

























# THREAD LINE



# THREAD LINE























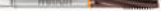
● First choice    ○ Suitable

Reference	Picture	Thread style	Page	Description	Coating	Ø Range (mm)	Tolerance	Tolerance	
								Through h.	Blind h.
4990		M	138	Threading mill - Solid Carbide	TiAIN	M2 - M12		●	●
4991		M-MF	140	Threading mill - Solid Carbide	TiAIN	M4 - M16		●	●
48.7010		M	142	Forming tap HSSE	TiN Up	M3 - M10	6HX	●	●
48.7016		M	143	Forming tap HSSE	TiN Up	M12 - M20	6HX	●	●
40.1040		M	144	Universal tap HSSE	Black HVA	M3 - M10	6H	●	
40.1046		M	145	Universal tap HSSE	Black HVA	M12 - M20	6H	●	
40.1640		M	146	Universal tap HSSE 6G tolerance	Black HVA	M3 - M10	6G	●	
40.1140		MF	148	Universal tap HSSE	Black HVA	MF4 - MF20	6H	●	
40.1240		GAS (BSP)	149	Universal tap HSSE	Black HVA	G 1/8 - G 1"	6H	●	
40.1340		UNF (SAE)	150	Universal tap HSSE	Black HVA	UNF4 - UNF 5/8	2B	●	
40.1440 40.1446		UNC	151	Universal tap HSSE	Black HVA	UNC 4 - UNC 3/4 UNC 7/8 - UNC 3/4	2B	●	
41.6040		M	152	Universal tap HSSE PM	TiN Up	M2 - M10	6H	●	
41.6046		M	153	Universal tap HSSE PM	TiN Up	M12 - M20	6H	●	
45.5040		M	154	High performance tap HSSE	DSC	M2 - M10	6HX	●	
45.5046		M	155	High performance tap HSSE	DSC	M12 - M30	6HX	●	
45.5144		MF	156	High performance tap HSSE	DSC	MF6 - MF24	6HX	●	
45.5245		GAS (BSP)	157	High performance tap HSSE	DSC	G 1/16 - G 1"	_	●	
44.0040		M	158	Tap for Aluminium HSSE	Bright	M3 - M10	6H	●	
44.0046		M	159	Tap for Aluminium HSSE	Bright	M12 - M20	6H	●	
43.2810		M	160	Tap HSSE-PM for Cast Iron and Steel. Internal Coolant	TiCN	M5 - M10	6HX	●	●
43.2816		M	161	Tap HSSE-PM for Cast Iron and Steel. Internal Coolant	TiCN	M10 - M14	6HX	●	●
43.2117		MF	163	Tap HSSE-PM for Cast Iron and Steel. Internal Coolant	TiCN	MF5 - MF16	6HX	●	●
46.4040		M	164	Inconel, Nickel alloys	TiCN	M3 - M10	6HX	●	
46.4046		M	165	Inconel, Nickel alloys	TiCN	M12 - M16	6HX	●	

NORM	UNI	500N/mm <sup>2</sup> <1200N/mm <sup>2</sup>	42-54 HRC	48-63 HRC	INOX	GG/G	TITAN	Non Ferrous		HSC	HHC	HPC
					Stainless Steel	Cast Iron	Inconel/ Hastelloy	ALU NE	PLAS- TIC	High Speed Cutting	High Hard Cutting	High Performance Cutting
Helion	●	●	●		●	●	●	○	○	●	●	●
Helion	●	●	●		●	●	●	○	○	●	●	●
2174	●	●			●	●		○	○			
2174	●	●			●	●		○	○			
371B	●	●			●	●		○	○			
376B	●	●			●	●		○	○			
371B	●	●			●	●		○	○			
376B	●	●			●	●		○	○			
5156	●	●			●	●		○	○			
371/376	●	●			●	●		○	○			
371/376	●	●			●	●		○	○			
371B	●	●			●	○		○	○	●		●
376B	●	●			●	○		○	○	●		●
371B		●			●	○	○	○	○	●		●
376B		●			●	○	○	○	○	●		●
376B		●			●	○	○	○	○	●		●
5156		●			●	○	○	○	○	●		●
371B								●	●	●		●
376B								●	●	●		●
371C		● > 1000 N/mm <sup>2</sup>				●		○				●
376C		● > 1000 N/mm <sup>2</sup>				●		○				●
376C		● > 1000 N/mm <sup>2</sup>				●		○				●
371B					○		●					●
376B					○		●					●

# THREAD LINE

● First choice    ○ Suitable

Reference	Picture	Thread style	Page	Description	Coating	Ø Range (mm)	Tolerance	Through h.	Blind h.
43.2010		M	166	Tap for hardened steel HSSE- PM	TiCN		6HX	●	●
47.9010		M	167	Tap for hardened steel Solid Carbide	TiCN		6H	●	●
40.1060		M	168	Universal tap HSSE	Black HVA		6H	○	●
40.1066		M	169	Universal tap HSSE	Black HVA		6H	○	●
40.1050		M	170	Universal tap HSSE Form E	Black HVA		6H	○	●
40.1660		M	171	Universal tap HSSE 6G tolerance	Black HVA		6G	○	●
40.1160		MF	172	Universal tap HSSE	Black HVA	MF4 - MF20	6H	○	●
40.1260		GAS (BSP)	173	Universal tap HSSE	Black HVA	G 1/8 - G 1"	_	○	●
40.1360		UNF (SAE)	174	Universal tap HSSE	Black HVA	UNF4 - UNF 5/8	2B	○	●
40.1460 40.1466		UNC	175	Universal tap HSSE	Black HVA	UNC 4 - UNC 3/8 UNC 7/16 - UNC 3/4	2B	○	●
40.7068		M	176	Universal tap HSSE long	TiN Up		6HX	○	●
40.7060		M	178	Universal tap HSSE	TiN Up		6H	○	●
40.7066		M	179	Universal tap HSSE	TiN Up		6HX	○	●
41.6050		M	180	Universal tap HSSE PM	TiN Up		6H	○	●
41.6056		M	181	Universal tap HSSE PM	TiN Up		6H	○	●
45.4060		M	182	High performance tap HSSE	TiAlN		6HX	○	●
45.4066		M	183	High performance tap HSSE	TiAlN		6HX	○	●
45.4164		MF	184	High performance tap HSSE	TiAlN	MF6 - MF24	6HX	○	●
45.3265		GAS (BSP)	185	High performance tap HSSE	TiAlN	G1/16 - G 1"	_	○	●
44.0060		M	186	Tap for Aluminium HSSE	Bright		6H	○	●
44.0066		M	187	Tap for Aluminium HSSE	Bright		6H	○	●
46.4070		M	188	Inconel, Nickel alloys	TiAlN		6HX	○	●
46.4076		M	189	Inconel, Nickel alloys	TiAlN		6HX	○	●







NORM	UNI	500N/mm <sup>2</sup> <1200N/mm <sup>2</sup>		42-54 HRC	48-63 HRC	INOX	GG/G	TITAN	Non Ferrous		HSC	HHC	HPC
		Stainless Steel	Cast Iron			Inconel/ Hastelloy	ALU NE	PLAS- TIC	High Speed Cutting	High Hard Cutting	High Performance Cutting		
Helion			●									●	●
Helion			○	●								●	●
371C	●	●				●	●		○	○			
376C	●	●				●	●		○	○			
371-E	●	●				●	●		○	○			
371C	●	●				●	●		○	○			
376C	●	●				●	●		○	○			
5156	●	●				●	●		○	○			
374C	●	●				●	●		○	○			
371/376	●	●				●	●		○	○			
Helion	●	●				●	●		○	○			
371C	●	●				●	●		○	○			
376C	●	●				●	●		○	○			
371C	●	●				●	○		○	○	●		●
376C	●	●				●	○		○	○	●		●
371C	●	○				●	○	○	○	○	●		●
376C	●	○				●	○	○	○	○	●		●
376C	●	○				●	○	○	○	○	●		●
5156	●	○				●	○	○	○	○	●		●
371C													
376C													
371C						○		●					●
376C						○		●					●

THREAD LINE

## 4990

### SOLID CARBIDE THREAD MILL 2xD



-  Fresa de roscar MD 2xD
-  Fraise à fileter en carbure 2xD
-  Fresa a filettare in metallo duro 2xD
-  Твердосплавные резьбофрезы 2xD
-  Kati karbür iplik freze 2xD
-  合金螺纹铣刀2xD




