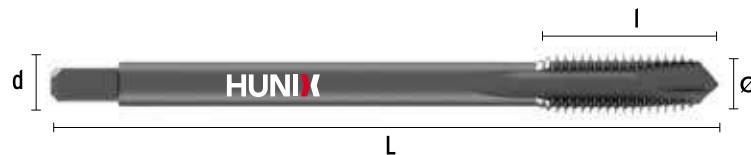
Ø	P	€	L mm	I mm	mm	d mm
M2,0	0,40	34,94	45	10	2,10	2,8
M2,5	0,45	34,94	50	9	2,10	2,8
M3,0	0,50	18,23	56	10	2,70	3,5
M3,5	0,60	24,11	56	12	3,00	4,0
M4,0	0,70	18,49	63	12	3,40	4,5

Ø	P	€	L mm	I mm	mm	d mm
M5,0	0,80	19,48	70	14	4,90	6,0
M6,0	1,00	19,48	80	18	4,90	6,0
M8,0	1,25	22,73	90	20	6,20	8,0
M10,0	1,50	29,08	100	20	8,00	10,0

2251 **HSSE DIN 376/374** M-MF Form. B "Gun" Tol. 6H 3XD D VAP

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
● 10-25	○ 10-15			○ 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	21,92	56	11	1,80	2,2
M4,0	0,70	23,40	63	12	2,10	2,8
M5,0	0,80	24,73	70	14	2,70	3,5
M6,0	1,00	24,73	80	18	3,40	4,5
M8,0	1,00	37,36	90	20	4,90	6,0
M8,0	1,25	28,79	90	20	4,90	6,0
M10,0	1,00	42,13	90	20	5,50	7,0
M10,0	1,25	49,21	100	20	5,50	7,0
M10,0	1,50	32,02	100	20	5,50	7,0
M12,0	1,00	54,49	100	20	7,00	9,0
M12,0	1,25	58,98	100	20	7,00	9,0
M12,0	1,50	54,49	100	20	7,00	9,0
M12,0	1,75	41,24	110	24	7,00	9,0
M14,0	1,00	74,37	100	20	9,00	11,0
M14,0	1,25	68,22	100	20	9,00	11,0
M14,0	1,50	74,37	100	20	9,00	11,0
M14,0	2,00	61,91	110	25	9,00	11,0

Ø	P	€	L mm	I mm	mm	d mm
M16,0	1,00	86,23	100	20	9,00	12,0
M16,0	1,50	76,36	100	20	9,00	12,0
M16,0	2,00	66,32	110	32	9,00	12,0
M18,0	1,00	118,49	110	24	11,00	14,0
M18,0	1,50	91,07	110	24	11,00	14,0
M18,0	2,50	91,07	125	32	11,00	14,0
M20,0	1,00	115,80	125	24	12,00	16,0
M20,0	1,50	106,12	125	24	12,00	16,0
M20,0	2,50	96,46	140	32	12,00	16,0
M22,0	1,00	164,90	125	24	14,50	18,0
M22,0	1,50	137,49	125	24	14,50	18,0
M22,0	2,50	137,49	140	32	14,50	18,0
M24,0	1,50	140,07	140	27	14,50	18,0
M24,0	2,00	152,81	140	27	14,50	18,0
M24,0	3,00	127,35	160	38	14,50	18,0
M27,0	3,00	159,18	160	38	16,00	20,0
M30,0	3,50	198,97	180	40	18,00	22,0

2116 **HSSE DIN 371** **M** **Form. B** **Tol. 6H** **3XD** **R** **TIN+**
DIN 13 "Gun"

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
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M2,0	0,40	36,20	45	10	2,10	2,8
M2,5	0,45	36,20	50	9	2,10	2,8
M3,0	0,50	25,39	56	10	2,70	3,5
M3,5	0,60	29,89	56	12	3,00	4,0
M4,0	0,70	25,60	63	12	3,40	4,5

Ø	P	€	L mm	I mm	∠ mm	d mm
M5,0	0,80	28,00	70	14	4,90	6,0
M6,0	1,00	29,01	80	18	4,90	6,0
M8,0	1,25	34,74	90	20	6,20	8,0
M10,0	1,50	45,67	100	20	8,00	10,0

2115 **HSSE DIN 376/374** **M-MF** **Form. B** **Tol. 6H** **3XD** **D** **TIN+**
DIN 13 "Gun"

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
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	28,01	56	11	2,00	2,2
M4,0	0,70	30,16	63	12	2,10	2,8
M5,0	0,80	32,71	70	14	2,70	3,5
M6,0	1,00	33,80	80	18	3,40	4,5
M8,0	1,00	51,98	90	20	4,90	6,0
M8,0	1,25	40,39	90	20	4,90	6,0
M10,0	1,00	61,27	90	20	5,50	7,0
M10,0	1,25	66,92	100	20	5,50	7,0
M10,0	1,50	51,12	100	20	5,50	7,0
M12,0	1,00	76,22	100	20	7,00	9,0
M12,0	1,25	84,41	100	20	7,00	9,0
M12,0	1,50	73,11	100	20	7,00	9,0
M12,0	1,75	63,37	110	24	7,00	9,0
M14,0	1,00	100,50	100	20	9,00	11,0
M14,0	1,25	93,68	100	20	9,00	11,0
M14,0	1,50	96,88	100	20	9,00	11,0
M14,0	2,00	83,60	110	25	9,00	11,0
M16,0	1,00	116,52	100	20	9,00	12,0
M16,0	1,50	101,38	100	20	9,00	12,0
M16,0	2,00	90,56	110	32	9,00	12,0

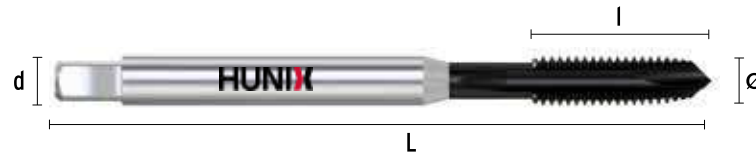
Ø	P	€	L mm	I mm	∠ mm	d mm
M18,0	1,00	144,23	110	24	11,00	14,0
M18,0	1,50	128,71	110	24	11,00	14,0
M18,0	2,50	122,98	125	32	11,00	14,0
M20,0	1,00	136,85	125	24	12,00	16,0
M20,0	1,50	144,94	125	24	12,00	16,0
M20,0	2,50	134,66	140	32	12,00	16,0
M22,0	1,00	185,71	125	24	14,50	18,0
M22,0	1,50	181,35	125	24	14,50	18,0
M22,0	2,50	181,42	140	32	14,50	18,0
M24,0	1,50	197,37	140	27	14,50	18,0
M24,0	2,00	216,58	140	27	14,50	18,0
M24,0	3,00	185,64	160	38	14,50	18,0
M27	1,50	274,65	140	27	16,00	20,0
M27	2,00	327,52	140	27	16,00	20,0
M27,0	3,00	232,05	160	38	16,00	20,0
M30	1,50	295,38	150	27	18,00	22,0
M30	2,00	355,17	150	27	18,00	22,0
M30,0	3,50	290,06	180	40	18,00	22,0
M33	3,50	371,55	180	45	20,00	25,0
M36	4,00	453,94	200	50	22,00	28,0

2254 HSSE-PM DIN 371

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
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
20-40	15-30	10-20	5-10	5-15	5-10	10-30	10-30	5-15	10-30	10-30	5-15	10-30	2-8	2-15			

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

MICRO FINISH
THROUGH-TOOL TECHNOLOGY



Ø	P	€	L mm	l mm	mm	d mm
M2,0*	0,40	50,92	45	10	2,10	2,8
M3,0	0,50	37,15	56	5	2,70	3,5
M4,0	0,70	39,12	63	7	3,40	4,5
M5,0	0,80	42,49	70	8	4,90	6,0

Ø	P	€	L mm	l mm	mm	d mm
M6,0	1,00	44,03	80	10	4,90	6,0
M8,0	1,25	52,89	90	13	6,20	8,0
M10,0	1,50	69,55	100	15	8,00	10,0

*Tol 6H

2255 HSSE-PM DIN 376/374

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
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
20-40	15-30	10-20	5-10	5-15	5-10	10-30	10-30	5-15	10-30	10-30	5-15	10-30	2-8	2-15			

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

MICRO FINISH
THROUGH-TOOL TECHNOLOGY



Ø	P	€	L mm	l mm	mm	d mm
M8,0	1,25	67,29	90	15	4,90	6,0
M10,0	1,00	78,85	90	10	5,50	7,0
M10,0	1,50	82,13	100	17	5,50	7,0
M12,0	1,00	150,59	100	10	7,00	9,0
M12,0	1,25	150,59	100	15	7,00	9,0
M12,0	1,50	109,80	100	15	7,00	9,0
M12,0	1,75	95,59	110	18	7,00	9,0
M14,0	1,50	150,52	100	15	9,00	11,0
M14,0	2,00	129,21	110	20	9,00	11,0

Ø	P	€	L mm	l mm	mm	d mm
M16,0	1,50	151,58	100	15	9,00	12,0
M16,0	2,00	135,95	110	20	9,00	12,0
M18,0	1,50	206,33	110	17	11,00	14,0
M18,0	2,50	205,52	125	25	11,00	14,0
M20,0	1,50	233,45	125	17	12,00	16,0
M20,0	2,50	238,70	140	25	12,00	16,0
M22,0	2,50	303,83	140	25	14,50	18,0
M24,0	3,00	308,22	160	30	14,50	18,0

2195 **HSSE-PM DIN 371** **M** **DIN 13** **Form. B "Gun"** **Tol. 6HX** **3XD** **R** **HL**

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
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			
20-50	20-50	20-50	20-50	5-25	5-25	10-50	10-50	5-15	10-50	10-50	10-50	10-50	1-8	1-8			

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

MICRO FINISH
THROUGH-DRILL TECHNOLOGY



Ø	P	€	L mm	l mm	mm	d mm
M5,0	0,80	68,92	70	8	4,90	6,0
M6,0	1,00	70,40	80	10	4,90	6,0

Ø	P	€	L mm	l mm	mm	d mm
M8,0	1,25	82,17	90	13	6,20	8,0
M10,0	1,50	108,19	100	15	8,00	10,0

2196 **HSSE-PM DIN 376** **M** **DIN 13** **Form. B "Gun"** **Tol. 6HX** **3XD** **D** **HL**

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
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			
20-50	20-50	20-50	20-50	5-25	5-25	10-50	10-50	5-15	10-50	10-50	10-50	10-50	1-8	1-8			

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

MICRO FINISH
THROUGH-DRILL TECHNOLOGY



Ø	P	€	L mm	l mm	mm	d mm
M12,0	1,75	161,92	110	18	7,00	9,0
M14,0	2,00	210,54	110	20	9,00	11,0

Ø	P	€	L mm	l mm	mm	d mm
M16,0	2,00	232,16	110	20	9,00	12,0

2126

HSSE-PM DIN 371

M
DIN 13

Form.
B
"Gun"



Tol.
6H

3XD



TIAISIN+

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
● 10-15	○ 6-10	○ 4-6		● 6-12				● 10-20		○ 4-6		○ 10-15		○ 4-8			

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

MICRO FINISH
TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	28,96	56	10	2,70	3,5
M4,0	0,70	29,39	63	12	3,40	4,5
M5,0	0,80	31,76	70	14	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M6,0	1,00	32,75	80	18	4,90	6,0
M8,0	1,25	39,30	90	20	6,20	8,0
M10,0	1,50	51,54	100	20	8,00	10,0

2125

HSSE-PM DIN 376/374

M-MF
DIN13

Form.
B
"Gun"



Tol.
6H

3XD



TIAISIN+

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
● 10-15	○ 6-10	○ 4-6		● 6-12				● 10-20		○ 4-6		○ 10-15		○ 4-8			

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

MICRO FINISH
TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
M8,0	1,00	61,03	90	20	4,90	6,0
M8,0	1,25	45,11	90	20	4,90	6,0
M10,0	1,00	64,17	90	20	5,50	7,0
M10,0	1,25	86,05	100	20	5,50	7,0
M10,0	1,50	56,74	100	20	5,50	7,0
M12,0	1,00	82,90	100	20	7,00	9,0
M12,0	1,25	88,55	100	20	7,00	9,0
M12,0	1,50	82,90	110	20	7,00	9,0
M12,0	1,75	71,68	110	24	7,00	9,0
M14,0	1,25	104,30	100	20	9,00	11,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M14,0	1,50	110,25	100	20	9,00	11,0
M14,0	2,00	94,83	110	25	9,00	11,0
M16,0	1,50	115,08	100	20	9,00	12,0
M16,0	2,00	102,80	110	32	9,00	12,0
M18,0	1,50	139,80	110	24	11,00	14,0
M18,0	2,50	139,73	125	32	11,00	14,0
M20,0	1,50	167,78	125	24	12,00	16,0
M20,0	2,50	152,52	140	32	12,00	16,0
M22,0	2,50	206,45	140	32	14,50	18,0
M24,0	3,00	209,47	160	38	14,50	18,0

2176 **HSSE-PM DIN 371** **M** **Form. B "Gun"** **Tol. 6HX** **3XD** **R** **TIAISIN+**

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
		○ 6-10	● 4-6		○ 4-6			● 10-20		○ 4-6		○ 10-15		○ 4-8			

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



Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	36,81	56	10	2,70	3,5
M4,0	0,70	37,39	63	12	3,40	4,5
M5,0	0,80	40,19	70	14	4,90	6,0

Ø	P	€	L mm	I mm	mm	d mm
M6,0	1,00	42,79	80	18	4,90	6,0
M8,0	1,25	49,91	90	20	6,20	8,0
M10,0	1,50	62,34	100	20	8,00	10,0

2175 **HSSE-PM DIN 376** **M** **Form. B "Gun"** **Tol. 6HX** **3XD** **D** **TIAISIN+**

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
		○ 6-10	● 4-6		○ 4-6			● 10-20		○ 4-6		○ 10-15		○ 4-8			

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



Ø	P	€	L mm	I mm	mm	d mm
M8,0	1,25	62,34	90	20	4,90	6,0
M10,0	1,50	81,47	100	20	5,50	7,0
M12,0	1,75	93,45	110	24	7,00	9,0
M14,0	2,00	130,09	110	25	9,00	11,0

Ø	P	€	L mm	I mm	mm	d mm
M16,0	2,00	137,43	110	32	9,00	12,0
M18,0	2,50	201,01	125	32	11,00	14,0
M20,0	2,50	198,45	140	32	12,00	16,0

2133

HSSE DIN 371

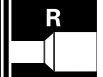
M
DIN 13

B-AZ



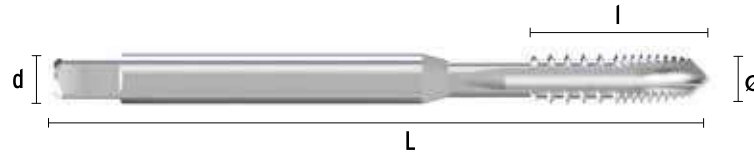
Tol.
6H

3XD



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
									● 10-20	○ 6-8	○ 10-20	○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
M3,0	0,50	27,18	56	11	2,70	3,5
M4,0	0,70	27,18	63	13	3,40	4,5
M5,0	0,80	27,18	70	16	4,90	6,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M6,0	1,00	28,62	80	19	4,90	6,0
M8,0	1,25	34,23	90	22	6,20	8,0
M10,0	1,50	40,33	100	24	8,00	10,0

2132

HSSE DIN 376

M
DIN 13

B-AZ



Tol.
6H

3XD



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
									● 10-20	○ 6-8	○ 10-20	○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
*M10,0	1,50	40,33	100	24	5,50	7,0
M12,0	1,75	50,88	110	29	7,00	9,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M14,0	2,00	63,36	110	30	9,00	11,0
M16,0	2,00	84,02	110	32	9,00	12,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2106

HSSE DIN 371

M-MF
DIN 13

Form.
C



Tol.
6H



2,5XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M2,0	0,40	45,86	45	10	2,10	2,8
M2,2	0,45	45,86	45	10	2,10	2,8
M2,3	0,40	45,86	45	10	2,10	2,8
M2,5	0,45	45,86	50	5	2,10	2,8
M2,6	0,45	45,86	50	5	2,10	2,8
M3,0	0,35	45,86	56	5	2,70	3,5
M3,0	0,50	19,64	56	5	2,70	3,5
M3,5	0,35	45,86	56	5	3,00	4,0
M3,5	0,60	25,15	56	6	3,00	4,0
M4,0	0,50	33,69	63	7	3,40	4,5
M4,0	0,70	19,64	63	7	3,40	4,5

Ø	P	€	L mm	I mm	∠ mm	d mm
M4,5	0,75	34,72	70	7	4,90	6,0
M5,0	0,50	47,25	70	8	4,90	6,0
M5,0	0,80	18,98	70	8	4,90	6,0
M6,0	0,75	33,17	80	10	4,90	6,0
M6,0	1,00	20,82	80	10	4,90	6,0
M7,0	1,00	26,44	80	10	5,50	7,0
M8,0	0,75	38,35	80	10	6,20	8,0
M8,0	1,25	24,80	90	14	6,20	8,0
M9,0	1,25	44,72	90	13	7,00	9,0
M10,0	1,50	28,85	100	15	8,00	10,0

2105 **HSSE DIN 376/374** M-MF Form. Tol. 35° 2,5XD 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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	20,38	56	5	1,80	2,2
M4,0	0,70	20,38	63	8	2,10	2,8
M5,0	0,80	19,70	70	10	2,70	3,5
M6,0	1,00	21,60	80	12	3,40	4,5
*M7,0	1,00	26,44	80	10	4,30	5,5
M8,0	1,00	31,86	90	10	4,90	6,0
M8,0	1,25	25,74	90	15	4,90	6,0
M9,0	1,00	41,05	90	10	5,50	7,0
M10,0	0,75	57,98	90	10	5,50	7,0
M10,0	1,00	37,62	90	10	5,50	7,0
M10,0	1,25	40,90	100	15	5,50	7,0
M10,0	1,50	29,94	100	17	5,50	7,0
M11,0	1,00	119,77	90	10	6,20	8,0
M11,0	1,50	87,26	100	15	6,20	8,0
M12,0	1,00	48,37	100	10	7,00	9,0
M12,0	1,25	46,26	100	15	7,00	9,0
M12,0	1,50	44,55	100	15	7,00	9,0
M12,0	1,75	40,00	110	18	7,00	9,0
M14,0	1,00	78,12	100	10	9,00	11,0
M14,0	1,25	66,72	100	15	9,00	11,0
M14,0	1,50	50,24	100	15	9,00	11,0
M14,0	2,00	51,35	110	20	9,00	11,0
M15,0	1,00	102,30	100	10	9,00	12,0
*M15,0	1,50	75,05	100	20	9,00	12,0
M16,0	1,00	163,58	100	10	9,00	12,0
M16,0	1,50	65,55	100	15	9,00	12,0
M16,0	2,00	62,01	110	20	9,00	12,0
M18,0	1,00	130,23	110	13	11,00	14,0
M18,0	1,50	82,97	110	20	11,00	14,0
M18,0	2,00	156,38	125	20	11,00	14,0
M18,0	2,50	83,37	125	25	11,00	14,0
M20,0	1,00	127,31	125	13	12,00	16,0
M20,0	1,50	94,83	125	17	12,00	16,0
M20,0	2,00	148,59	140	20	12,00	16,0
M20,0	2,50	88,83	140	25	12,00	16,0
M22,0	1,00	125,41	125	13	14,50	18,0
M22,0	1,50	102,33	125	17	14,50	18,0
M22,0	2,00	140,70	140	20	14,50	18,0
M22,0	2,50	109,55	140	25	14,50	18,0
M24,0	1,00	168,16	140	13	14,50	18,0
M24,0	1,50	139,04	140	20	14,50	18,0
M24,0	2,00	168,16	140	20	14,50	18,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M24,0	3,00	133,73	160	30	14,50	18,0
M25,0	1,50	224,17	140	20	14,50	18,0
M26,0	1,50	150,13	140	20	14,50	18,0
M27,0	1,50	171,59	140	20	16,00	20,0
M27,0	2,00	225,13	140	20	16,00	20,0
M27,0	3,00	163,80	160	30	16,00	20,0
M28,0	1,50	171,59	140	20	16,00	20,0
M28,0	2,00	281,27	140	20	16,00	20,0
M30,0	1,50	213,81	150	22	18,00	22,0
M30,0	2,00	248,62	150	22	18,00	22,0
M30,0	3,50	209,87	180	35	18,00	22,0
M32,0	1,50	263,85	150	22	18,00	22,0
M33,0	1,50	323,54	160	22	20,00	25,0
M33,0	2,00	355,76	160	24	20,00	25,0
M33,0	3,50	252,16	180	35	20,00	25,0
M35,0	1,50	360,93	170	22	22,00	28,0
M36,0	1,50	439,85	170	22	22,00	28,0
M36,0	2,00	571,64	170	24	22,00	28,0
M36,0	3,00	445,90	200	30	22,00	28,0
M36,0	4,00	340,27	200	40	22,00	28,0
M38,00	1,50	527,59	170	24	22,00	28,0
M39,00	1,50	425,17	170	25	24,00	32,0
M39,00	2,00	425,17	170	25	24,00	32,0
M39,00	3,00	695,62	200	30	24,00	32,0
M39,00	4,00	718,81	200	40	24,00	32,0
M40,00	1,50	580,28	170	25	24,00	32,0
M40,00	2,00	471,04	170	25	24,00	32,0
M42,00	1,50	623,99	170	25	24,00	32,0
M42,00	2,00	526,10	170	25	24,00	32,0
M42,00	3,00	526,10	200	30	24,00	32,0
M42,00	4,50	525,02	200	45	24,00	32,0
M45,00	1,50	614,81	180	27	29,00	36,0
M45,00	2,00	614,81	180	27	29,00	36,0
M45,00	3,00	734,10	200	30	29,00	36,0
M45,00	4,50	963,50	220	45	29,00	36,0
M48,00	1,50	734,10	190	27	29,00	36,0
M48,00	2,00	734,10	190	27	29,00	36,0
M48,00	3,00	734,10	225	33	29,00	36,0
M48,00	5,00	1.055,26	250	50	29,00	36,0
M50,00	1,50	856,45	190	27	29,00	36,0
M52,00	5,00	1.254,08	250	50	32,00	40,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2106/5 **HSSE DIN 371** Izquierda
a gauche / lefthand **M**
DIN 13 Form. **C** Tol. **6H** 35° LH 2,5XD **R**

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
M3,0	0,50	34,06	56	6	2,70	3,5
M4,0	0,70	34,49	63	7	3,40	4,5
M5,0	0,80	36,40	70	8	4,90	6,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M6,0	1,00	36,40	80	10	4,90	6,0
M8,0	1,25	42,45	90	14	6,20	8,0
M10,0	1,50	54,32	100	16	8,00	10,0

2105/5 **HSSE DIN 376/374** Izquierda
a gauche / lefthand **M**
DIN13 Form. **C** Tol. **6H** 35° LH 2,5XD **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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
M8,0	1,00	63,72	90	10	4,90	6,0
M10,0	1,00	75,24	90	10	5,50	7,0
M10,0	1,25	77,44	100	16	5,50	7,0
M12,0	1,25	92,52	100	15	7,00	9,0
M12,0	1,75	79,96	110	18	7,00	9,0
M16,0	1,50	131,10	100	15	9,00	12,0
M16,0	2,00	116,95	110	20	9,00	12,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M18,0	1,50	165,95	110	17	11,00	14,0
M20,0	1,50	189,66	125	20	12,00	16,0
M20,0	2,00	297,18	140	20	12,00	16,0
M20,0	2,50	169,98	140	25	12,00	16,0
M22,0	2,00	281,40	140	20	14,50	18,0
M24,0	2,00	336,31	140	20	14,50	18,0
M24,0	3,00	224,55	140	20	14,50	18,0

2112

HSSE DIN 371-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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	44,91	100	5	2,70	3,5
M4,0	0,70	44,91	125	7	3,40	4,5

Ø	P	€	L mm	I mm	∠ mm	d mm
M5,0	0,80	51,80	140	8	4,90	6,0
M6,0	1,00	51,80	160	10	4,90	6,0

2273

HSSE DIN 376-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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M8,0	1,25	74,49	180	15	4,90	6,0
M10,0	1,50	91,20	200	17	5,50	7,0
M12,0	1,75	117,28	220	18	7,00	9,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M16,0	2,00	171,59	220	20	9,00	12,0
M20,0	2,50	192,97	250	25	12,00	16,0

2166 HSSE DIN 371

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	32,91	56	5	2,70	3,5
M4,0	0,70	32,91	63	7	3,40	4,5
M5,0	0,80	31,78	70	8	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M6,0	1,00	34,84	80	10	4,90	6,0
M8,0	1,25	41,59	90	13	4,90	6,0
M10,0	1,50	49,31	110	15	8,00	10,0

2165 HSSE DIN 376

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M8,0	1,25	41,59	90	15	4,90	6,0
M10,0	1,50	49,31	100	17	5,50	7,0
M12,0	1,75	55,34	110	18	7,00	9,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M14,0	2,00	79,23	110	20	9,00	11,0
M16,0	2,00	95,66	110	20	9,00	12,0

2170 HSSE DIN 371

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
M3,0	0,50	28,62	56	5	2,70	3,5
M4,0	0,70	28,62	63	7	3,40	4,5
M5,0	0,80	27,60	70	8	4,90	6,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M6,0	1,00	30,28	80	10	4,90	6,0
M8,0	1,25	36,15	90	13	6,20	8,0
M10,0	1,50	42,83	110	15	8,00	10,0

2208 HSSE DIN 376

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
M8,0	1,25	36,15	90	15	4,90	6,0
M10,0	1,50	42,83	100	17	5,50	7,0
M12,0	1,75	57,17	110	18	7,00	9,0
M14,0	2,00	66,03	110	20	9,00	11,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M16,0	2,00	79,74	110	20	9,00	12,0
M18,0	2,50	108,64	125	25	11,00	14,0
M20,0	2,50	114,28	140	25	12,00	16,0

2409 HSSE DIN 371

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	28,79	56	6	2,70	3,5
M4,0	0,70	29,36	63	7	3,40	4,5
M5,0	0,80	29,52	70	8	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M6,0	1,00	32,79	80	10	4,90	6,0
M8,0	1,25	36,86	90	14	6,20	8,0
M10,0	1,50	45,24	100	16	8,00	10,0

2410 HSSE DIN 376/374

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M12,0	1,75	55,78	110	18	7,00	9,0

2108 HSSE DIN 371

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
*M2,0	0,40	25,78	45	8	2,10	2,8
M3,0	0,50	21,63	56	11	2,70	3,5
M4,0	0,70	20,76	63	13	3,40	4,5
M5,0	0,80	20,01	70	16	4,90	6,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M6,0	1,00	21,93	80	19	4,90	6,0
M7,0	1,00	26,61	80	19	5,50	7,0
M8,0	1,25	26,21	90	22	6,20	8,0
M10,0	1,50	31,04	100	24	8,00	10,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2107 HSSE DIN 376/374

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
M4,0	0,70	20,57	63	13	2,10	2,8
M5,0	0,80	19,88	70	16	2,70	3,5
M6,0	1,00	21,93	80	19	3,40	4,5
*M7,0	1,00	26,61	80	19	4,30	5,5
M8,0	1,25	26,21	90	22	4,90	6,0
M10,0	1,50	31,04	100	24	5,50	7,0
M12,0	1,75	41,46	110	29	7,00	9,0
M14,0	2,00	49,31	110	30	9,00	11,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M16,0	2,00	59,57	110	32	9,00	12,0
M18,0	2,50	80,15	125	34	11,00	14,0
M20,0	2,50	85,37	140	34	12,00	16,0
M22,0	2,50	105,29	140	34	14,50	18,0
M24,0	3,00	127,92	160	38	14,50	18,0
*M30,0	3,50	201,74	180	45	18,00	22,0
*M36,0	4,00	325,31	200	56	22,00	28,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2252 HSSE DIN 371

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

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

MICRO FINISH
TURNING TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
M2,0	0,40	39,71	45	10	2,10	2,8
M2,5	0,45	39,71	50	5	2,10	2,8
M3,0	0,50	22,03	56	5	2,70	3,5
M3,5	0,60	26,42	56	6	3,00	4,0
M4,0	0,70	22,41	63	7	3,40	4,5

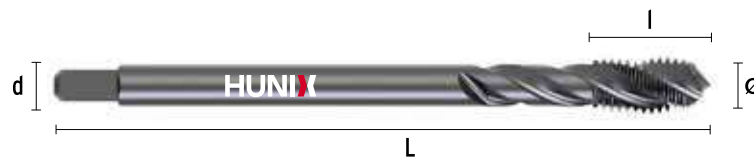
Ø	P	€	L mm	I mm	∠ mm	d mm
M5,0	0,80	23,67	70	8	4,90	6,0
M6,0	1,00	23,67	80	10	4,90	6,0
M8,0	1,25	27,51	90	14	6,20	8,0
M10,0	1,50	35,21	100	15	8,00	10,0

2253 HSSE DIN 376/374

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

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

MICRO FINISH
TURNING TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	25,28	56	5	2,00	2,2
M4,0	0,70	25,82	63	8	2,10	2,8
M5,0	0,80	27,15	70	10	2,70	3,5
M6,0	1,00	27,15	80	12	3,40	4,5
M8,0	1,00	41,14	90	10	4,90	6,0
M8,0	1,25	31,64	90	15	4,90	6,0
M10,0	1,00	46,52	90	10	5,50	7,0
M10,0	1,25	54,22	100	15	5,50	7,0
M10,0	1,50	38,79	100	17	5,50	7,0
M12,0	1,00	59,86	100	10	7,00	9,0
M12,0	1,25	64,98	100	15	7,00	9,0
M12,0	1,50	59,86	100	15	7,00	9,0
M12,0	1,75	49,93	110	18	7,00	9,0
M14,0	1,00	81,74	100	10	9,00	11,0
M14,0	1,25	75,03	100	15	9,00	11,0
M14,0	1,50	81,74	100	15	9,00	11,0
M14,0	2,00	68,22	110	20	9,00	11,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M16,0	1,00	94,75	100	10	9,00	12,0
M16,0	1,50	83,88	100	15	9,00	12,0
M16,0	2,00	72,95	110	20	9,00	12,0
M18,0	1,00	130,23	110	13	11,00	14,0
M18,0	1,50	100,19	110	20	11,00	14,0
M18,0	2,50	100,19	125	25	11,00	14,0
M20,0	1,00	127,35	125	13	12,00	16,0
M20,0	1,50	116,68	125	17	12,00	16,0
M20,0	2,50	106,12	140	25	12,00	16,0
M22,0	1,00	213,43	125	13	14,50	18,0
M22,0	1,50	151,18	125	17	14,50	18,0
M22,0	2,50	151,18	140	25	14,50	18,0
M24,0	1,50	154,14	140	20	14,50	18,0
M24,0	2,00	168,14	140	20	14,50	18,0
M24,0	3,00	140,07	160	30	14,50	18,0
M27,0	3,00	175,10	160	30	16,00	20,0
M30,0	3,50	218,87	180	35	18,00	22,0

2118

HSSE DIN 371

M
DIN 13

Form.
C



Tol.
6H



2,5XD



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
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 15-20			● 15-25		○ 12-18					

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

MICRO FINISH
IMPROVED TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
M2,0	0,40	42,70	45	10	2,10	2,8
M2,5	0,45	42,70	50	5	2,10	2,8
M3,0	0,50	26,53	56	5	2,70	3,5
M3,5	0,60	33,72	56	6	3,00	4,0
M4,0	0,70	26,75	63	7	3,40	4,5

Ø	P	€	L mm	I mm	∠ mm	d mm
M5,0	0,80	29,14	70	8	4,90	6,0
M6,0	1,00	30,16	80	10	4,90	6,0
M8,0	1,25	36,26	90	14	6,20	8,0
M10,0	1,50	47,63	100	15	8,00	10,0

2117

HSSE DIN 376/374

M-MF
DIN 13

Form.
C



Tol.
6H



2,5XD



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
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 15-20			● 15-25		○ 12-18					