600  
1200  
N/mm<sup>2</sup>


45  
HRC

55  
HRC

TiAlN


UNI







HA

HPC





HELION  
NORM

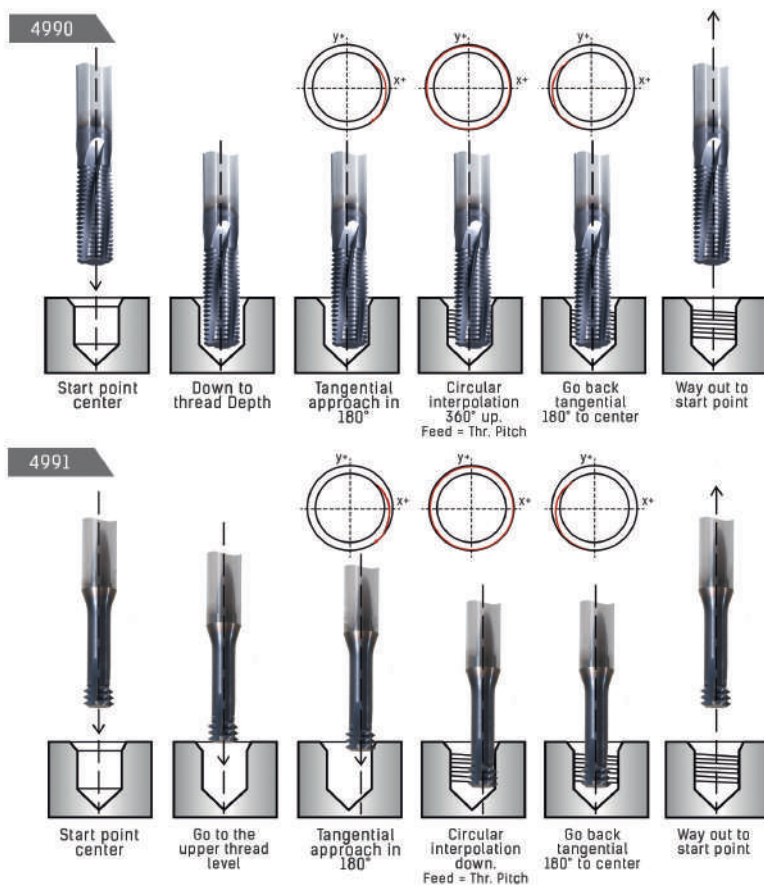
 p-190

**M**

Cod.	M	d1	P	d2	L1	L2	Z	Previous Hole Ø
4990M20040	<b>M 2,0</b>	1,55	0,40	3,00	39	4,50	3	1,60
4990M22045	<b>M 2,2</b>	1,65	0,45	6,00	54	5,00	3	1,75
4990M25045	<b>M 2,5</b>	1,95	0,45	6,00	54	5,50	3	2,05
4990M30050	<b>M 3,0</b>	2,35	0,50	6,00	54	6,50	3	2,50
4990M35060	<b>M 3,5</b>	2,75	0,60	6,00	54	7,50	3	2,90
4990M40070	<b>M 4,0</b>	3,10	0,70	6,00	54	9,00	3	3,30
4990M45075	<b>M 4,5</b>	3,40	0,75	6,00	54	10,50	3	3,75
4990M50080	<b>M 5,0</b>	3,80	0,80	6,00	54	12,50	3	4,20
4990M60100	<b>M 6,0</b>	4,65	1,00	6,00	54	14,00	3	5,00
4990M80125	<b>M 8,0</b>	5,95	1,25	6,00	54	18,00	3	6,75
4990M10150	<b>M 10,0</b>	7,80	1,50	8,00	64	23,00	3	8,50
4990M12175	<b>M 12,0</b>	9,00	1,75	10,00	73	26,00	3	10,25



## THREAD MILLING PROCESS



THREAD LINE

## MILL THREADING ADVANTAGES

one tool can...

1.2311 316-L  
1.2379 St 52  
G-AISI 12 GG-25  
HARDOX-400

Thread a wide range of materials

M-16x1,50 M-20x1,50

Thread different diameters to the same thread pitch







Optimal in fine pitch

Thread right or left hand. Several ways of tapping

## 4991



### SOLID CARBIDE THREAD MILL 2XD

-  Fresa de roscar MD HeliNorm 2xD
-  Fraise à fileter en carbure 2xD
-  Fresa a filettare in metallo duro 2xD
-  Твердосплавные резьбофрезы 2xD
-  Kati karbür iplik freze 2xD
-  合金螺纹铣刀2XD













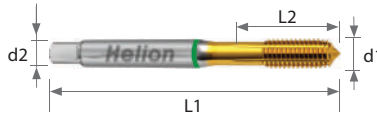

Cod.	M	d1	P	d2	L1	L2	Z	Previous Hole Ø
4991M40070	<b>M 4</b>	3,10	0,70	6	55	8	3	3,30
4991M50080	<b>M 5</b>	4,00	0,80	6	55	12	3	4,20
4991M60100	<b>M 6</b>	4,50	1,00	6	55	12	3	5,00
4991M60100	<b>M 7</b>	4,50	1,00	6	55	12	3	6,00
4991MF80100	<b>MF 8</b>	6,00	1,00	6	55	15	3	7,00
4991M80125	<b>M 8</b>	6,00	1,25	6	55	15	3	6,80
4991MF10100	<b>MF 10</b>	8,00	1,00	8	66	20	3	9,00
	<b>MF 12</b>	8,00	1,00	8	66	20	3	11,00
4991MF12125	<b>MF 10</b>	8,00	1,25	8	66	20	3	8,80
	<b>MF 12</b>	8,00	1,25	8	66	20	3	10,80
4991M10150	<b>M 10</b>	8,00	1,50	8	66	20	3	8,50
	<b>MF 12</b>	8,00	1,50	8	66	20	3	10,50
4991M12175	<b>M 12</b>	8,00	1,75	8	66	20	3	10,20
4991MF14150	<b>MF 14</b>	10,00	1,50	10	80	25	4	13,50
4991M14200	<b>M 14</b>	10,00	2,00	10	80	25	4	12,00
4991MF16150	<b>MF 16</b>	12,00	1,50	12	82	30	4	14,50
4991M16200	<b>M 16</b>	12,00	2,00	12	82	30	4	14,00







Double application with the same tool  
 Doble aplicación con la misma herramienta

## 48.7010

### FORMING TAP HSS-E TIN D2174C

-  Macho roscar laminación HSS-E TIN D2174C
-  Taraud machine a refoiler HSS-E TIN D2174C
-  Maschio a rullare HSS-E TIN DIN 2174C
-  Бесстружечные метчики (раскатники) HSS-E TIN D2174C
-  Şekillendirme tap HSS-E kalay D2174C
-  挤压丝锥 HSS-E TIN D2174C



<b>6HX</b> tolerance	<b>TiN</b> Up	<b>600</b> <b>1200</b> N/mm <sup>2</sup>	<b>INOX</b>	<b>NI</b> ALLOYS	<b>TITAN</b> INCONELL	<b>UNI</b>
		<b>DIN</b> 2174				
		<b>HPC</b>				
		<b>p-192</b>				







**M**

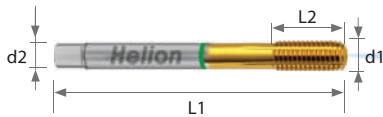
Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
487010M03	<b>M3</b>	3,00	0,50	3,50	56	10	2,80
487010M04	<b>M4</b>	4,00	0,70	4,50	63	12	3,70
487010M05	<b>M5</b>	5,00	0,80	6,00	70	14	4,65
487010M06	<b>M6</b>	6,00	1,00	6,00	80	16	5,55
487010M08	<b>M8</b>	8,00	1,25	8,00	90	17	7,40
487010M10	<b>M10</b>	10,00	1,50	10,00	100	20	9,30

\*Lamination taps recommended for the aeronautical industry, for other sectors, consult your application with the Technical Department. / Machos de laminación recomendados para la industria aeronáutica, para otros sectores, consultar su aplicación con el Departamento Técnico.

## FORMING TAP HSS-E TIN D2174C

# 48.7016

-  Macho roscar laminación HSS-E TIN D2174C
-  Taraud machine a refoiler HSS-E TIN D2174C
-  Maschio a rullare HSS-E Tin DIN 2174C
-  Бесстружечные метчики (раскатники) HSS-E TIN D2174C
-  Şekillendirme tap HSS-E kalay D2174C
-  挤压丝锥HSS-E TIN D2174C



THREAD LINE

**6HX**  
tolerance

TiN  
Up

600  
1200  
N/mm<sup>2</sup>

INOX

NI  
ALLOYS

TITAN  
INCONEL

UNI

DIN  
2174

HPC

i

p-192

M







Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
487016M12	<b>M12</b>	12,00	1,75	9,00	110	24	11,20
487016M16	<b>M16</b>	16,00	2,00	12,00	110	26	15,10
487016M20	<b>M20</b>	20,00	2,50	16,00	140	32	18,90

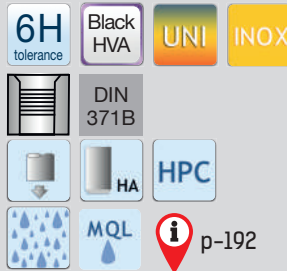
\*Lamination taps recommended for the aeronautical industry, for other sectors, consult your application with the Technical Department. / Machos de laminación recomendados para la industria aeronáutica, para otros sectores, consultar su aplicación con el Departamento Técnico.

## 40.1040

### UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E



-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kilvuz ilk seçim HSS-E
-  优选通用丝锥HSS-E









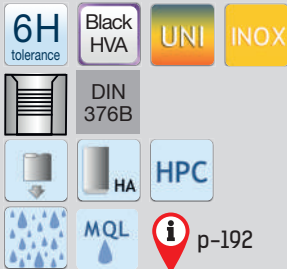
**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
401040M03	M3	3,00	0,50	3,50	56	10	2,50
401040M04	M4	4,00	0,70	4,50	63	12	3,20
401040M05	M5	5,00	0,80	6,00	70	14	4,20
401040M06	M6	6,00	1,00	6,00	80	16	5,00
401040M08	M8	8,00	1,25	8,00	90	17	6,80
401040M10	M10	10,00	1,50	10,00	100	20	8,50

## UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E

# 40.1046

-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evřensel makina kilzuvuz ilk seřim HSS-E
-  优选通用丝锥HSS-E



THREAD LINE

**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
401046M12	<b>M12</b>	12,00	1,75	9,00	110	24	10,20
401046M14	<b>M14</b>	14,00	2,00	11,00	110	26	12,00
401046M16	<b>M16</b>	16,00	2,00	12,00	110	26	14,00
401046M20	<b>M20</b>	20,00	2,50	16,00	140	32	17,50

## 40.1640

### UNIVERSAL MACHINE TAP 6G TOLERANCE HSS-E



-  Macho de máquina multiuso Tol. 6G HSS-E
-  Taraud machine universel Tol. 6G HSS-E
-  Maschio a macchina universale tolleranza 6G HSS-E
-  Машинные метчики общего применения "6G" HSS-E
-  Üniversal makina kilzvuз 6G tolerans HSS-E
-  通用6G丝锥HSS-E





**6G**  
tolerance

Black  
HVA

UNI

INOX

 DIN  
371B

 HA

 MQL

**i**

p-192

M

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
401640M03	M3	3,00	0,50	3,50	56	10	2,50
401640M04	M4	4,00	0,70	4,50	63	12	3,20
401640M05	M5	5,00	0,80	6,00	70	14	4,20
401640M06	M6	6,00	1,00	6,00	80	16	5,00
401640M08	M8	8,00	1,25	8,00	90	17	6,80
401640M10	M10	10,00	1,50	10,00	100	20	8,50









**BUILDING  
UP A NEW  
GENERATION**

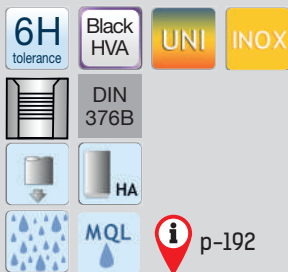


## 40.1140

### UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E



-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kilzuvuz ilk seçim HSS-E
-  优选通用丝锥HSS-E









**MF**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
401140MF405	MF4	4,00	0,50	2,80	63	8	3,50
401140MF505	MF5	5,00	0,50	3,50	70	10	4,50
401140MF6075	MF6	6,00	0,75	4,50	80	13	5,20
401140MF81	MF8	8,00	1,00	6,00	90	16	7,00
401140MF101	MF10	10,00	1,00	7,00	90	16	9,00
401140MF121	MF12	12,00	1,00	9,00	100	20	11,00
401140MF1215	MF12	12,00	1,50	9,00	100	20	10,50
401140MF1415	MF14	14,00	1,50	11,00	100	20	12,50
401140MF1615	MF16	16,00	1,50	12,00	100	22	14,50
401140MF2015	MF20	20,00	1,50	16,00	125	25	18,50

## UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E

# 40.1240

-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kılzuvuz ilk seçim HSS-E
-  优选通用丝锥HSS-E



p-192



THREAD LINE







**GAS  
BSP**

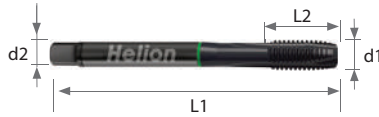
Cod.	Size	d1	P	d2	L1	L2	Prev. Hole Ø
401240G18	G1/8	9,73	28	7,00	90	18	8,80
401240G14	G1/4	13,16	19	11,00	100	20	11,80
401240G38	G3/8	16,66	19	12,00	100	22	15,25
401240G12	G1/2	20,96	14	16,00	125	25	19,00
401240G34	G3/4	26,44	14	20,00	140	28	24,50
401240G1	G1"	33,25	11	25,00	160	30	30,75

## 40.1340

### UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E



-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kilvuz ilk seçim HSS-E
-  优选英制通用丝锥HSS-E



**2B**  
tolerance

Black  
HVA

UNI

INOX



DIN  
374



HA



MQL







 p-192

**UNF**  
**SAE**

Cod.	Size	d1	P	d2	L1	L2	Prev. Hole Ø
401340NF448	UNF 4	2,85	48	2,20	56	10	2,40
401340NF640	UNF 6	3,51	40	2,50	56	11	2,95
401340NF1032	UNF 10	4,83	32	3,50	70	14	4,10
401340NF1428	UNF 1/4	6,35	28	4,50	80	16	5,50
401340NF3824	UNF 3/8	9,53	24	7,00	90	18	8,50
401340NF5818	UNF 5/8	15,88	18	12,00	100	22	14,50

40.1440  
40.1446

UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E

-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kilzuvuz ilk seçim HSS-E
-  优选英制通用丝锥HSS-E



THREAD LINE

2B tolerance

Black HVA

UNI


INOX

DIN 371

DIN 376

HA

MLQ

 p-192



Cod.	Size	d1	P	d2	L1	L2	Prev. Hole Ø
401440NC440	UNC 4	2,85	40	3,50	56	11	2,35
401440NC632	UNC 6	3,51	32	4,00	56	12	2,85
401440NC832	UNC 8	4,17	32	4,50	63	12	3,50
401440NC1024	UNC 10	4,83	24	6,00	70	14	3,90
401440NC1420	UNC 1/4	6,35	20	7,00	80	16	5,10
401440NC51618	UNC 5/16	7,94	18	8,00	90	18	6,60
401440NC3816	UNC 3/8	9,53	16	10,00	100	20	8,00
401446NC71614	UNC 7/16	11,11	14	8,00	100	22	9,40
401446NC1213	UNC 1/2	12,70	13	9,00	110	25	10,80
401446NC5811	UNC 5/8	15,88	11	12,00	110	30	13,50
401446NC3410	UNC 3/4	19,05	10	14,00	125	33	16,50





## 41.6040

### UNIVERSAL MACHINE TAP PERFORMANCE HSS-E-PM



-  Macho de máquina multiuso producción HSS-E-PM
-  Taraud machine universel performance HSS-E-PM
-  Maschio a macchina universale ad alta prestazione HSS-E-PM
-  Машинные метчики общего применения HSS-E-PM
-  Evrensel makine kilavuzu performansi HSS-E-PM
-  粉末高速钢通用丝锥HSS-E-PM



<b>6H</b> tolerance	<b>600</b> <b>1200</b> N/mm <sup>2</sup>	<b>INOX</b>	<b>TIN</b> Up	<b>UNI</b>
	<b>DIN</b> <b>371B</b>	<b>HSS-E-PM</b>		
	<b>HA</b>	<b>HPC</b>		
	<b>MQL</b>	 p-192		

**M**

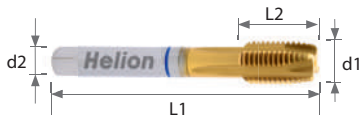
Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
416040M02	<b>M2</b>	2,00	0,40	2,80	45	8	1,60
416040M03	<b>M3</b>	3,00	0,50	3,50	56	10	2,50
416040M04	<b>M4</b>	4,00	0,70	4,50	63	12	3,20
416040M05	<b>M5</b>	5,00	0,80	6,00	70	14	4,20
416040M06	<b>M6</b>	6,00	1,00	6,00	80	16	5,00
416040M08	<b>M8</b>	8,00	1,25	8,00	90	17	6,80
416040M10	<b>M10</b>	10,00	1,50	10,00	100	20	8,50














## UNIVERSAL MACHINE TAP PERFORMANCE HSS-E-PM

# 41.6046

-  Macho de máquina multiuso producción HSS-E-PM
-  Taraud machine universel performance HSS-E-PM
-  Maschio a macchina universale ad alta prestazione HSS-E-PM
-  Машинные метчики общего применения HSS-E-PM
-  Evrensel makine kilavuzu performansli HSS-E-PM
-  粉末高速钢通用丝锥HSS-E-PM



THREAD LINE

				
	DIN 376B			
				
				







**M**

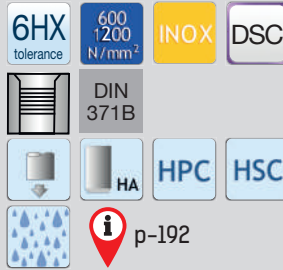
Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
416046M12	M12	12,00	1,75	9,00	110	24	10,20
416046M14	M14	14,00	2,00	11,00	110	26	12,00
416046M16	M16	16,00	2,00	12,00	110	26	14,00
416046M18	M18	18,00	2,50	14,00	125	30	15,50
416046M20	M20	20,00	2,50	16,00	140	32	17,50

## 45.5040

### HIGH PERFORMANCE MACHINE TAP HSS-E



-  Macho de máquina alto rendimiento HSS-E
-  Taraud machine haute performance HSS-E
-  Maschio a macchina ad alta prestazione HSS-E
-  Mашинные метчики высокопроизводительные HSS-E
-  Yüksek performanslı makina tap HSS-E
-  高性能丝锥HSS-E









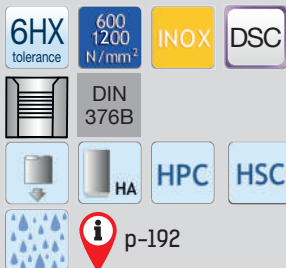
**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
455040M02	M2	2,00	0,40	2,80	45	8	1,60
455040M025	M2,5	2,50	0,45	2,80	50	9	2,05
455040M03	M3	3,00	0,50	3,50	56	10	2,50
455040M04	M4	4,00	0,70	4,50	63	12	3,30
455040M05	M5	5,00	0,80	6,00	70	14	4,20
455040M06	M6	6,00	1,00	6,00	80	16	5,00
455040M08	M8	8,00	1,25	8,00	90	17	6,80
455040M10	M10	10,00	1,50	10,00	100	20	8,50

## HIGH PERFORMANCE MACHINE TAP HSS-E

# 45.5046

-  Macho de máquina alto rendimiento HSS-E
-  Taraud machine haute performance HSS-E
-  Maschio a macchina ad alta prestazione HSS-E
-  Машинные метчики высокопроизводительные HSS-E
-  Yüksek performanslı makina tap HSS-E
-  高性能丝锥HSS-E



THREAD LINE







**M**

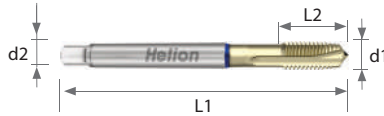
Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
455046M12	M12	12,00	1,75	9,00	110	24	10,20
455046M14	M14	14,00	2,00	11,00	110	26	12,00
455046M16	M16	16,00	2,00	12,00	110	26	14,00
455046M18	M18	18,00	2,50	14,00	125	30	15,50
455046M20	M20	20,00	2,50	16,00	140	32	17,50
455046M24	M24	24,00	3,00	18,00	160	36	21,00
455046M30	M30	30,00	3,50	22,00	180	40	26,50

## 45.5144

### HIGH PERFORMANCE MACHINE TAP HSS-E



-  Macho de máquina alto rendimiento HSS-E
-  Taraud machine haute performance HSS-E
-  Maschio a macchina ad alta prestazione HSS-E
-  Машинные метчики высокопроизводительные HSS-E
-  Yüksek performanslı makina tap HSS-E
-  高性能丝锥HSS-E