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

MICRO FINISH
IMPROVED TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	28,59	56	5	1,80	2,2
M4,0	0,70	32,78	63	8	2,10	2,8
M5,0	0,80	35,45	70	10	2,70	3,5
M6,0	1,00	36,54	80	12	3,40	4,5
M8,0	1,00	56,42	90	10	4,90	6,0
M8,0	1,25	43,65	90	15	4,90	6,0
M10,0	1,00	66,14	90	10	5,50	7,0
M10,0	1,25	72,36	100	15	5,50	7,0
M10,0	1,50	55,11	100	17	5,50	7,0
M12,0	1,00	82,24	100	10	7,00	9,0
M12,0	1,25	91,50	100	15	7,00	9,0
M12,0	1,50	78,83	100	15	7,00	9,0
M12,0	1,75	68,16	110	18	7,00	9,0
M14,0	1,00	108,99	100	10	9,00	11,0
M14,0	1,25	101,29	100	15	9,00	11,0
M14,0	1,50	104,78	100	15	9,00	11,0
M14,0	2,00	90,13	110	20	9,00	11,0
M16,0	1,00	126,10	100	10	9,00	12,0
M16,0	1,50	109,42	100	15	9,00	12,0
M16,0	2,00	97,68	110	20	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M18,0	1,00	150,37	110	13	11,00	14,0
M18,0	1,50	138,50	110	20	11,00	14,0
M18,0	2,50	132,69	125	25	11,00	14,0
M20,0	1,00	147,64	125	13	12,00	16,0
M20,0	1,50	156,28	125	17	12,00	16,0
M20,0	2,50	144,94	140	25	12,00	16,0
M22,0	1,00	201,21	125	13	14,50	18,0
M22,0	1,50	196,00	125	17	14,50	18,0
M22,0	2,50	195,92	140	25	14,50	18,0
M24,0	1,50	212,23	140	20	14,50	18,0
M24,0	2,00	246,47	140	20	14,50	18,0
M24,0	3,00	199,18	160	30	14,50	18,0
M27	1,50	257,38	140	27	16,00	20,0
M27	2,00	337,69	140	27	16,00	20,0
M27,0	3,00	248,99	160	30	16,00	20,0
M30	1,50	320,71	150	27	18,00	22,0
M30	2,00	397,60	150	27	18,00	22,0
M30,0	3,50	311,22	180	35	18,00	22,0
M33	3,50	378,25	180	35	20,00	25,0
M36	4,00	510,41	200	40	22,00	28,0

2256 **HSSE-PM DIN 371** **M** **DIN 13** **Form. C** **Tol. 6HX** **45°** **2,5XD** **R** **HL**

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
20-40	15-30	10-20	5-10	5-15	5-15	10-30	10-30	5-15	10-30	10-30	5-15	10-30	2-8	2-15			

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

MICRO FINISH
TURNING TECHNOLOGY



Ø	P	€	L mm	l mm	∠ mm	d mm
M2,0*	0,40	56,66	45	10	2,10	2,8
M3,0	0,50	42,25	56	5	2,70	3,5
M4,0	0,70	44,46	63	7	3,40	4,5
M5,0	0,80	48,29	70	8	4,90	6,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M6,0	1,00	50,05	80	10	4,90	6,0
M8,0	1,25	60,10	90	13	6,20	8,0
M10,0	1,50	79,09	100	15	8,00	10,0

*Tol 6H

2257 **HSSE-PM DIN 376/374** **M** **DIN 13** **Form. C** **Tol. 6HX** **45°** **2,5XD** **D** **HL**

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
20-40	15-30	10-20	5-10	5-15	5-15	10-30	10-30	5-15	10-30	10-30	5-15	10-30	2-8	2-15			

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

MICRO FINISH
TURNING TECHNOLOGY



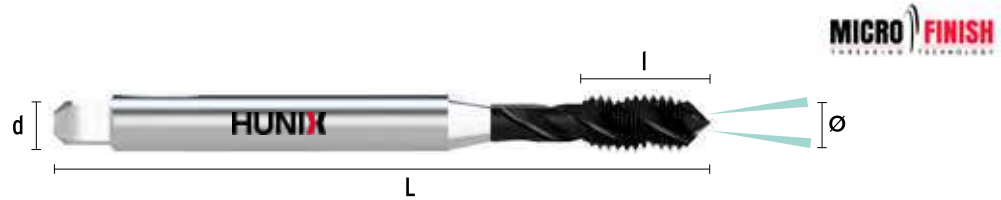
Ø	P	€	L mm	l mm	∠ mm	d mm
M8,0	1,25	72,79	90	15	4,90	6,0
M10,0	1,00	91,58	90	10	5,50	7,0
M10,0	1,50	106,84	100	17	5,50	7,0
M12,0	1,00	120,99	100	10	7,00	9,0
M12,0	1,25	163,69	100	15	7,00	9,0
M12,0	1,50	127,72	100	15	7,00	9,0
M12,0	1,75	110,48	110	18	7,00	9,0
M14,0	1,50	168,94	100	15	9,00	11,0
M14,0	2,00	145,46	110	20	9,00	11,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M16,0	1,50	176,54	100	15	9,00	12,0
M16,0	2,00	157,70	110	20	9,00	12,0
M18,0	1,50	240,44	110	17	11,00	14,0
M18,0	2,50	222,27	125	25	11,00	14,0
M20,0	1,50	274,36	125	17	12,00	16,0
M20,0	2,50	265,28	140	25	12,00	16,0
M22,0	2,50	328,92	140	25	14,50	18,0
M24,0	3,00	323,36	160	30	14,50	18,0

2288 **HSSE-PM DIN 371** **M** **Form.** **Tol.** **45°** **2,5XD** **R** **HL**
DIN 13 **C** **6HX**

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
●	●	●	●	●	●	●	●	○	●	●	●	●	●	●			
20-50	20-50	20-50	20-50	5-25	5-25	10-50	10-50	5-15	10-50	10-50	10-50	10-50	1-8	1-8			

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M5,0	0,80	75,24	70	8	4,90	6,0
M6,0	1,00	77,11	80	10	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M8,0	1,25	92,02	90	13	6,20	8,0
M10,0	1,50	120,12	100	15	8,00	10,0

2289 **HSSE-PM DIN 376** **M** **Form.** **Tol.** **45°** **2,5XD** **D** **HL**
DIN 13 **C** **6HX**

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
●	●	●	●	●	●	●	●	○	●	●	●	●	●	●			
20-50	20-50	20-50	20-50	5-25	5-25	10-50	10-50	5-15	10-50	10-50	10-50	10-50	1-8	1-8			

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M12,0	1,75	138,77	110	18	7,00	9,0
M14,0	2,00	242,17	110	20	9,00	11,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M16,0	2,00	251,96	110	20	9,00	12,0

2124 HSSE-PM DIN 371

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
● 10-15	● 6-10	○ 4-6		● 6-12				● 10-20				○ 10-15		○ 4-8			

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

MICRO FINISH
TURNING TECHNOLOGY



Ø	P	€	L mm	l mm	∠ mm	d mm
M3,0	0,50	31,43	56	5	2,70	3,5
M4,0	0,70	31,92	63	7	3,40	4,5
M5,0	0,80	34,41	70	8	4,90	6,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M6,0	1,00	35,50	80	10	4,90	6,0
M8,0	1,25	45,69	90	13	6,20	8,0
M10,0	1,50	55,41	100	15	8,00	10,0

2123 HSSE-PM DIN 376/374

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
● 10-15	● 6-10	○ 4-6		● 6-12				● 10-20				○ 10-15		○ 4-8			

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

MICRO FINISH
TURNING TECHNOLOGY



Ø	P	€	L mm	l mm	∠ mm	d mm
M8,0	1,00	60,32	90	10	4,90	6,0
M8,0	1,25	47,41	90	15	4,90	6,0
M10,0	1,00	69,45	90	10	5,50	7,0
M10,0	1,25	79,87	100	15	5,50	7,0
M10,0	1,50	60,95	100	17	5,50	7,0
M12,0	1,00	103,50	100	10	7,00	9,0
M12,0	1,25	92,48	100	15	7,00	9,0
M12,0	1,50	89,71	100	15	7,00	9,0
M12,0	1,75	77,34	110	18	7,00	9,0
M14,0	1,25	223,73	100	15	9,00	11,0

Ø	P	€	L mm	l mm	∠ mm	d mm
M14,0	1,50	119,36	100	15	9,00	11,0
M14,0	2,00	102,61	110	20	9,00	11,0
M16,0	1,50	124,60	100	15	9,00	12,0
M16,0	2,00	111,08	110	20	9,00	12,0
M18,0	1,50	150,99	110	17	11,00	14,0
M18,0	2,50	151,98	125	25	11,00	14,0
M20,0	1,50	177,53	125	17	12,00	16,0
M20,0	2,50	164,47	140	25	12,00	16,0
M22,0	2,50	223,47	140	25	14,50	18,0
M24,0	3,00	242,54	160	30	14,50	18,0

2178 **HSSE-PM DIN 371** **M** **Form. C** **Tol. 6HX** **15°** **2,5XD** **R** **TIA SIN+**

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
		○ 6-10	● 4-6		○ 4-6			● 10-20				○ 10-15		○ 4-8			

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



MICRO FINISH
 TURNING TECHNOLOGY



Ø	P	€	L mm	l mm	mm	d mm
M3,0	0,50	47,63	56	10	2,70	3,5
M4,0	0,70	35,15	63	12	3,40	4,5
M5,0	0,80	37,39	70	14	4,90	6,0

Ø	P	€	L mm	l mm	mm	d mm
M6,0	1,00	40,00	80	18	4,90	6,0
M8,0	1,25	45,69	90	20	6,20	8,0
M10,0	1,50	59,86	100	20	8,00	10,0

2177 **HSSE-PM DIN 376** **M** **Form. C** **Tol. 6HX** **15°** **2,5XD** **D** **TIA SIN+**

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
		○ 6-10	● 4-6		○ 4-6			● 10-20				○ 10-15		○ 4-8			

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



MICRO FINISH
 TURNING TECHNOLOGY

Ø	P	€	L mm	l mm	mm	d mm
M8,0	1,25	68,11	90	20	4,90	6,0
M10,0	1,50	70,18	100	20	5,50	7,0
M12,0	1,75	83,45	110	24	7,00	9,0
M14,0	2,00	115,81	110	25	9,00	11,0

Ø	P	€	L mm	l mm	mm	d mm
M16,0	2,00	120,02	110	32	9,00	12,0
M18,0	2,50	199,52	125	32	11,00	14,0
M20,0	2,50	184,91	140	32	12,00	16,0

2182 **HSSE DIN 371** **M** **Form. C** **Tol. 6H** **2,5XD** **R**

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
									● 10-20	○ 6-8	○ 10-20						

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



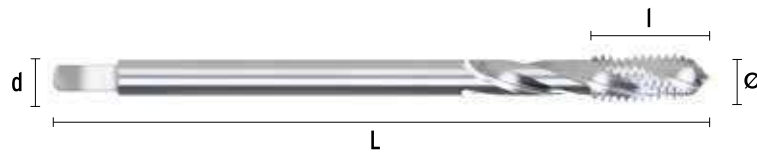
Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	24,60	56	6	2,70	3,5
M4,0	0,70	24,60	63	7	3,40	4,5
M5,0	0,80	25,10	70	8	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M6,0	1,00	27,21	80	10	4,90	6,0
M8,0	1,25	32,49	90	14	6,20	8,0
M10,0	1,50	38,39	100	16	8,00	10,0

2181 **HSSE DIN 376** **M** **Form. C** **Tol. 6H** **2,5XD** **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
									● 10-20	○ 6-8	○ 10-20						

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



Ø	P	€	L mm	I mm	∠ mm	d mm
*M6,0	1,00	27,21	80	18	3,40	4,5
M12,0	1,75	45,65	110	18	7,00	9,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M14,0	2,00	66,73	110	20	9,00	11,0
M16,0	2,00	89,98	110	22	9,00	12,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2199 HSSE DIN 357

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
●						○	○	○									
15-25						10-15	10-20										

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



Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	35,99	70	22	2,00	2,2
M4,0	0,70	35,99	90	25	2,10	2,8
M5,0	0,80	37,02	100	28	2,70	3,5
M6,0	1,00	34,31	110	32	3,40	4,5
M8,0	1,25	40,10	125	40	4,90	6,0
M10,0	1,50	61,68	140	45	5,50	7,0
M12,0	1,75	73,99	180	50	7,00	9,0

Ø	P	€	L mm	I mm	mm	d mm
M14,0	2,00	82,21	200	56	9,00	11,0
M16,0	2,00	100,74	200	63	9,00	12,0
M18,0	2,50	123,32	220	63	11,00	14,0
M20,0	2,50	142,84	250	70	12,00	16,0
M22,0	2,50	182,92	280	80	14,50	18,0
M24,0	3,00	215,78	280	80	14,50	18,0

2134 HSSE

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
●						○	○	○									
15-25						10-15	10-20										

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



Ø	P	€	L mm	I mm	d mm
M3,0	0,50	98,65	280	12	2,7
M4,0	0,70	97,25	280	17	2,1
M5,0	0,80	97,25	280	20	2,7
M6,0	1,00	97,25	280	25	3,4
M8,0	1,25	103,16	280	31	4,9
M10,0	1,50	119,58	280	37	5,5
M12,0	1,75	186,46	420	43	7,0

Ø	P	€	L mm	I mm	d mm
M14,0	2,00	180,10	420	50	9,0
M16,0	2,00	253,28	420	50	9,0
M18,0	2,50	312,80	530	62	14,2
M20,0	2,50	413,66	530	63	12,0
M22,0	2,50	477,81	530	62	18,0
M24,0	3,00	669,23	530	75	19,2

2806 **HSSE DIN 13** Broca-Macho / Foret taraud / Drill-tap

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
● 10-25							○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



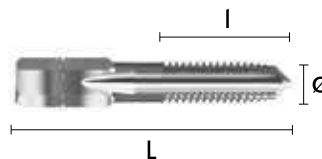
Ø	P	€	L mm	L1 mm	L2 mm	∠ mm	d1 mm	d2 mm
M3,0	0,50	48,77	56	16	11	2,40	3,0	2,5
M4,0	0,70	48,77	63	18	14	3,00	4,0	3,3
M5,0	0,80	48,77	71	20	18	3,80	5,0	4,2
M6,0	1,00	53,91	80	22	22	4,90	6,0	5,0

Ø	P	€	L mm	L1 mm	L2 mm	∠ mm	d1 mm	d2 mm
M8,0	1,25	60,89	95	26	25	6,20	8,0	6,8
M10,0	1,50	67,01	106	30	31	8,00	10,0	8,5
M12,0	1,75	79,08	115	32	35	9,00	12,0	10,20

1504 **HSS Hex.** **M DIN 13** **ToI. 6H**

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
● 15-45																	

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



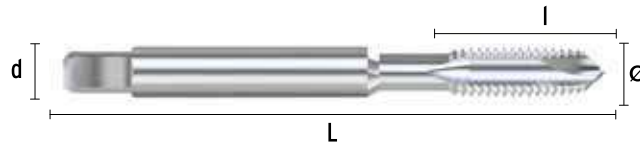
Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	9,97	33	11		
M4,0	0,70	9,97	35	12		
M5,0	0,80	9,97	36	15		

Ø	P	€	L mm	I mm	∠ mm	d mm
M6,0	1,00	9,97	39	18		
M8,0	1,25	13,81	40	19		
M10,0	1,50	15,80	41	21		

2248 **HSS ISO 529** **M** **Form. B "Gun"** **Tol. 6H** **3XD**

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
● 5-20						○ 5-15			○ 10-15	● 5-15		○ 10-15					

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



Ø	P	€	L mm	l mm	mm	d mm
M3,0	0,50	8,10	48	11	2,50	3,2
M4,0	0,70	8,21	53	13	3,15	4,0
M5,0	0,80	10,42	58	16	4,00	5,0
M6,0	1,00	10,89	66	19	5,00	6,3
M8,0	1,25	11,24	72	22	6,30	8,0
M10,0	1,50	13,74	80	24	8,00	10,0
M12,0	1,75	20,81	89	29	7,10	10,2
M14,0	2,00	21,84	95	30	9,00	11,2

Ø	P	€	L mm	l mm	mm	d mm
M16,0	2,00	25,52	102	32	10,00	12,5
M18,0	2,50	31,89	110	37	11,20	14,0
M20,0	2,50	35,63	112	37	11,20	14,0
M22,0	2,50	40,39	118	38	12,50	16,0
M24,0	3,00	51,03	130	45	14,00	18,0
M27,0	3,00	68,52	135	45	16,00	20,0
M30,0	3,50	127,16	138	48	16,00	20,0

2249 **HSS ISO 529** **M** **Form. C** **Tol. 6H** **2,5XD**

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
● 5-20						○ 5-15			○ 10-15	● 5-15		○ 10-15					

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



Ø	P	€	L mm	l mm	mm	d mm
M3,0	0,50	10,11	48	11	2,50	3,2
M4,0	0,70	10,47	53	13	3,15	4,0
M5,0	0,80	12,97	58	16	4,00	5,0
M6,0	1,00	13,44	66	19	5,00	6,3
M8,0	1,25	14,32	72	22	6,30	8,0
M10,0	1,50	17,18	80	24	8,00	10,0
M12,0	1,75	25,99	89	29	7,10	10,2
M14,0	2,00	29,33	95	30	9,00	11,2

Ø	P	€	L mm	l mm	mm	d mm
M16,0	2,00	31,89	102	32	10,00	12,5
M18,0	2,50	40,02	112	37	11,20	14,0
M20,0	2,50	44,85	112	37	11,20	14,0
M22,0	2,50	50,39	118	38	12,50	16,0
M24,0	3,00	63,64	130	45	14,00	18,0
M27,0	3,00	85,53	135	45	16,00	20,0
M30,0	3,50	143,69	138	48	16,00	20,0

2266 **HSSE JIS** **M** **DIN13** **Form. B** **"Gun"** **HH1** **HH4** **3XD**

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	16,53	46	11	3,20	4,0
M4,0	0,70	16,90	52	13	4,00	5,0
M5,0	0,80	16,93	60	16	4,50	5,5
M6,0	1,00	18,58	62	19	4,50	6,0
M8,0	1,25	20,49	70	22	5,00	6,2
M10,0	1,50	25,14	75	24	5,50	7,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M12,0	1,75	32,09	82	29	6,50	8,5
M14,0	2,00	42,25	88	30	8,00	10,5
M16,0	2,00	51,91	95	32	10,00	12,5
M18,0	2,50	70,53	100	37	11,00	14,0
M20,0	2,50	76,09	105	37	12,00	15,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2267 **HSSE JIS** **M** **DIN13** **Form. C** **HH1** **HH4** **2,5XD**

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	20,38	46	6	3,20	4,0
M4,0	0,70	20,38	52	9	4,00	5,0
M5,0	0,80	19,70	60	10	4,50	5,5
M6,0	1,00	21,60	62	12	4,50	6,0
M8,0	1,25	25,74	70	15	5,00	6,2
M10,0	1,50	29,94	75	18	5,50	7,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M12,0	1,75	40,00	82	21	6,50	8,5
M14,0	2,00	51,35	88	24	8,00	10,5
M16,0	2,00	62,01	95	24	10,00	12,5
M18,0	2,50	83,37	100	30	11,00	14,0
M20,0	2,50	88,83	105	30	12,00	15,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2268

HSSE JIS

M
DIN13

Form.
B
"Gun"



HH1
HH4

3XD

VAP

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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

MICRO FINISH
 THINNING TECHNOLOGY



Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	18,50	46	11	3,20	4,0
M4,0	0,70	18,93	52	13	4,00	5,0
M5,0	0,80	18,94	60	16	4,50	5,5
M6,0	1,00	20,80	62	19	4,50	6,0
M8,0	1,25	22,94	70	22	5,00	6,2
M10,0	1,50	28,16	75	24	5,50	7,0

Ø	P	€	L mm	I mm	mm	d mm
M12,0	1,75	35,94	82	29	6,50	8,5
M14,0	2,00	47,32	88	30	8,00	10,5
M16,0	2,00	58,14	95	32	10,00	12,5
M18,0	2,50	78,99	100	37	11,00	14,0
M20,0	2,50	85,23	105	37	12,00	15,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2269

HSSE JIS

M
DIN13

Form.
C



HH1
HH4



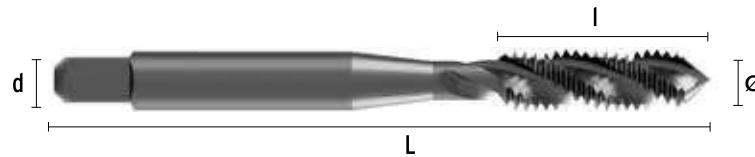
2,5XD

VAP

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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

MICRO FINISH
 THINNING TECHNOLOGY



Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	22,85	46	6	3,20	4,0
M4,0	0,70	22,85	52	9	4,00	5,0
M5,0	0,80	22,06	60	10	4,50	5,5
M6,0	1,00	24,19	62	12	4,50	6,0
M8,0	1,25	28,84	70	15	5,00	6,2
M10,0	1,50	33,56	75	18	5,50	7,0

Ø	P	€	L mm	I mm	mm	d mm
M12,0	1,75	44,80	82	21	6,50	8,5
M14,0	2,00	57,51	88	24	8,00	10,5
M16,0	2,00	69,44	95	24	10,00	12,5
M18,0	2,50	93,38	100	30	11,00	14,0
M20,0	2,50	99,50	105	30	12,00	15,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2270

HSSE JIS

M
DIN13

Form.
B
"Gun"



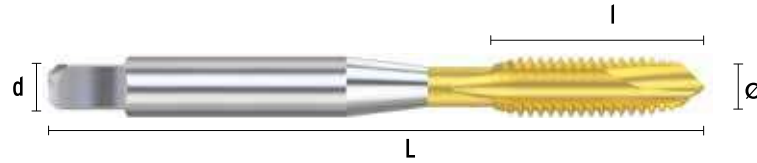
HH1
HH4

3XD

TIN

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
● 10-25	○ 12-18			○ 5-10			○ 15-20		○ 15-20	● 15-25		○ 12-18					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	23,13	46	11	3,20	4,0
M4,0	0,70	24,73	52	13	4,00	5,0
M5,0	0,80	24,74	60	16	4,50	5,5
M6,0	1,00	26,39	62	19	4,50	6,0
M8,0	1,25	30,55	70	22	5,00	6,2
M10,0	1,50	40,06	75	24	5,50	7,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M12,0	1,75	48,52	82	29	6,50	8,5
M14,0	2,00	60,89	88	30	8,00	10,5
M16,0	2,00	72,41	95	32	10,00	12,5
M18,0	2,50	91,04	100	37	11,00	14,0
M20,0	2,50	96,57	105	37	12,00	15,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2271

HSSE JIS

M
DIN13

Form.
C



HH1
HH4

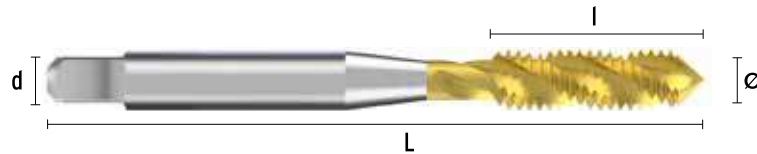


2,5XD

TIN

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
● 10-25	○ 12-18			○ 5-10			○ 15-20		○ 15-20	● 15-25		○ 12-18					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	27,34	46	6	3,20	4,0
M4,0	0,70	28,59	52	9	4,00	5,0
M5,0	0,80	27,91	60	10	4,50	5,5
M6,0	1,00	29,79	62	12	4,50	6,0
M8,0	1,25	36,30	70	15	5,00	6,2
M10,0	1,50	45,57	75	18	5,50	7,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M12,0	1,75	57,22	82	21	6,50	8,5
M14,0	2,00	70,87	88	24	8,00	10,5
M16,0	2,00	83,48	95	24	10,00	12,5
M18,0	2,50	104,85	100	30	11,00	14,0
M20,0	2,50	110,30	105	30	12,00	15,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2148

HSSE DIN 371

UNC
ANSI/ASME
B1.1

Form.
C



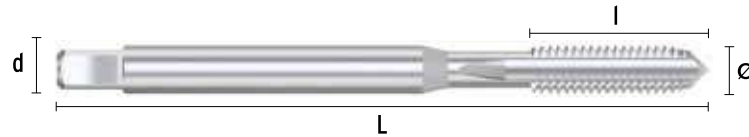
Tol.
2B

1,5XD



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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
Nº4	40,00	32,58	56	11	2,70	3,5
Nº5	40,00	32,58	56	11	2,70	3,5
Nº6	32,00	31,01	56	12	3,00	4,0

Ø	P	€	L mm	I mm	∠ mm	d mm
Nº8	32,00	31,01	63	13	3,40	4,5
Nº10	24,00	32,58	70	14	4,90	6,0
Nº12	24,00	34,17	80	16	4,90	6,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2147

HSSE DIN 376

UNC
ANSI/ASME
B1.1

Form.
C



Tol.
2B

1,5XD



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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
1/4	20,00	28,92	80	18	3,40	4,5
7/16	14,00	51,33	100	22	6,20	8,0
9/16	12,00	76,68	110	30	9,00	11,0
5/8	11,00	74,48	110	30	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
3/4	10,00	98,44	125	35	11,00	14,0
7/8	9,00	129,68	140	36	14,50	18,0
1	8,00	170,31	160	38	16,00	20,0
1 1/4	7,00	263,67	180	45	18,00	22,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2147/5

HSSE DIN 376

Izquierda
a gauche / lefthand

UNC

ANSI/ASME
B1.1

Form.

C



LH



Tol.

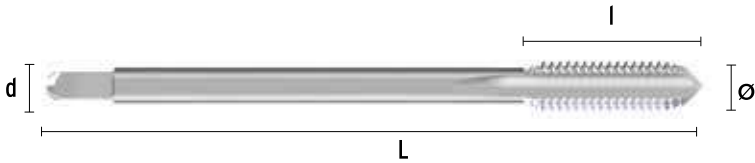
2B

1,5XD

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
● 10-25	○ 10-15						○ 15-20			○ 10-20							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
1/4	20,00	57,82	80	18	3,40	4,5
5/16	18,00	65,43	90	20	4,90	6,0
3/8	16,00	74,68	100	22	5,50	7,0
7/16	14,00	102,65	100	22	6,20	8,0

Ø	P	€	L mm	I mm	∠ mm	d mm
9/16	12,00	153,37	110	30	9,00	11,0
5/8	11,00	148,97	110	30	9,00	12,0
7/8	9,00	259,39	140	36	14,50	18,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2150

HSSE DIN 371

UNC
ANSI/ASME
B1.1

Form.
B
"Gun"



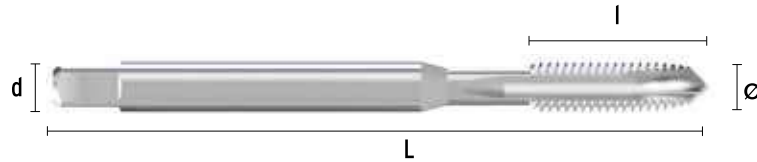
Tol.
2B

3XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
Nº4	40,00	30,12	56	10	2,70	3,5
Nº5	40,00	28,05	56	10	2,70	3,5
Nº6	32,00	28,05	56	12	3,00	4,0
Nº8	32,00	28,05	63	12	3,40	4,5
Nº10	24,00	28,40	70	14	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
Nº12	24,00	30,04	80	18	4,90	6,0
1/4	20,00	30,04	80	18	5,50	7,0
5/16	18,00	32,45	90	20	6,20	8,0
3/8	16,00	38,35	100	20	8,00	10,0

2149

HSSE DIN 376

UNC
ANSI/ASME
B1.1

Form.
B
"Gun"



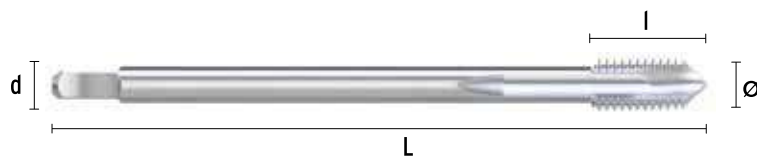
Tol.
2B

3XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
*1/4	20,00	30,04	80	18	3,40	4,5
*5/16	18,00	32,45	90	20	4,90	6,0
7/16	14,00	54,52	100	22	6,20	8,0
1/2	13,00	54,52	110	24	7,00	9,0
9/16	12,00	74,36	110	25	9,00	11,0
5/8	11,00	72,94	110	32	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
3/4	10,00	106,11	125	32	11,00	14,0
7/8	9,00	151,17	140	32	14,50	18,0
1"	8,00	140,10	160	38	16,00	20,0
1*1/8	7,00	233,22	180	40	18,00	22,0
1*1/4	7,00	239,80	180	40	18,00	22,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2262 HSSE DIN 371

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
Nº4	40,00	33,12	56	10	2,70	3,5
Nº5	40,00	30,88	56	10	2,70	3,5
Nº6	32,00	30,88	56	12	3,00	4,0
Nº8	32,00	30,88	63	12	3,40	4,5
Nº10	24,00	31,24	70	14	4,90	6,0

Ø	P	€	L mm	l mm	∠ mm	d mm
Nº12	24,00	33,04	80	18	4,90	6,0
1/4	20,00	33,04	80	18	5,50	7,0
5/16	18,00	35,71	90	20	6,20	8,0
3/8	16,00	42,19	100	20	8,00	10,0

2263 HSSE DIN 376

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	l mm	∠ mm	d mm
7/16	14,00	59,94	100	22	6,20	8,0
1/2	13,00	59,94	110	24	7,00	9,0
9/16	12,00	81,83	110	25	9,00	11,0
5/8	11,00	80,25	110	32	9,00	12,0

Ø	P	€	L mm	l mm	∠ mm	d mm
3/4	10,00	116,74	125	32	11,00	14,0
7/8	9,00	166,30	140	32	14,50	18,0
1"	8,00	154,08	160	38	16,00	20,0

2234

HSSE DIN 371

UNC
 ANSI/ASME
 B1.1

Form. B
 "Gun"



Tol. 2B



3XD

TIN+

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
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-30		○ 12-18					

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

MICRO FINISH
 THREADED TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
N°4	40,00	45,24	56	10	2,70	3,5
N°5	40,00	40,81	56	10	2,70	3,5
N°6	32,00	40,81	56	12	3,00	4,0
N°8	32,00	40,81	63	12	3,40	4,5
N°10	24,00	43,86	70	14	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
N°12	24,00	45,85	80	18	4,90	6,0
1/4	20,00	45,85	80	18	5,50	7,0
5/16	18,00	51,43	90	20	6,20	8,0
3/8	16,00	63,17	100	20	8,00	10,0

2235

HSSE DIN 376

UNC
 ANSI/ASME
 B1.1

Form. B
 "Gun"



Tol. 2B



3XD

TIN+

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
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-30		○ 12-18					

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

MICRO FINISH
 THREADED TECHNOLOGY



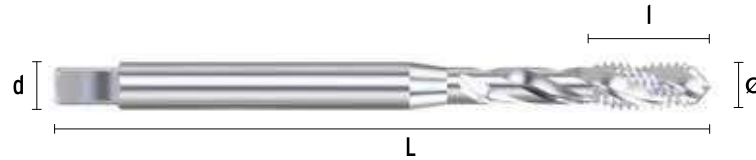
Ø	P	€	L mm	I mm	∠ mm	d mm
7/16	14,00	88,33	100	22	6,20	8,0
1/2	13,00	91,03	110	24	7,00	9,0
9/16	12,00	124,26	110	25	9,00	11,0
5/8	11,00	117,81	110	32	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
3/4	10,00	173,86	125	32	11,00	14,0
7/8	9,00	260,51	140	32	14,50	18,0
1"	8,00	240,43	160	38	16,00	20,0

2152 HSSE DIN 371

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
Nº4	40,00	33,17	56	5	2,70	3,5
Nº5	40,00	30,80	56	7	2,70	3,5
Nº6	32,00	30,80	56	6	3,00	4,0
Nº8	32,00	30,80	63	7	3,40	4,5
Nº10	24,00	31,34	70	8	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
Nº12	24,00	33,11	80	10	4,90	6,0
1/4	20,00	33,11	80	13	5,50	7,0
5/16	18,00	35,75	90	13	6,20	8,0
3/8	16,00	42,22	100	15	8,00	10,0

2151 HSSE DIN 376

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
*1/4	20,00	33,11	80	13	3,40	4,5
*5/16	18,00	35,75	90	13	4,90	6,0
*3/8	16,00	42,22	100	16	5,50	7,0
7/16	14,00	59,88	100	15	6,20	8,0
1/2	13,00	59,88	110	18	7,00	9,0
9/16	12,00	81,77	110	20	9,00	11,0