**6HX**  
tolerance

**600  
1200**  
N/mm<sup>2</sup>

**INOX**


**DSC**


 **DIN  
376B**

 **HA**

**HPC**

**HSC**

 **MQL**







 **p-192**

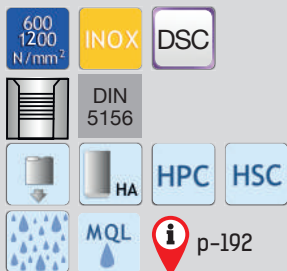
**MF**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
455144MF6075	<b>MF6</b>	6,00	0,75	4,50	80	13	5,20
455144MF8075	<b>MF8</b>	8,00	0,75	6,00	80	14	7,20
455144MF81	<b>MF8</b>	8,00	1,00	6,00	90	16	7,00
455144MF101	<b>MF10</b>	10,00	1,00	7,00	90	16	9,00
455144MF10125	<b>MF10</b>	10,00	1,25	7,00	100	20	8,80
455144MF121	<b>MF12</b>	12,00	1,00	9,00	100	20	11,00
455144MF12125	<b>MF12</b>	12,00	1,25	9,00	100	20	10,80
455144MF1215	<b>MF12</b>	12,00	1,50	9,00	100	20	10,50
455144MF1415	<b>MF14</b>	14,00	1,50	11,00	100	20	12,50
455144MF1615	<b>MF16</b>	16,00	1,50	12,00	100	22	14,50
455144MF1815	<b>MF18</b>	18,00	1,50	14,00	110	25	16,50
455144MF2015	<b>MF20</b>	20,00	1,50	16,00	125	25	18,50
455144MF2415	<b>MF24</b>	24,00	1,50	18,00	140	28	22,50

## HIGH PERFORMANCE MACHINE TAP HSS-E

# 45.5245

-  Macho de máquina alto rendimiento HSS-E
-  Taraud machine haute performance HSS-E
-  Maschio a macchina ad alta prestazione HSS-E
-  Машинные метчики высокопроизводительные HSS-E
-  Yüksek performanslı makina tap HSS-E
-  高性能管螺纹丝锥HSS-E









THREAD LINE

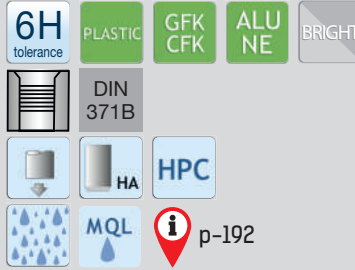
**GAS  
BSP**

Cod.	Size	d1	P	d2	L1	L2	Prev. Hole Ø
455245G116	<b>GAS1/16</b>	7,72	28	6,00	90	18	6,80
455245G18	<b>GAS1/8</b>	9,73	28	7,00	90	18	8,80
455245G14	<b>GAS1/4</b>	13,16	19	11,00	100	20	11,80
455245G38	<b>GAS3/8</b>	16,66	19	12,00	100	22	15,25
455245G12	<b>GAS1/2</b>	20,96	14	16,00	125	25	19,00
455245G58	<b>GAS5/8</b>	22,91	14	18,00	125	25	21,00
455245G34	<b>GAS3/4</b>	26,44	14	20,00	140	28	24,50
455245G78	<b>GAS7/8</b>	30,20	14	22,00	150	28	28,25
455245G1	<b>GAS1"</b>	33,25	11	25,00	160	30	30,75

## 44.0040

### MACHINE TAP FOR ALUMINIUM HSS-E

-  Macho de máquina especial aluminio HSS-E
-  Taraud machine pour aluminium HSS-E
-  Maschio a macchina speciale per alluminio HSS-E
-  Машинные метчики для обработки алюминия HSS-E
-  Alüminyum HSS-E için makine kılzuvuz
-  铝用丝锥HSS-E









**M**

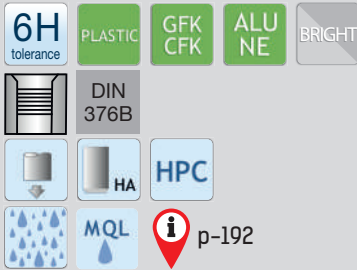
Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
440040M03	M3	3,00	0,50	3,50	56	10	2,50
440040M04	M4	4,00	0,70	4,50	63	12	3,30
440040M05	M5	5,00	0,80	6,00	70	14	4,20
440040M06	M6	6,00	1,00	6,00	80	16	5,00
440040M08	M8	8,00	1,25	8,00	90	17	6,80
440040M10	M10	10,00	1,50	10,00	100	20	8,50



## MACHINE TAP FOR ALUMINIUM HSS-E

# 44.0046

-  Macho de máquina especial aluminio HSS-E
-  Taraud machine pour aluminium HSS-E
-  Maschio a macchina speciale per alluminio HSS-E
-  Машинные метчики для обработки алюминия HSS-E
-  Alüminyum HSS-E için makine kilvuz
-  铝用丝锥HSS-E









THREAD LINE

**M**








Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
440046M12	M12	12,00	1,75	9,00	110	24	10,20
440046M16	M16	16,00	2,00	12,00	110	26	14,00
440046M20	M20	20,00	2,50	16,00	140	32	17,50

## 43.2810

### HIGH PERFORMANCE MACHINE TAP HSS-E-PM

-  Macho de máquina alto rendimiento HSS-E-PM
-  Taraud machine haute performance HSS-E-PM
-  Maschio a macchina ad alta prestazione HSS-E-PM
-  Машинные метчики высокопроизводительные HSS-E-PM
-  Yüksek performanslı makina tap HSS-E-PM
-  粉末高速钢丝锥HSS-E-PM








<b>6HX</b> tolerance	<b>600</b> <b>1200</b> N/mm <sup>2</sup>	<b>GG(G)</b>	<b>SI ≥7%</b>	<b>TICN</b>
		<b>DIN</b> <b>371C</b>	<b>HSS-E-PM</b>	
		<b>HPC</b>		
			<b>p-192</b>	

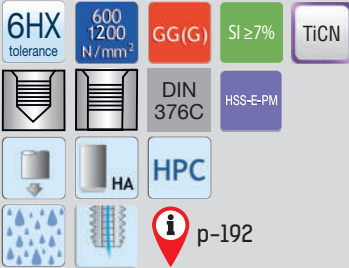
**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
432810M05	<b>M5</b>	5,00	0,80	6,00	70	14	4,20
432810M06	<b>M6</b>	6,00	1,00	6,00	80	16	5,00
432810M08	<b>M8</b>	8,00	1,25	8,00	90	17	6,80
432810M10	<b>M10</b>	10,00	1,50	10,00	100	20	8,50

## HIGH PERFORMANCE MACHINE TAP HSS-E-PM

# 43.2816

-  Macho de máquina alto rendimiento HSS-E-PM
-  Taraud machine haute performance HSS-E-PM
-  Maschio a macchina ad alta prestazione HSS-E-PM
-  Машинные метчики высокопроизводительные HSS-E-PM
-  Yüksek performanslı makina tap HSS-E-PM
-  粉末高速钢丝锥HSS-E-PM



THREAD LINE

**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
432816M10	M10	10,00	1,50	7,00	100	20	8,50
432816M12	M12	12,00	1,75	9,00	110	24	10,20
432816M14	M14	14,00	2,00	11,00	110	26	12,00









EVERYWHERE  
YOU WORK

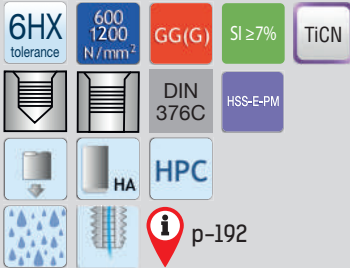
*Helion*



## HIGH PERFORMANCE MACHINE TAP HSS-E-PM

# 43.2117

-  Macho de máquina alto rendimiento HSS-E-PM
-  Taraud machine haute performance HSS-E-PM
-  Maschio a macchina ad alta prestazione HSS-E-PM
-  Машинные метчики высокопроизводительные HSS-E-PM
-  Yüksek performanslı makina kılavuz HSS-E-PM
-  粉末高速钢丝锥HSS-E-PM









THREAD LINE

**MF**





Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
432117MF05050	MF5	5,00	0,50	3,50	70	10	4,50
432117MF06050	MF6	6,00	0,50	4,50	80	13	5,50
432117MF06075	MF6	6,00	0,75	4,50	80	13	5,20
432117MF08075	MF8	8,00	0,75	6,00	80	14	7,20
432117MF08100	MF8	8,00	1,00	6,00	90	16	7,00
432117MF10100	MF10	10,00	1,00	7,00	90	16	9,00
432117MF10125	MF10	10,00	1,25	7,00	100	20	9,30
432117MF12100	MF12	12,00	1,00	9,00	100	20	11,00
432117MF12125	MF12	12,00	1,25	9,00	100	20	10,80
432117MF12150	MF12	12,00	1,50	9,00	100	20	10,50
432117MF14150	MF14	14,00	1,50	11,00	100	20	12,50
432117MF16150	MF16	16,00	1,50	12,00	100	22	14,50

## 46.4040

### HIGH PERFORMANCE MACHINE TAP HSS-E-PM

-  Macho de máquina alto rendimiento HSS-E-PM
-  Taraud machine haute performance HSS-E-PM
-  Maschio a macchina ad alta prestazione HSS-E-PM
-  Mашинные метчики высокопроизводительные HSS-E-PM
-  Yüksek performanslı makina kılavuz HSS-E-PM
-  粉末高速钢丝锥HSS-E-PM



<b>6HX</b> tolerance	<b>NI ALLOYS</b>	<b>TITAN INCONEL</b>	<b>TiCN</b>
	<b>DIN 371B</b>	<b>HSS-E-PM</b>	
	<b>HA</b>	<b>HPC</b>	
	 p-192		







**M**

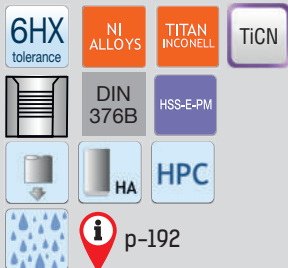
Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
464040M03	M3	3,00	0,50	3,50	56	10	2,50
464040M04	M4	4,00	0,70	4,50	63	12	3,30
464040M05	M5	5,00	0,80	6,00	70	14	4,20
464040M06	M6	6,00	1,00	6,00	80	16	5,00
464040M08	M8	8,00	1,25	8,00	90	17	6,80
464040M10	M10	10,00	1,50	10,00	100	20	8,50



## HIGH PERFORMANCE MACHINE TAP HSS-E-PM

# 46.4046

-  Macho de máquina alto rendimiento HSS-E-PM
-  Taraud machine haute performance HSS-E-PM
-  Maschio a macchina ad alta prestazione HSS-E-PM
-  Машинные метчики высокопроизводительные HSS-E-PM
-  Yüksek performanslı makina kılavuz HSS-E-PM
-  粉末高速钢丝锥HSS-E-PM



THREAD LINE







**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
464046M12	M12	12,00	1,75	9,00	110	24	10,20
464046M16	M16	16,00	2,00	12,00	110	26	14,00













## 43.2010

### HIGH PERFORMANCE MACHINE TAP HARDENED STEELS



-  Macho de máquina alto rendimiento para aceros duros
-  Taraud machine haute performance pour aciers durs
-  Maschio a macchina ad alta prestazione per acciaio temprato HSS-E-PM
-  Машинные метчики высокопроизводительные по закаленной стали
-  Yüksek performanslı makina masası sertleştirilmiş çelikler HSS-E-PM
-  淬火钢用丝锥








		
		
		
		

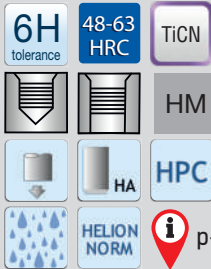
**M**

Cod.	M	d <sub>1</sub>	P	d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	Prev. Hole Ø
432010M03	M3	3,00	0,50	3,50	56	10	2,60
432010M04	M4	4,00	0,70	4,50	63	12	3,40
432010M05	M5	5,00	0,80	6,00	70	14	4,30
432010M06	M6	6,00	1,00	6,00	80	16	5,10
432010M08	M8	8,00	1,25	8,00	90	17	6,90
432010M10	M10	10,00	1,50	10,00	100	20	8,60
432010M12	M12	12,00	1,75	12,00	110	24	10,40
432010M14	M14	14,00	2,00	14,00	110	26	12,00
432010M16	M16	16,00	2,00	16,00	110	26	14,10

## SOLID CARBIDE MACHINE TAP HARDENED STEELS

# 47.9010

-  Macho de máquina de metal duro para aceros duros
-  Taraud machine en carbure pour aciers durs
-  Maschio a macchina in metallo duro per acciaio temprato
-  Твердосплавные машинные метчики по закаленной стали
-  Kati karbür makinesi kilvuz sertleştirilmiş çelikler
-  淬火钢用合金丝锥



48 - 63 HRC  
VC = 1-2 m/min



THREAD LINE

**M**







Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
479010M03	M3	3,00	0,50	3,50	56	12	2,60
479010M04	M4	4,00	0,70	4,50	63	14	3,40
479010M05	M5	5,00	0,80	6,00	70	17	4,30
479010M06	M6	6,00	1,00	6,00	80	20	5,10
479010M08	M8	8,00	1,25	8,00	90	20	6,90
479010M10	M10	10,00	1,50	10,00	100	24	8,60
479010M12	M12	12,00	1,75	12,00	110	28	10,40
479010M16	M16	16,00	2,00	16,00	110	40	14,10

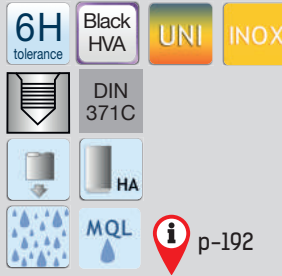
Usar la broca 62.6000 para los taladros previos al roscado, según los diámetros aconsejados para cada rosca  
Use drill bit 62.6000 for the holes prior to threading, according to the recommended diameters for each thread

## 40.1060

### UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E



-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kiltvuz ilk seçim HSS-E
-  优选通用丝锥HSS-E








**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
401060M03	M3	3	0,50	3,50	56	6	2,50
401060M04	M4	4	0,70	4,50	63	8	3,20
401060M05	M5	5	0,80	6,00	70	9	4,20
401060M06	M6	6	1,00	6,00	80	11	5,00
401060M08	M8	8	1,25	8,00	90	14	6,80
401060M10	M10	10	1,50	10,00	100	16	8,50

## UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E

# 40.1066

-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kılzuvuz ilk seçim HSS-E
-  优选通用丝锥HSS-E



THREAD LINE

**6H**  
tolerance

Black  
HVA

UNI

INOX



DIN  
376C



HA



MQL



p-192







**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
401066M12	<b>M12</b>	12,00	1,75	9,00	110	19	10,20
401066M16	<b>M16</b>	16,00	2,00	12,00	110	20	14,00
401066M20	<b>M20</b>	20,00	2,50	16,00	140	25	17,50

## 40.1050

### UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E



-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kilzuvuz ilk seçim HSS-E
-  优选通用丝锥HSS-E



**6H**  
tolerance

Black  
HVA

UNI

INOX



DIN  
371E



HA



MQL

 p-192

FORM E WITH  
SHORT ENTRY



FORMA E CON  
ENTRADA CORTA

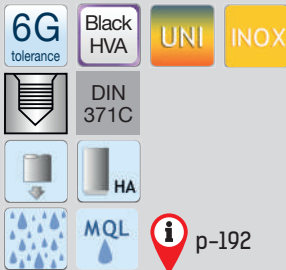
**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
401050M03	M3	3,00	0,50	3,50	56	6	2,50
401050M04	M4	4,00	0,70	4,50	63	7,50	3,30
401050M05	M5	5,00	0,80	6,00	70	8,50	4,20
401050M06	M6	6,00	1,00	6,00	80	11	5,00
401050M08	M8	8,00	1,25	8,00	90	14	6,80
401050M10	M10	10,00	1,50	10,00	100	16	8,50

## UNIVERSAL MACHINE TAP 6G TOLERANCE HSS-E

# 40.1660

-  Macho de máquina multiuso Tol. 6G HSS-E
-  Taraud machine universel Tol. 6G HSS-E
-  Maschio a macchina universale tolleranza 6G HSS-E
-  Машинные метчики общего применения "6G" HSS-E
-  Úniverzální makina kílvezűz 6G toleráns HSS-E
-  通用6G丝锥HSS-E



THREAD LINE



**M**

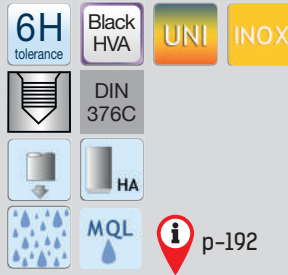
Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
401660M03	M3	3,00	0,50	3,50	56	6	2,50
401660M04	M4	4,00	0,70	4,50	63	8	3,20
401660M05	M5	5,00	0,80	6,00	70	9	4,20
401660M06	M6	6,00	1,00	6,00	80	11	5,00
401660M08	M8	8,00	1,25	8,00	90	14	6,80
401660M10	M10	10,00	1,50	10,00	100	16	8,50

## 40.1160

### UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E



-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale prima scelta HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kiltvuz ilk seçim HSS-E
-  优选通用丝锥HSS-E









**MF**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
401160MF405	MF4	4,00	0,50	2,80	63	5	3,50
401160MF505	MF5	5,00	0,50	3,50	70	5	4,50
401160MF6075	MF6	6,00	0,75	4,50	80	8	5,25
401160MF81	MF8	8,00	1,00	6,00	90	11	7,00
401160MF101	MF10	10,00	1,00	7,00	90	11	9,00
401160MF10125	MF10	10,00	1,25	7,00	100	14	8,80
401160MF121	MF12	12,00	1,00	9,00	100	11	11,00
401160MF12125	MF12	12,00	1,25	9,00	100	16	10,80
401160MF1215	MF12	12,00	1,50	9,00	100	16	10,50
401160MF141	MF14	14,00	1,00	11,00	100	11	13,00
401160MF1415	MF14	14,00	1,50	11,00	100	15	12,50
401160MF161	MF16	16,00	1,00	12,00	100	11	15,00
401160MF1615	MF16	16,00	1,50	12,00	100	15	14,50
401160MF2015	MF20	20,00	1,50	16,00	125	16	18,50



## UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E

# 40.1260

-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale prima scelta HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kilvuz ilk seçim HSS-E
-  优选通用丝锥HSS-E



THREAD LINE



p-192






**GAS  
BSP**

Cod.	Size	d1	P	d2	L1	L2	Prev. Hole Ø
401260G18	GAS1/8	9,73	28	7,00	90	11	8,80
401260G14	GAS1/4	13,16	19	11,00	100	14	11,80
401260G38	GAS3/8	16,66	19	12,00	100	14	15,25
401260G12	GAS1/2	20,96	14	16,00	125	18	19,00
401260G34	GAS3/4	26,44	14	20,00	140	20	24,50
401260G1	GAS1"	33,25	11	25,00	160	24	30,75

## 40.1360

### UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E



-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale prima scelta HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kiltvuz ilk seçim HSS-E
-  英制优选通用丝锥HSS-E





2B  
tolerance

Black  
HVA


UNI


INOX

 DIN  
374C

 HA

HPC

 MQL







 p-192

**UNF  
SAE**

Cod.	Size	d1	P	d2	L1	L2	Prev. Hole Ø
401360NF448	UNF4	2,85	48	2,20	56	6	2,40
401360NF640	UNF6	3,51	40	2,50	56	7	2,95
401360NF1032	UNF10	4,83	32	3,50	70	9	4,10
401360NF1428	UNF1/4	6,35	28	4,50	80	9	5,50
401360NF3824	UNF3/8	9,53	24	7,00	90	11	8,50
401360NF5818	UNF5/8	15,88	18	12,00	100	15	14,50

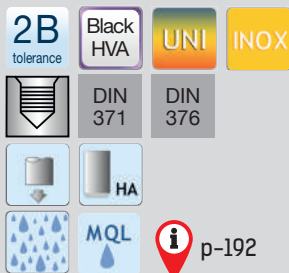
## UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E

40.1460  
40.1466

-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale prima scelta HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kılzuvuz ilk seçim HSS-E
-  英制优选通用丝锥HSS-E