Ø	P	€	L mm	I mm	∠ mm	d mm
5/8	11,00	80,28	110	22	9,00	12,0
3/4	10,00	116,71	125	25	11,00	14,0
7/8	9,00	166,25	140	30	14,50	18,0
1"	8,00	154,17	160	30	16,00	20,0
1*1/8	7,00	256,54	180	40	18,00	22,0
1*1/4	7,00	263,78	180	40	18,00	22,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2264 **HSSE DIN 371** **UNC** **Form. C** **Tol. 2B** **35°** **R** **2,5XD** **VAP**

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

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

MICRO FINISH
 TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
N°4	40,00	36,49	56	5	2,70	3,5
N°5	40,00	33,90	56	7	2,70	3,5
N°6	32,00	33,90	56	6	3,00	4,0
N°8	32,00	33,90	63	7	3,40	4,5
N°10	24,00	34,51	70	8	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
N°12	24,00	36,39	80	10	4,90	6,0
1/4	20,00	36,39	80	13	5,50	7,0
5/16	18,00	39,34	90	13	6,20	8,0
3/8	16,00	46,41	100	15	8,00	10,0

2265 **HSSE DIN 376** **UNC** **Form. C** **Tol. 2B** **35°** **D** **2,5XD** **VAP**

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

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

MICRO FINISH
 TECHNOLOGY



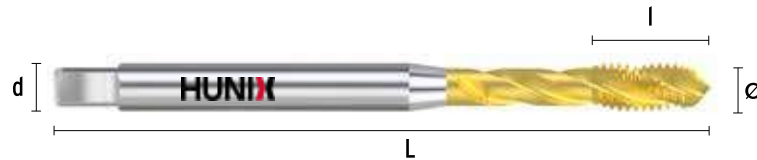
Ø	P	€	L mm	I mm	∠ mm	d mm
7/16	14,00	65,87	100	15	6,20	8,0
1/2	13,00	65,87	110	18	7,00	9,0
9/16	12,00	89,90	110	20	9,00	11,0
5/8	11,00	88,34	110	22	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
3/4	10,00	128,35	125	25	11,00	14,0
7/8	9,00	182,90	140	30	14,50	18,0
1"	8,00	169,54	160	30	16,00	20,0

2236 HSS DIN 371

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
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 10-20			● 15-25		○ 12-18					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
Nº4	40,00	45,24	56	5	2,70	3,5
Nº5	40,00	45,24	56	7	2,70	3,5
Nº6	32,00	44,36	56	6	3,00	4,0
Nº8	32,00	44,36	63	7	3,40	4,5
Nº10	24,00	47,52	70	8	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
Nº12	24,00	49,76	80	10	4,90	6,0
1/4	20,00	49,76	80	13	5,50	7,0
5/16	18,00	55,52	90	13	6,20	8,0
3/8	16,00	68,13	100	15	8,00	10,0

2237 HSS DIN 376

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
● 10-25	● 12-18	○ 8-12		● 6-12	○ 6-10		● 10-20			● 15-25		○ 12-18					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
7/16	14,00	95,28	100	15	6,20	8,0
1/2	13,00	98,07	110	18	7,00	9,0
9/16	12,00	134,27	110	20	9,00	11,0
5/8	11,00	127,05	110	22	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
3/4	10,00	187,51	125	25	11,00	14,0
7/8	9,00	280,87	140	30	14,50	18,0
1"	8,00	258,35	160	30	16,00	20,0

2154

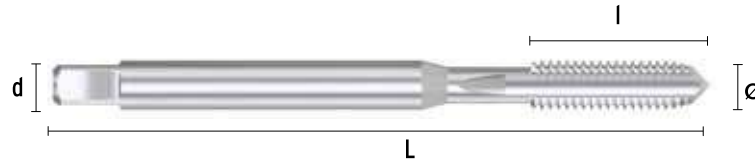
HSSE DIN 371

UNF
ANSI/ASME
B1.1
Form.
C

Tol.
2B
1,5XD


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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	mm	d mm
Nº4	48,00	35,70	56	11	2,70	3,5
Nº5	44,00	35,70	56	11	2,70	3,5
Nº6	40,00	34,21	56	12	3,00	4,0

Ø	P	€	L mm	I mm	mm	d mm
Nº8	36,00	34,21	63	13	3,40	4,5
Nº12	28,00	35,70	80	16	4,90	6,0
1/4	28,00	27,46	80	16	5,50	7,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2153/5

HSSE DIN 374

izquierda
a gauche / lefthand
UNF
ANSI/ASME
B1.1
Form.
C

LH
Tol.
2B
1,5XD


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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	mm	d mm
1/4	28,00	54,88	80	18	3,40	4,5
3/8	24,00	72,85	90	20	5,50	7,0
7/16	20,00	93,34	100	22	6,20	8,0
1/2	20,00	99,35	100	22	7,00	9,0

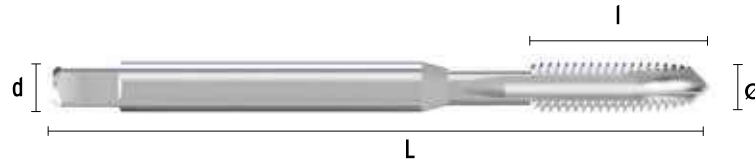
Ø	P	€	L mm	I mm	mm	d mm
9/16	18,00	121,99	100	22	9,00	11,0
3/4	16,00	175,80	110	25	11,00	14,0
7/8	14,00	221,17	125	25	14,50	18,0
1"	12,00	289,92	140	27	16,00	20,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2156 HSSE DIN 371

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



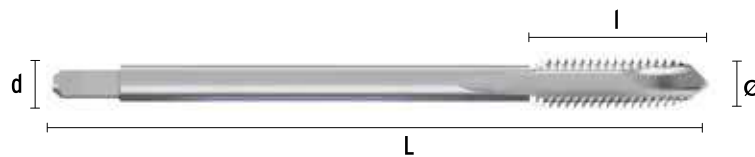
Ø	P	€	L mm	I mm	∠ mm	d mm
Nº4	48,00	31,75	56	11	2,70	3,5
Nº5	44,00	31,75	56	11	2,70	3,5
Nº6	40,00	31,97	56	12	3,00	4,0
Nº8	36,00	32,24	63	12	3,40	4,5
Nº10	32,00	32,80	70	14	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
Nº12	28,00	34,43	80	18	4,90	6,0
1/4	28,00	36,04	80	18	5,50	7,0
5/16	24,00	37,36	90	20	6,20	8,0
3/8	24,00	44,29	90	20	8,00	10,0

2155 HSSE DIN 374

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
*1/4	28,00	36,04	80	19	3,40	4,5
*5/16	24,00	37,36	90	22	4,90	6,0
*3/8	24,00	44,29	90	20	5,50	7,0
7/16	20,00	62,63	100	20	6,20	8,0
1/2	20,00	62,63	100	20	7,00	9,0

Ø	P	€	L mm	I mm	∠ mm	d mm
9/16	18,00	85,42	100	20	9,00	11,0
5/8	18,00	83,88	100	20	9,00	12,0
3/4	16,00	122,07	110	24	11,00	14,0
7/8	14,00	173,86	125	24	14,50	18,0
1"	12,00	161,23	140	27	14,50	18,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2276 **HSSE DIN 371** **UNF** **Form. B "Gun"** **Tol. 2B** **3XD** **R** **VAP**

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

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

MICRO FINISH
 TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
Nº4	48,00	34,93	56	11	2,70	3,5
Nº5	44,00	34,91	56	11	2,70	3,5
Nº6	40,00	35,19	56	12	3,00	4,0
Nº8	36,00	35,49	63	12	3,40	4,5
Nº10	32,00	36,07	70	14	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
Nº12	28,00	37,88	80	18	4,90	6,0
1/4	28,00	39,64	80	18	5,50	7,0
5/16	24,00	41,10	90	20	6,20	8,0
3/8	24,00	48,70	90	20	8,00	10,0

2277 **HSSE DIN 374** **UNF** **Form. B "Gun"** **Tol. 2B** **3XD** **D** **VAP**

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15		○ 10-15	● 10-20		○ 10-15					

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

MICRO FINISH
 TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
7/16	20,00	68,90	100	20	6,20	8,0
1/2	20,00	68,90	100	20	7,00	9,0
9/16	18,00	93,95	100	20	9,00	11,0
5/8	18,00	92,27	100	20	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
3/4	16,00	134,28	110	24	11,00	14,0
7/8	14,00	191,25	125	24	14,50	18,0
1"	12,00	177,35	140	27	14,50	18,0

2280

HSSE DIN 371

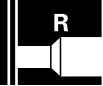
UNF
ANSI/ASME
B1.1

Form.
B
"Gun"



Tol.
2B

3XD



TIN+

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
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
Nº4	48,00	51,56	56	11	2,70	3,5
Nº5	44,00	46,52	56	11	2,70	3,5
Nº6	40,00	46,52	56	12	3,00	4,0
Nº8	36,00	46,52	63	12	3,40	4,5
Nº10	32,00	49,60	70	14	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
Nº12	28,00	51,87	80	18	4,90	6,0
1/4	28,00	51,87	80	18	5,50	7,0
5/16	24,00	58,73	90	20	6,20	8,0
3/8	24,00	73,11	90	20	8,00	10,0

2281

HSSE DIN 374

UNF
ANSI/ASME
B1.1

Form.
B
"Gun"



Tol.
2B

3XD



TIN+

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
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

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



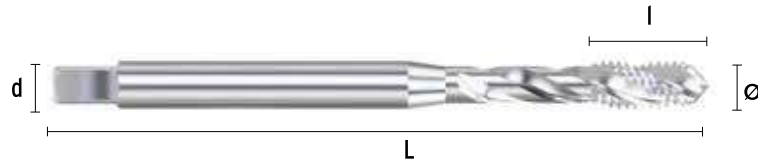
Ø	P	€	L mm	I mm	∠ mm	d mm
7/16	20,00	99,73	100	20	6,20	8,0
1/2	20,00	104,76	100	20	7,00	9,0
9/16	18,00	142,88	100	20	9,00	11,0
5/8	18,00	135,39	100	20	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
3/4	16,00	200,13	110	24	11,00	14,0
7/8	14,00	293,92	125	24	14,50	18,0
1"	12,00	276,00	140	27	14,50	18,0

2158 HSS DIN 371

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
Nº4	48,00	34,94	56	5	2,70	3,5
Nº5	44,00	34,94	56	5	2,70	3,5
Nº6	40,00	35,39	56	6	3,00	4,0
Nº8	36,00	35,60	63	7	3,40	4,5
Nº10	32,00	36,04	70	8	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
Nº12	28,00	37,91	80	10	4,90	6,0
1/4	28,00	39,71	80	10	5,50	7,0
5/16	24,00	41,14	90	13	6,20	8,0
3/8	24,00	48,76	90	15	8,00	10,0

2157 HSS DIN 374

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
*1/4	28,00	39,71	80	13	3,40	4,5
*5/16	24,00	41,14	90	13	4,90	6,0
*3/8	24,00	48,76	90	16	5,50	7,0
7/16	20,00	68,94	100	15	6,20	8,0
1/2	20,00	68,94	100	15	7,00	9,0

Ø	P	€	L mm	I mm	∠ mm	d mm
9/16	18,00	94,19	100	15	9,00	11,0
5/8	18,00	92,33	100	15	9,00	12,0
3/4	16,00	134,27	110	17	11,00	14,0
7/8	14,00	191,32	125	17	14,50	18,0
1"	12,00	177,27	140	20	14,50	18,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2278 **HSSE DIN 371** **UNF** **Form. C** **Tol. 2B** **35°** **2,5XD** **R** **VAP**

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
N°4	48,00	38,43	56	5	2,70	3,5
N°5	44,00	38,43	56	5	2,70	3,5
N°6	40,00	38,92	56	6	3,00	4,0
N°8	36,00	39,15	63	7	3,40	4,5
N°10	32,00	39,64	70	8	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
N°12	28,00	41,70	80	10	4,90	6,0
1/4	28,00	43,67	80	10	5,50	7,0
5/16	24,00	45,25	90	13	6,20	8,0
3/8	24,00	53,65	90	15	8,00	10,0

2279 **HSSE DIN 374** **UNF** **Form. C** **Tol. 2B** **35°** **2,5XD** **D** **VAP**

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
7/16	20,00	75,83	100	20	6,20	8,0
1/2	20,00	75,83	100	20	7,00	9,0
9/16	18,00	103,61	100	20	9,00	11,0
5/8	18,00	101,56	100	20	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
3/4	16,00	147,68	110	24	11,00	14,0
7/8	14,00	210,46	125	24	14,50	18,0
1"	12,00	195,00	140	20	14,50	18,0

2282

HSSE DIN 371

UNF
ANSI/ASME
B1.1

Form.
C



Tol.
2B



2,5XD



TIN+

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
● 10-25	○ 12-18	○ 8-12		● 6-12	○ 6-10		● 15-20			● 15-25		○ 12-18					

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

MICRO FINISH
 THREADING TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
N°4	48,00	56,86	56	5	2,70	3,5
N°5	44,00	51,12	56	5	2,70	3,5
N°6	40,00	51,12	56	6	3,00	4,0
N°8	36,00	51,12	63	7	3,40	4,5
N°10	32,00	53,78	70	8	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
N°12	28,00	56,22	80	10	4,90	6,0
1/4	28,00	56,22	80	10	5,50	7,0
5/16	24,00	63,51	90	13	6,20	8,0
3/8	24,00	78,32	90	15	8,00	10,0

2283

HSSE DIN 374

UNF
ANSI/ASME
B1.1

Form.
C



Tol.
2B



2,5XD



TIN+

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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

MICRO FINISH
 THREADING TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
7/16	20,00	107,65	100	15	6,20	8,0
1/2	20,00	112,77	100	15	7,00	9,0
9/16	18,00	154,44	100	15	9,00	11,0
5/8	18,00	144,69	100	15	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
3/4	16,00	215,62	110	17	11,00	14,0
7/8	14,00	317,25	125	17	14,50	18,0
1"	12,00	295,77	140	20	14,50	18,0

2189

HSSE DIN 374

UN

ANSI/ASME B1.1

Form.

C



Tol.

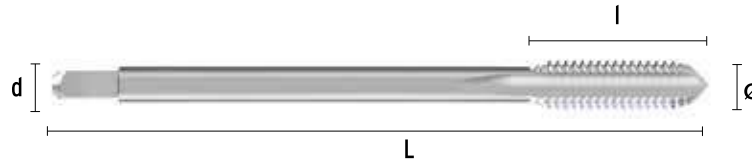
2B

1,5XD

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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

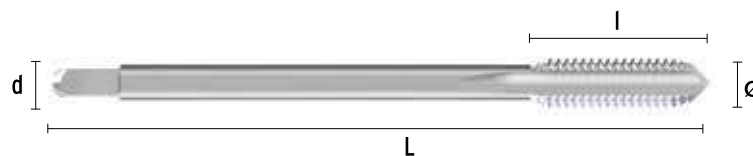
Vc (m/min).
● Optima / Optimun
○ Alternativo / Alternative



Ø	P	€	L mm	I mm	∠ mm	d mm
1"1/8	8,00	568,95	180	45	18,00	22,0
1"1/4	8,00	734,04	180	45	18,00	22,0
1"3/8	8,00	611,46	200	56	22,00	28,0
1"1/2	8,00	700,08	200	60	24,00	32,0

Ø	P	€	L mm	I mm	∠ mm	d mm
1"5/8	8,00	712,69	200	60	24,00	32,0
1"3/4	8,00	893,44	200	50	29,00	36,0
2"	8,00	1.452,28	225	50	32,00	40,0

2160	HSSE DIN 374								UNEF ANSI/ASME B1.1		Form. C			Tol. 2B		1,5XD		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	
	● 10-25	○ 10-15						○ 10-15				○ 10-20							
Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative																			



Ø	P	€	L mm	I mm	∠ mm	d mm
1/4	32,00	117,07	80	18	3,40	4,5
7/16	28,00	198,96	90	22	6,20	8,0
9/16	24,00	255,71	100	22	9,00	11,0

Ø	P	€	L mm	I mm	∠ mm	d mm
3/4	20,00	394,06	110	25	11,00	14,0
1"	20,00	645,70	140	28	14,50	18,0

2136

HSSE DIN 371

BSW
BS 84

Form.
C

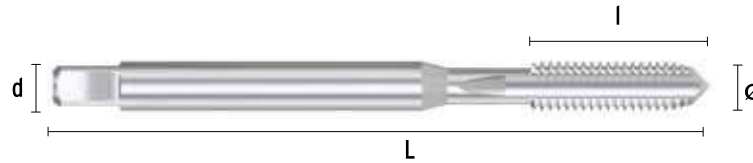


1,5XD



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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
3/32	48,00	27,51	50	10	2,10	2,8
1/8	40,00	22,99	56	11	2,70	3,5
5/32	32,00	22,99	63	13	3,40	4,5

Ø	P	€	L mm	I mm	∠ mm	d mm
3/16	24,00	22,99	70	16	4,90	6,0
7/32	24,00	34,94	80	16	4,90	6,0

*Hasta fin de existencias / Jusqu'à epuiseiment des stocks / Until end of stock

2135

HSSE DIN 376

BSW
BS 84

Form.
C

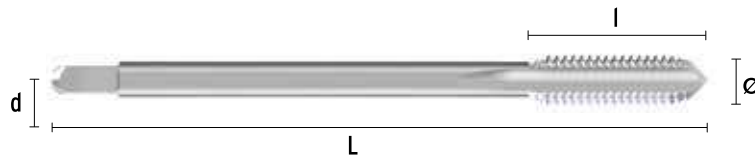


1,5XD



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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
1/8	40,00	22,99	56	11	2,10	2,8
5/32	32,00	22,99	63	13	2,10	2,8
3/16	24,00	22,99	70	16	2,70	3,5
7/32	24,00	34,94	80	18	3,40	4,5
1/4	20,00	25,05	80	18	3,40	4,5
5/16	18,00	30,75	90	20	4,90	6,0
7/16	14,00	44,83	100	22	6,20	8,0
9/16	12,00	61,66	110	30	9,00	11,0

Ø	P	€	L mm	I mm	∠ mm	d mm
1"3/8	6,00	420,72	200	55	22,00	28,0
1"1/2	6,00	456,71	200	55	24,00	32,0
1"5/8	5,00	666,38	220	60	24,00	32,0
1"3/4	5,00	718,91	220	62	29,00	36,0
1"7/8	4,50	797,02	250	70	29,00	36,0
2"	4,50	1.028,90	250	70	32,00	40,0
2"1/4	4,00	1.121,35	280	78	35,00	45,0
2"1/2	4,00	1.295,31	315	90	39,00	50,0

*Hasta fin de existencias / Jusqu'à epuiseiment des stocks / Until end of stock



Acero
Aciers
Steels
Stähle



Acero Inox
Aciers Inox
Stainless Steels
Edelstahl



Fundición
Fonte
Cast Iron
Gusseisen



Metales no ferrosos
Métal non Ferreux
Non Ferrous metals
NE-Metalle



Titanio y Superalloys
Titanium et Superalloys
Titanium and Superalloys
Titan und Superlegierungen



Materiales Duros
Materiels Durs
Hard materials
Hartmaterialien

2136/5 **HSSE DIN 371** Izquierda
 a gauche / lefthand **BSW**
 BS 84 **Form.**
C **LH** **1,5XD** **R**

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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	mm	d mm
1/8	40,00	45,99	56	11	2,70	3,5
5/32	32,00	45,99	63	13	3,40	4,5

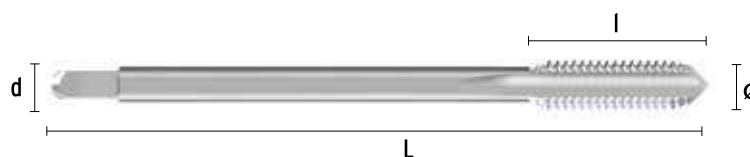
Ø	P	€	L mm	I mm	mm	d mm
3/16	24,00	45,99	70	14	4,90	6,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2135/5 **HSSE DIN 376** Izquierda
 a gauche / lefthand **BSW**
 BS 84 **Form.**
C **LH** **1,5XD** **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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	mm	d mm
1/4	20,00	50,12	80	18	3,40	4,5
5/16	18,00	61,50	90	20	4,90	6,0
3/8	16,00	67,95	100	22	5,50	7,0
1/2	12,00	85,94	110	27	7,00	9,0

Ø	P	€	L mm	I mm	mm	d mm
9/16	12,00	123,29	110	30	9,00	11,0
5/8	11,00	116,66	110	30	9,00	12,0
7/8	9,00	211,37	140	36	14,50	18,0
1"	8,00	265,80	160	38	14,50	18,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2138

HSSE DIN 371

BSW
BS 84

Form.
B
"Gun"

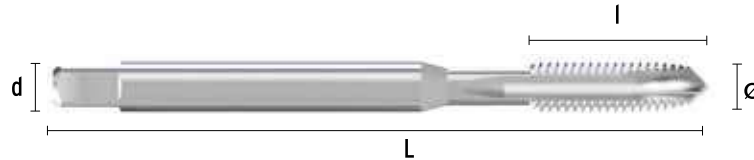


3XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
1/8	40,00	25,40	56	11	2,70	3,5
*5/32	32,00	25,40	63	13	3,40	4,5
3/16	24,00	25,40	70	15	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
1/4	20,00	28,84	80	18	5,50	7,0
5/16	18,00	39,00	90	20	6,20	8,0
3/8	16,00	37,33	100	20	8,00	10,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2137

HSSE DIN 376

BSW
BS 84

Form.
B
"Gun"

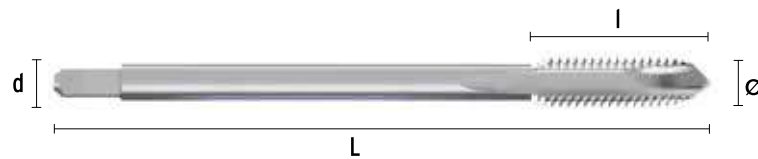


3XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
*1/4	20,00	28,84	80	17	3,40	4,5
7/16	14,00	39,00	100	22	6,20	8,0
1/2	12,00	37,33	110	27	7,00	9,0
9/16	12,00	67,78	110	30	9,00	11,0

Ø	P	€	L mm	I mm	∠ mm	d mm
5/8	11,00	64,05	110	30	9,00	12,0
3/4	10,00	85,92	125	35	11,00	14,0
7/8	9,00	116,20	140	36	14,50	18,0
1"	8,00	146,11	160	38	14,50	18,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2140 HSSE DIN 371

BSW
BS 84

Form.
C



2,5XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
1/8	40,00	28,84	56	7	2,70	3,5
*5/32	32,00	28,84	63	7	3,40	4,5
3/16	24,00	28,84	70	10	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
1/4	20,00	39,09	80	13	5,50	7,0
5/16	18,00	47,94	90	14	6,20	8,0
3/8	16,00	50,60	100	20	8,00	10,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2139 HSSE DIN 376

BSW
BS 84

Form.
C



2,5XD



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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
*3/16	24,00	28,84	70	14	2,70	3,5
*1/4	20,00	39,09	80	16	3,40	4,5
7/16	14,00	57,46	100	15	6,20	8,0
1/2	12,00	55,08	110	18	7,00	9,0
9/16	12,00	78,96	110	22	9,00	11,0

Ø	P	€	L mm	I mm	∠ mm	d mm
5/8	11,00	74,71	110	22	9,00	12,0
3/4	10,00	100,01	125	25	11,00	14,0
7/8	9,00	135,38	140	30	14,50	18,0
1"	8,00	169,94	160	30	16,00	20,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2141

HSSE DIN 371

BSF
BS 84

Form.
C



1,5XD



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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
3/16	32,00	98,67	70	14	4,90	6,0
1/4	26,00	42,01	80	18	3,40	4,5

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2142

HSSE DIN 374

BSF
BS 84

Form.
C



1,5XD



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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
7/16	18,00	70,74	100	20	6,20	8,0
9/16	16,00	84,70	110	23	9,00	11,0
5/8	14,00	112,88	110	28	9,00	12,0

Ø	P	€	L mm	I mm	∠ mm	d mm
7/8	11,00	185,79	140	34	14,50	18,0
1"	10,00	221,84	140	28	16,00	20,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2144 **HSSE DIN 5156** **G** **Form. C** **1,5XD** **D**
ISO 228

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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	mm	d mm
1/8	28,00	38,84	90	20	5,50	7,0
1/4	19,00	55,36	100	22	9,00	11,0
3/8	19,00	66,25	100	22	9,00	12,0
1/2	14,00	83,73	125	25	12,00	16,0
5/8	14,00	104,37	125	25	14,50	18,0
3/4	14,00	131,09	140	28	16,00	20,0
7/8	14,00	176,22	150	30	18,00	22,0

Ø	P	€	L mm	I mm	mm	d mm
1"	11,00	203,41	160	32	20,00	25,0
1"1/8	11,00	309,14	170	34	22,00	28,0
1"1/4	11,00	362,71	170	34	24,00	32,0
1"3/8	11,00	453,65	180	32	29,00	36,0
1"1/2	11,00	575,71	190	36	29,00	36,0
1"3/4	11,00	684,24	190	36	32,00	40,0
2"	11,00	871,93	220	40	35,00	45,0

2144/5 **HSSE DIN 5156** **G** **Form. C** **LH** **1,5XD** **D**
ISO 228 Izquierda a gauche / lefthand

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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



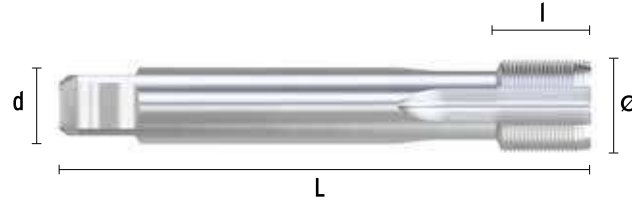
Ø	P	€	L mm	I mm	mm	d mm
1/8	28,00	77,69	90	20	5,50	7,0
1/4	19,00	110,76	100	22	9,00	11,0
3/8	19,00	132,48	100	22	9,00	12,0
1/2	14,00	167,44	125	25	12,00	16,0

Ø	P	€	L mm	I mm	mm	d mm
5/8	14,00	208,75	125	25	14,50	18,0
3/4	14,00	262,19	140	28	16,00	20,0
1"	11,00	406,82	160	32	20,00	25,0

2192 **HSSE DIN 5156** **G** **ISO 228** **Form. E** **1,5XD** **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
										25-35							

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



Ø	P	€	L mm	I mm	∅ mm	d mm
1/8	28,00	47,11	90	20	5,50	7,0
1/4	19,00	72,34	100	22	9,00	11,0
3/8	19,00	99,89	100	22	9,00	12,0
1/2	14,00	134,79	125	25	12,00	16,0

Ø	P	€	L mm	I mm	∅ mm	d mm
5/8	14,00	140,82	125	25	14,50	18,0
3/4	14,00	197,81	140	28	16,00	20,0
7/8	14,00	241,78	150	28	18,00	22,0
1"	11,00	301,74	160	30	20,00	25,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2206 **HSSE DIN 5156** **+0,1** **G** **ISO 228** **Form. E** **1,5XD** **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
										25-35							

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



Ø	P	€	L mm	I mm	∅ mm	d mm
3/8	19,00	119,88	100	22	9,00	12,0
1/2	14,00	163,65	125	25	12,00	16,0
5/8	14,00	171,15	125	25	14,50	18,0

Ø	P	€	L mm	I mm	∅ mm	d mm
3/4	14,00	237,38	140	28	16,00	20,0
7/8	14,00	280,46	150	28	18,00	22,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

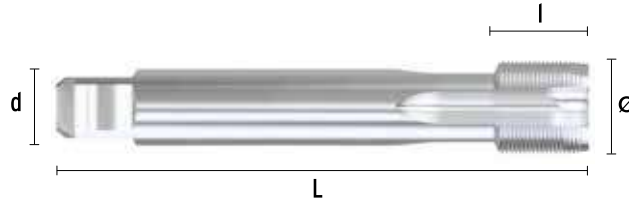
2145

HSSE DIN 5156

G
ISO 228
 Form. B
"Gun"
 3XD
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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	mm	d mm
1/8	28,00	44,89	90	20	5,50	7,0
1/4	19,00	80,58	100	22	9,00	11,0
3/8	19,00	79,49	100	22	9,00	12,0
1/2	14,00	106,12	125	25	12,00	16,0
5/8	14,00	164,90	125	25	14,50	18,0
3/4	14,00	187,59	140	28	16,00	20,0

Ø	P	€	L mm	I mm	mm	d mm
7/8	14,00	239,72	150	30	18,00	22,0
1"	11,00	352,94	160	32	20,00	25,0
1*1/8	11,00	527,49	170	30	22,00	28,0
1*1/4	11,00	525,02	170	30	24,00	32,0
1*3/8	11,00	537,53	190	32	29,00	36,0
1*1/2	11,00	558,90	190	32	29,00	36,0

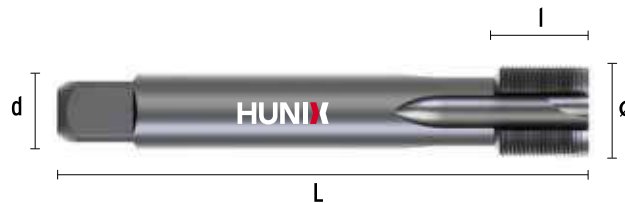
2284

HSSE DIN 5156

G
ISO 228
 Form. B
"Gun"
 3XD
D
VAP

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



MICRO FINISH
THROUGH THE TECHNOLOGY

Ø	P	€	L mm	I mm	mm	d mm
1/8	28,00	49,37	90	20	5,50	7,0
1/4	19,00	88,64	100	22	9,00	11,0
3/8	19,00	87,44	100	22	9,00	12,0
1/2	14,00	116,74	125	25	12,00	16,0

Ø	P	€	L mm	I mm	mm	d mm
5/8	14,00	181,39	125	25	14,50	18,0
3/4	14,00	206,35	140	28	16,00	20,0
7/8	14,00	263,70	150	30	18,00	22,0
1"	11,00	388,23	160	32	20,00	25,0

2286

HSSE DIN 5156

G
ISO 228

Form.
B
"Gun"



3XD

D

TIN+

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
● 15-30	● 12-18	○ 8-12		● 6-12	○ 6-10	● 10-15	● 15-20		● 15-25	● 15-25		○ 12-18					

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

MICRO FINISH
THE NEW TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
1/8	28,00	75,97	90	20	5,50	7,0
1/4	19,00	124,17	100	22	9,00	11,0
3/8	19,00	139,73	100	22	9,00	12,0
1/2	14,00	177,51	125	25	12,00	16,0

Ø	P	€	L mm	I mm	∠ mm	d mm
5/8	14,00	268,44	125	25	14,50	18,0
3/4	14,00	301,15	140	28	16,00	20,0
7/8	14,00	395,65	150	30	18,00	22,0
1"	11,00	539,91	160	32	20,00	25,0

2146

HSSE DIN 5156

G
ISO 228

Form.
C



2,5XD

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
● 10-25	○ 10-15			○ 5-10			○ 10-15		○ 10-15	● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	∠ mm	d mm
1/8	28,00	49,21	90	10	5,50	7,0
1/4	19,00	88,65	100	14	9,00	11,0
3/8	19,00	87,56	100	15	9,00	12,0
1/2	14,00	116,68	125	17	12,00	16,0
5/8	14,00	181,39	125	20	14,50	18,0
3/4	14,00	206,33	140	20	16,00	20,0

Ø	P	€	L mm	I mm	∠ mm	d mm
7/8	14,00	263,85	150	22	18,00	22,0
1"	11,00	388,15	160	24	20,00	25,0
1" 1/8	11,00	580,26	170	24	22,00	28,0
1" 1/4	11,00	577,51	170	25	24,00	32,0
1" 3/8	11,00	591,27	190	32	29,00	36,0
1" 1/2	11,00	614,79	190	32	29,00	36,0

2285 **HSSE DIN 5156** **G** **Form- C** **2,5XD** **D** **VAP**

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
● 10-25	○ 10-15			● 5-10	○ 5-8		○ 10-15			● 10-20		○ 10-15					

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



Ø	P	€	L mm	I mm	mm	d mm
1/8	28,00	54,13	90	10	5,50	7,0
1/4	19,00	97,50	100	14	9,00	11,0
3/8	19,00	96,33	100	15	9,00	12,0
1/2	14,00	128,35	125	17	12,00	16,0