THREAD LINE









**UNC**

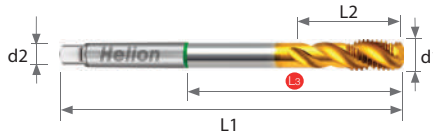
Cod.	Size	d1	P	d2	L1	L2	Prev. Hole Ø
401460NC440	<b>UNC4</b>	2,85	40	3,50	56	7	2,35
401460NC632	<b>UNC6</b>	3,51	32	4,00	56	8	2,85
401460NC832	<b>UNC8</b>	4,17	32	4,50	63	8	3,50
401460NC1024	<b>UNC10</b>	4,83	24	6,00	70	11	3,90
401460NC1420	<b>UNC1/4</b>	6,35	20	7,00	80	13	5,10
401460NC51618	<b>UNC5/16</b>	7,94	18	8,00	90	14	6,60
401460NC3816	<b>UNC3/8</b>	9,53	16	10,00	100	16	8,00
401466NC71614	<b>UNC7/16</b>	11,11	14	8,00	100	18	9,40
401466NC1213	<b>UNC1/2</b>	12,7	13	9,00	110	20	10,80
401466NC5811	<b>UNC5/8</b>	15,88	11	12,00	110	24	13,50
401466NC3410	<b>UNC3/4</b>	19,05	10	14,00	125	25	16,50

## 40.7068

### UNIVERSAL MACHINE TAP LONG HSS-E



-  Macho de máquina multiuso largo HSS-E
-  Taraud machine universel long HSS-E
-  Maschio a macchina universale lungo HSS-E
-  Машинные метчики общего применения, длинная серия HSS-E
-  Üniuersal makina kilavuzu uzun HSS-E
-  加长通用丝锥HSS-E



p-192

**M**

Cod.	M	d1	P	d2	L1	L2	L3	Prev. Hole Ø
407068M03	M3	3,00	0,50	3,50	112	6	18	2,50
407068M04	M4	4,00	0,70	2,80	112	8	77	3,20
407068M05	M5	5,00	0,80	3,50	125	9	90	4,20
407068M06	M6	6,00	1,00	4,50	125	11	90	5,00
407068M08	M8	8,00	1,25	6,00	140	14	97	6,80
407068M10	M10	10,00	1,50	7,00	160	16	117	8,50
407068M12	M12	12,00	1,75	9,00	180	19	133	10,20
407068M16	M16	16,00	2,00	12,00	220	20	168	14,00
407068M20	M20	20,00	2,50	16,00	280	25	225	17,50



**MILL**  **LINE**

**DRILL**  **LINE**

**THREAD**  **LINE**

**REAM**  **LINE**

Our speciality is the design and manufacturing of all kinds of solid carbide cutting tools: End mills, drills, reamers, taps and special tools.

Our business philosophy is to provide our customers with comprehensive solutions that improve machining operations, increase productivity, and reduce costs. Service + Quality + Performance.

More information + 34 93 877 08 69  
Barcelona - Spain

Somos especialistas en el diseño y la fabricación de todo tipo de herramientas de metal duro: fresas, brocas, escariadores, machos y herramientas especiales.

Nuestra filosofía de negocio ofrece a nuestros clientes soluciones integrales que permiten mejorar las operaciones de mecanizado, aumentar la productividad y reducir los costes. Servicio, Calidad y Funcionamiento.

Más información + 34 93 877 08 69  
Barcelona - España









[www.helion.tools](http://www.helion.tools)

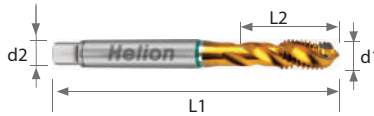
WORKING FOR YOUR SUCCESS Since 1952

## 40.7060

### UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E



-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kilzuvuz ilk seçim HSS-E
-  优选通用丝锥HSS-E




**6H**  
tolerance


TiN  
Up

UNI

INOX




DIN  
371C




HA

HPC



MQL

 p-192







**M**

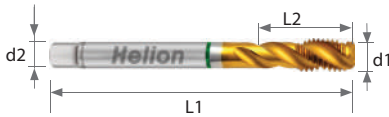
Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
407060M02	<b>M2</b>	2,00	0,40	2,80	45	5	1,60
407060M03	<b>M3</b>	3,00	0,50	3,50	56	6	2,50
407060M04	<b>M4</b>	4,00	0,70	4,50	63	8	3,20
407060M05	<b>M5</b>	5,00	0,80	6,00	70	9	4,20
407060M06	<b>M6</b>	6,00	1,00	6,00	80	11	5,00
407060M08	<b>M8</b>	8,00	1,25	8,00	90	14	6,80
407060M10	<b>M10</b>	10,00	1,50	10,00	100	16	8,50



## UNIVERSAL MACHINE TAP FIRST CHOICE HSS-E

# 40.7066

-  Macho de máquina multiuso HSS-E
-  Taraud machine universel HSS-E
-  Maschio a macchina universale HSS-E
-  Машинные метчики общего применения HSS-E
-  Evrensel makina kilvuz ilk seçim HSS-E
-  优选通用丝锥HSS-E




THREAD LINE

**6HX**  
tolerance


TiN  
Up

UNI

INOX




DIN  
376C




HA

HPC



MQL

 p-192







**M**

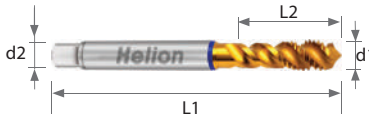
Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
407066M12	<b>M12</b>	12,00	1,75	9,00	110	19	10,20
407066M14	<b>M14</b>	14,00	2,00	11,00	110	20	12,00
407066M16	<b>M16</b>	16,00	2,00	12,00	110	20	14,00
407066M20	<b>M20</b>	20,00	2,50	16,00	140	25	17,50
407066M24	<b>M24</b>	24,00	3,00	18,00	160	30	21,00


## 41.6050

### UNIVERSAL MACHINE TAP PERFORMANCE HSS-E-PM



-  Macho de máquina multiuso producción HSS-E-PM
-  Taraud machine universel performance HSS-E-PM
-  Maschio a macchina universale prestazione HSS-E-PM
-  Машинные метчики общего применения HSS-E-PM
-  Evrensel makine kilavuzu performansi HSS-E-PM
-  粉末高速钢通用丝锥HSS-E-PM



<b>6H</b> tolerance	<b>600</b> <b>1200</b> N/mm <sup>2</sup>	TiN Up	UNI
	DIN 371C	HSS-E-PM	
	HA	HPC	HSC
	MQL	 p-192	







**M**

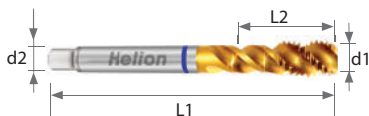
Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
416050M03	M3	3,00	0,50	3,50	56	6	2,50
416050M04	M4	4,00	0,70	4,50	63	8	3,20
416050M05	M5	5,00	0,80	6,00	70	9	4,20
416050M06	M6	6,00	1,00	6,00	80	11	5,00
416050M08	M8	8,00	1,25	8,00	90	14	6,80
416050M10	M10	10,00	1,50	10,00	100	16	8,50



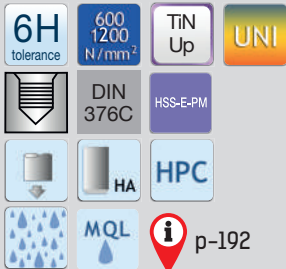
## UNIVERSAL MACHINE TAP PERFORMANCE HSS-E-PM

# 41.6056

-  Macho de máquina multiuso producción HSS-E-PM
-  Taraud machine universel performance HSS-E-PM
-  Maschio a macchina universale prestazione HSS-E-PM
-  Машинные метчики общего применения HSS-E-PM
-  Evrensel makine kilavuzu performansi HSS-E-PM
-  粉末高速钢通用丝锥HSS-E-PM



THREAD LINE









**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
416056M12	M12	12,00	1,75	9,00	110	19	10,20
416056M14	M14	14,00	2,00	11,00	110	20	12,00
416056M16	M16	16,00	2,00	12,00	110	20	14,00
416056M20	M20	20,00	2,50	16,00	140	25	17,50

## 45.4060

### HIGH PERFORMANCE MACHINE TAP HSS-E



-  Macho de máquina alto rendimiento HSS-E
-  Taraud machine haute performance HSS-E
-  Maschio a macchina ad alta prestazione HSS-E
-  Машинные метчики высокопроизводительные HSS-E
-  Yüksek performanslı tap HSS-E
-  高性能丝锥HSS-E









			
			
			
			

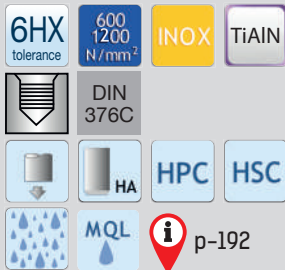
**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
454060M02	M2	2,00	0,40	2,80	45	4,5	1,60
454060M03	M3	3,00	0,50	3,50	56	6	2,50
454060M04	M4	4,00	0,70	4,50	63	7,5	3,30
454060M05	M5	5,00	0,80	6,00	70	8,5	4,20
454060M06	M6	6,00	1,00	6,00	80	11	5,00
454060M08	M8	8,00	1,25	8,00	90	14	6,80
454060M10	M10	10,00	1,50	10,00	100	30	8,50

## HIGH PERFORMANCE MACHINE TAP HSS-E

# 45.4066

-  Macho de máquina alto rendimiento HSS-E
-  Taraud machine haute performance HSS-E
-  Maschio a macchina ad alta prestazione HSS-E
-  Машинные метчики высокопроизводительные HSS-E
-  Yüksek performanslı makina tap HSS-E
-  高性能丝锥HSS-E



THREAD LINE







**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
454066M12	<b>M12</b>	12,00	1,75	9,00	110	19	10,20
454066M14	<b>M14</b>	14,00	2,00	11,00	110	20	12,00
454066M16	<b>M16</b>	16,00	2,00	12,00	110	20	14,00
454066M18	<b>M18</b>	18,00	2,50	14,00	125	25	15,50
454066M20	<b>M20</b>	20,00	2,50	16,00	140	25	17,50
454066M24	<b>M24</b>	24,00	3,00	18,00	160	30	21,00
454066M30	<b>M30</b>	30,00	3,50	22,00	180	35	26,50

## 45.4164

### HIGH PERFORMANCE MACHINE TAP HSS-E



-  Macho de máquina alto rendimiento HSS-E
-  Taraud machine haute performance HSS-E
-  Maschio a macchina ad alta prestazione HSS-E
-  Mашинные метчики высокопроизводительные HSS-E
-  Yüksek performanslı tap HSS-E
-  高性能丝锥 HSS-E



**6HX**  
tolerance

**600**  
1200  
N/mm<sup>2</sup>

**INOX**

**TiAlN**

 **DIN 376C**

 **HA**

**HPC**

**HSC**

 **MQL**







 **p-192**

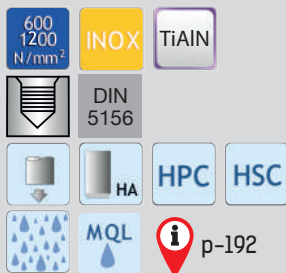
**MF**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
454164MF6075	<b>MF6</b>	6,00	0,75	4,50	80	8	5,20
454164MF8075	<b>MF8</b>	8,00	0,75	6,00	80	8	7,20
454164MF81	<b>MF8</b>	8,00	1,00	6,00	90	11	7,00
454164MF101	<b>MF10</b>	10,00	1,00	7,00	90	11	9,00
454164MF10125	<b>MF10</b>	10,00	1,25	7,00	100	14	8,80
454164MF121	<b>MF12</b>	12,00	1,00	9,00	100	11	11,00
454164MF12125	<b>MF12</b>	12,00	1,25	9,00	100	16	10,80
454164MF1215	<b>MF12</b>	12,00	1,50	9,00	100	16	10,50
454164MF1415	<b>MF14</b>	14,00	1,50	11,00	100	15	12,50
454164MF1615	<b>MF16</b>	16,00	1,50	12,00	100	15	14,50
454164MF1815	<b>MF18</b>	18,00	1,50	14,00	110	16	16,50
454164MF2015	<b>MF20</b>	20,00	1,50	16,00	125	16	18,50
454164MF2415	<b>MF24</b>	24,00	1,50	18,00	140	16	22,50

## HIGH PERFORMANCE MACHINE TAP HSS-E

# 45.3265

-  Macho de máquina alto rendimiento HSS-E
-  Taraud machine haute performance HSS-E
-  Maschio a macchina ad alta prestazione HSS-E
-  Машинные метчики высокопроизводительные HSS-E
-  Yüksek performanslı tap HSS-E
-  高性能丝锥HSS-E









THREAD LINE

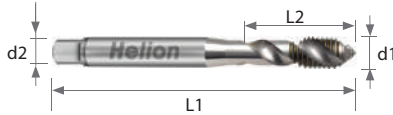
**GAS  
BSP**

Cod.	Size	d1	P	d2	L1	L2	Prev. Hole Ø
453265G116	GAS1/16	7,72	28	6,00	90	11	6,80
453265G18	GAS1/8	9,73	28	7,00	90	11	8,80
453265G14	GAS1/4	13,16	19	11,00	100	14	11,80
453265G38	GAS3/8	16,66	19	12,00	100	14	15,25
453265G12	GAS1/2	20,96	14	16,00	125	18	19,00
453265G58	GAS5/8	22,91	14	18,00	125	18	21,00
453265G34	GAS3/4	26,44	14	20,00	140	20	24,50
453265G78	GAS7/8	30,20	14	22,00	150	22	28,25
453265G1	GAS1"	33,25	11	25,00	160	24	30,75

## 44.0060

### MACHINE TAP FOR ALUMINIUM HSS-E

-  Macho de máquina especial aluminio HSS-E
-  Taraud machine pour aluminium HSS-E
-  Maschio a macchina ad alta prestazione HSS-E
-  Машинные метчики для обработки алюминия HSS-E
-  Alüminyum HSS-E için makine kılzuv
-  铝用丝锥HSS-E




**6H**  
tolerance


**ALU**  
NE

PLASTIC


GFK  
CFK


BRIGHT

 DIN  
371C

 HA

**HPC**









 p-192

**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
440060M03	M3	3,00	0,50	3,50	56	6	2,50
440060M04	M4	4,00	0,70	4,50	63	8	3,30
440060M05	M5	5,00	0,80	6,00	70	9	4,20
440060M06	M6	6,00	1,00	6,00	80	11	5,00
440060M08	M8	8,00	1,25	8,00	90	14	6,80
440060M10	M10	10,00	1,50	10,00	100	16	8,50

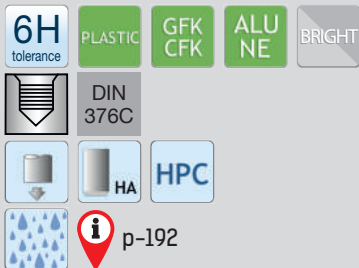
## MACHINE TAP FOR ALUMINIUM HSS-E

# 44.0066

-  Macho de máquina especial aluminio HSS-E
-  Taraud machine pour aluminium HSS-E
-  Maschio a macchina ad alta prestazione HSS-E
-  Машинные метчики для обработки алюминия HSS-E
-  Alüminyum HSS-E için makine kılavuz
-  铝用丝锥HSS-E



THREAD LINE









**M**





Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
440066M12	<b>M12</b>	12,00	1,75	9,00	110	19	10,20
440066M16	<b>M16</b>	16,00	2,00	12,00	110	20	14,00
440066M20	<b>M20</b>	20,00	2,50	16,00	140	25	17,50

## 46.4070

### HIGH PERFORMANCE MACHINE TAP HSS-E-PM

-  Macho de máquina alto rendimiento HSS-E-PM
-  Taraud machine haute performance HSS-E-PM
-  Maschio a macchina ad alta prestazione HSS-E-PM
-  Mашинные метчики высокопроизводительные HSS-E-PM
-  Yüksek performanslı makina kılavuz HSS-E-PM
-  粉末高速钢丝锥HSS-E-PM



<b>6HX</b> tolerance	<b>NI ALLOYS</b>	<b>TITAN INCONELL</b>	<b>TiAlN</b>
	<b>DIN 371C</b>	<b>HSS-E-PM</b>	
	<b>HA</b>	<b>HPC</b>	
	<b>MQL</b>		<b>p-192</b>

**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
464070M03	<b>M3</b>	3,00	0,50	3,50	56	10	2,50
464070M04	<b>M4</b>	4,00	0,70	4,50	63	12	3,30
464070M05	<b>M5</b>	5,00	0,80	6,00	70	14	4,20
464070M06	<b>M6</b>	6,00	1,00	6,00	80	16	5,00
464070M08	<b>M8</b>	8,00	1,25	8,00	90	17	6,80
464070M10	<b>M10</b>	10,00	1,50	10,00	100	20	8,50







## HIGH PERFORMANCE MACHINE TAP HSS-E-PM

# 46.4076

-  Macho de máquina alto rendimiento HSS-E-PM
-  Taraud machine haute performance HSS-E-PM
-  Maschio a macchina ad alta prestazione HSS-E-PM
-  Машинные метчики высокопроизводительные HSS-E-PM
-  Yüksek performanslı makina tap HSS-E-PM
-  粉末高速钢丝锥HSS-E-PM



<b>6HX</b> tolerance	<b>NI ALLOYS</b>	<b>TITAN INCONEL</b>	<b>TiAlN</b>
	<b>DIN 376C</b>	<b>HSS-E-PM</b>	
	<b>HA</b>	<b>HPC</b>	
	<b>MLQ</b>	 p-192	

**M**

Cod.	M	d1	P	d2	L1	L2	Prev. Hole Ø
464076M12	<b>M12</b>	12,00	1,75	9,00	110	24	10,20
464076M16	<b>M16</b>	16,00	2,00	12,00	110	26	14,00

THREAD LINE

## CUTTING CONDITIONS SOLID CARBIDE THREAD MILL 2XD



CODE 4990		Ø1	Ø1,5	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12	Ø14	Ø15	
		Vc	fz mm	fz mm	fz mm	fz mm	fz mm	fz mm	fz mm	fz mm	fz mm	fz mm	fz mm	fz mm	fz mm	fz mm
Steel	Low carbon content steels	60-120	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
	Highly bound steels	60-90	0,03	0,04	0,05	0,06	0,08	0,09	0,1	0,12	0,13	0,14	0,14	0,16	0,17	0,18
	Bound steels - Steels capable of being hardened and tempered	50-80	0,03	0,04	0,04	0,05	0,05	0,06	0,07	0,07	0,08	0,09	0,10	0,12	0,13	0,14
Inox	Stainless steels	60-90	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,08	0,09	0,10	0,11	0,12	0,13
	Casting steels	70-90	0,03	0,04	0,04	0,05	0,05	0,06	0,07	0,07	0,08	0,09	0,10	0,12	0,13	0,14
Cast Iron	Cast iron	40-80	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
Non ferrous	Aluminium	80-150	0,04	0,05	0,05	0,07	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,17	0,18	0,18
	Thermosetting plastic materials	50-200	0,09	0,10	0,11	0,12	0,14	0,16	0,18	0,19	0,19	0,19	0,19	0,19	0,2	0,2
	Thermoplastics	50-200	0,09	0,10	0,11	0,12	0,14	0,16	0,18	0,19	0,19	0,19	0,19	0,19	0,2	0,2
Special materials	Nickel and titanium alloys	20-40	0,03	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,07	0,08	0,08