Ø	P	€	L mm	I mm	mm	d mm
5/8	14,00	199,53	125	20	14,50	18,0
3/4	14,00	226,94	140	20	16,00	20,0
7/8	14,00	290,22	150	22	18,00	22,0
1"	11,00	426,97	160	24	20,00	25,0

2287 **HSSE DIN 5156** **G** **Form- C** **2,5XD** **D** **TIN+**

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
● 10-25	● 12-18			● 6-12	○ 6-10		○ 15-20			● 15-25		○ 12-18					

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



Ø	P	€	L mm	I mm	mm	d mm
1/8	28,00	81,80	90	10	5,50	7,0
1/4	19,00	134,52	100	14	9,00	11,0
3/8	19,00	153,75	100	15	9,00	12,0
1/2	14,00	191,16	125	17	12,00	16,0

Ø	P	€	L mm	I mm	mm	d mm
5/8	14,00	289,58	125	20	14,50	18,0
3/4	14,00	321,34	140	20	16,00	20,0
7/8	14,00	426,18	150	22	18,00	22,0
1"	11,00	584,90	160	24	20,00	25,0

2159 **HSSE DIN 5156**

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
● 7-15	○ 7-10						○ 7-10			○ 7-15							

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



Ø	P	€	L mm	I mm	mm	d mm
1/8	28,00	65,44	90	18	5,50	7,0
1/4	19,00	94,75	100	22	9,00	11,0
3/8	19,00	130,67	100	22	9,00	12,0
1/2	14,00	182,13	125	25	12,00	16,0

Ø	P	€	L mm	I mm	mm	d mm
3/4	14,00	282,30	140	28	16,00	20,0
*7/8	14,00	487,38	150	28	18,00	22,0
1"	11,00	405,82	160	33	20,00	25,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2164 **HSSE DIN 374**

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
● 7-15	○ 7-10						○ 7-10			○ 7-15							

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



Ø	P	€	L mm	I mm	mm	d mm
1/16	27,00	82,05	90	15	4,90	6,0
1/8	27,00	64,60	90	15	5,50	7,0
1/4	18,00	88,74	100	20	9,00	11,0
3/8	18,00	114,64	110	22	11,00	14,0
1/2	14,00	152,81	140	27	14,50	18,0

Ø	P	€	L mm	I mm	mm	d mm
3/4	14,00	237,14	140	28	16,00	20,0
1"	11,50	507,88	160	35	20,00	25,0
*1"1/4	11,50	524,37	190	35	24,00	32,0
*1"1/2	11,50	885,28	200	35	29,00	36,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2212 **HSSE** **Tr** **DIN 103** **Tol.** **7H**

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
● 2-8	○ 1-5									● 2-6							

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



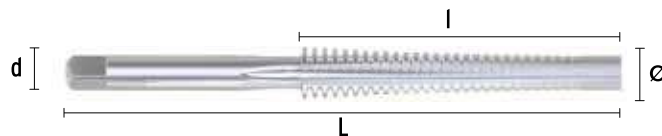
Ø	P	€	L mm	I mm	mm	d mm
10	2,00	509,06	110	63	5,50	7,0
10	3,00	509,06	125	75	5,50	7,0
12	3,00	595,47	165	111	6,20	8,0
14	3,00	610,48	140	85	8,00	10,0
14	4,00	659,23	170	112	8,00	10,0
16	4,00	659,23	180	116	9,00	11,0
18	4,00	706,57	190	120	9,00	12,0

Ø	P	€	L mm	I mm	mm	d mm
20	4,00	769,26	200	124	11,00	14,0
22	5,00	769,26	235	155	12,00	16,0
24	5,00	832,19	245	160	14,50	18,0
26	5,00	863,67	255	165	16,00	20,0
28	5,00	942,08	265	170	18,00	22,0
30	6,00	1.020,77	290	185	18,00	22,0
32	6,00	1.003,09	300	191	20,00	25,0

2212/5 **HSSE** **Izquierda** **a gauche / lefthand** **Tr** **DIN 103** **Tol.** **7H** **LH**

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
● 2-8	○ 1-5									● 2-6							

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



Ø	P	€	L mm	I mm	mm	d mm
10	2,00	636,25	110	63	5,50	7,0
10	3,00	636,25	125	75	5,50	7,0
12	3,00	744,32	165	111	6,20	8,0
14	3,00	763,08	140	85	8,00	10,0
14	4,00	824,09	170	112	8,00	10,0
16	4,00	824,09	180	116	9,00	11,0
18	4,00	883,14	190	120	9,00	12,0

Ø	P	€	L mm	I mm	mm	d mm
20	4,00	961,57	200	124	11,00	14,0
22	5,00	961,57	235	155	12,00	16,0
24	5,00	1.040,25	245	160	14,50	18,0
26	5,00	1.079,61	255	165	16,00	20,0
28	5,00	1.177,50	265	170	18,00	22,0
30	6,00	1.276,00	290	185	18,00	22,0
32	6,00	1.253,86	300	191	20,00	25,0

2163

HSSE DIN 40433

PG
DIN 40430

Form.
C



1,5XD

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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Pg	Ø	P	€	L mm	I mm	mm	d mm	Pg	Ø	P	€	L mm	I mm	mm	d mm
7,0	12,5	20,00	60,20	100	22	7,00	9,0	21,0	28,3	16,00	227,37	150	28	18,00	22,0
9,0	15,2	18,00	83,29	100	22	9,00	11,0	29,0	37,0	16,00	384,38	170	30	22,00	28,0
11,0	18,6	18,00	108,39	110	25	11,00	14,0	36,0	47,0	16,00	674,40	190	32	29,00	36,0
13,5	20,4	18,00	121,66	125	25	12,00	16,0	42,0	54,0	16,00	1.098,02	190	32	32,00	40,0
16,0	22,5	18,00	143,22	125	25	14,50	18,0	48,0	59,3	16,00	1.338,63	220	40	35,00	45,0

2242

HSSE DIN 371

Vg
DIN 7756

Form.
C



1,5XD

R

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
● 10-25	○ 10-15						○ 10-15			○ 10-20							

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



Ø	P	€	L mm	I mm	mm	d mm	Ø	P	€	L mm	I mm	mm	d mm
5,0	36,00	125,65	70	12	4,90	6,0	6,0	32,00	143,06	80	14	5,50	7,0
5,2	24,00	125,65	80	17	4,90	6,0	8,0	32,00	159,17	80	16	6,20	8,0

2188 **HSSE-PM DIN 371** $A > 12\%$ **M** **DIN 13** **Form. C** **Tol. 6HX** **1,5XD** **R** **TIN+**

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
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

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

MICRO FINISH
 TOOLING TECHNOLOGY



Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	41,02	56	10	2,70	3,5
M4,0	0,70	41,02	63	7	3,40	4,5
M5,0	0,80	43,13	70	8	4,90	6,0

Ø	P	€	L mm	I mm	mm	d mm
M6,0	1,00	45,97	80	10	4,90	6,0
M8,0	1,25	54,92	90	13	6,20	8,0
M10,0	1,50	66,97	100	15	8,00	10,0

2187 **HSSE-PM DIN 376** $A > 12\%$ **M** **DIN 13** **Form. C** **Tol. 6HX** **1,5XD** **D** **TIN+**

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
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

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

MICRO FINISH
 TOOLING TECHNOLOGY



Ø	P	€	L mm	I mm	mm	d mm
M12,0	1,75	86,59	110	18	7,00	9,0
M14,0	2,00	116,78	110	20	9,00	11,0

Ø	P	€	L mm	I mm	mm	d mm
M16,0	2,00	140,14	110	20	9,00	12,0

2214

HSSE-PM DIN 371

A>12%	M DIN 13	Form. C				Tol. 6HX	3XD	R	TIN+					
M				K			N			S		H		
<800	<1.200	<500	<800	<1.400	Al ● 15-40	Cu ● 15-30	Mg/Zn ● 20-40	Plastic	Ni	Ti ○ 10-20	50 HRC	55 HRC	60 HRC	

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

MICRO FINISH
 THE NEW TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	41,02	56	10	2,70	3,5
M4,0	0,70	41,02	63	7	3,40	4,5
M5,0	0,80	43,13	70	8	4,90	6,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M6,0	1,00	45,97	80	10	4,90	6,0
M8,0	1,25	54,92	90	13	6,20	8,0
M10,0	1,50	66,97	100	15	8,00	10,0

2213

HSSE-PM DIN 376/374

A>12%		M-MF DIN13		Form. C								Tol. 6HX		3XD					
K				N								S		H					
200	<500		<800	<1.400		Al		Cu		Mg/Zn		Plastic		Ni	Ti		50 HRC	55 HRC	60 HRC
						● 15-40		● 15-30		● 20-40					○ 10-20				

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

MICRO FINISH
 THE NEW TECHNOLOGY



Ø	P	€	L mm	I mm	∠ mm	d mm
M8,0	1,00	89,99	90	13	4,90	6,0
M8,0	1,25	77,63	90	13	4,90	6,0
M10,0	1,00	73,76	90	13	5,50	7,0
M10,0	1,25	115,01	100	15	5,50	7,0
M10,0	1,50	91,63	100	15	5,50	7,0
M12,0	1,00	113,86	100	10	7,00	9,0
M12,0	1,25	119,02	100	15	7,00	9,0
M12,0	1,50	115,76	100	15	7,00	9,0

Ø	P	€	L mm	I mm	∠ mm	d mm
M12,0	1,75	86,59	110	18	7,00	9,0
M14,0	2,00	116,78	110	20	9,00	11,0
M16,0	1,50	180,81	100	15	9,00	12,0
M16,0	2,00	140,14	110	20	9,00	12,0
M18,0	1,50	323,84	110	17	11,00	14,0
M18,0	2,50	253,23	125	25	11,00	14,0
M20,0	1,50	310,46	125	17	12,00	16,0
M20,0	2,50	242,55	140	25	12,00	16,0

2216 **HSSE-PM DIN 371** A>12% **M** **DIN 13** **Form. C** **Tol. 6GX** **1,5XD** **R** **TIN+**

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
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

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



Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	43,07	56	10	2,70	3,5
M4,0	0,70	43,07	63	7	3,40	4,5
M5,0	0,80	45,30	70	8	4,90	6,0

Ø	P	€	L mm	I mm	mm	d mm
M6,0	1,00	48,27	80	10	4,90	6,0
M8,0	1,25	57,66	90	13	6,20	8,0
M10,0	1,50	70,32	100	15	8,00	10,0

2215 **HSSE-PM DIN 376** A>12% **M** **DIN 13** **Form. C** **Tol. 6GX** **1,5XD** **D** **TIN+**

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
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

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



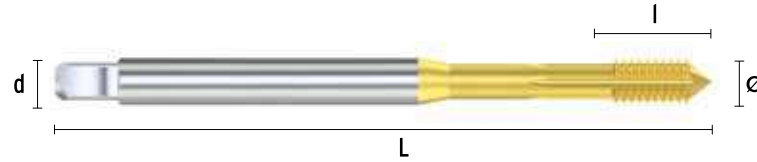
Ø	P	€	L mm	I mm	mm	d mm
M12,0	1,75	100,06	110	18	7,00	9,0

2218 **HSSE-PM DIN 371** $A \geq 12\%$ **M** **DIN13** **Form.** **C** **Tol.** **6GX** **3XD** **R** **TIN+**

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
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

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

MICRO FINISH
THREADING TECHNOLOGY



Ø	P	€	L mm	I mm	mm	d mm
M3,0	0,50	43,07	56	10	2,70	3,5
M4,0	0,70	43,07	63	7	3,40	4,5
M5,0	0,80	45,30	70	8	4,90	6,0

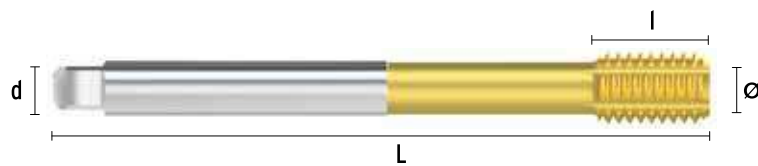
Ø	P	€	L mm	I mm	mm	d mm
M6,0	1,00	48,27	80	10	4,90	6,0
M8,0	1,25	57,66	90	13	6,20	8,0
M10,0	1,50	70,32	100	15	8,00	10,0

2217 **HSSE-PM DIN 376** $A \geq 12\%$ **M** **DIN13** **Form.** **C** **Tol.** **6HX** **3XD** **D** **TIN+**

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
● 15-45	● 15-25			● 10-25					● 15-40	● 15-30	● 20-40			○ 10-20			

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

MICRO FINISH
THREADING TECHNOLOGY



Ø	P	€	L mm	I mm	mm	d mm
M12,0	1,75	100,06	110	18	7,00	9,0

2411

HM-MD

M-MF

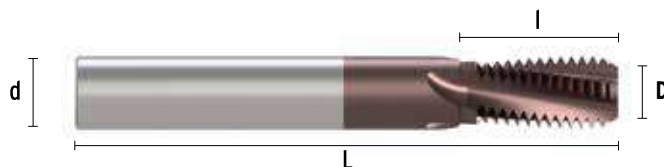


DIN 6535
HA
h6



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
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○
120-200	100-140	80-120	70-110	90-180	70-120	120-180	100-150	80-120	200-900	60-150	100-140	70-170	50-80	30-80	60-100	30-60	20-40

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



M	P		€	d mm	D mm	z	l mm	L mm
M2,0	0,40	1,5xD	170,27	4	1,50	3	3,40	50
M2,0	0,40	2,0xD	187,33	4	1,50	3	4,60	50
M2,5	0,45	1,5xD	170,27	4	1,90	3	4,27	50
M2,5	0,45	2,0xD	187,33	4	1,90	3	5,62	50
M3,0	0,50	1,5xD	170,27	4	2,30	3	5,25	50
M3,0	0,50	2,0xD	187,33	4	2,30	3	6,75	50
M4,0	0,70	1,5xD	170,27	4	3,00	3	7,35	50
M4,0	0,70	2,0xD	187,33	4	3,00	3	8,75	50
M5,0	0,80	1,5xD	170,27	4	3,80	3	8,40	50
M5,0	0,80	2,0xD	187,33	4	3,80	3	10,80	50
M6,0	1,00	1,5xD	197,87	6	4,50	3	10,50	63
M6,0	1,00	2,0xD	217,73	6	4,50	3	13,50	63
M6,0	1,00	2,5xD	239,33	6	4,50	3	16,50	63
M8,0	1,25	1,5xD	197,87	6	6,00	3	14,37	63
M8,0	1,25	2,0xD	217,73	6	6,00	3	18,12	63
M8,0	1,25	2,5xD	239,33	6	6,00	3	21,87	63
M10,0	1,00	2,0xD	275,47	8	8,00	4	17,50	63
M10,0	1,50	1,5xD	250,40	8	7,50	3	17,25	63
M10,0	1,50	2,0xD	275,47	8	7,50	3	21,75	76
M10,0	1,50	2,5xD	302,67	8	7,50	3	27,75	76
M12,0	1,75	1,5xD	250,40	8	8,00	3	20,12	76
M12,0	1,75	2,0xD	275,47	8	8,00	3	27,12	76
M12,0	1,75	2,5xD	385,07	10	9,00	3	32,37	100
M14,0	1,50	2,0xD	350,27	10	10,00	4	23,25	76
M14,0	2,00	2,0xD	350,27	10	10,00	3	31,00	100
M14,0	2,00	2,5xD	385,07	10	10,00	3	37,00	100
M16,0	1,50	2,0xD	411,47	12	12,00	5	29,25	83
M16,0	2,00	2,0xD	411,47	12	12,00	4	35,00	100
M16,0	2,00	2,5xD	452,27	12	12,00	4	43,00	100
M20,0	1,50	2,0xD	591,47	16	16,00	6	35,25	100
M20,0	2,50	2,0xD	511,07	14	14,00	4	43,75	100
M20,0	2,50	2,5xD	591,47	16	15,00	4	53,75	120
M24,0	3,00	2,0xD	591,47	16	16,00	3	52,50	100
M24,0	3,00	2,5xD	688,00	18	18,00	3	64,50	120

2412

HM-MD

G
ISO 228



DIN 6535
HA
h6

TIALCN

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
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○
120-200	100-140	80-120	70-110	90-180	70-120	120-180	100-150	80-120	200-900	60-150	100-140	70-170	50-80	30-80	60-100	30-60	20-40

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



Ø	P	€	d mm	D mm	z	l mm	L mm
1/16 - 1/8	28	197,87	6	6	3	10,43	63
1/4 - 3/8	19	250,40	8	8	3	15,37	63
1/4 - 3/8	19	318,53	10	10	4	22,06	76
1/2 - 7/8	14	373,87	12	12	4	20,86	83
1/2 - 7/8	14	411,47	12	12	4	28,12	83
1/2 - 7/8	11	538,00	16	16	5	28,12	89
1 - 1 1/2	11	373,87	12	12	3	26,55	83
1 - 3"	11	538,00	16	16	4	40,41	100
≥ 1	11	688,00	20	20	5	49,65	120

2301

HSS DIN 352/2181

M-MF
DIN 13



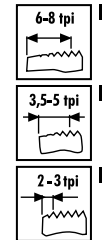
Tol.
6H

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

PVP = € / 3 $\left\{ \begin{array}{l} M (\text{€} / 3) \\ MF (\text{€} / 2) \end{array} \right.$



Ø	P	Nº	€	L mm	I mm	mm	d mm	Ø	P	Nº	€	L mm	I mm	mm	d mm
M1,0	0,25	3	96,49	32	5,5	2,10	2,5	M12,0	0,75	2	84,38	70	22	7,00	9,0
M1,1	0,25	3	96,49	32	5,5	2,10	2,5	M12,0	1,00	2	52,08	70	22	7,00	9,0
M1,2	0,25	3	96,49	32	5,5	2,10	2,5	M12,0	1,25	2	52,29	70	22	7,00	9,0
M1,4	0,30	3	96,49	32	7	2,10	2,5	M12,0	1,50	2	44,48	70	22	7,00	9,0
M1,6	0,35	3	88,03	32	8	2,10	2,5	M12,0	1,75	3	47,48	75	28	7,00	9,0
M1,7	0,35	3	55,59	32	8	2,10	2,5	M13,0	0,75	2	147,67	70	20	9,00	11,0
M1,8	0,35	3	82,65	32	8	2,10	2,5	M13,0	1,00	2	85,37	70	22	9,00	11,0
M2,0	0,40	3	43,84	36	8	2,10	2,8	M13,0	1,25	2	85,37	70	22	9,00	11,0
M2,2	0,45	3	47,22	36	9	2,10	2,8	M13,0	1,50	2	85,37	70	22	9,00	11,0
M2,3	0,40	3	47,28	36	9	2,10	2,8	M13,0	1,75	3	107,54	75	30	9,00	11,0
M2,5	0,45	3	45,35	40	9	2,10	2,8	M14,0	0,75	2	147,82	70	22	9,00	11,0
M2,6	0,45	3	41,72	40	9	2,10	2,8	M14,0	1,00	2	77,91	70	22	9,00	11,0
M3,0	0,50	3	24,01	40	11	2,70	3,5	M14,0	1,25	2	63,92	70	22	9,00	11,0
M3,0	0,60	2	46,04	40	11	2,70	3,5	M14,0	1,50	2	49,65	70	22	9,00	11,0
M3,5	0,60	2	33,23	45	12	3,00	4,0	M14,0	2,00	3	62,48	80	30	9,00	11,0
M3,5	0,75	2	55,61	45	14	3,40	4,5	M15,0	1,00	2	115,16	70	22	9,00	12,0
M4,0	0,50	2	46,83	45	13	3,40	4,5	M15,0	1,25	2	121,20	70	22	9,00	12,0
M4,0	0,70	3	22,10	45	14	3,40	4,5	M15,0	1,50	2	117,90	70	22	9,00	12,0
M4,5	0,75	2	42,85	50	16	4,90	6,0	M15,0	2,00	3	123,21	80	32	9,00	12,0
M5,0	0,50	2	49,79	50	12	4,90	6,0	M16,0	1,00	2	109,03	70	22	9,00	12,0
M5,0	0,75	2	46,40	50	12	4,90	6,0	M16,0	1,25	2	114,78	70	22	9,00	12,0
M5,0	0,80	3	24,02	50	16	4,90	6,0	M16,0	1,50	2	61,90	70	22	9,00	12,0
M5,0	1,00	3	26,68	50	14	4,90	6,0	M16,0	2,00	3	87,96	80	32	9,00	12,0
M5,5	0,90	2	162,31	50	18	4,90	6,0	M17,0	1,00	2	175,70	70	22	9,00	12,0
M6,0	0,50	2	49,74	56	14	4,90	6,0	M17,0	1,25	2	175,70	70	22	9,00	12,0
M6,0	0,75	2	28,01	56	14	4,90	6,0	M17,0	1,50	2	175,70	70	22	9,00	12,0
M6,0	0,90	2	162,18	56	19	4,90	6,0	M18,0	1,00	2	121,19	80	22	11,00	14,0
M6,0	1,00	3	24,02	56	19	4,90	6,0	M18,0	1,25	2	173,18	80	22	11,00	14,0
M7,0	0,75	2	35,36	56	14	4,90	6,0	M18,0	1,50	2	82,08	80	22	11,00	14,0
M7,0	1,00	3	33,16	56	19	4,90	6,0	M18,0	2,00	2	130,59	80	22	11,00	14,0
M8,0	0,50	2	53,10	56	18	4,90	6,0	M18,0	2,50	3	117,58	95	34	11,00	14,0
M8,0	0,75	2	41,37	56	18	4,90	6,0	M19,0	1,00	2	255,03	80	22	11,00	14,0
M8,0	1,00	2	27,51	63	22	4,90	6,0	M19,0	1,25	2	254,79	80	22	11,00	14,0
M8,0	1,25	3	28,92	63	22	4,90	6,0	M19,0	1,50	2	255,03	80	22	11,00	14,0
M9,0	1,00	2	35,55	63	22	5,50	7,0	M20,0	1,00	2	161,40	80	22	12,00	16,0
M9,0	1,25	3	51,31	63	22	5,50	7,0	M20,0	1,25	2	255,03	80	22	12,00	16,0
M10,0	0,50	2	134,90	63	18	5,50	7,0	M20,0	1,50	2	102,42	80	22	12,00	16,0
M10,0	0,75	2	59,30	63	20	5,50	7,0	M20,0	2,00	2	135,35	80	22	12,00	16,0
M10,0	1,00	2	29,83	63	20	5,50	7,0	M20,0	2,50	3	132,13	95	34	12,00	16,0
M10,0	1,25	2	30,37	70	24	5,50	7,0	M21,0	1,00	2	329,56	80	22	12,00	16,0
M10,0	1,50	3	36,53	70	24	5,50	7,0	M21,0	1,25	2	329,56	80	22	12,00	16,0
M11,0	0,75	2	147,67	63	20	6,20	8,0	M21,0	1,50	2	260,61	80	22	12,00	16,0
M11,0	1,00	2	52,72	63	20	6,20	8,0	M22,0	1,00	2	180,04	80	22	14,50	18,0
M11,0	1,25	2	52,72	70	22	6,20	8,0	M22,0	1,25	2	255,03	80	22	14,50	18,0
M11,0	1,50	3	70,77	70	24	6,20	8,0	M22,0	1,50	2	111,97	80	22	14,50	18,0

2301

HSS DIN 352/2181

M-MF
DIN 13



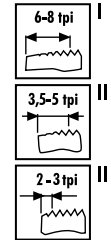
Tol.
6H

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

PVP = € / 3 < M (€ / 3)
MF (€ / 2)



Ø	P	Nº	€	L mm	I mm	mm	d mm
M22,0	2,00	2	180,05	80	22	14,50	18,0
M22,0	2,50	3	161,99	100	34	14,50	18,0
M23,0	1,00	2	329,25	80	22	14,50	18,0
M23,0	1,50	2	329,25	80	22	14,50	18,0
M24,0	1,00	2	201,30	90	22	14,50	18,0
M24,0	1,25	2	329,56	90	22	14,50	18,0
M24,0	1,50	2	142,93	90	22	14,50	18,0
M24,0	2,00	2	201,30	90	22	14,50	18,0
M24,0	3,00	3	204,05	110	38	14,50	18,0
M25,0	1,00	2	288,36	90	22	14,50	18,0
M25,0	1,25	2	469,51	90	22	14,50	18,0
M25,0	1,50	2	249,33	90	22	14,50	18,0
*M25,0	2,00	2	482,93	90	22	14,50	18,0
M26,0	1,00	2	469,97	90	22	14,50	18,0
M26,0	1,50	2	227,73	90	22	14,50	18,0
M26,0	2,00	2	469,97	90	22	14,50	18,0
M27,0	1,00	2	283,00	90	22	16,00	20,0
M27,0	1,50	2	252,33	90	22	16,00	20,0
M27,0	2,00	2	279,03	90	22	16,00	20,0
M27,0	3,00	3	262,78	110	38	16,00	20,0
M28,0	1,00	2	469,94	90	22	16,00	20,0
M28,0	1,50	2	253,01	90	22	16,00	20,0
M28,0	2,00	2	469,94	90	22	16,00	20,0
M30,0	1,00	2	291,60	90	22	18,00	22,0
M30,0	1,50	2	262,45	90	22	18,00	22,0
M30,0	2,00	2	302,57	90	22	18,00	22,0
M30,0	3,50	3	333,65	125	45	18,00	22,0
M32,0	1,00	2	610,59	90	22	18,00	22,0
M32,0	1,50	2	323,14	90	22	18,00	22,0
M32,0	2,00	2	611,14	90	22	18,00	22,0
M33,0	1,00	2	611,14	100	25	20,00	25,0
M33,0	1,50	2	356,02	100	25	20,00	25,0
M33,0	2,00	2	423,30	100	25	20,00	25,0
M33,0	3,50	3	423,30	125	50	20,00	25,0
M34,0	1,50	2	385,25	100	25	22,00	28,0

Ø	P	Nº	€	L mm	I mm	mm	d mm
M35,0	1,50	2	494,76	100	25	22,00	28,0
M36,0	1,50	2	412,70	100	25	22,00	28,0
M36,0	2,00	2	528,11	125	40	22,00	28,0
M36,0	3,00	2	720,44	125	40	22,00	28,0
M36,0	4,00	3	545,13	150	56	22,00	28,0
M38,0	1,50	2	464,22	100	25	22,00	28,0
M38,0	2,00	2	833,56	125	40	22,00	28,0
M39,0	1,50	2	622,61	110	25	24,00	32,0
M39,0	2,00	2	622,61	125	40	24,00	32,0
M39,0	3,00	2	605,85	125	40	24,00	32,0
M39,0	4,00	3	605,74	150	60	24,00	32,0
M40,0	1,50	2	545,21	110	25	24,00	32,0
M40,0	2,00	2	633,29	125	40	24,00	32,0
M40,0	3,00	2	627,40	125	40	24,00	32,0
M42,0	1,50	2	603,07	110	25	24,00	32,0
M42,0	2,00	2	724,54	125	40	24,00	32,0
M42,0	3,00	2	724,54	125	40	24,00	32,0
M42,0	4,50	3	758,96	150	60	24,00	32,0
M45,0	1,50	2	678,93	110	25	29,00	36,0
M45,0	2,00	2	862,59	125	40	29,00	36,0
M45,0	3,00	2	862,59	125	40	29,00	36,0
M45,0	4,50	3	880,33	160	65	29,00	36,0
M48,0	1,50	2	765,07	140	40	29,00	36,0
M48,0	2,00	2	1.134,89	140	40	29,00	36,0
M48,0	3,00	2	1.044,30	140	40	29,00	36,0
M48,0	5,00	3	1.057,28	180	70	29,00	36,0
M50,0	1,50	2	836,67	140	40	29,00	36,0
M52,0	1,50	2	887,57	140	40	32,00	40,0
M52,0	2,00	2	1.276,91	140	40	32,00	40,0
M52,0	3,00	2	1.185,53	140	40	32,00	40,0
M52,0	5,00	3	1.379,71	180	70	32,00	40,0
M56,0	5,50	3	1.992,80	200	70	35,00	45,0
M60,0	5,50	3	2.497,33	200	75	35,00	45,0
M63,0	1,50	2	1.984,95	160	40	39,00	50,0
M64,0	6,00	3	3.118,64	220	80	39,00	50,0

*Hasta fin de existencias / Jusqu'à epuisement des stocks / Until end of stock

2301/5

HSS DIN 352

Izquierda / A gauche / Left hand

M-MF
DIN 13



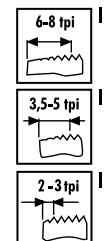
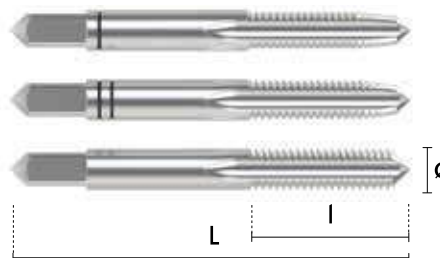
Tol.
6H



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

Macho 3°
 Taraud 3°
 Tap 3°
 Gewindebohrer 3° } **PVP = €/3**



Ø	P	Nº	€	L mm	I mm	∠ mm	d mm	Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	3	48,00	40	11	2,70	3,5	M14,0	1,25	2	127,84	70	22	9,00	11,0
M4,0	0,70	3	44,20	45	13	3,40	4,5	M14,0	1,50	2	99,32	70	22	9,00	11,0
M5,0	0,80	3	48,04	50	16	4,90	6,0	M14,0	2,00	3	124,93	80	30	9,00	11,0
M6,0	1,00	3	48,04	56	19	4,90	6,0	M16,0	1,50	2	123,80	70	22	9,00	12,0
M7,0	1,00	3	66,31	56	19	4,90	6,0	M16,0	2,00	3	175,91	80	32	9,00	12,0
M8,0	1,00	2	55,00	63	22	4,90	6,0	M18,0	2,50	3	235,17	95	34	11,00	14,0
M8,0	1,25	3	57,85	63	22	4,90	6,0	M20,0	1,50	2	204,86	80	22	12,00	16,0
M9,0	1,25	3	102,63	63	22	5,50	7,0	M20,0	2,50	3	264,25	95	34	12,00	16,0
M10,0	1,00	2	59,63	63	20	5,50	7,0	M22,0	1,50	2	223,95	80	22	14,50	18,0
M10,0	1,25	2	60,75	70	24	5,50	7,0	M22,0	2,50	3	323,99	100	34	14,50	18,0
M10,0	1,50	3	73,06	70	24	5,50	7,0	M24,0	1,50	2	285,84	90	22	14,50	18,0
M12,0	1,25	2	104,61	70	22	7,00	9,0	M24,0	3,00	3	408,10	110	38	14,50	18,0
M12,0	1,50	2	88,98	70	22	7,00	9,0	M27,0	3,00	3	525,58	110	38	16,00	20,0
M12,0	1,75	3	94,95	75	29	7,00	9,0	M30,0	3,50	3	667,26	125	45	18,00	22,0

2314

HSSE DIN 352

M
DIN 13



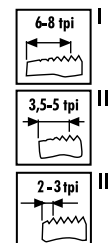
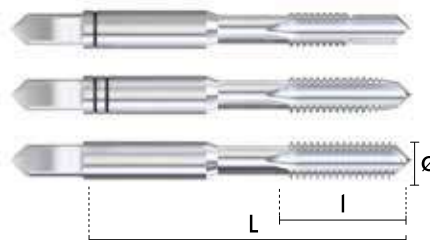
Tol.
6HX

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

PVP = €/3



Ø	P	Nº	€	L mm	I mm	∠ mm	d mm	Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	3	38,17	40	11	2,70	3,5	M12,0	1,75	3	84,15	75	29	7,00	9,0
M4,0	0,70	3	38,09	45	13	3,40	4,5	M14,0	2,00	3	111,41	80	30	9,00	11,0
M5,0	0,80	3	39,89	50	16	4,90	6,0	M16,0	2,00	3	122,89	80	32	9,00	12,0
M6,0	1,00	3	40,03	56	19	4,90	6,0	M18,0	2,50	3	135,18	95	40	11,00	14,0
M8,0	1,25	3	45,97	56	22	4,90	6,0	M20,0	2,50	3	148,70	95	40	12,00	16,0
M10,0	1,50	3	59,20	70	24	5,50	7,0								

2303

HSSE DIN 352

M
DIN 13



Tol.
6HX

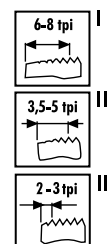
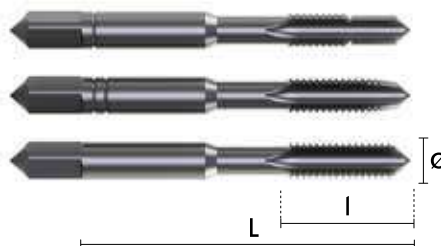
VAP

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

PVP = €/3



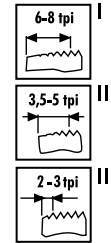
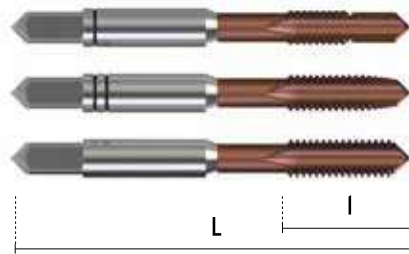
Ø	P	Nº	€	L mm	I mm	∠ mm	d mm	Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
M3,0	0,50	3	41,99	40	11	2,70	3,5	M12,0	1,75	3	92,56	75	29	7,00	9,0
M4,0	0,70	3	41,90	45	13	3,40	4,5	M14,0	2,00	3	122,55	80	30	9,00	11,0
M5,0	0,80	3	43,88	50	16	4,90	6,0	M16,0	2,00	3	135,18	80	32	9,00	12,0
M6,0	1,00	3	44,03	56	19	4,90	6,0	M18,0	2,50	3	148,70	95	40	11,00	14,0
M8,0	1,25	3	50,56	63	22	4,90	6,0	M20,0	2,50	3	163,57	95	40	12,00	16,0
M10,0	1,50	3	65,12	70	24	5,50	7,0								

2324 HSSE-PM DIN 352

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3° } PVP = €3



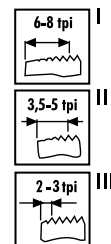
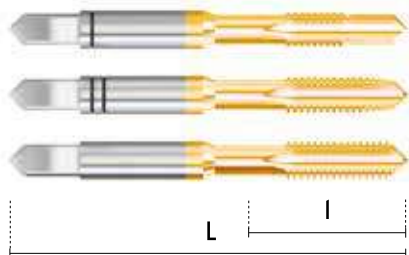
Ø	P	Nº	€	L mm	I mm	mm	d mm	Ø	P	Nº	€	L mm	I mm	mm	d mm
M4,0	0,70	3	138,59	45	13	2,70	3,5	M10,0	1,50	3	195,51	70	24	5,50	7,0
M5,0	0,80	3	140,31	50	16	4,90	6,0	M12,0	1,75	3	237,65	75	29	7,00	9,0
M6,0	1,00	3	140,31	56	19	4,90	6,0	M14,0	2,00	3	349,40	80	30	9,00	11,0
M8,0	1,25	3	158,16	63	22	4,90	6,0	M16,0	2,00	3	349,40	80	32	9,00	12,0

2302 HSSE DIN 352

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3° } PVP = €3



Ø	P	Nº	€	L mm	I mm	mm	d mm	Ø	P	Nº	€	L mm	I mm	mm	d mm
M3,0	0,50	3	57,25	40	11	2,70	3,5	M12,0	1,75	3	126,22	75	29	7,00	9,0
M4,0	0,70	3	57,13	45	13	3,40	4,5	M14,0	2,00	3	167,12	80	30	9,00	11,0
M5,0	0,80	3	59,84	50	16	4,90	6,0	M16,0	2,00	3	184,33	80	32	9,00	12,0
M6,0	1,00	3	60,05	56	19	4,90	6,0	M18,0	2,50	3	193,05	95	40	11,00	14,0
M8,0	1,25	3	68,95	56	22	4,90	6,0	M20,0	2,50	3	202,77	95	40	12,00	16,0
M10,0	1,50	3	88,80	70	24	5,50	7,0								

2304

HSS DIN 352

BSW
BS 84

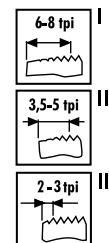
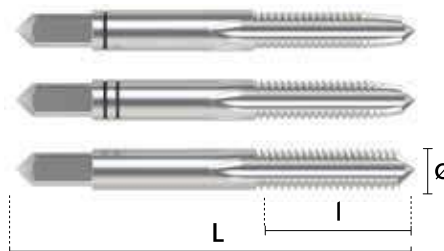


P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
•									•	•							

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

Macho 3°
 Taraud 3°
 Tap 3°
 Gewindebohrer 3°

PVP = €3



Ø	P	Nº	€	L mm	I mm	∠ mm	d mm	Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
3/32	48,00	3	44,60	36	10	2,10	2,8	1"	8,00	3	266,35	110	50	14,50	18,0
1/8	40,00	3	30,76	40	12	2,70	3,5	1 1/8"	7,00	3	396,87	132	56	18,00	22,0
5/32	32,00	3	31,07	45	14	3,40	4,5	1 1/4"	7,00	3	480,10	132	56	18,00	22,0
3/16	24,00	3	30,76	50	18	4,90	6,0	1 3/8"	6,00	3	597,08	150	63	22,00	28,0
7/32	24,00	3	54,72	50	18	4,90	6,0	1 1/2"	6,00	3	718,82	150	63	24,00	32,0
1/4	20,00	3	34,67	50	19	4,90	6,0	1 5/8"	5,00	3	1.078,34	160	70	24,00	32,0
5/16	18,00	3	42,30	56	22	4,90	6,0	1 3/4"	5,00	3	1.327,16	160	70	29,00	36,0
3/8	16,00	3	46,49	70	24	5,50	7,0	1 7/8"	4,50	3	1.714,15	190	80	29,00	36,0
7/16	14,00	3	61,82	70	24	6,20	8,0	2"	4,50	3	1.799,52	190	80	32,00	40,0
1/2	12,00	3	66,96	75	29	7,00	9,0	2 1/4"	4,00	3	2.378,75	220	80	35,00	45,0
9/16	12,00	3	91,10	80	30	9,00	11,0	2 1/2"	4,00	3	2.893,77	220	80	39,00	50,0
5/8	11,00	3	104,71	80	32	9,00	12,0	2 3/4"	3,50	3	4.131,95	240	80	39,00	50,0
3/4	10,00	3	149,08	95	40	11,00	14,0	3"	3,50	3	4.780,22	240	80	39,00	50,0
7/8	9,00	3	218,11	100	40	14,50	18,0								

P

Aceros
 Aciers
 Steels
 Stähle

M

Aceros Inox
 Aciers Inox
 Stainless Steels
 Edelstahl

K

Fundicion
 Fonte
 Cast Iron
 Gusseisen

N

Metales no ferrosos
 Métal non Ferreux
 Non Ferrous metals
 NE-Metalle

S

Titanio y Superalaciones
 Titanium et Superalloys
 Titanium and Superalloys
 Titan und Superlegierungen

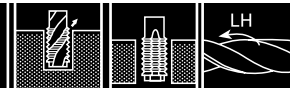
H

Materiales Duros
 Matériels Durs
 Hard materials
 Hartmaterialien

2304/5

HSS DIN 352 Izquierda / A gauche / Left hand

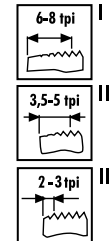
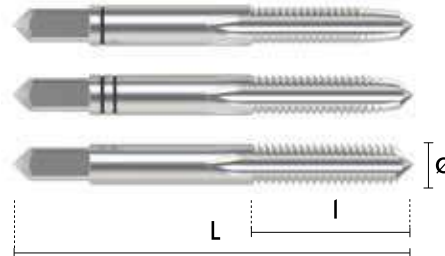
BSW
BS 84



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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3° } **PVP = €13**



Ø	P	Nº	€	L mm	I mm	mm	d mm
1/8	40,00	3	61,54	40	12	2,70	3,5
5/32	32,00	3	62,14	45	14	3,40	4,5
3/16	24,00	3	61,54	50	18	4,90	6,0
1/4	20,00	3	69,29	50	19	4,90	6,0
5/16	18,00	3	84,59	56	22	4,90	6,0
3/8	16,00	3	92,97	70	24	5,50	7,0
7/16	14,00	3	123,64	70	24	6,20	8,0

Ø	P	Nº	€	L mm	I mm	mm	d mm
1/2	12,00	3	133,91	75	29	7,00	9,0
9/16	12,00	3	182,18	80	30	9,00	11,0
5/8	11,00	3	209,42	80	32	9,00	12,0
3/4	10,00	3	298,15	95	40	11,00	14,0
7/8	9,00	3	436,16	100	40	14,50	18,0
1"	8,00	3	532,69	110	50	14,50	18,0

2305

HSS DIN 2181

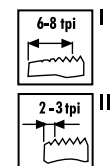
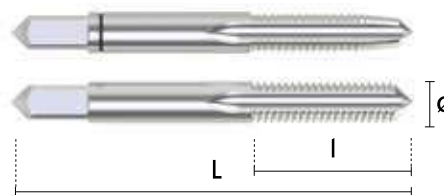
BSF
BS 84



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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3° } **PVP = €12**



Ø	P	Nº	€	L mm	I mm	mm	d mm
3/16	32,00	2	117,86	50	14	4,90	6,0
1/4	26,00	2	48,58	50	18	4,90	6,0
5/16	22,00	2	56,68	56	22	4,90	6,0
3/8	20,00	2	65,57	63	22	5,50	7,0
7/16	18,00	2	78,68	63	22	6,20	8,0
1/2	16,00	2	88,97	75	24	7,00	9,0
9/16	16,00	2	106,68	80	28	9,00	11,0

Ø	P	Nº	€	L mm	I mm	mm	d mm
5/8	14,00	2	139,27	80	28	9,00	12,0
3/4	12,00	2	213,41	95	32	11,00	14,0
7/8	11,00	2	254,70	100	36	14,50	18,0
1"	10,00	2	357,51	110	40	14,50	18,0
1", 1/8	9,00	2	737,71	110	22	18,00	22,0
1", 1/4	9,00	2	842,29	110	22	18,00	22,0
1", 1/2	8,00	2	1.283,64	125	40	24,00	32,0

2306

HSS DIN 5157

G
ISO 228

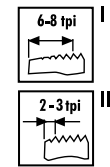
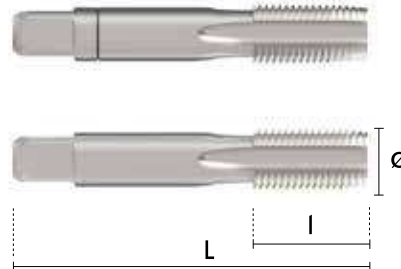


P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
•									•	•							

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

PVP = €/2



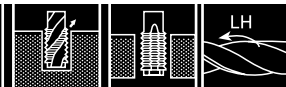
Ø	P	Nº	€	L mm	I mm	∅ mm	d mm	Ø	P	Nº	€	L mm	I mm	∅ mm	d mm
1/8	28,00	2	39,34	63	20	5,50	7,0	1 1/4	11,00	2	392,59	125	40	24,00	32,0
1/4	19,00	2	55,41	70	22	9,00	11,0	1 3/8	11,00	2	533,32	140	40	29,00	36,0
3/8	19,00	2	69,78	70	22	9,00	12,0	1 1/2	11,00	2	593,43	140	40	29,00	36,0
1/2	14,00	2	97,58	75	24	12,00	16,0	1 3/4	11,00	2	986,56	140	40	32,00	40,0
5/8	14,00	2	128,90	80	22	14,50	18,0	2"	11,00	2	1.093,66	160	40	35,00	45,0
3/4	14,00	2	152,36	90	22	16,00	20,0	2 1/4	11,00	2	1.860,71	160	40	39,00	50,0
7/8	14,00	2	209,58	90	22	18,00	22,0	2 1/2	11,00	2	2.796,88	160	40	39,00	50,0
1"	11,00	2	242,55	100	25	20,00	25,0	2 3/4	11,00	2	3.391,23	160	40	39,00	50,0
1 1/8	11,00	2	360,34	125	40	22,00	28,0	3"	11,00	2	3.529,32	160	40	39,00	50,0

2306/5

HSS DIN 5157

Izquierda / A gauche / Left hand

G
ISO 228

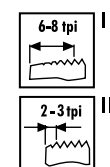
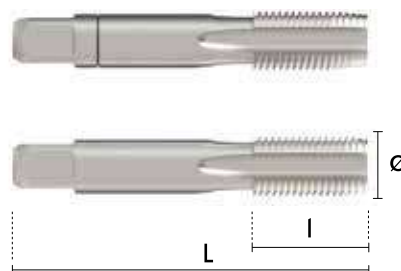


P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
•									•	•							

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

PVP = €/2



Ø	P	Nº	€	L mm	I mm	∅ mm	d mm	Ø	P	Nº	€	L mm	I mm	∅ mm	d mm
1/8	28,00	2	78,69	63	20	5,50	7,0	5/8	14,00	2	257,76	80	22	14,50	18,0
1/4	19,00	2	110,80	70	22	9,00	11,0	3/4	14,00	2	304,73	90	22	16,00	20,0
3/8	19,00	2	139,52	70	22	9,00	12,0	1"	11,00	2	485,14	100	25	20,00	25,0
1/2	14,00	2	195,16	80	22	12,00	16,0								

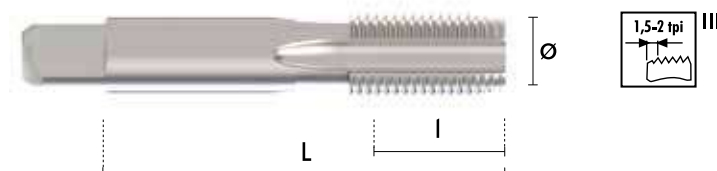
2316 HSSE DIN 5157

G
ISO 228



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	P	Nº	€	L mm	I mm	∠ mm	d mm	Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
1/8	28,00	1	23,27	63	20	5,50	7,0	5/8	14,00	1	88,61	80	22	14,50	18,0
1/4	19,00	1	37,88	70	22	9,00	11,0	3/4	14,00	1	103,65	90	22	16,00	20,0
3/8	19,00	1	41,44	70	22	9,00	11,0	7/8	14,00	1	149,82	90	22	18,00	22,0
1/2	14,00	1	66,28	80	22	12,00	16,0	1"	11,00	1	171,74	100	25	20,00	25,0

2317 HSSE DIN 5157

G
ISO 228



+0,1

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	P	Nº	€	L mm	I mm	∠ mm	d mm	Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
1/8	28,00	1	25,55	63	20	5,50	7,0	5/8	14,00	1	97,46	80	22	14,50	18,0
1/4	19,00	1	41,69	70	22	9,00	11,0	3/4	14,00	1	113,97	90	22	16,00	20,0
3/8	19,00	1	45,74	70	22	9,00	11,0	7/8	14,00	1	164,80	90	22	18,00	22,0
1/2	14,00	1	75,76	80	22	12,00	16,0	1"	11,00	1	188,91	100	25	20,00	25,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2307

HSS DIN 352

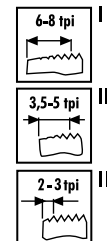
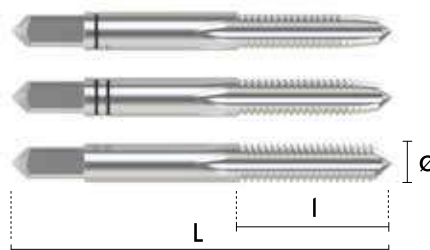
UNC
 ANSI/ASME
 B1.1



Tol.
2B

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



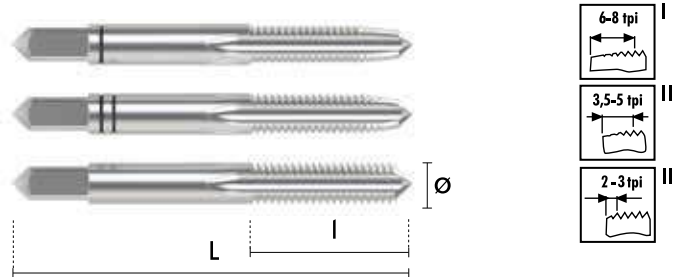
Ø	P	Nº	€	L mm	I mm	mm	d mm
Nº4	40,00	3	60,74	40	12	2,70	3,5
Nº5	40,00	3	58,07	40	12	2,70	3,5
Nº6	32,00	3	58,07	45	14	3,00	4,0
Nº8	32,00	3	58,07	45	14	3,40	4,5
Nº10	24,00	3	58,07	50	16	4,90	6,0
Nº12	24,00	3	58,07	50	18	4,90	6,0
1/4	20,00	3	46,99	50	19	4,90	6,0
5/16	18,00	3	53,69	56	22	4,90	6,0
3/8	16,00	3	60,69	70	24	5,50	7,0
7/16	14,00	3	78,99	70	24	6,20	8,0
1/2	13,00	3	90,93	75	29	7,00	9,0

Ø	P	Nº	€	L mm	I mm	mm	d mm
9/16	12,00	3	107,35	80	30	9,00	11,0
5/8	11,00	3	148,09	80	32	9,00	12,0
3/4	10,00	3	201,61	95	40	11,00	14,0
7/8	9,00	3	248,32	100	40	14,50	18,0
1"	8,00	3	335,36	110	50	14,50	18,0
1"1/8	7,00	3	511,94	132	56	18,00	22,0
1"1/4	7,00	3	644,41	132	56	18,00	22,0
1"3/8	6,00	3	817,46	150	63	22,00	28,0
1"1/2	6,00	3	1.003,71	150	63	24,00	32,0
1"3/4	5,00	3	1.250,41	160	70	29,00	36,0
2"	4,50	3	1.437,47	190	80	32,00	40,0

2307/5 **HSS DIN 352** Izquierda / A gauche / Left hand **UNC** **ANSI/ASME B1.1** **Tol. 2B** **LH**

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

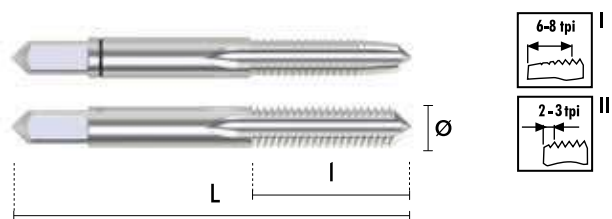


Ø	P	Nº	€	L mm	I mm	mm	d mm	Ø	P	Nº	€	L mm	I mm	mm	d mm
1/4	20,00	3	94,00	50	19	4,90	6,0	9/16	12,00	3	214,69	80	30	9,00	11,0
5/16	18,00	3	107,35	56	22	4,90	6,0	5/8	11,00	3	296,14	80	32	9,00	12,0
3/8	16,00	3	121,39	70	24	5,50	7,0	3/4	10,00	3	403,23	95	40	11,00	14,0
7/16	14,00	3	158,04	70	24	6,20	8,0	7/8	9,00	3	496,60	100	40	14,50	18,0
1/2	13,00	3	181,85	75	29	7,00	9,0	1"	8,00	3	670,73	110	50	14,50	18,0

2308 **HSS DIN 2181** **UNF** **ANSI/ASME B1.1** **Tol. 2B**

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	P	Nº	€	L mm	I mm	mm	d mm	Ø	P	Nº	€	L mm	I mm	mm	d mm
Nº4	48,00	2	46,12	36	11	2,70	3,5	1/2	20,00	2	53,38	75	24	7,00	9,0
Nº5	44,00	2	46,12	36	11	2,70	3,5	9/16	18,00	2	69,51	80	28	9,00	11,0
Nº6	40,00	2	44,06	40	12	3,40	4,5	5/8	18,00	2	89,79	80	28	9,00	12,0
Nº8	36,00	2	44,06	40	12	3,40	4,5	3/4	16,00	2	120,63	95	32	11,00	14,0
Nº10	32,00	2	44,06	45	14	4,90	6,0	7/8	14,00	2	155,03	100	36	14,50	18,0
Nº12	28,00	2	46,12	50	14	4,90	6,0	1"	12,00	2	205,52	110	40	14,50	18,0
1/4	28,00	2	31,77	50	18	4,90	6,0	1*1/8	12,00	2	320,05	110	50	18,00	22,0
5/16	24,00	2	34,00	56	22	4,90	6,0	1*1/4	12,00	2	403,71	132	56	18,00	22,0
3/8	24,00	2	39,32	63	22	5,50	7,0	1*3/8	12,00	2	512,70	132	56	22,00	28,0
7/16	20,00	2	52,19	63	22	6,20	8,0	1*1/2	12,00	2	627,76	150	63	24,00	32,0

2308/5

HSS DIN 2181 Izquierda / A gauche / Left hand

UNF
ANSI/ASME
B1.1



Tol.
2B

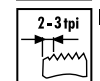
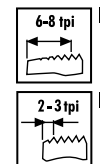
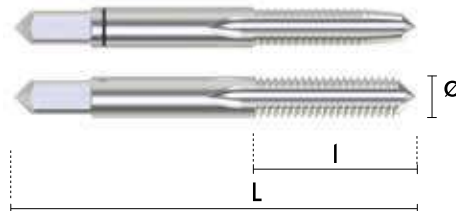
LH

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

PVP = €1/2



Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
1/4	28,00	2	63,53	50	18	4,90	6,0
5/16	24,00	2	68,01	56	22	4,90	6,0
3/8	24,00	2	78,62	63	22	5,50	7,0
7/16	20,00	2	104,37	63	22	6,20	8,0
1/2	20,00	2	106,72	75	24	7,00	9,0

Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
9/16	18,00	2	139,02	80	28	9,00	11,0
5/8	18,00	2	179,53	80	28	9,00	12,0
3/4	16,00	2	241,28	95	32	11,00	14,0
7/8	14,00	2	310,06	100	36	14,50	18,0
1"	12,00	2	411,06	110	40	14,50	18,0

2315

HSS DIN 2184

UN
ANSI/ASME
B1.1



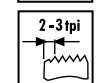
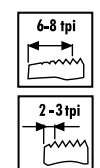
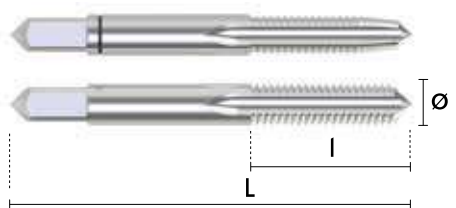
Tol.
2B

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

PVP = €1/2



Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
1"1/8	8,00	2	283,47	125	40	18,00	22,0
1"1/4	8,00	2	365,70	125	40	18,00	22,0
1"3/8	8,00	2	414,83	125	40	22,00	28,0
1"1/2	8,00	2	544,67	125	40	24,00	32,0

Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
1"5/8	8,00	2	637,11	125	40	24,00	32,0
1"3/4	8,00	2	776,13	125	40	29,00	36,0
2"	8,00	2	831,60	140	40	32,00	40,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2309

HSS DIN 5157

Rc
 DIN 2999



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	P	Nº	€	L mm	I mm	mm	d mm
1/8	28,00	1	41,46	59	15	6,30	8,0
1/4	19,00	1	58,47	67	19	8,00	10,0
3/8	19,00	1	81,20	75	21	10,00	12,5
1/2	14,00	1	113,65	87	26	12,50	16,0

Ø	P	Nº	€	L mm	I mm	mm	d mm
5/8	14,00	1	207,99	80	36	14,50	18,0
3/4	14,00	1	192,89	85	28	16,00	20,0
7/8	14,00	1	346,65	100	36	18,00	22,0
1"	11,00	1	293,64	109	33	20,00	25,0

2310

HSS DIN 2181

UNEF
 ANSI/ASME
 B1.1

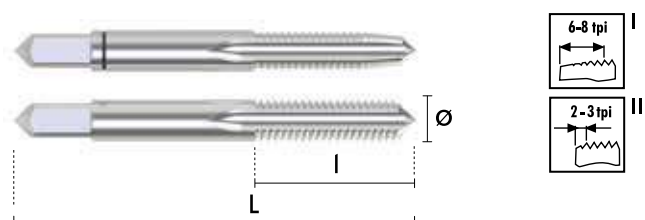


Tol.
2B

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

Macho 3º
 Taraud 3º
 Tap 3º
 Gewindebohrer 3º } **PVP = €/2**



Ø	P	Nº	€	L mm	I mm	mm	d mm
1/4	32,00	2	130,63	56	14	4,90	6,0
5/16	32,00	2	145,96	56	18	4,90	6,0
3/8	32,00	2	167,00	63	20	5,50	7,0
7/16	28,00	2	212,56	63	20	6,20	8,0
1/2	28,00	2	240,20	70	22	7,00	9,0

Ø	P	Nº	€	L mm	I mm	mm	d mm
9/16	24,00	2	280,97	70	22	9,00	11,0
5/8	24,00	2	391,09	70	22	9,00	12,0
3/4	20,00	2	579,15	80	22	11,00	14,0
1"	20,00	2	828,66	90	22	14,50	18,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

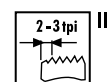
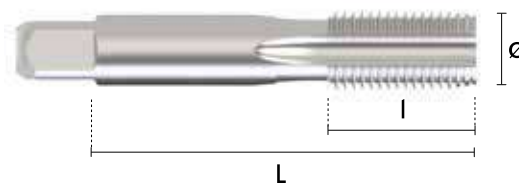
2312 HSS DIN 40432

PG
DIN 40430



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



PG	Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
7,0	12,5	20,00	1	43,61	70	22	7,00	9,0
9,0	15,2	18,00	1	55,45	70	22	9,00	12,0
11,0	18,6	18,00	1	76,98	80	22	11,00	14,0
13,5	20,4	18,00	1	84,44	80	22	12,00	16,0
16,0	22,5	18,00	1	101,37	80	22	14,50	18,0

PG	Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
21,0	28,3	16,00	1	149,10	90	22	18,00	22,0
29,0	37,0	16,00	1	296,02	100	25	22,00	28,0
36,0	47,0	16,00	1	494,47	140	40	29,00	36,0
42,0	54,0	16,00	1	587,23	140	40	32,00	40,0
48,0	59,3	16,00	1	740,57	160	40	35,00	45,0

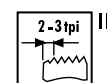
2313 HSS

NPT
ANSI/ASME
B1.20.1



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	P	Nº	€	L mm	I mm	∠ mm	d mm
1/16	27,00	1	35,98	65	19	5,50	7,0
1/8	27,00	1	35,98	65	19	5,50	7,0
1/4	18,00	1	50,46	70	25	9,00	11,0
3/8	18,00	1	69,62	75	26	9,00	12,0
1/2	14,00	1	97,37	80	31	12,00	16,0

Ø	P	Nº	€	L mm	I mm	∠ mm	d mm
3/4	14,00	1	148,88	100	33	16,00	20,0
1"	11,50	1	165,76	110	38	20,00	25,0
1*1/4	11,50	1	271,79	125	41	24,00	32,0
1*1/2	11,50	1	413,00	140	42	29,00	36,0
2"	11,50	1	644,72	160	44	29,00	36,0

2321

HSS DIN 352/2181

Perfil completo / Profil complet / Non serial form

M-MF
DIN 13



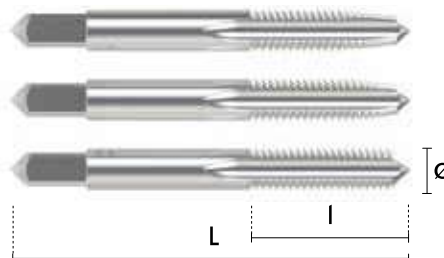
Tol.
6H

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

PVP = € / 3 < M (€/3)
MF (€/2)



Ø	P	Nº	€	L mm	I mm	mm	d mm	Ø	P	Nº	€	L mm	I mm	mm	d mm
M2,0	0,40	3	43,84	36	8	2,10	2,8	M12,0	1,25	3	52,29	70	22	7,00	9,0
M2,5	0,45	3	45,35	40	9	2,10	2,8	M12,0	1,50	3	44,48	70	22	7,00	9,0
M3,0	0,50	3	24,01	40	11	2,70	3,5	M12,0	1,75	3	47,48	75	28	7,00	9,0
M4,0	0,70	3	22,10	45	13	3,40	4,5	M14,0	1,25	3	63,92	70	22	9,00	11,0
M5,0	0,80	3	24,02	50	16	4,90	6,0	M14,0	2,00	3	62,48	80	30	9,00	11,0
M6,0	1,00	3	24,02	56	19	4,90	6,0	M16,0	2,00	3	87,96	80	32	9,00	12,0
M7,0	1,00	3	33,16	56	19	4,90	6,0	M18,0	1,50	3	82,08	80	22	11,00	14,0
M8,0	1,00	3	27,51	63	22	4,90	6,0	M18,0	2,50	3	117,58	95	34	11,00	14,0
M8,0	1,25	3	28,92	63	22	4,90	6,0	M20,0	2,00	3	135,35	80	22	12,00	16,0
M9,0	1,00	3	35,55	63	22	5,50	7,0	M20,0	2,50	3	132,13	95	34	12,00	16,0
M9,0	1,25	3	51,31	63	22	5,50	7,0	M22,0	2,50	3	161,99	100	34	14,50	18,0
M10,0	1,25	3	30,37	70	24	5,50	7,0	M24,0	1,50	3	142,93	90	22	14,50	18,0
M10,0	1,50	3	36,53	70	24	5,50	7,0	M24,0	3,00	3	204,05	110	38	14,50	18,0
M11,0	1,50	3	70,77	70	24	6,20	8,0	M27,0	3,00	3	262,78	110	38	16,00	20,0
M12,0	1,00	3	52,08	70	22	7,00	9,0	M30,0	3,50	3	333,65	125	45	18,00	22,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2322

HSS DIN 352

Perfil completo / Profil complet / Non serial form

UNC
ANSI/ASME
B1.1



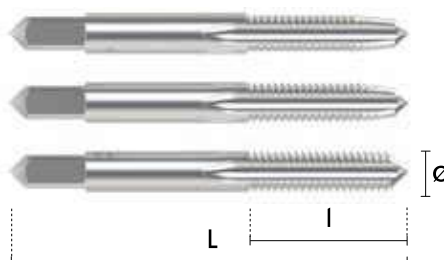
Tol.
2B

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

PVP = € / 3 < M (€/3)
MF (€/2)



Ø	P	Nº	€	L mm	I mm	mm	d mm	Ø	P	Nº	€	L mm	I mm	mm	d mm
Nº6	32,00	3	58,07	45	14	3,00	4,0	1/2	13,00	3	90,93	75	29	7,00	9,0
Nº10	24,00	3	58,07	50	16	4,90	6,0	9/16	12,00	3	107,35	80	30	9,00	11,0
1/4	20,00	3	46,99	50	19	4,90	6,0	5/8	11,00	3	148,09	80	32	9,00	12,0
5/16	18,00	3	53,69	56	22	4,90	6,0	3/4	10,00	3	201,61	95	40	11,00	14,0
3/8	16,00	3	60,69	70	24	5,50	7,0	7/8	9,00	3	248,32	100	40	14,50	18,0
7/16	14,00	3	78,99	70	24	6,20	8,0	1"	8,00	3	335,36	110	50	14,50	18,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2323 **HSS DIN 2181** Perfil completo / Profil complet / Non serial form

UNF
ANSI/ASME
B1.1



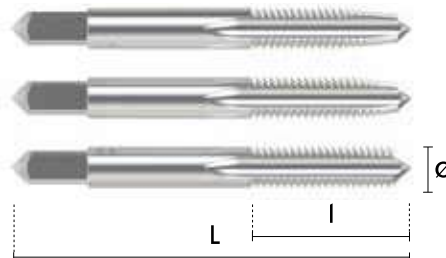
Tol.
2B

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

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

$$PVP = \epsilon/3 < \begin{matrix} M (\epsilon/3) \\ MF (\epsilon/2) \end{matrix}$$



Ø	P	Nº	€	L mm	I mm	mm	d mm
Nº10	32,00	3	44,06	45	14	4,90	6,0
Nº12	28,00	3	46,12	50	14	4,90	6,0
1/4	28,00	3	31,77	50	18	4,90	6,0
5/16	24,00	3	34,00	56	22	4,90	6,0
7/16	20,00	3	52,19	63	22	6,20	8,0
1/2	20,00	3	53,38	75	24	7,00	9,0

Ø	P	Nº	€	L mm	I mm	mm	d mm
9/16	18,00	3	69,51	80	28	9,00	11,0
5/8	18,00	3	89,79	80	28	9,00	12,0
7/8	14,00	3	155,03	100	36	14,50	18,0
1"	12,00	3	205,52	110	40	14,50	18,0
1 3/8	12,00	3	512,70	132	56	22,00	28,0