# CUTTING CONDITIONS SOLID CARBIDE THREAD MILL 2XD



		CODE 4991	Vc	fz		
				Ø d1 ≤ 4 mm	Ø d1 ≤ 8 mm	Ø d1 > 8 mm
Steel	Cold-struted steels / Structural steels / Hig speed steels, etc...	≤ 600 N/mm <sup>2</sup>	80-250	0,005 - 0,04	0,04 - 0,07	0,05 - 0,15
	Structural steels / Casehardened steels / Steel casting etc..	≤ 800 N/mm <sup>2</sup>	60-150	0,005 - 0,04	0,04 - 0,07	0,05 - 0,15
	Casehardened steels / Steels capable of being hardened and tempered / Cold-working steels etc...	≤ 1000 N/mm <sup>2</sup>	40-120	0,005 - 0,03	0,03 - 0,05	0,04 - 0,12
	Steels capable of being hardened and tempered / Cold-working steels etc... / Nitrided steels, etc...	≤ 1200 N/mm <sup>2</sup>	40-120	0,003 - 0,02	0,02 - 0,05	0,04 - 0,12
	Highly bound steels / Cold-working steels etc... / Hot-working steels, etc..	≤ 1200 N/mm <sup>2</sup>	40-120	0,003 - 0,02	0,02 - 0,05	0,04 - 0,12
Inox	Ferritic, martensitic	≤ 600 N/mm <sup>2</sup>	40-120	0,003 - 0,03	0,03 - 0,05	0,04 - 0,12
	Austenitic	≤ 800 N/mm <sup>2</sup>	40-120	0,003 - 0,03	0,03 - 0,05	0,04 - 0,12
	Austenitic - Ferritic	≤ 1000 N/mm <sup>2</sup>	30-80	0,003 - 0,02	0,02 - 0,05	0,04 - 0,10
Cast Iron	Cast irons with laminar graphite	≤ 100-250 N/mm <sup>2</sup>	100-200		0,04 - 0,07	0,05 - 0,15
		≤ 250-450 N/mm <sup>2</sup>	100-200		0,04 - 0,07	0,05 - 0,15
	Cast irons with nodular graphite	≤ 350-500 N/mm <sup>2</sup>	80-200		0,04 - 0,07	0,05 - 0,15
		≤ 500-900 N/mm <sup>2</sup>	80-200		0,04 - 0,07	0,05 - 0,15
	Cast irons with vermicular graphite	≤ 300-400 N/mm <sup>2</sup>	80-200		0,04 - 0,07	0,05 - 0,15
	≤ 400-500 N/mm <sup>2</sup>	80-200		0,04 - 0,07	0,05 - 0,15	
Malleable cast irons		≤ 250-500 N/mm <sup>2</sup>	80-200		0,04 - 0,07	0,05 - 0,15
		≤ 500-800 N/mm <sup>2</sup>	80-200		0,04 - 0,07	0,05 - 0,15
Non ferrous		≤ 200 N/mm <sup>2</sup>	150-400	0,01 - 0,05	0,05 - 0,08	0,07 - 0,20
	Malleable aluminum alloys	≤ 350 N/mm <sup>2</sup>	150-400	0,01 - 0,05	0,05 - 0,08	0,07 - 0,20
		≤ 550 N/mm <sup>2</sup>	150-400	0,01 - 0,05	0,05 - 0,08	0,07 - 0,20
		Si ≤ 7%	150-400	0,01 - 0,05	0,05 - 0,08	0,07 - 0,20
	Cast irons with nodular graphite	7% < Si ≤ 12%	150-400	0,01 - 0,05	0,05 - 0,08	0,07 - 0,20
		12% < Si ≤ 17%	100-200	0,01 - 0,05	0,05 - 0,08	0,07 - 0,20
	Pure copper, slightly bound copper	≤ 400 N/mm <sup>2</sup>	150-400	0,008 - 0,05	0,05 - 0,08	0,07 - 0,20
	Copper alloys - Zinc (Brass, long chip)	≤ 550 N/mm <sup>2</sup>	150-400	0,008 - 0,05	0,05 - 0,08	0,07 - 0,20
	Copper alloys - Zinc (Brass, short chip)	≤ 550 N/mm <sup>2</sup>	150-400	0,008 - 0,05	0,05 - 0,08	0,07 - 0,20
	Copper alloys - Aluminium (Alubronze, long chip)	≤ 800 N/mm <sup>2</sup>	100-250	0,008 - 0,04	0,04 - 0,07	0,05 - 0,15
	Copper alloys - TIN (Bronze, long chip)	≤ 700 N/mm <sup>2</sup>	100-250	0,008 - 0,04	0,04 - 0,07	0,05 - 0,15
	Copper alloys - TIN (Bronze, short chip)	≤ 400 N/mm <sup>2</sup>	100-250	0,008 - 0,04	0,04 - 0,07	0,05 - 0,15
	Special copper alloys	≤ 600 N/mm <sup>2</sup>	40-80	0,003 - 0,02	0,02 - 0,05	0,04 - 0,15
		≤ 1400 N/mm <sup>2</sup>	30-60	0,003 - 0,02	0,02 - 0,05	0,04 - 0,15
	Malleable magnesium alloys	≤ 500 N/mm <sup>2</sup>	150-400	0,01 - 0,05	0,05 - 0,08	0,07 - 0,20
Magnesium casting alloys	≤ 500 N/mm <sup>2</sup>	150-400	0,01 - 0,05	0,05 - 0,08	0,07 - 0,20	
Thermosetting plastic materials (short chip)		100-400	0,01 - 0,05	0,05 - 0,10	0,08 - 0,25	
Thermoplastic resins (long chip)		100-400	0,01 - 0,05	0,05 - 0,10	0,08 - 0,25	
Epoissidic resins (fibre percentage ≤ 30%)		80-120	0,01 - 0,05	0,05 - 0,10	0,08 - 0,25	
Epoissidic resins (fibre percentage > 30%)		80-120	0,01 - 0,05	0,05 - 0,10	0,08 - 0,25	
Graphite		100-200		0,04 - 0,07	0,08 - 0,25	
Tungsten alloys - copper		30-60		0,02 - 0,04	0,08 - 0,25	
Composites					0,08 - 0,25	
Special materials	Pure titanium	≤ 450 N/mm <sup>2</sup>	30-80	0,003 - 0,03	0,03 - 0,05	0,04 - 0,10
		≤ 900 N/mm <sup>2</sup>	30-80	0,003 - 0,03	0,03 - 0,05	0,04 - 0,10
	Titanium alloys	≤ 1250 N/mm <sup>2</sup>	30-60	0,003 - 0,02	0,02 - 0,04	0,03 - 0,08
	Pure nickel	≤ 600 N/mm <sup>2</sup>	30-60	0,003 - 0,02	0,02 - 0,04	0,03 - 0,08
	Nickel base alloys	≤ 1000 N/mm <sup>2</sup>	30-60	0,003 - 0,02	0,02 - 0,04	0,03 - 0,08
		≤ 1600 N/mm <sup>2</sup>	30-40	0,003 - 0,02	0,02 - 0,04	0,03 - 0,08
	Cobalt base alloys	≤ 1000 N/mm <sup>2</sup>	30-60	0,003 - 0,02	0,02 - 0,04	0,03 - 0,08
	≤ 1600 N/mm <sup>2</sup>	30-40	0,003 - 0,02	0,02 - 0,04	0,03 - 0,08	
Iron based alloys	≤ 1500 N/mm <sup>2</sup>	30-40	0,003 - 0,02	0,02 - 0,04	0,03 - 0,08	
Hard materials			40-50 HRC		0,015 - 0,04	0,03 - 0,08
			50-55 HRC		0,015 - 0,04	0,03 - 0,08
	High resistance steels, tempered steels	Cast iron mold	55-60 HRC			
			60-63 HRC			
			63-66 HRC			

THREAD LINE

# THREAD LINE

## CUTTING CONDITIONS



Reference Group / Family color		Reference group / Family color							
		40	41	43	44	45	46	47	48
Tap material		HSS-E	HSS-E PM	HSS-E	HSS-E	HSS-E	HSS-E	HM	HSS-E
Coating		Black HVA	TiN Up	TiCN	Brigh	TiAlN	TiAlN/TiCN	TiAlN	TiN Up
		Vc m/min.							
Steel	Unalloyed steel / Acero no aleado $\leq 800$ N/mm <sup>2</sup>	10-20	15-22			18-20			15-20
	Alloyed steel / Aceros aleados $> 800$ N/mm <sup>2</sup> $\leq 1000$ N/mm <sup>2</sup>	10-15	15-20	15-20		18-20			12-15
	Alloyed steel / Aceros aleados $\leq 1200$ N/mm <sup>2</sup>	8-12	10-18	12-15		12-15			10-12
	Alloyed steel / Aceros aleados $\leq 1300$ N/mm <sup>2</sup>	6-10	8-12						8-10
Hard Steels	Hard Steels 42-52 HRC <b>Only with Tap ref. 43.2010 HSS PM</b>			3-5					
	Hard Steels 48-63 HRC <b>Tap ref. 47.9010 Solid Carbide</b>							1-2	
Inox	Stainless steel / Inoxidables	6-12	8-12			8-15			5-8
Cast Iron	Grey cast iron / Fundición gris $\leq 350-500$ N/mm <sup>2</sup>	15-20	20-25	20-35		18-25			
	Nodular cast iron / Fundicion nodular $\leq 300-400$ N/mm <sup>2</sup>	15-20	20-25	20-30		20-25			
Non ferrous	Unalloyed copper / Cobre no aleado				12-20				
	Brass, Bronze / Laton, Bronce $<200$ HB-	10-20	15-25			25-30			20
	Brass, Bronze / Laton, Bronce 200HB - 300HB	10-20	15-22	15-22					20
	Brass, Bronze / Laton, Bronce $> 300$ HB	10-15	15-20	15-20					20
	Unalloyed Aluminium / Aluminio no aleado	15-25	10-18		15-25	15-25			20
	Alloyed Aluminium / Aluminio aleado 2% - 10% Si	15-20	20-25	12-20	15-25	15-25			20
	Alloyed Aluminium / Aluminio aleado 10% - 15% Si	10-18	20-25	10-15					
Special materials	Pure Titanium / Titanio puro					2-3	3-5		
	Alloyed Titanium / Aleaciones de Titanio $<900$ N/mm <sup>2</sup>					2-3	2-4		
	Alloyed Titanium / Aleaciones de Titanio $<900$ N/mm <sup>2</sup> - 1500 N/mm <sup>2</sup>						3		
	Pure nickel / Niquel puro					2-3	4		
	Alloyed Nickel / Aleaciones de Niquel $<900$ N/mm <sup>2</sup>					2-3	4		
	Alloyed Nickel / Aleaciones de Niquel $<900$ N/mm <sup>2</sup> - 1500 N/mm <sup>2</sup>						3		