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2325 **HSS IS0529** Perfil completo / Profil complet / Non serial form

M-MF
DIN 13



Tol.
6H

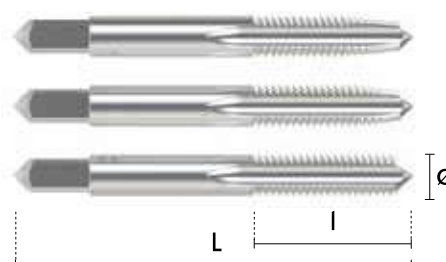
P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
•									•	•							

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

NEW

Macho 3°
Taraud 3°
Tap 3°
Gewindebohrer 3°

$$PVP = \epsilon/3 < \begin{matrix} M (\epsilon/3) \\ MF (\epsilon/2) \end{matrix}$$



Ø	P	Nº	€	L mm	I mm	mm	d mm
M2,0	0,40	3	36,45	41	8	2,00	2,5
M2,5	0,45	3	36,45	44,5	9,5	2,24	2,8
M3,0	0,50	3	19,59	48	11	2,50	3,15
M4,0	0,70	3	19,59	53	13	3,15	4,0
M5,0	0,80	3	21,60	58	16	4,00	5,0
M6,0	1,00	3	21,60	66	19	5,00	6,3
M7,0	1,00	3	36,45	66	19	5,60	7,1
M8,0	1,00	3	29,04	69	19	6,30	8,0
M8,0	1,25	3	45,90	72	22	6,30	8,0
M9,0	1,00	3	39,84	76	20	8,00	10,0
M9,0	1,25	3	59,40	72	22	7,10	10,0
M10,0	1,25	3	50,64	76	20	8,00	8,0
M10,0	1,50	3	55,35	80	24	8,00	8,0
M11,0	1,25	3	72,24	77	17	6,30	9,0
M11,0	1,50	3	101,25	85	25	7,10	9,0
M12,0	1,00	3	112,05	84	24	7,10	9,0

Ø	P	Nº	€	L mm	I mm	mm	d mm
M12,0	1,25	3	128,25	89	22	7,10	9,0
M12,0	1,50	3	158,64	89	22	7,10	9,0
M12	175	3	48,60	90	29	7,10	9
M14	125	3	52,65	95	25	9,00	11,2
M14	200	3	52,65	102	30	9,00	11,2
M16	200	3	68,85	104	32	10,00	12,5
M18	150	3	68,85	110	29	11,20	14
M18	250	3	68,85	104	37	11,20	14
M20	150	3	66,84	112	29	11,20	14
M20	200	3	79,65	112	37	11,20	14
M20	250	3	97,20	118	37	11,20	14
M22	250	3	117,45	120	38	12,50	16
M24	150	3	158,64	120	35	14,00	18
M24	200	3	176,85	130	35	14,00	18
M24	300	3	220,74	130	45	14,00	18

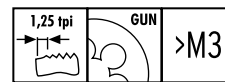
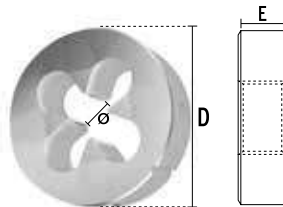
2501

HSS DIN EN 22568

M-MF
DIN 13Tol.
6g

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



PVP = € + 10%

Ø	P	€	D mm	E mm	
** M1,0	0,25	64,26	16	5	1
** M1,1	0,25	106,11	16	5	1
** M1,2	0,25	99,56	16	5	1
** M1,4	0,30	91,22	16	5	1
M1,6	0,35	86,20	16	5	1
M1,7	0,35	86,20	16	5	1
M1,8	0,35	86,20	16	5	1
M2,0	0,40	36,47	16	5	1
M2,2	0,45	85,38	16	5	1
M2,3	0,40	36,47	16	5	1
M2,5	0,45	36,47	16	5	1
M2,6	0,45	36,47	16	5	1
M3,0	0,50	31,37	20	5	1
M3,0	0,60	40,74	20	5	1
M3,5	0,60	32,38	20	5	1
*M3,5	0,75	105,10	20	5	1
M4,0	0,50	38,74	20	5	1
M4,0	0,70	31,37	20	5	1
M4,5	0,75	42,30	20	7	1
M5,0	0,50	42,73	20	5	1
M5,0	0,75	45,38	20	7	1
M5,0	0,80	31,37	20	7	1
M5,5	0,90	105,10	20	7	1
M6,0	0,50	41,58	20	7	1
M6,0	0,75	38,40	20	7	1
M6,0	1,00	31,37	20	7	1
M7,0	0,75	40,51	25	9	1
M7,0	1,00	34,21	25	9	1
M8,0	0,50	49,93	25	9	1
M8,0	0,75	40,51	25	9	1
M8,0	1,00	40,51	25	9	1
M8,0	1,25	32,78	25	9	1
M9,0	1,00	45,16	25	9	1
M9,0	1,25	48,23	25	9	1
M10,0	0,50	85,16	30	11	1
M10,0	0,75	63,08	30	11	1
M10,0	1,00	42,94	30	11	1
M10,0	1,25	53,80	30	11	1
M10,0	1,50	46,77	30	11	1
M11,0	0,75	116,61	30	11	1
M11,0	1,00	62,74	30	11	1
M11,0	1,25	67,24	30	11	1
M11,0	1,50	62,71	30	11	1
M12,0	0,75	72,89	38	10	1
M12,0	1,00	62,71	38	10	1
M12,0	1,25	62,71	38	10	1
M12,0	1,50	56,01	38	10	1

** Tol. 6h

Ø	P	€	D mm	E mm	
M12,0	1,75	51,41	38	14	1
M13,0	0,75	116,61	38	10	1
M13,0	1,00	73,71	38	10	1
M13,0	1,50	76,88	38	10	1
M13,0	1,75	76,88	38	14	1
M14,0	0,75	114,56	38	10	1
M14,0	1,00	68,82	38	10	1
M14,0	1,25	68,37	38	10	1
M14,0	1,50	58,55	38	10	1
M14,0	2,00	51,41	38	14	1
M15,0	1,00	83,57	38	10	1
M15,0	1,50	83,57	38	10	1
M15,0	2,00	103,05	38	14	1
M16,0	1,00	86,98	45	14	1
M16,0	1,25	79,09	45	14	1
M16,0	1,50	64,13	45	14	1
M16,0	2,00	79,09	45	18	1
M17,0	1,00	124,37	45	14	1
M17,0	1,25	124,37	45	14	1
M17,0	1,50	124,37	45	14	1
M18,0	1,00	90,95	45	14	1
M18,0	1,25	103,38	45	14	1
M18,0	1,50	80,43	45	14	1
M18,0	2,00	90,95	45	14	1
M18,0	2,50	69,07	45	18	1
M19,0	1,00	201,58	45	14	1
M19,0	1,25	201,58	45	14	1
M19,0	1,50	205,19	45	14	1
M20,0	1,00	90,58	45	14	1
M20,0	1,25	201,58	45	14	1
M20,0	1,50	83,02	45	14	1
M20,0	2,00	91,23	45	14	1
M20,0	2,50	69,07	45	18	1
M21,0	1,00	233,83	45	16	1
M21,0	1,25	233,83	45	14	1
M21,0	1,50	192,73	45	14	1
M22,0	1,00	123,69	55	16	1
M22,0	1,25	201,58	55	16	1
M22,0	1,50	106,40	55	16	1
M22,0	2,00	118,39	55	16	1
M22,0	2,50	101,62	55	22	1
M23,0	1,50	233,83	55	16	1
M24,0	1,00	118,39	55	16	1
M24,0	1,25	201,58	55	16	1
M24,0	1,50	106,40	55	16	1
M24,0	2,00	118,39	55	16	1
M24,0	3,00	101,62	55	22	1

(continúa Ref.2501 / suite Réf.2501 / Ref.2501 cont'd)

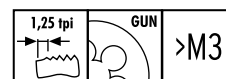
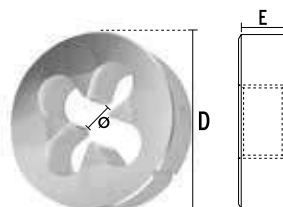
2501

HSS DIN EN 22568

M-MF
DIN 13Tol.
6g

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



PVP = € + 10%

Ø	P	€	D mm	E mm	
M25,0	1,00	183,08	55	16	1
M25,0	1,50	154,58	55	16	1
M26,0	1,00	265,57	55	16	1
M26,0	1,50	146,31	55	16	1
M26,0	2,00	265,57	55	16	1
M27,0	1,00	163,44	65	18	1
M27,0	1,50	160,92	65	18	1
M27,0	2,00	175,01	65	18	1
M27,0	3,00	146,31	65	25	1
M28,0	1,00	265,57	65	18	1
M28,0	1,50	160,92	65	18	1
M28,0	2,00	265,57	65	18	1
M30,0	1,00	179,69	65	18	1
M30,0	1,50	160,88	65	18	1
M30,0	2,00	179,69	65	18	1
M30,0	3,50	150,94	65	25	1
M32,0	1,00	270,31	65	18	1
M32,0	1,50	170,01	65	18	1
M32,0	2,00	265,57	65	18	1
M33,0	1,50	160,92	65	18	1
M33,0	2,00	175,23	65	18	1
M33,0	3,50	150,94	65	25	1
M34,0	1,50	167,87	65	18	1
*M34,0	2,00	376,60	65	18	1
M35,0	1,50	174,15	65	18	1
M35,0	2,00	376,60	65	18	1
M36,0	1,50	164,82	65	18	1
M36,0	2,00	175,23	65	18	1
M36,0	3,00	190,70	65	25	1
M36,0	4,00	156,51	65	25	1

Ø	P	€	D mm	E mm	
M38,0	1,50	249,30	75	20	1
M38,0	2,00	477,23	75	20	1
M39,0	1,50	250,52	75	20	1
M39,0	2,00	264,52	75	20	1
M39,0	3,00	300,61	75	30	1
M39,0	4,00	234,93	75	30	1
M40,0	1,50	260,09	75	20	1
M40,0	2,00	264,52	75	20	1
*M40,0	3,00	288,51	75	30	1
M42,0	1,50	341,91	75	20	1
M42,0	2,00	382,21	75	20	1
M42,0	3,00	398,75	75	30	1
M42,0	4,50	234,93	75	30	1
M45,0	1,50	341,91	90	22	1
M45,0	2,00	382,21	90	22	1
M45,0	3,00	398,75	90	36	1
*M45,0	4,50	359,30	90	36	1
M48,0	1,50	344,07	90	22	1
M48,0	2,00	351,74	90	22	1
M48,0	3,00	382,21	90	36	1
M48,0	5,00	359,72	90	36	1
M50,0	1,50	341,91	90	22	1
M52,0	1,50	341,91	90	22	1
M52,0	2,00	397,37	90	22	1
M52,0	3,00	433,66	90	36	1
M52,0	5,00	359,72	90	36	1
M56,0	5,50	642,21	105	36	1
M60,0	5,50	642,21	105	36	1
M63,0	1,50	1.212,11	105	22	1
M64,0	6,00	767,91	120	36	1

*Hasta fin de existencias / Jusqu'à épuisement des stocks / Until end of stock

2501/5

HSS DIN EN 22568

Izquierda / A gauche / Left hand

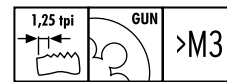
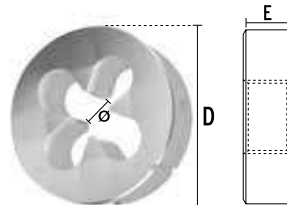
M-MF
DIN 13

Tol.
6g

LH

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



PVP = € + 10%

Ø	P	€	D mm	E mm	
M3,0	0,50	62,74	20	5	1
M4,0	0,70	62,74	20	5	1
M5,0	0,80	62,74	20	7	1
M6,0	1,00	62,74	20	7	1
M7,0	1,00	68,39	25	9	1
M8,0	1,00	80,97	25	9	1
M8,0	1,25	65,52	25	9	1
M10,0	1,00	85,91	30	11	1
M10,0	1,25	107,59	30	11	1
M10,0	1,50	93,56	30	11	1
M12,0	1,25	125,43	38	10	1
M12,0	1,50	93,56	38	10	1
M12,0	1,75	102,82	38	14	1
M14,0	1,50	117,16	38	10	1

Ø	P	€	D mm	E mm	
M14,0	2,00	102,81	38	14	1
M16,0	1,50	130,39	45	14	1
M16,0	2,00	138,16	45	18	1
M18,0	1,50	160,88	45	14	1
M18,0	2,50	138,16	45	18	1
M20,0	1,50	166,02	45	14	1
M20,0	2,50	138,16	45	18	1
M22,0	1,50	212,84	55	16	1
M22,0	2,50	203,24	55	22	1
M24,0	1,50	212,84	55	16	1
M24,0	3,00	203,24	55	22	1
M27,0	3,00	292,62	65	25	1
M30,0	3,50	301,91	65	25	1

2514

HSSE DIN EN 22568

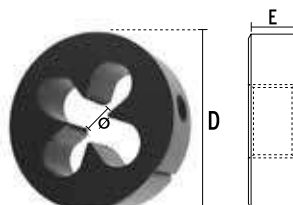
M
DIN 13Tol.
6g

NIT



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	P	€	D mm	E mm	
M3,0	0,50	50,28	20	5	1
M4,0	0,70	50,28	20	5	1
M5,0	0,80	50,28	20	7	1
M6,0	1,00	50,28	20	7	1
M8,0	1,25	52,53	25	9	1

Ø	P	€	D mm	E mm	
M10,0	1,50	74,93	30	11	1
M12,0	1,75	82,38	38	14	1
M14,0	2,00	85,67	38	14	1
M16,0	2,00	115,05	45	18	1

2512

HSSE DIN EN 22568

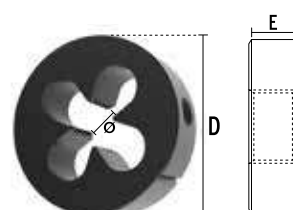
M
DIN 13Tol.
6g

VAP



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	P	€	D mm	E mm	
M3,0	0,50	42,70	20	5	1
M4,0	0,70	42,70	20	5	1
M5,0	0,80	42,70	20	7	1
M6,0	1,00	42,70	20	7	1
M8,0	1,25	44,60	25	9	1
M10,0	1,50	63,68	30	11	1

Ø	P	€	D mm	E mm	
M12,0	1,75	70,01	38	14	1
M14,0	2,00	71,41	38	14	1
M16,0	2,00	95,88	45	18	1
M18,0	2,50	95,88	45	18	1
M20,0	2,50	95,88	45	18	1

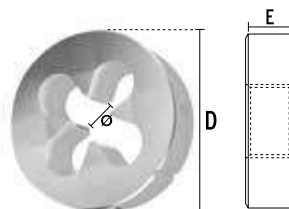
2502

HSS DIN EN 22568

BSW
BS 84

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



PVP = € + 10%

Ø	P	€	D mm	E mm	
3/32	48,00	43,21	16	5	1
1/8	40,00	35,03	20	5	1
5/32	32,00	35,03	20	7	1
3/16	24,00	35,03	20	7	1
7/32	24,00	35,03	20	7	1
1/4	20,00	35,03	20	7	1
5/16	18,00	36,54	25	9	1
3/8	16,00	52,93	30	11	1
7/16	14,00	52,93	30	11	1
1/2	12,00	52,93	38	14	1
9/16	12,00	63,39	38	14	1
5/8	11,00	76,99	45	18	1

Ø	P	€	D mm	E mm	
3/4	10,00	76,98	45	18	1
7/8	9,00	113,22	55	22	1
1"	8,00	113,22	55	22	1
1*1/8	7,00	178,24	65	25	1
1*1/4	7,00	178,24	65	25	1
1*3/8	6,00	181,55	65	25	1
1*1/2	6,00	275,92	75	30	1
1*5/8	5,00	366,76	75	30	1
1*3/4	5,00	461,56	90	36	1
1*7/8	4,50	505,01	90	36	1
2"	4,50	480,76	90	36	1

2502/5

HSS DIN EN 22568

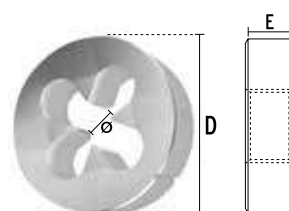
Izquierda / A gauche / Left hand / Links

BSW
BS 84

LH

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



PVP = € + 10%

Ø	P	€	D mm	E mm	
1/8	40,00	70,07	20	5	1
5/32	32,00	70,07	20	5	1
3/16	24,00	70,07	20	7	1
1/4	20,00	70,07	20	7	1
5/16	18,00	73,08	25	9	1
3/8	16,00	105,84	30	11	1

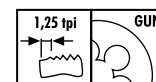
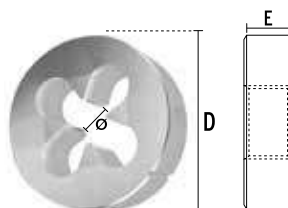
Ø	P	€	D mm	E mm	
7/16	14,00	105,84	30	11	1
1/2	12,00	105,84	38	14	1
9/16	12,00	126,80	38	14	1
5/8	11,00	154,01	45	18	1
7/8	9,00	226,46	55	22	1
1"	8,00	226,46	55	22	1

2503 HSS DIN EN 22568

BSF
BS 84

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



PVP = € + 10%

Ø	P	€	D mm	E mm	
3/16	32,00	158,54	20	7	1
1/4	26,00	55,19	20	7	1
7/16	18,00	96,52	30	11	1
1/2	16,00	96,52	38	10	1
9/16	16,00	107,63	38	10	1

Ø	P	€	D mm	E mm	
5/8	14,00	135,99	45	14	1
3/4	12,00	135,99	45	14	1
7/8	11,00	201,08	55	22	1
1"	10,00	201,08	55	22	1

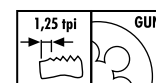
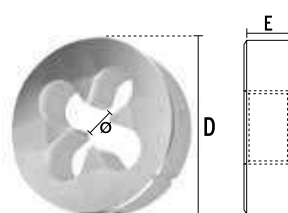
*(Hasta fin de existencias / Jusqu'à épuisement des stocks / While supplies last)

2504 HSS DIN EN 24231

G
ISO 228

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



PVP = € + 10%

Ø	P	€	D mm	E mm	
1/8	28,00	56,38	30	11	1
1/4	19,00	56,38	38	10	1
3/8	19,00	72,89	45	14	1
1/2	14,00	72,89	45	14	1
5/8	14,00	101,06	55	16	1
3/4	14,00	151,07	55	16	1
7/8	14,00	158,14	65	18	1

Ø	P	€	D mm	E mm	
1"	11,00	158,14	65	18	1
1*1/8	11,00	225,40	75	20	1
1*1/4	11,00	221,85	75	20	1
1*3/8	11,00	349,69	90	22	1
1*1/2	11,00	339,84	90	22	1
1*3/4	11,00	349,69	105	22	1
2"	11,00	420,86	105	22	1

2504/5

HSS DIN EN 24231

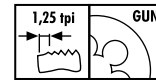
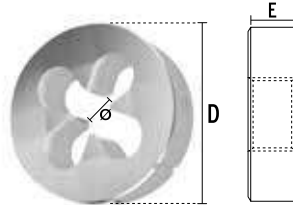
Izquierda / A gauche / Left hand / Links

G
ISO 228



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



PVP = € + 10%

Ø	P	€	D mm	E mm	
1/8	28,00	112,72	30	11	1
1/4	19,00	112,72	38	10	1
3/8	19,00	145,77	45	14	1
1/2	14,00	145,77	45	14	1

Ø	P	€	D mm	E mm	
5/8	14,00	202,17	55	16	1
3/4	14,00	302,15	55	16	1
7/8	14,00	316,28	65	18	1
1"	11,00	316,28	65	18	1

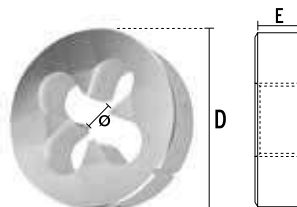
2522

HSS DIN EN 24231

G
ISO 228

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	P	€	D mm	E mm	
1/8	28,00	67,02	30	11	1
1/4	19,00	67,02	38	10	1
3/8	19,00	86,72	45	14	1
1/2	14,00	86,72	45	14	1

Ø	P	€	D mm	E mm	
5/8	14,00	136,95	55	16	1
3/4	14,00	179,62	55	16	1
7/8	14,00	188,03	65	18	1
1"	11,00	188,03	65	18	1

2521

HSS DIN EN 24231

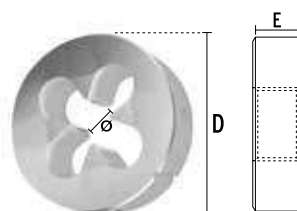


- 0,1

G
ISO 228

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	P	€	D mm	E mm	
1/8	28,00	73,70	30	11	1
1/4	19,00	73,70	38	10	1
3/8	19,00	95,38	45	14	1
1/2	14,00	95,38	45	14	1

Ø	P	€	D mm	E mm	
5/8	14,00	190,28	55	16	1
3/4	14,00	197,57	55	16	1
7/8	14,00	240,20	65	18	1
1"	11,00	240,20	65	18	1

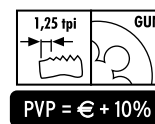
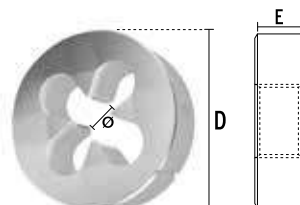
2505 HSS DIN EN 22568

UNC
ANSI/ASME
B1.1

Tol.
2A

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



PVP = € + 10%

Ø	P	€	D mm	E mm	
Nº4	40,00	45,03	20	5	1
Nº5	40,00	45,03	20	5	1
Nº6	32,00	45,03	20	5	1
Nº8	32,00	45,03	20	7	1
Nº10	24,00	45,03	20	7	1
Nº12	24,00	45,03	20	7	1
1/4	20,00	41,45	20	7	1
5/16	18,00	40,51	25	9	1
3/8	16,00	59,66	30	11	1
7/16	14,00	59,66	30	11	1
1/2	13,00	61,40	38	14	1

Ø	P	€	D mm	E mm	
9/16	12,00	64,23	38	14	1
5/8	11,00	84,29	45	18	1
3/4	10,00	84,29	45	18	1
7/8	9,00	110,25	55	22	1
1"	8,00	110,25	55	22	1
1*1/8	7,00	163,75	65	25	1
1*1/4	7,00	163,75	65	25	1
1*3/8	6,00	163,75	65	25	1
1*1/2	6,00	255,34	75	30	1
1*3/4	5,00	547,15	90	36	1
2"	4,50	554,54	90	36	1

2505/5 HSS DIN EN 22568 Izquierda / A gauche / Left hand / Links

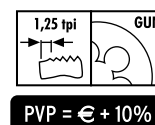
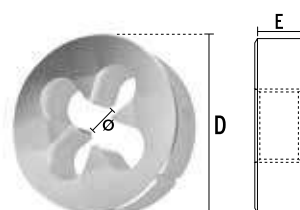
UNC
ANSI/ASME
B1.1

Tol.
2A



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



PVP = € + 10%

Ø	P	€	D mm	E mm	
1/4	20,00	82,90	20	7	1
5/16	18,00	80,97	25	9	1
3/8	16,00	119,30	30	11	1
7/16	14,00	119,30	30	11	1
1/2	13,00	122,75	38	14	1

Ø	P	€	D mm	E mm	
9/16	12,00	128,50	38	14	1
5/8	11,00	168,57	45	18	1
3/4	10,00	168,57	45	18	1
7/8	9,00	220,54	55	22	1
1"	7,00	220,54	55	22	1

2506

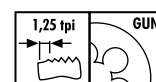
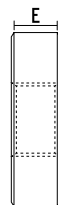
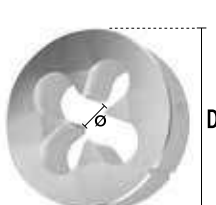
HSS DIN EN 22568

UNF
ANSI/ASME
B1.1

Tol.
2A

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



PVP = € + 10%



Ø	P	€	D mm	E mm	
Nº4	48,00	45,42	20	5	1
Nº5	44,00	45,42	20	5	1
Nº6	40,00	45,42	20	5	1
Nº8	36,00	45,42	20	7	1
Nº10	32,00	45,42	20	7	1
Nº12	28,00	44,54	20	7	1
1/4	28,00	35,98	20	7	1
5/16	24,00	42,76	25	9	1
3/8	24,00	60,02	30	11	1
7/16	20,00	55,18	30	11	1

Ø	P	€	D mm	E mm	
1/2	20,00	63,03	38	10	1
9/16	18,00	67,87	38	10	1
5/8	18,00	86,73	45	14	1
3/4	16,00	86,73	45	14	1
7/8	14,00	116,49	55	16	1
1"	12,00	116,49	55	16	1
1*1/8	12,00	179,42	65	18	1
1*1/4	12,00	179,42	65	18	1
1*3/8	12,00	268,33	65	18	1
1*1/2	12,00	268,33	75	20	1

2506/5

HSS DIN EN 22568

Izquierda / A gauche / Left hand / Links

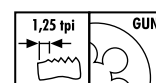
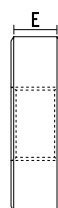
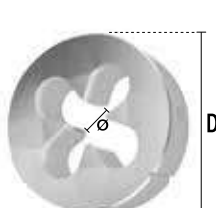
UNF
ANSI/ASME
B1.1

Tol.
2A



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



PVP = € + 10%

Ø	P	€	D mm	E mm	
1/4	28,00	71,97	20	7	1
5/16	24,00	85,55	25	9	1
3/8	24,00	120,05	30	11	1
7/16	20,00	110,39	30	11	1
1/2	20,00	126,02	38	10	1

Ø	P	€	D mm	E mm	
9/16	18,00	135,73	38	10	1
5/8	18,00	173,46	45	14	1
3/4	16,00	173,46	45	14	1
7/8	14,00	232,97	55	16	1
1"	12,00	232,97	55	16	1

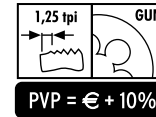
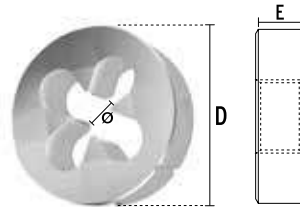
2507

HSS ISO 7-1

R
DIN 2999

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	P	€	D mm	E mm	
1/8	28,00	132,65	30	11	1
1/4	19,00	132,65	38	14	1
3/8	19,00	172,78	45	18	1

Ø	P	€	D mm	E mm	
1/2	14,00	172,78	55	22	1
3/4	14,00	326,23	55	22	1
1"	11,00	347,57	65	25	1

2508

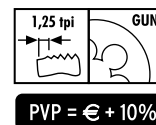
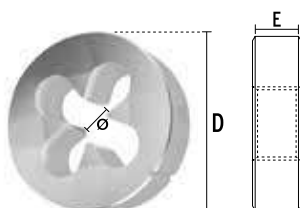
HSS DIN EN 22568

UNEF
ANSI/ASME
B1.1

Tol.
2A

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	P	€	D mm	E mm	
1/4	32,00	135,61	20	7	1
5/16	32,00	135,61	25	9	1
3/8	32,00	210,54	30	11	1
7/16	28,00	210,54	30	11	1
1/2	28,00	210,54	38	10	1

Ø	P	€	D mm	E mm	
9/16	24,00	210,54	38	12	1
5/8	24,00	337,45	45	14	1
3/4	20,00	337,45	45	14	1
1"	20,00	412,44	55	16	1

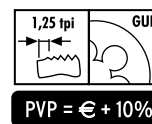
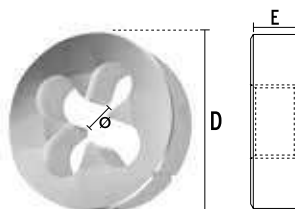
2520

HSS DIN EN 22568

UN
ANSI/ASME
B1.1Tol.
2A

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	P	€	D mm	E mm	
1"1/8	8,00	448,71	65	25	1
1"1/4	8,00	448,71	65	25	1
1"3/8	8,00	481,36	65	25	1
1"1/2	8,00	509,45	75	30	1

Ø	P	€	D mm	E mm	
1"5/8	8,00	642,51	75	30	1
1"3/4	8,00	781,54	90	36	1
2"	8,00	781,54	90	36	1

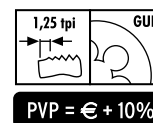
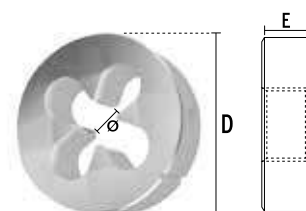
2510

HSS DIN 40434

PG
DIN 40430

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



Pg	Ø	P	€	D mm	E mm	
7,0	12,5	20,00	80,54	38	10	1
9,0	15,2	18,00	80,54	45	14	1
11,0	18,6	18,00	100,87	45	14	1
13,5	20,4	18,00	100,87	45	14	1
16,0	22,5	18,00	130,06	55	16	1

Pg	Ø	P	€	D mm	E mm	
21,0	28,3	16,00	184,86	65	18	1
29,0	37,0	16,00	184,86	65	18	1
36,0	47,0	16,00	473,79	90	22	1
42,0	54,0	16,00	473,79	105	22	1
48,0	59,3	16,00	628,35	105	22	1

Aceros
Aciers
Steels
StähleAceros Inox
Aciers Inox
Stainless Steels
EdelstahlFundición
Fonte
Cast Iron
GusseisenMetales no ferrosos
Métal non Ferreux
Non Ferrous metals
NE-MetalleTitanio y Superalaciones
Titanium et Superalloys
Titanium and Superalloys
Titan und SuperlegierungenMateriales Duros
Materiels Durs
Hard materials
Hartmaterialien

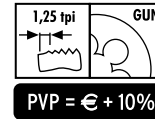
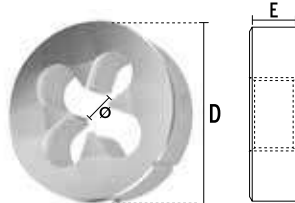
2509

HSS DIN EN 24230

NPT
ANSI/ASME
B1.20.1

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	P	€	D mm	E mm	
1/16	27,00	102,52	25	9	1
1/8	27,00	84,59	30	11	1
1/4	18,00	84,59	38	14	1
3/8	18,00	110,47	45	18	1
1/2	14,00	110,47	45	18	1

Ø	P	€	D mm	E mm	
3/4	14,00	202,03	55	22	1
1"	11,50	242,92	65	25	1
1"1/4	11,50	301,86	75	25	1
1"1/2	11,50	421,09	90	25	1
2"	11,50	586,29	105	25	1

2701 HSS ISO 529

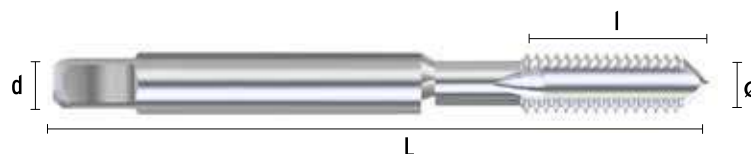
Tol.
4H

EG-M
(STI)

Form.
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
•									•	•							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
M2,0	0,40	16,58	44,5	9,5	2,24	2,80
M2,2	0,45	16,58	44,5	9,5	2,24	2,80
M2,5	0,45	16,58	48	11	2,50	3,15
M3,0	0,50	10,76	53	13	3,15	4,00
M3,5	0,60	10,76	53	13	3,55	4,50
M4,0	0,70	13,05	58	16	4,00	5,00
M5,0	0,80	13,48	66	19	5,00	6,30
M6,0	1,00	13,48	72	22	6,30	8,00
M7,0	1,00	21,70	72	22	7,10	9,00
M8,0	1,00	21,70	80	24	8,00	10,00
M8,0	1,25	18,63	80	24	8,00	10,00
M9,0	1,25	26,97	85	25	6,30	8,00
M10,0	1,00	26,31	85	25	6,30	8,00
M10,0	1,25	26,31	85	25	6,30	8,00
M10,0	1,50	24,22	89	29	7,10	9,00
M11,0	1,50	30,92	89	29	7,10	9,00
M12,0	1,00	37,61	95	30	9,00	11,20
M12,0	1,25	37,61	95	30	9,00	11,20
M12,0	1,50	37,61	95	30	9,00	11,20
M12,0	1,75	26,65	95	30	9,00	11,20

Ø	P	€	L mm	I mm	∠ mm	d mm
M14,0	1,00	44,05	102	32	10,00	12,50
M14,0	1,25	44,05	102	32	10,00	12,50
M14,0	1,50	44,05	102	32	10,00	12,50
M14,0	2,00	36,93	102	32	10,00	12,50
M15,0	1,50	46,32	102	32	10,00	12,50
M15,0	2,00	46,32	112	37	11,20	14,00
M16,0	1,50	46,32	104	29	11,20	14,00
M16,0	2,00	46,32	112	37	11,20	14,00
M18,0	1,50	46,32	104	29	11,20	14,00
M18,0	2,00	57,93	104	29	11,20	14,00
M18,0	2,50	57,93	118	38	12,50	16,00
M20,0	1,50	64,25	113	33	12,50	16,00
M20,0	2,00	64,25	113	33	12,50	16,00
M20,0	2,50	64,25	118	38	12,50	16,00
M22,0	1,50	72,60	120	35	14,00	18,00
M22,0	2,00	72,60	120	35	14,00	18,00
M22,0	2,50	72,60	130	45	14,00	18,00
M24,0	1,50	91,50	120	35	14,00	18,00
M24,0	2,00	91,50	127	37	16,00	20,00
M24,0	3,00	91,50	138	48	16,00	20,00

2702 HSS ISO 529

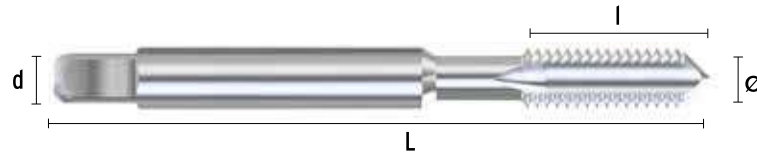
Tol.
3B

EG-UNC
(STI)

Form.
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
•									•	•							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
N°2	56,00	27,19	48	9,5	2,50	3,15
N°4	40,00	27,19	53	13	3,15	4,00
N°6	32,00	27,19	58	16	4,00	5,00
N°8	32,00	27,19	62	17	4,50	5,60
N°10	24,00	18,19	66	19	5,00	6,30
N°12	24,00	18,19	66	19	5,60	7,10
1/4	20,00	18,19	72	22	6,30	8,00
5/16	18,00	19,19	80	24	8,00	10,00
3/8	16,00	20,71	85	25	6,30	8,00

Ø	P	€	L mm	I mm	∠ mm	d mm
7/16	14,00	29,26	95	30	9,00	11,20
1/2	13,00	31,47	102	32	10,00	12,50
9/16	12,00	48,88	112	37	11,20	14,00
5/8	11,00	58,65	112	37	11,20	14,00
11/16	11,00	78,03	112	37	11,20	14,00
3/4	10,00	78,03	118	38	12,50	16,00
7/8	9,00	90,31	130	45	14,00	18,00
1"	8,00	90,31	138	48	16,00	20,00

2703 HSS ISO 529

Tol.
3B

EG-UNF
(STI)

Form.
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
•									•	•							

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



Ø	P	€	L mm	I mm	∠ mm	d mm
N°4	48,00	27,19	53	13	3,15	4,00
N°6	40,00	27,19	53	13	3,55	4,50
N°8	36,00	27,19	62	17	4,50	5,60
N°10	32,00	18,19	66	19	5,00	6,30
1/4	28,00	18,19	69	19	6,30	8,00
5/16	24,00	19,19	76	20	8,00	10,00
3/8	24,00	20,71	82	22	6,30	8,00
7/16	20,00	29,26	84	24	7,10	9,00

Ø	P	€	L mm	I mm	∠ mm	d mm
1/2	20,00	31,47	90	25	9,00	11,20
9/16	18,00	48,88	104	29	10,00	12,50
5/8	18,00	58,65	104	29	11,20	14,00
3/4	16,00	78,03	104	29	11,20	14,00
7/8	14,00	90,31	120	35	14,00	18,00
1"	14,00	90,31	127	37	16,00	20,00*
1"	12,00	90,31	127	37	16,00	20,00

*UNS

2704

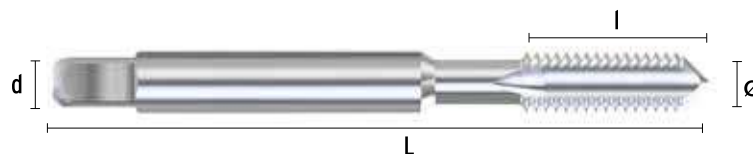
HSS ISO 529

EG-W
(STI)

Form.
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
•									•	•							

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



Ø	P	€	L mm	l mm	∠ mm	d mm
1/8	40,00	18,19	53	13	3,15	4,00
3/16	24,00	18,19	66	19	5,00	6,30
1/4	20,00	18,19	72	22	6,30	8,00
5/16	18,00	19,19	80	24	8,00	10,00
3/8	16,00	20,71	85	25	6,30	8,00
7/16	14,00	29,26	95	30	9,00	11,20
1/2	12,00	31,47	102	32	10,00	12,50

Ø	P	€	L mm	l mm	∠ mm	d mm
9/16	12,00	48,88	102	32	10,00	12,50
5/8	11,00	58,65	112	37	11,20	14,00
11/16	11,00	78,03	112	37	11,20	14,00
3/4	10,00	78,03	118	38	12,50	16,00
7/8	9,00	90,31	130	45	14,00	18,00
1"	8,00	90,31	138	48	16,00	20,00

2715

HSS ISO 529

EG-G
(STI)

Form.
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
•									•	•							

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



Ø	P	€	L mm	l mm	∠ mm	d mm
1/8	28,00	21,15	59	15	6,30	8,00
1/4	19,00	24,00	67	19	9,00	11,20

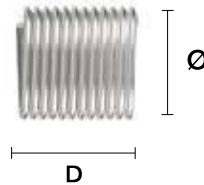
Ø	P	€	L mm	l mm	∠ mm	d mm
3/8	19,00	31,59	75	21	11,20	14,00
1/2	14,00	51,17	87	26	12,50	16,00

2705

DIN 8140

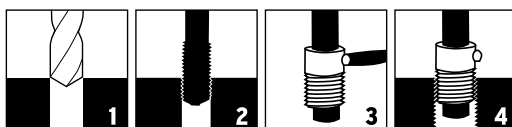
M
DIN 8140

Tol.
6H



Ø	P	Dmm.									
		1,0 Ø €		1,5 Ø €		2,0 Ø €		2,5 Ø* €		3,0 Ø* €	
		10	100	10	100	10	100	10	100	10	100
M2,0	0,40	0,48		0,50		0,51		0,55		0,60	
M2,2	0,45	0,46		0,48		0,50		0,51		0,46	
M2,5	0,45	0,38		0,42		0,46		0,48		0,51	
M3,0	0,50	0,35	0,32	0,36	0,33	0,38	0,35	0,48		0,51	
M3,5	0,60	0,46		0,48		0,50		0,51		0,57	
M4,0	0,70	0,35	0,32	0,36	0,33	0,38	0,35	0,46		0,50	
M5,0	0,80	0,35	0,32	0,36	0,33	0,38	0,35	0,46		0,50	
M6,0	1,00	0,35	0,32	0,36	0,33	0,38	0,35	0,46		0,50	
M7,0	1,00	0,38		0,42		0,46		0,55		0,60	
M8,0	1,00	0,42		0,48		0,57		0,80		0,93	
M8,0	1,25	0,38	0,34	0,48	0,43	0,55	0,51	0,68		0,83	
M9,0	1,25	0,59		0,68		0,84		1,05		1,22	
M10,0	1,00	0,46		0,55		0,71		1,01		1,22	
M10,0	1,25	0,46		0,55		0,71		1,01		1,22	
M10,0	1,50	0,46	0,41	0,55	0,50	0,71	0,66	0,88		1,07	
M11,0	1,50	0,60		0,96		1,28		1,75		2,16	
M12,0	1,00	0,55		0,86		1,14		1,75		2,16	
M12,0	1,25	0,55		0,86		1,14		1,75		2,16	
M12,0	1,50	0,55		0,86		1,14		1,75		2,16	
M12,0	1,75	0,55	0,50	0,86	0,77	1,14	1,05	1,55		1,93	
M14,0	1,00	1,34		1,70		2,16		2,69		3,10	
M14,0	1,25	1,34		1,70		2,16		2,69		3,10	
M14,0	1,50	1,34		1,70		2,16		2,69		3,10	
M14,0	2,00	0,95		1,20		1,53		2,69		3,10	
M16,0	1,50	1,80		2,23		2,76		3,34		3,92	
M16,0	2,00	1,26		1,56		1,93		3,34		3,95	
M18,0	1,50	2,44		3,18		3,87		4,60		5,28	
M18,0	2,00	2,44		3,18		3,91		4,60		5,25	
M18,0	2,50	1,94		2,58		3,11		4,60		5,25	
M20,0	1,50	2,95		3,85		4,66		6,04		6,93	
M20,0	2,00	2,95		3,85		4,66		6,04		6,93	
M20,0	2,50	2,35		3,08		3,74		6,04		6,93	
		1,0 Ø €		1,5 Ø €		2,0 Ø €		2,5 Ø* €		3,0 Ø* €	
		5		5		5		5		5	
M22,0	1,50	4,06		5,09		6,30		8,17		9,51	
M22,0	2,00	4,06		5,09		6,30		8,17		9,51	
M22,0	2,50	3,25		4,06		5,04		8,17		9,51	
M24,0	1,50	5,09		6,67		8,11					
M24,0	2,00	5,09		6,67		8,11					
M24,0	3,00	5,09		6,67		8,11					

* Bajo pedido
Sur commande
To-order



MODO DE EMPLEO / MODE D'EMPLOI / HOW TO USE

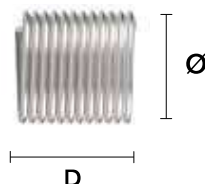
- 1- Taladrado previo / Perçage préalable / Previous drilling
- 2- Roscado previo / Taraudage préalable / Previous threading
- 3- Instalación del inserto en la herramienta / Pose de l'insert dans l'outil / Placement of the insert in the tool
- 4- Introducción del inserto en la rosca / Introduction de l'insert dans le filet / Introduction of the insert in the coil

2706

DIN 8140

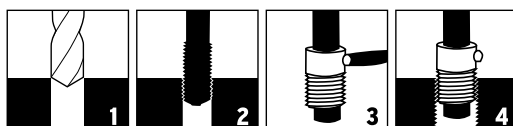
UNC
ANSI/ASME
B18.29.1

Tol.
2B



Ø	P	Dmm.					
		1,0 Ø €	1,5 Ø €	2,0 Ø €	2,5 Ø* €	3,0 Ø* €	
Nº 2	56,00	0,80	0,68	0,96	1,05	1,13	10
Nº 4	40,00	0,60	0,55	0,68	0,83	0,88	10
Nº 5	40,00	0,67	0,60	0,77	0,88	1,00	10
Nº 6	32,00	0,60	0,55	0,68	0,83	0,88	10
Nº 8	32,00	0,60	0,55	0,68	0,84	0,96	10
Nº 10	24,00	0,60	0,67	0,68	0,84	0,96	10
Nº 12	24,00	0,68	0,71	0,84	0,83	0,88	10
1/4	20,00	0,60	0,55	0,68	0,86	0,86	10
5/16	18,00	0,68	0,67	0,83	1,34	1,43	10
3/8	16,00	0,80	0,80	1,26	1,73	2,07	10
7/16	14,00	0,89	0,89	1,47	2,07	2,47	10
1/2	13,00	1,00	1,23	2,02	2,98	3,70	10
9/16	12,00	1,87	2,10	3,51	4,32	5,01	5
5/8	11,00	2,54	2,71	4,45	5,33	6,35	5
3/4	10,00	3,43	3,92	6,28	7,39	8,49	5
7/8	9,00	5,47	5,22	8,43	9,97	11,63	5
1"	8,00	6,86	6,77	10,88	14,21	16,33	5

* Bajo pedido
Sur commande
To-order



MODOS DE EMPLEO / MODE D'EMPLOI / HOW TO USE

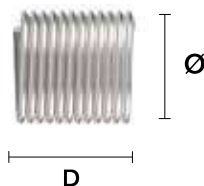
- 1- Taladrado previo / Perçage préalable / Previous drilling
- 2- Roscado previo / Taraudage préalable / Previous threading
- 3- Instalación del inserto en la herramienta / Pose de l'insert dans l'outil / Placement of the insert in the tool
- 4- Introducción del inserto en la rosca / Introduction de l'insert dans le filet / Introduction of the insert in the coil

2707

DIN 8140

UNF
ANSI/ASME
B18.29.1

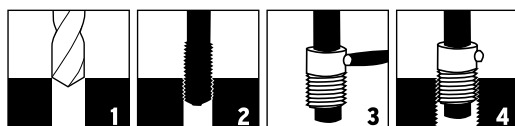
Tol.
2B



Ø	P	Dmm.					
		1,0 Ø €	1,5 Ø €	2,0 Ø €	2,5 Ø* €	3,0 Ø* €	
4	48,00	0,60	0,55	0,68	0,83	0,88	10
6	40,00	0,60	0,55	0,68	0,83	0,88	10
8	36,00	0,68	0,55	0,77	0,84	0,96	10
10	32,00	0,60	0,55	0,68	0,86	0,96	10
1/4	28,00	0,60	0,55	0,68	0,84	0,96	10
5/16	24,00	0,68	0,68	1,00	1,34	1,58	10
3/8	24,00	0,80	0,80	1,26	1,73	2,07	10
7/16	20,00	0,89	0,89	1,47	2,05	2,47	10
1/2	20,00	0,96	1,23	2,02	2,98	3,70	10
9/16	18,00	1,96	2,10	3,51	4,32	5,01	5
5/8	18,00	2,66	2,71	4,45	5,33	6,35	5
3/4	16,00	3,59	3,92	6,28	7,39	8,49	5
7/8	14,00	5,47	5,22	8,43	9,97	11,63	5
1"	12,00	6,86	6,77	10,88	14,21	16,33	5
*1"1/8	12,00	11,46	11,40	17,28			5
*1"1/4	12,00	12,67	19,68				5
*1"3/8	12,00	15,03	20,74				5
*1"1/2	12,00	15,85	17,13				5

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

*** Bajo pedido**
Sur commande
To-order



MODO DE EMPLEO / MODE D'EMPLOI / HOW TO USE

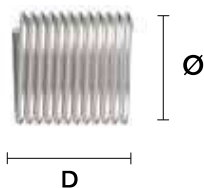
- 1- Taladrado previo / Perçage préalable / Previous drilling
- 2- Roscado previo / Taraudage préalable / Previous threading
- 3- Instalación del inserto en la herramienta / Pose de l'insert dans l'outil / Placement of the insert in the tool
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2708

DIN 8140

BSW
BS 84

Tol.
2B



Ø	P	Dmm.					
		1,0 Ø €	1,5 Ø €	2,0 Ø €	2,5 Ø* €	3,0 Ø* €	
1/8	40,00	0,77	0,60	0,84	0,88	1,00	10
3/16	24,00	0,68	0,55	0,77	0,88	1,00	10
1/4	20,00	0,68	0,55	0,77	0,93	1,07	10
5/16	18,00	0,77	0,68	1,08	1,47	1,73	10
3/8	16,00	0,86	0,80	1,39	1,87	2,28	10
7/16	14,00	1,00	0,89	1,63	2,28	2,71	10
1/2	12,00	0,96	1,47	2,02	3,25	4,05	10
9/16	12,00	2,16	2,33	3,51	4,74	5,49	5
5/8	11,00	2,90	2,71	4,45	5,87	6,93	5
3/4	10,00	3,98	3,92	5,28	6,83	9,33	5
7/8	9,00	4,96	4,17	7,67	9,94	11,60	5
1"	8,00	6,24	5,44	9,90	12,91	14,85	5

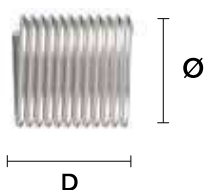
* Bajo pedido
Sur commande
To-order

2716

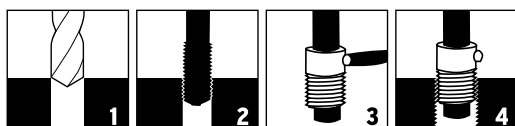
DIN 8140

G
ISO 229

Tol.
2B



Ø	P	Dmm.			
		1,0 Ø €	1,5 Ø €	2,0 Ø €	
1/8	28,00	0,71	1,04	1,13	10
1/4	19,00	0,98	1,41	1,58	10
3/8	19,00	0,87	1,60	1,81	10
1/2	14,00	1,51	2,30	2,41	10



MODO DE EMPLEO / MODE D'EMPLOI / HOW TO USE

- 1- Taladrado previo / Perçage préalable / Previous drilling
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2709 Insertador / Appareil de pose manuel / Insert Tool / Einsatzwerkzeug



n°	Ø x P mm	UNC/UNF/BSW/BSF/BSP		€
2	M 2,00 x 0,40 M 2,20 x 0,45	UNC N° 2	1	31,25
3	M 2,50 x 0,45		1	31,25
4	M 3,00 x 0,50	UNC N° 5, UNC/UNF N° 4, BSW 1/8	1	23,59
5	M 3,50 x 0,60	UNC/UNF N° 6	1	23,59
6	M 4,00 x 0,70	UNC, UNF N° 8	1	23,59
7		BSW 3/16, UNC N° 10	1	23,59
8	M 5,00 x 0,80	UNF N° 10, UNC N° 12, BSF 3/16	1	23,59
9	M 6,00 x 1,00	UNC, UNF 1/4, BSW, BSF 1/4	1	23,59
10	M 7,00 x 1,00		1	23,59
11	M 8,00 x 1,00 M 8,00 x 1,25	UNF, BSF 5/16 UNC, BSW 5/16	1	23,59
12	M 9,00 x 1,00 M 9,00 x 1,25		1	23,59
13	M 10,00 x 1,00 M 10,00 x 1,25 M 10,00 x 1,50	UNF, BSF 3/8 UNC, BSW 3/8 G 1/18	1	23,59
14	M 11,00 x 1,25 M 11,00 x 1,50	UNC, UNF 7/16, BSW, BSF 7/16	1	25,15
15	M 12,00 x 1,00 M 12,00 x 1,25 M 12,00 x 1,50 M 12,00 x 1,75	UNC, UNF 1/2, BSW, BSF 1/2	1	28,22
16	M 14,00 x 1,50 M 14,00 x 2,00	UNC, UNF 9/16, BSW, BSF 9/16 G 1/4, G 3/8	1	31,40
17	M 14,00 x 1,00 M 14,00 x 1,25		1	31,40
18	M 16,00 x 1,50 M 16,00 x 2,00	UNC, UNF 5/8, BSW, BSF 5/8	1	31,40
20	M 18,00 x 1,50 M 18,00 x 2,00 M 18,00 x 2,50	UNC 3/4, BSW, BSF 3/4	1	39,18
21	M 20,00 x 1,50 M 20,00 x 2,00 M 20,00 x 2,50	UNF 3/4	1	39,18
22	M 22,00 x 1,50 M 22,00 x 2,00 M 22,00 x 2,50	UNC, UNF 7/8, BSW, BSF 7/8 G 1/2	1	39,18
23	M 24,00 x 1,50 M 24,00 x 2,00 M 24,00 x 3,00	UNC, UNF 1", BSW, BSF 1"	1	62,82

2710 Rompe Arrastre / Rupteur / Tang break tool / Zapfenbrecher



n°	Ø x P mm	UNC/UNF/BSW/BSF/BSP		€
2	M 2,00 x 0,40 M 2,20 x 0,45	UNC N° 2	1	7,45
3	M 2,50 x 0,45		1	7,45
4	M 3,00 x 0,50	UNC, UNF N° 4	1	7,45
5	M 3,50 x 0,60	UNC, UNF N° 6	1	7,45
6	M 4,00 x 0,70	UNC N° 10, UNC/UNF N° 8, BSF 3/16	1	7,45
8	M 5,00 x 0,80		1	9,37
9	M 6,00 x 1,00	UNC/UNF 1/4, BSW/BSF 1/4	1	9,37
	M 7,00 x 1,00			12,22
11	M 8,00 x 1,00 M 8,00 x 1,25	UNC/UNF 5/16, BSW/BSF 5/16	1	
12	M 9,00 x 1,00 M 9,00 x 1,25	BSF 3/8	1	12,22
13	M 10,00 x 1,00 M 10,00 x 1,25 M 10,00 x 1,50	UNF 3/8 UNC, BSW 3/8 G 1/8	1	12,22
14	M 11,00 x 1,25 M 11,00 x 1,50	UNC/UNF 7/16, BSW/BSF 7/16	1	12,22
15	M 12,00 x 1,00 M 12,00 x 1,25 M 12,00 x 1,50 M 12,00 x 1,75	UNC/UNF 1/2, BSW/BSF 1/2 G 1/4	1	12,22

2711 Kits / Sets / Sätze

EG-M
(STI)



Ø	P				1,5D	€
M2,0	0,40	2,10	No. 2	No. 2	10	76,78
M2,5	0,45	2,60	No. 3	No. 3	10	76,08
M3,0	0,50	3,20	No. 4	No. 4	10	62,30
M3,5	0,60	3,70	No. 5	No. 5	10	63,29
M4,0	0,70	4,20	No. 6	No. 6	10	64,74
M5,0	0,80	5,20	No. 8	No. 8	10	68,42
M6,0	1,00	6,30	No. 9	No. 9	10	68,47
M7,0	1,00	7,30	No. 10	No. 11	10	80,99
M8,0	1,00	8,30	No. 11	No. 11	10	79,65
M8,0	1,25	8,30	No. 11	No. 11	10	82,71
M9,0	1,25	9,30	No. 12		10	79,14
M10,0	1,00	10,30	No. 13		10	78,66
M10,0	1,25	10,30	No. 13		10	78,66
M10,0	1,50	10,40	No. 13		10	76,57
M11,0	1,50	11,40	No. 14		5	86,17
M12,0	1,00	12,30	No. 15		5	97,27
M12,0	1,25	12,30	No. 15		5	97,27
M12,0	1,50	12,40	No. 15		5	97,27
M12,0	1,75	12,40	No. 15		5	86,31
M14,0	1,00		No. 17		5	99,32
M14,0	1,25		No. 17		5	99,32
M14,0	1,50		No. 16		5	99,32
M14,0	2,00		No. 16		5	85,34
M16,0	1,50		No. 18		5	104,16
M16,0	2,00		No. 18		5	104,16
M18,0	1,50		No. 20		5	128,50
M18,0	2,00		No. 20		5	128,50
M18,0	2,50		No. 20		5	128,50
M20,0	1,50		No. 21		5	138,01
M20,0	2,00		No. 21		5	138,01
M20,0	2,50		No. 21		5	138,01
M22,0	1,50		No. 22		5	152,65
M22,0	2,00		No. 22		5	152,65
M22,0	2,50		No. 22		5	152,65
M24,0	1,50		No. 23		5	202,91
M24,0	2,00		No. 23		5	202,91
M24,0	3,00		No. 23		5	202,91

2712 Kits / Sets / Sätze

EG-UNC
(STI)



	Ø	P				1,5D	€
N°2		56,00	2,30	No. 2	No. 2	10	89,37
N°4		40,00	3,00	No. 4	No. 4	10	80,25
N°6		32,00	3,70	No. 5	No. 5	10	80,45
N°8		32,00	4,50	No. 6	No. 6	10	80,74
N°10		24,00	5,20	No. 7	No. 6	10	73,68
N°12		24,00	5,80	No. 8	No. 8	10	76,19
1/4		20,00	6,70	No. 9	No. 9	10	75,39
5/16		18,00	8,30	No. 11	No. 11	10	82,15
3/8		16,00	9,90	No. 13		10	74,63
7/16		14,00	11,60	No. 14		10	84,79
1/2		13,00	13,00	No. 15		10	91,96
9/16		12,00		No. 16		10	106,10
5/8		11,00		No. 18		10	118,93
3/4		10,00		No. 20		10	152,17
7/8		9,00		No. 22		5	170,87
1"		8,00		No. 23		5	202,36

2713

Kits / Sets / Sätze

EG-UNF
(STI)



Ø	P				1,5D	€
Nº4	48,00	3,00	No. 4	No. 4	10	82,95
Nº6	40,00	3,70	No. 5	No. 5	10	83,53
Nº8	36,00	4,40	No. 6	No. 6	10	83,80
Nº10	32,00	5,10	No. 8	No. 8	10	77,20
1/4	28,00	6,60	No. 9	No. 9	10	78,46
5/16	24,00	8,20	No. 11	No. 11	10	85,46
3/8	24,00	9,80	No. 13	No. 13	10	77,70
7/16	20,00	11,50	No. 14		5	97,91
1/2	20,00	13,00	No. 15		5	107,29
9/16	18,00		No. 16		5	121,44
5/8	18,00		No. 18		5	134,27
3/4	16,00		No. 21		5	198,20
7/8	14,00		No. 22		5	216,89
1"	12,00		No. 23		5	248,40

2714 Kits / Sets / Sätze

EG-W
(STI)



Ø	P				1,5D	€
1/8	40,00	3,40	No. 4	No. 4	10	75,15
3/16	24,00	5,00	No. 8	No. 8	10	78,46
1/4	20,00	6,70	No. 9	No. 9	10	78,46
5/16	18,00	8,30	No. 11	No. 11	10	85,46
3/8	16,00	9,90	No. 13	No. 13	10	77,70
7/16	14,00	11,60	No. 14		5	97,91
1/2	12,00	13,00	No. 15		5	108,52
9/16	12,00		No. 16		5	122,68
5/8	11,00		No. 18		5	134,27
3/4	10,00		No. 20		5	198,20
7/8	9,00		No. 22		5	211,70
1"	8,00		No. 23		4	241,62

2717 Kits / Sets / Sätze

EG-G
(STI)



Ø	P				1,5D	€
1/8	28,00	9,90	No. 13	No. 13	5	124,22
1/4	19,00	13,50	No. 16	No. 15	5	131,16
3/8	19,00	17,00	No. 16		5	150,75
1/2	14,00		No. 22		5	198,18

7167

Multi-kits / Multi-kits

EG-M
(STI)



	Ø	P				1,5D 
	M5,0	0,80	5,20	No. 8	No. 8	10
	M6,0	1,00	6,30	No. 9	No. 9	10
	M8,0	1,25	8,30	No. 11	No. 11	10
	M10,0	1,50	10,40	No. 13		10
	M12,0	1,75	12,40	No. 15		10
						€ 483,75

2901/1

DIN ISO 1502

PASA
NO
PASA

CTPNP

M-MF
DIN 13

Tol.
6H



Ø	P	€		Ø	P	€		Ø	P	€	
M1,0	0,25	385,60	1	M12,0	0,75	216,90	1	M27,0	1,50	299,52	1
M1,1	0,25	385,60	1	M12,0	1,00	206,57	1	M27,0	2,00	299,52	1
M1,2	0,25	368,38	1	M12,0	1,25	216,90	1	M27,0	3,00	247,88	1
M1,4	0,30	368,38	1	M12,0	1,50	220,34	1	M30,0	1,00	368,38	1
M1,6	0,35	309,85	1	M12,0	1,75	148,04	1	M30,0	1,50	330,51	1
M1,8	0,35	271,97	1	M14,0	1,00	216,90	1	M30,0	2,00	330,51	1
M2,0	0,40	175,59	1	M14,0	1,25	234,11	1	M30,0	3,00	378,71	1
M2,2	0,45	251,58	1	M14,0	1,50	203,12	1	M30,0	3,50	271,97	1
M2,5	0,45	154,93	1	M14,0	2,00	158,36	1	M32,0	1,00	368,38	1
M3,0	0,50	144,61	1	M16,0	1,00	234,11	1	M32,0	1,50	337,40	1
M4,0	0,50	285,74	1	M16,0	1,50	210,01	1	M32,0	2,00	337,40	1
M4,0	0,70	137,72	1	M16,0	2,00	168,71	1	M33,0	1,00	371,83	1
M4,5	0,75	152,21	1	M18,0	1,00	237,55	1	M33,0	1,50	344,28	1
M5,0	0,50	278,86	1	M18,0	1,50	220,34	1	M33,0	2,00	344,28	1
M5,0	0,80	134,26	1	M18,0	2,50	182,47	1	M33,0	3,00	389,03	1
M6,0	0,50	278,86	1	M20,0	1,00	254,77	1	M33,0	3,50	299,52	1
M6,0	0,75	189,36	1	M20,0	1,50	234,11	1	M36,0	1,00	399,36	1
M6,0	1,00	127,38	1	M20,0	2,00	234,11	1	M36,0	1,50	368,38	1
M7,0	1,00	127,38	1	M20,0	2,50	196,24	1	M36,0	2,00	368,38	1
M8,0	0,50	278,86	1	M22,0	1,00	282,32	1	M36,0	3,00	368,38	1
M8,0	0,75	203,12	1	M22,0	1,50	261,65	1	M36,0	4,00	323,62	1
M8,0	1,00	182,47	1	M22,0	2,50	203,12	1	M39,0	1,50	399,36	1
M8,0	1,25	134,26	1	M24,0	1,00	302,97	1	M39,0	2,00	399,36	1
M9,0	1,25	137,72	1	M24,0	1,50	275,42	1	M39,0	3,00	468,22	1
M10,0	0,50	299,52	1	M24,0	2,00	275,42	1	M39,0	4,00	351,17	1
M10,0	0,75	206,57	1	M24,0	3,00	227,22	1	M40,0	1,50	423,46	1
M10,0	1,00	189,36	1	M25,0	1,00	309,85	1	M40,0	2,00	423,46	1
M10,0	1,25	223,79	1	M25,0	1,50	282,32	1	M40,0	3,00	475,10	1
M10,0	1,50	141,16	1	M25,0	2,00	282,32	1				
M12,0	0,50	320,18	1	M27,0	1,00	327,07	1				

2901/4 **DIN ISO 1502** **PASA** **CTP** **M-MF
DIN 13** **Tol.
6H**



Ø	P	€		Ø	P	€		Ø	P	€	
M42,0	1,50	247,88	1	M45,0	4,50	254,77	1	M50,0	3,00	327,07	1
M42,0	2,00	247,88	1	M48,0	1,50	268,54	1	M52,0	1,50	289,20	1
M42,0	3,00	285,74	1	M48,0	2,00	275,42	1	M52,0	2,00	299,52	1
M42,0	4,50	237,55	1	M48,0	3,00	313,29	1	M52,0	3,00	344,28	1
M45,0	1,50	258,22	1	M48,0	5,00	275,42	1	M52,0	5,00	289,20	1
M45,0	2,00	261,65	1	M50,0	1,50	282,32	1				
M45,0	3,00	299,52	1	M50,0	2,00	285,74	1				

2901/5 **DIN ISO 1502** **NO
PASA** **CTNP** **M-MF
DIN 13** **Tol.
6H**



Ø	P	€		Ø	P	€		Ø	P	€	
M42,0	1,50	247,88	1	M45,0	4,50	254,77	1	M50,0	3,00	327,07	1
M42,0	2,00	247,88	1	M48,0	1,50	268,54	1	M52,0	1,50	289,20	1
M42,0	3,00	285,74	1	M48,0	2,00	275,42	1	M52,0	2,00	299,52	1
M42,0	4,50	237,55	1	M48,0	3,00	313,29	1	M52,0	3,00	344,28	1
M45,0	1,50	258,22	1	M48,0	5,00	275,42	1	M52,0	5,00	289,20	1
M45,0	2,00	261,65	1	M50,0	1,50	282,32	1				
M45,0	3,00	299,52	1	M50,0	2,00	285,74	1				

2901/2

DIN ISO 1502

PASA

CAP

M-MF
DIN 13

Tol.
6g



Ø	P	€		Ø	P	€		Ø	P	€	
M2,0	0,40	196,24	1	M16,0	1,50	220,34	1	M33,0	3,00	402,81	1
M2,2	0,45	230,67	1	M16,0	2,00	213,46	1	M33,0	3,50	409,70	1
M2,5	0,45	151,48	1	M18,0	1,00	254,77	1	M36,0	1,00	447,56	1
M3,0	0,50	148,04	1	M18,0	1,50	237,55	1	M36,0	1,50	395,93	1
M4,0	0,50	306,41	1	M18,0	2,50	244,45	1	M36,0	2,00	416,58	1
M4,0	0,70	137,72	1	M20,0	1,00	271,97	1	M36,0	3,00	464,78	1
M4,5	0,75	137,72	1	M20,0	1,50	254,77	1	M36,0	4,00	440,68	1
M5,0	0,50	306,41	1	M20,0	2,00	271,97	1	M39,0	1,50	437,23	1
M5,0	0,80	137,72	1	M20,0	2,50	271,97	1	M39,0	2,00	454,45	1
M6,0	0,50	306,41	1	M22,0	1,00	333,95	1	M39,0	3,00	471,67	1
M6,0	0,75	189,36	1	M22,0	1,50	271,97	1	M39,0	4,00	478,56	1
M6,0	1,00	137,72	1	M22,0	2,50	292,64	1	M40,0	1,50	437,23	1
M7,0	1,00	175,59	1	M24,0	1,00	316,74	1	M40,0	2,00	464,78	1
M8,0	0,50	296,08	1	M24,0	1,50	296,08	1	M40,0	3,00	485,44	1
M8,0	0,75	213,46	1	M24,0	2,00	306,41	1	M42,0	1,50	454,45	1
M8,0	1,00	165,25	1	M24,0	3,00	309,85	1	M42,0	2,00	378,71	1
M8,0	1,25	137,72	1	M25,0	1,00	371,83	1	M42,0	3,00	499,21	1
M9,0	1,25	189,36	1	M25,0	1,50	302,97	1	M42,0	4,50	519,87	1
M10,0	0,50	340,84	1	M25,0	2,00	306,41	1	M45,0	1,50	478,56	1
M10,0	0,75	237,55	1	M27,0	1,00	399,36	1	M45,0	2,00	389,03	1
M10,0	1,00	182,47	1	M27,0	1,50	316,74	1	M45,0	3,00	506,09	1
M10,0	1,25	223,79	1	M27,0	2,00	333,95	1	M45,0	4,50	550,84	1
M10,0	1,50	154,93	1	M27,0	3,00	344,28	1	M48,0	1,50	506,09	1
M12,0	0,50	389,03	1	M30,0	1,00	378,71	1	M48,0	2,00	395,93	1
M12,0	0,75	282,32	1	M30,0	1,50	340,84	1	M48,0	3,00	523,31	1
M12,0	1,00	206,57	1	M30,0	2,00	340,84	1	M48,0	5,00	581,83	1
M12,0	1,25	251,33	1	M30,0	3,00	382,15	1	M50,0	1,50	523,31	1
M12,0	1,50	196,24	1	M30,0	3,50	378,71	1	M50,0	2,00	413,14	1
M12,0	1,75	179,03	1	M32,0	1,00	406,26	1	M50,0	3,00	537,08	1
M14,0	1,00	220,34	1	M32,0	1,50	364,95	1	M52,0	1,50	550,84	1
M14,0	1,25	316,74	1	M32,0	2,00	364,95	1	M52,0	2,00	423,46	1
M14,0	1,50	203,12	1	M33,0	1,00	416,58	1	M52,0	3,00	585,29	1
M14,0	2,00	196,24	1	M33,0	1,50	371,83	1	M52,0	5,00	626,59	1
M16,0	1,00	237,55	1	M33,0	2,00	378,71	1				

2901/3

DIN ISO 1502

NO
PASA

CANP

M-MF
DIN 13

Tol.
6g



Ø	P	€		Ø	P	€		Ø	P	€	
M2,0	0,40	196,24	1	M16,0	1,50	220,34	1	M33,0	3,00	402,81	1
M2,2	0,45	230,67	1	M16,0	2,00	213,46	1	M33,0	3,50	409,70	1
M2,5	0,45	151,48	1	M18,0	1,00	254,77	1	M36,0	1,00	447,56	1
M3,0	0,50	148,04	1	M18,0	1,50	237,55	1	M36,0	1,50	395,93	1
M4,0	0,50	306,41	1	M18,0	2,50	244,45	1	M36,0	2,00	416,58	1
M4,0	0,70	137,72	1	M20,0	1,00	271,97	1	M36,0	3,00	440,68	1
M4,5	0,75	137,72	1	M20,0	1,50	254,77	1	M36,0	4,00	440,68	1
M5,0	0,50	306,41	1	M20,0	2,00	271,97	1	M39,0	1,50	437,23	1
M5,0	0,80	137,72	1	M20,0	2,50	271,97	1	M39,0	2,00	454,45	1
M6,0	0,50	306,41	1	M22,0	1,00	333,95	1	M39,0	3,00	471,67	1
M6,0	0,75	189,36	1	M22,0	1,50	271,97	1	M39,0	4,00	478,56	1
M6,0	1,00	137,72	1	M22,0	2,50	292,64	1	M40,0	1,50	437,23	1
M7,0	1,00	175,59	1	M24,0	1,00	316,74	1	M40,0	2,00	464,78	1
M8,0	0,50	296,08	1	M24,0	1,50	296,08	1	M40,0	3,00	485,44	1
M8,0	0,75	213,46	1	M24,0	2,00	306,41	1	M42,0	1,50	454,45	1
M8,0	1,00	165,25	1	M24,0	3,00	309,85	1	M42,0	2,00	378,71	1
M8,0	1,25	137,72	1	M25,0	1,00	371,83	1	M42,0	3,00	499,21	1
M9,0	1,25	189,36	1	M25,0	1,50	302,97	1	M42,0	4,50	519,87	1
M10,0	0,50	340,84	1	M25,0	2,00	306,41	1	M45,0	1,50	478,56	1
M10,0	0,75	237,55	1	M27,0	1,00	399,36	1	M45,0	2,00	389,03	1
M10,0	1,00	182,47	1	M27,0	1,50	316,74	1	M45,0	3,00	506,09	1
M10,0	1,25	223,79	1	M27,0	2,00	333,95	1	M45,0	4,50	550,84	1
M10,0	1,50	154,93	1	M27,0	3,00	344,28	1	M48,0	1,50	506,09	1
M12,0	0,50	389,03	1	M30,0	1,00	378,71	1	M48,0	2,00	395,93	1
M12,0	0,75	282,32	1	M30,0	1,50	340,84	1	M48,0	3,00	523,31	1
M12,0	1,00	206,57	1	M30,0	2,00	340,84	1	M48,0	5,00	581,83	1
M12,0	1,25	251,33	1	M30,0	3,00	382,15	1	M50,0	1,50	523,31	1
M12,0	1,50	196,24	1	M30,0	3,50	378,71	1	M50,0	2,00	413,14	1
M12,0	1,75	179,03	1	M32,0	1,00	406,26	1	M50,0	3,00	537,08	1
M14,0	1,00	220,34	1	M32,0	1,50	364,95	1	M52,0	1,50	550,84	1
M14,0	1,25	316,74	1	M32,0	2,00	364,95	1	M52,0	2,00	423,46	1
M14,0	1,50	203,12	1	M33,0	1,00	416,58	1	M52,0	3,00	585,29	1
M14,0	2,00	196,24	1	M33,0	1,50	371,83	1	M52,0	5,00	626,59	1
M16,0	1,00	237,55	1	M33,0	2,00	378,71	1				

2902/1 ISO 228-2

PASA
NO
PASA

CTPNP

G
ISO 228



Ø	P	€	
1/8	28,00	203,12	1
1/4	19,00	216,90	1
3/8	19,00	251,33	1

Ø	P	€	
1/2	14,00	285,74	1
5/8	14,00	302,97	1
3/4	14,00	330,51	1

Ø	P	€	
7/8	14,00	368,38	1
1"	11,00	389,03	1
1 1/8	7,00	440,68	1

2902/4 ISO 228-2

PASA

CTP

G
ISO 228



Ø	P	€	
1 1/4	11,00	271,97	1
1 1/2	11,00	316,74	1

Ø	P	€	
1 3/4	11,00	358,06	1
2"	11,00	392,48	1

Ø	P	€	
2 1/4	11,00	426,90	1
2 1/2	11,00	492,32	1

2902/5 ISO 228-2

NO
PASA

CTNP

G
ISO 228



Ø	P	€	
1 1/4	11,00	271,97	1
1 1/2	11,00	316,74	1

Ø	P	€	
1 3/4	11,00	358,06	1
2"	11,00	392,48	1

Ø	P	€	
2 1/4	11,00	426,90	1
2 1/2	11,00	492,32	1

2902/2 DIN ISO 228-2

PASA

CAP

Tol.
A

G
ISO 228



Ø	P	€	
1/8	28,00	223,79	1
1/4	19,00	261,65	1
3/8	19,00	313,29	1
1/2	14,00	302,97	1
5/8	14,00	327,07	1

Ø	P	€	
3/4	14,00	347,72	1
7/8	14,00	392,48	1
1"	11,00	430,35	1
1*1/8	11,00	488,88	1
1*1/4	11,00	533,64	1

Ø	P	€	
1*1/2	11,00	599,05	1
1*3/4	11,00	661,03	1
2"	11,00	729,87	1
2*1/4	11,00	788,41	1
2*1/2	11,00	895,14	1

2902/3 DIN ISO 228-2

NO
PASA

CANP

Tol.
A

G
ISO 228



Ø	P	€	
1/8	28,00	223,79	1
1/4	19,00	261,65	1
3/8	19,00	313,29	1
1/2	14,00	302,97	1
5/8	14,00	327,07	1

Ø	P	€	
3/4	14,00	347,72	1
7/8	14,00	392,48	1
1"	11,00	430,35	1
1*1/8	11,00	488,88	1
1*1/4	11,00	533,64	1

Ø	P	€	
1*1/2	11,00	599,05	1
1*3/4	11,00	661,03	1
2"	11,00	729,87	1
2*1/4	11,00	788,41	1
2*1/2	11,00	895,14	1

2903/1

BS 919

PASA
NO
PASA

CTPNP

BSW
BS 84



Ø	P	€	
1/8	40,00	302,97	1
1/4	20,00	265,10	1
3/8	16,00	278,86	1

Ø	P	€	
1/2	12,00	302,97	1
5/8	11,00	340,84	1
3/4	10,00	392,48	1

Ø	P	€	
7/8	9,00	437,23	1
1"	8,00	502,65	1

2903/2

BS 919

PASA

CAP

BSW
BS 84



Ø	P	€	
1/8	40,00	251,33	1
1/4	20,00	213,46	1
3/8	16,00	240,99	1

Ø	P	€	
1/2	12,00	268,54	1
5/8	11,00	313,29	1
3/4	10,00	364,95	1

Ø	P	€	
7/8	9,00	416,58	1
1"	8,00	464,78	1

2903/3

BS 919

NO
PASA

CANP

BSW
BS 84



Ø	P	€	
1/8	40,00	251,33	1
1/4	20,00	213,46	1
3/8	16,00	240,99	1

Ø	P	€	
1/2	12,00	268,54	1
5/8	11,00	313,29	1
3/4	10,00	364,95	1

Ø	P	€	
7/8	9,00	416,58	1
1"	8,00	464,78	1

2904/1 **ANSI / ASME B1.2** **PASA NO PASA** **CTPNP** **UNC**
ANSI/ASME B1.1 **Tol. 2B**



Ø	P	€		Ø	P	€		Ø	P	€	
N°4	40,00	309,85	1	5/16	18,00	185,91	1	7/8	9,00	296,08	1
N°5	40,00	327,07	1	3/8	16,00	185,91	1	1"	8,00	330,51	1
N°6	32,00	196,24	1	7/16	14,00	196,24	1	1"1/8	7,00	364,95	1
N°8	32,00	189,36	1	1/2	13,00	210,01	1	1"1/4	7,00	395,93	1
N°10	24,00	185,91	1	9/16	12,00	216,90	1	1"3/8	6,00	426,90	1
N°12	24,00	179,03	1	5/8	11,00	234,11	1	1"1/2	6,00	471,67	1
1/4	20,00	179,03	1	3/4	10,00	261,65	1				

2904/2 **ANSI / ASME B1.2** **PASA** **CAP** **UNC**
ANSI/ASME B1.1 **Tol. 2A**



Ø	P	€		Ø	P	€		Ø	P	€	
N°4	40,00	285,74	1	5/16	18,00	196,24	1	7/8	9,00	399,36	1
N°5	40,00	213,46	1	3/8	16,00	210,01	1	1"	8,00	447,56	1
N°6	32,00	210,01	1	7/16	14,00	223,79	1	1"1/8	7,00	495,76	1
N°8	32,00	196,24	1	1/2	13,00	251,33	1	1"1/4	7,00	568,06	1
N°10	24,00	189,36	1	9/16	12,00	278,86	1	1"3/8	6,00	626,59	1
N°12	24,00	182,47	1	5/8	11,00	302,97	1	1"1/2	6,00	667,91	1
1/4	20,00	182,47	1	3/4	10,00	344,28	1				

2904/3 **ANSI / ASME B1.2** **NO PASA** **CANP** **UNC**
ANSI/ASME B1.1 **Tol. 2A**



Ø	P	€		Ø	P	€		Ø	P	€	
N°4	40,00	285,74	1	5/16	18,00	196,24	1	7/8	9,00	399,36	1
N°5	40,00	213,46	1	3/8	16,00	210,01	1	1"	8,00	447,56	1
N°6	32,00	210,01	1	7/16	14,00	223,79	1	1"1/8	7,00	495,76	1
N°8	32,00	196,24	1	1/2	13,00	251,33	1	1"1/4	7,00	568,06	1
N°10	24,00	189,36	1	9/16	12,00	278,86	1	1"3/8	7,00	626,59	1
N°12	24,00	182,47	1	5/8	11,00	302,97	1	1"1/2	7,00	667,91	1
1/4	20,00	182,47	1	3/4	10,00	344,28	1				

2905/1

ANSI / ASME B1.2

PASA
NO
PASA

CTPNP

UNF
ANSI/ASME
B1.1

Tol.
2B



Ø	P	€	
Nº4	48,00	309,85	1
Nº5	44,00	203,12	1
Nº6	40,00	196,24	1
Nº8	36,00	189,36	1
Nº10	32,00	185,91	1
Nº12	28,00	209,29	1
1/4	28,00	179,03	1

Ø	P	€	
3/8	24,00	185,91	1
5/16	24,00	185,91	1
1/2	20,00	210,01	1
7/16	20,00	196,24	1
5/8	18,00	223,79	1
9/16	18,00	216,90	1
3/4	16,00	247,88	1

Ø	P	€	
7/8	14,00	271,97	1
1"	12,00	302,97	1
1"1/8	12,00	330,51	1
1"1/4	12,00	347,72	1
1"3/8	12,00	378,71	1
1"1/2	12,00	416,58	1

2905/2

ANSI / ASME B1.2

PASA

CAP

UNF
ANSI/ASME
B1.1

Tol.
2A



Ø	P	€	
Nº4	48,00	282,32	1
Nº5	44,00	213,46	1
Nº6	40,00	210,01	1
Nº8	36,00	196,24	1
Nº10	32,00	189,36	1
Nº12	28,00	189,36	1
1/4	28,00	182,47	1

Ø	P	€	
3/8	24,00	210,01	1
5/16	24,00	196,24	1
1/2	20,00	251,33	1
7/16	20,00	223,79	1
5/8	18,00	302,97	1
9/16	18,00	278,86	1
3/4	16,00	344,28	1

Ø	P	€	
7/8	14,00	399,36	1
1"	12,00	447,56	1
1"1/8	12,00	523,31	1
1"1/4	12,00	568,06	1
1"3/8	12,00	626,59	1
1"1/2	12,00	667,91	1

2905/3 ANSI / ASME B1.2

NO
PASA

CANP

UNF
ANSI/ASME
B1.1

Tol.
2A



Ø	P	€	
Nº4	48,00	282,32	1
Nº5	44,00	213,46	1
Nº6	40,00	210,01	1
Nº8	36,00	196,24	1
Nº10	32,00	189,36	1
Nº12	28,00	189,36	1
1/4	28,00	182,47	1

Ø	P	€	
3/8	24,00	210,01	1
5/16	24,00	196,24	1
1/2	20,00	251,33	1
7/16	20,00	223,79	1
5/8	18,00	302,97	1
9/16	18,00	278,86	1
3/4	16,00	344,28	1

Ø	P	€	
7/8	14,00	399,36	1
1"	12,00	447,56	1
1"1/8	12,00	523,31	1
1"1/4	12,00	568,06	1
1"3/8	12,00	626,59	1
1"1/2	12,00	667,91	1

2906/1 ANSI / ASME B1.20.1

PASA
NO
PASA

CTPNP

NPT
ANSI/ASME
B1.1



Ø	P	€	
1/16	27,00	395,93	1
1/8	27,00	433,81	1
1/4	18,00	457,89	1
3/8	18,00	492,32	1
1/2	14,00	533,64	1

Ø	P	€	
3/4	14,00	595,61	1
1"	11,50	685,12	1
1"1/4	11,50	815,94	1
1"1/2	11,50	912,34	1
2"	11,50	1.184,82	1

2906/2 ANSI / ASME B1.20.1

PASA
NO
PASA

CAPNP

NPT
ANSI/ASME
B1.1



Ø	P	€	
1/16	27,00	686,94	1
1/8	27,00	722,99	1
1/4	18,00	757,42	1
3/8	18,00	719,55	1
1/2	14,00	778,07	1

Ø	P	€	
3/4	14,00	850,39	1
1"	11,50	957,10	1
1"1/4	11,50	1.118,90	1
1"1/2	11,50	1.235,97	1
2"	11,50	1.501,07	1

2907/1

DIN 7162

PASA
NO
PASA

H7

CTL PNP



Ø	€	
1	92,96	1
2	103,29	1
3	103,29	1
4	92,96	1
5	92,96	1
6	92,96	1
7	86,07	1
8	86,07	1
9	86,07	1
10	86,07	1
11	99,84	1
12	99,84	1
13	99,84	1
14	99,84	1
15	106,73	1
16	106,73	1
17	106,73	1
18	106,73	1

Ø	€	
19	120,50	1
20	120,50	1
21	120,50	1
22	120,50	1
23	127,38	1
24	127,38	1
25	127,38	1
26	127,38	1
27	127,38	1
28	141,16	1
30	141,16	1
32	141,16	1
33	158,36	1
34	158,36	1
35	158,36	1
36	158,36	1
37	158,36	1
38	158,36	1

Ø	€	
40	168,71	1
42	168,71	1
44	189,36	1
45	189,36	1
46	189,36	1
47	189,36	1
48	189,36	1
50	234,11	1
52	234,11	1
55	234,11	1
58	285,74	1
60	285,74	1
62	285,74	1
65	306,41	1
68	306,41	1
70	306,41	1

2907/4

DIN 7162

PASA

H7

CTL P



Ø	€	
72	203,12	1
75	203,12	1
78	223,79	1
80	223,79	1

2907/5

DIN 7162

NO
PASA

H7

CTLNP



Ø	€	
72	203,12	1
75	203,12	1
78	223,79	1
80	223,79	1

2907/2

DIN 2250-C

Anillo Patrón / Bague étalon / Master ring / Lehrring

CAL



Ø	€	
4	316,74	1
5	316,74	1
6	254,77	1
7	254,77	1
8	254,77	1
9	254,77	1
10	254,77	1
11	261,65	1
12	261,65	1
13	261,65	1
14	261,65	1
15	285,74	1
16	285,74	1
17	285,74	1
18	285,74	1
19	296,08	1
20	296,08	1
21	296,08	1
22	296,08	1

Ø	€	
23	313,29	1
24	313,29	1
25	313,29	1
26	313,29	1
27	313,29	1
28	330,51	1
30	330,51	1
32	330,51	1
33	358,06	1
34	358,06	1
35	358,06	1
36	358,06	1
37	358,06	1
38	358,06	1
40	389,03	1
42	389,03	1
44	406,26	1
45	406,26	1
46	406,26	1

Ø	€	
47	406,26	1
48	406,26	1
50	430,35	1
52	430,35	1
55	430,35	1
58	454,45	1
60	454,45	1
62	454,45	1
65	478,56	1
68	478,56	1
70	478,56	1
72	509,54	1
75	509,54	1
78	557,74	1
80	557,74	1
82	557,74	1
85	616,26	1
90	616,26	1

2801 > Giramachos / Tourne-à-gauche / Tap turners / Schneideisenhalter



Ø	Nº	€	mm		Ø	Nº	€	mm	
M1 - M12	1	22,45	2,00 - 7	1	M13 - M32	5	143,12	7,00 - 20,00	1
M4 - M12	2	30,00	3,00 - 9,00	1	M18 - M42	6	143,12	11,00 - 24,00	1
M5 - M20	3	42,69	4,90 - 12,00	1	M25 - M52	7	248,15	16,00 - 32,00	1
M10 - M27	4	68,09	5,50 - 16,00	1	M45 - M60	8	358,64	25,00 - 36,00	1

2802 > Volvedor / Porte-filière / Tap wrench / Windeisen



Ø Ext.	H mm	€		Ø Ext.	H mm	€	
16,00	5,00	12,44	1	55,00	22,00	36,57	1
20,00	5,00	12,72	1	65,00	18,00	56,18	1
20,00	7,00	12,75	1	65,00	25,00	56,18	1
25,00	9,00	15,14	1	75,00	20,00	89,86	1
30,00	11,00	17,06	1	75,00	30,00	89,85	1
38,00	14,00	22,48	1	90,00	22,00	113,80	1
45,00	14,00	27,94	1	90,00	36,00	113,81	1
45,00	18,00	27,94	1	105,00	22,00	121,52	1
55,00	16,00	36,57	1	105,00	36,00	121,53	1

2803 > Giramacho T / Tourne-à-gauche en T / Tap turner in T / T-Typ Schneideisenhalter



M DIN	M ISO	€	L mm	gr	mm	
M3 - 10	M3 - 6	25,97	85	180	2,60 - 5,50	1
M5 - 12	M6 - 12	33,89	110	300	4,60 - 8,00	1
M13 - 20	M14 - 20	157,44	117	400	9,00 - 12,50	1

2804 » Giramacho T / Tourne-à-gauche en T / Tap turner in T / T-Typ Schneideisenhalter



M DIN	M ISO	€	L mm	gr	mm	
M3-10	M3-6	41,59	250	250	2,60 - 5,50	1
M5-12	M6-12	49,58	300	440	4,60 - 8,00	1

2805 » Extractor / Extracteur / Extractor / Auszieher



M	Z	€	
M3	3	42,04	1
M4	3	42,04	1
M5	3	42,04	1
M6	3	43,10	1
M8	4,3	45,42	1

M	Z	€	
M10	4,3	47,13	1
M12	4,3	50,74	1
M14	4,3	69,90	1
M16	4,3	76,21	1

2808 » Alargador / Adaptateur / Extension piece / Verlängerungsstück DIN 377



mm	€	L mm	D	d	
2,10	8,14	60	5	2,7	1
2,40	8,14	70	6	3	1
2,70	8,14	80	7	3,5	1
3,00	8,14	90	7	4	1
3,40	12,75	95	8	4,5	1
3,80	13,35	100	9	5	1
4,30	14,25	105	10	5,5	1
4,90	14,86	110	11	6	1
5,50	15,56	115	12	7	1
6,20	20,07	120	14	8	1
7,00	20,91	125	15	9	1

mm	€	L mm	D	d	
8,00	23,71	125	17	10	1
9,00	28,04	130	19	12	1
10,00	33,87	140	21	13	1
11,00	39,25	150	23	14	1
12,00	42,30	155	25	16	1
13,00	58,44	165	27	17	1
14,50	67,11	175	29	18	1
16,00	70,97	180	30	20	1
18,00	80,91	200	33	22	1
20,00	107,83	220	36	25	1

2834 Extractor / Extracteur / Extractor / Auszieher



M	ø mm	€	L mm	mm	
M3 - 6	1,80 - 7,00	2,81	50	2,70	1
M6 - 8	3,20 - 10,00	2,81	57	3,80	1
M8 - 11	4,50 - 13,00	3,34	64	4,90	1
M11 - 14	6,50 - 16,00	4,12	71	7,00	1
M14 - 18	8,50 - 21,00	5,32	79	9,00	1
M18 - 24	12,00	8,58	85	12,00	1
M24 - 33	15,30	13,18	92	14,50	1
M33 - 45	20,00	19,26	100	18,00	1

JUEGOS / JEUX / SETS			
M	Pcs.	€	
M3 - 18	5	21,16	1
M3 - 24	6	29,87	1
M3 - 45	8	62,57	1

2846 Aceite / Huile / Oil / Öl



Envase / Emballage / Packaging	Litr.	€	
Aerosol / Pulvérisateur / Spray	400 ml	27,63	1
Granel / Vrac / Bulk	1 l.	37,41	1
Granel / Vrac / Bulk	5 l.	135,71	1

2821 Macho 3° / Taraud 3° / Tap 3° / Gewindebohrer 3°

M
DIN 13

HSS
(1101 + 2301/3)



HSSCO
(1105 + 2314/3)



HSSCO INOX
(1105 + 2303/3)



	Machos Tarauds / Taps	Brocas Forets / Drill-bits	Giramachos n° Tourne-à-gauche n° Tap turner n°	€
HSS	M3-4-5-6-8-10-12	2,50-3,30-4,20-5,00-6,80-8,50-10,20	1,50	134,64
HSSCO	M3-4-5-6-8-10-12	2,50-3,30-4,20-5,00-6,80-8,50-10,20	1,50	169,04
HSSCO INOX	M3-4-5-6-8-10-12	2,50-3,30-4,20-5,00-6,80-8,50-10,20	1,50	189,09

2822 2840 Juegos de machos / Jeux de taraud / Tap set

M
DIN 13

>2822
(2301)



>2840
(1101 + 2301)



Ref.	Machos Tarauds / Taps	Brocas Forets / Drill-bits	€
2822 (2301)	M3-4-5-6-8-10-12	-	226,73
2840 (2301)	M3-4-5-6-8-10-12	(1101) 2,50-3,30-4,20-5,00-6,80-8,50-10,20	247,36

2824 M3-12

Form.
B
"Gun"

M
3-4-5-6-8-10-12


7

>HSS E
(2103/2014)



>HSSE-PM
(2125/2126)



HUNIX
>HSSE VAP
(2250/2251)



HUNIX
>HSSE TIN
(2115/2116)



REF.	€
HSS E	153,15
HSSE-PM	292,63
HSSE VAP	180,22
HSSE TIN+	260,25

2825 M3-12



M
3-4-5-6-8-10-12


7

>HSS E
(2105/2106)



>HSSE-PM
(2123/2124)



HUNIX
>HSSE VAP
(2252/2253)



HUNIX
>HSSE TIN+
(2117/2118)



REF.	€
HSS E	182,04
HSSE-PM	317,98
HSSE VAP	214,63
HSSE TIN+	272,67

2850 M3-12

Form
B

M
3-4-5-6-8-10-12

Ø
2,5-3,3-4,2-5-6,8-
8,5-10,2


14

>HSSE + HSSCO
(1105 + 2103/2104)



HUNIX
>HSSEVAP + HSSCO
(1105 + 2250/2251)



HUNIX
>HSSETIN+ + HSSCO
(1105 + 2116/2115)



REF.	€
HSSE+HSSCO	196,10
HSSEVAP+HSSCO	224,80
HSS TIN+ + HSSCO	288,82

2851 M3-12



M
3-4-5-6-8-10-12

Ø
2,5-3,3-4,2-5-6,8-
8,5-10,2


14

>HSSE + HSSCO
(1105 + 2105/2106)



HUNIX
>HSSEVAP + HSSCO
(1105 + 2252/2253)



HUNIX
>HSSETIN+ + HSSCO
(1105 + 2118/2117)



REF.	€
HSSE+HSSCO	224,99
HSSEVAP+HSSCO	259,19
HSS TIN+ + HSSCO	300,85

2827

M3-8

Form.
B
"Gun"

M
3-4-5-6-8

5

>HSS E
(2104)



HUNIX
>HSSE-PM
(2254)



REF.	€
HSS E	86,18
HSSE-PM	215,67
HSSE VAP	98,41
HSSE TIN+	142,73

HUNIX
>HSSE VAP
(2250)



HUNIX
>HSSE TIN+
(2116)



2828

M3-8



M
3-4-5-6-8

5

>HSS E
(2106)



HUNIX
>HSSE-PM
(2256)



REF.	€
HSS E	110,31
HSSE-PM	251,86
HSSE VAP	125,97
HSSE TIN+	155,54

HUNIX
>HSSE VAP
(2252)



HUNIX
>HSSE TIN+
(2118)



2809
2810

M3-12

M
DIN 13

>2809
(1101 + 2301 + 2501)



>2810
(2301 + 2501)



Ref.	Machos y cojinetes Tarauds et filières Taps and bearing	Brocas Forets/Drill-bits	Volvedores Porte-filières Tap wrench	Giramachos nº Tourne-à-gauche nº Tap turner nº	Carraca nº Cliquet nº Ratchet nº	€
2809	M3-4-5-6-8-10-12	2,50-3,30-4,20-5,00-6,80-8,50-10,20	20x5-20x7-25x9-30x11-38x40	1-2	-	427,75
2810	M3-4-5-6-8-10-12	-	25x9	1-1/2	1	292,28

2811
2812

M3-20 / M5-20

M
DIN 13

>2811/2812
(2301 + 2501)



Ref.	Machos y cojinetes Tarauds et filières Taps and bearing	Volvedores Porte-filières Tap wrench	Giramachos nº Tourne-à-gauche nº Tap turner nº	Carraca nº Cliquet nº Ratchet nº	€
2811	M3-4-5-6-8-10-12-14-16-18-20	20x5-20x7-25x9-30x11-38x14-45x18	1 - 3	1 - 2	855,46
2812	M5-6-8-10-12-14-16-18-20	20x7-25x9-30x11-38x14-45x18	1 - 3	1 - 2	812,71

2813
2814

M3-24 / M5-30

M
DIN 13



>2813/2814
(2301 + 2501)

Ref.	Machos y cojinetes Tarauds et filières Taps and bearing	Volvedores Porte-filières Tap wrench	Giramachos n° Tourne-à-gauche n° Tap turner n°	€
2813	M3-4-5-6-8-10-12-14-16-18-20-22-24	20x5-20x7-25x9-30x11-38x14-45x18-55x22	1 - 4	1.336,65
2814	M5-6-8-10-12-14-16-18-20-22-24-27-30	20x7-25x9-30x11-38x14-45x18-55x22-65x25	3 - 5	2.268,39

2841
2842

MF3-12 / MF6-20

MF
DIN 13



>2841
(2301 + 2501)



>2842
(2301 + 2501)

Ref.	Machos y cojinetes Tarauds et filières Taps and bearing	Volvedores Porte-filières Tap wrench	Giramachos n° Tourne-à-gauche n° Tap turner n°	Carraca n° Cliquet n° Ratchet n°	€
2841	M3x0,35-4x0,50-5x0,50-6x0,75-8x0,75 8x1,00-10x1,00-12x1,50	20x5-25x9-30x11-38x10	1 - 2	1	877,74
2842	M6x0,75-8x0,75-8x1,00-10x1,00-12x1,50 14x1,25-14x1,50-16x1,50-18x1,50-20x1,50	20x7-25x9-30x11-38x10-45x14	1 - 3	1	1.472,57

2815
2816
2817 **W1/8-1/2, W1/4-1/2, W1/4-1"**

BSW
BS 84

>2815
(2304 + 2502)



>2816
(2304 + 2502)



>2817
(2304 + 2502)



Ref.	Machos y cojinetes Tarauds et filières Taps and bearing	Volvedores Porte-filières Tap wrench	Giramachos nº Tourne-à-gauche nº Tap turner nº	Carraca nº Cliquet nº Ratchet nº	€
2815	W1/8-3/16-1/4-5/16-3/8-7/16-1/2	20x5-20x7-25x9-30x11-38x14	1 - 2	1	701,47
2816	W1/4-5/16-3/8-7/16-1/2	20x7-25x9-30x11-38x14	1 - 2	1	594,55
2817	W1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	20x7-25x9-30x11-38x14-45x18-55x22	1 - 4	-	1639,64

2843
2818 **UNC1/4", UNF1/4-1"**

UNC
ANSI/ASME
B1.1

UNF
ANSI/ASME
B1.1

>2843/2818
(2307 + 2505)



Ref.	Machos y cojinetes Tarauds et filières Taps and bearing	Volvedores Porte-filières Tap wrench	Giramachos nº Tourne-à-gauche nº Tap turner nº	€
2843	UNC1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	20x7-25x9-30x11-38x14-45x18-55x22	1 - 4	2.361,72
2818	UNF1/4-5/16-3/8-7/16-1/2-5/8-3/4-7/8-1"	20x7-25x9-30x11-38x10-45x14-55x16	1 - 4	1.497,04