



# INCH Line



**MILL LINE**

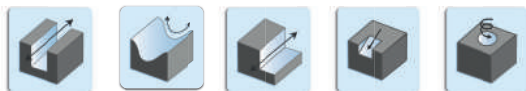
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## ICONOGRAPHY · ICONOGRAFÍA



Application  
Operación



Coolant  
Refrigeración



Polished Flutes  
Labios Pulidos



High Speed Cutting  
Corte de gran avance



High Hard Cutting  
Corte de materiales duros



High Performance Cutting  
Corte de alto rendimiento



Shape  
Forma



Shank Design  
Forma de mango



Helix Angle  
Ángulo



Coatings  
Recubrimientos

Materials / Materiales



Steel  
Acero



Cast Iron  
Fundición



Non ferrous  
No férricos



Exotic Materials  
Materiales exóticos



New Product  
Nuevo producto



Helion Norm  
Norma Helion



Universal Application  
Aplicación universal

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80.7202F

## General Application - Square End Mill



HELIX 35°	ALTiN + B	600 1200 N/mm <sup>2</sup>	55 HRC	GG(G)	UNI
HA	HSC	HHC			
		AIR	NEW	HELION NORM	

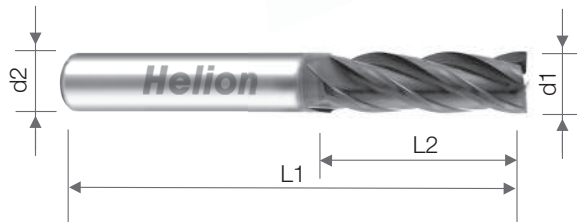


Cod.	d1	d2	L1	L2	Z	Price €
807202F116	1/16	1/8	1-1/2	3/16	2	
807202F564	5/64	1/8	1-1/2	3/16	2	
807202F332	3/32	1/8	1-1/2	9/32	2	
807202F764	7/64	1/8	1-1/2	3/8	2	
807202F18	1/8	1/8	1-1/2	3/8	2	
807202F316	3/16	3/16	2	5/8	2	
807202F14	1/4	1/4	2-1/2	3/4	2	
807202F516	5/16	5/16	2-1/2	13/16	2	
807202F38	3/8	3/8	2-1/2	1	2	
807202F12	1/2	1/2	3	1	2	
807202F58	5/8	5/8	3-1/2	1-1/4	2	

Unit: Inch / Unidad: Pulgadas

80.7402F

General Application - Square End Mill



HELIX 35°	ALTiN + B	600 1200 N/mm <sup>2</sup>	55 HRC	GG(G)	UNI
HA	HSC	HPC			
		MQL	AIR	NEW	HELION NORM

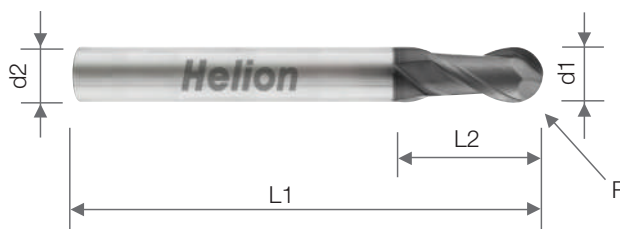


Cod.	d1	d2	L1	L2	Z	Price €
807402F116	1/16	1/8	1-1/2	3/16	4	
807402F564	5/64	1/8	1-1/2	3/16	4	
807402F332	3/32	1/8	1-1/2	9/32	4	
807402F764	7/64	1/8	1-1/2	3/8	4	
807402F18	1/8	1/8	1-1/2	3/8	4	
807402F316	3/16	3/16	2	5/8	4	
807402F14	1/4	1/4	2-1/2	3/4	4	
807402F516	5/16	5/16	2-1/2	13/16	4	
807402F38	3/8	3/8	2-1/2	1	4	
807402F12	1/2	1/2	3	1	4	
807402F58	5/8	5/8	3-1/2	1-1/4	4	

Unit: Inch / Unidad: Pulgadas

80.7421F

## General Application - Ball Nose End Mill



HELIX 35°	ALTiN+B	600 1200 N/mm <sup>2</sup>	55 HRC	GG(G)	UNI
POLISHED	HA	HSC	HPC	3D	
		MQL	AIR	NEW	HELION NORM

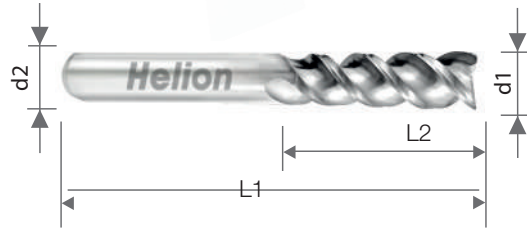


Cod.	d1	d2	L1	L2	Z	Price €
807421F116	1/16	1/8	1-1/2	3/16	2	
807421F564	5/64	1/8	1-1/2	3/16	2	
807421F332	3/32	1/8	1-1/2	9/32	2	
807421F764	7/64	1/8	1-1/2	3/8	2	
807421F18	1/8	1/8	1-1/2	3/8	2	
807421F316	3/16	3/16	2	5/8	2	
807421F14	1/4	1/4	2-1/2	3/4	2	
807421F516	5/16	5/16	2-1/2	13/16	2	
807421F38	3/8	3/8	2-1/2	1	2	
807421F12	1/2	1/2	3	1	2	
807421F58	5/8	5/8	3-1/2	1-1/4	2	

Unit: Inch / Unidad: Pulgadas

84.3302F

Aluminum Square Function End Mill



Product specifications and features:

- HELIX 45°
- POLISHED
- PLASTIC
- ALU NE
- HA
- HSC
- HHC
- 90°
- HA
- X
- AIR
- NEW
- HELION NORM

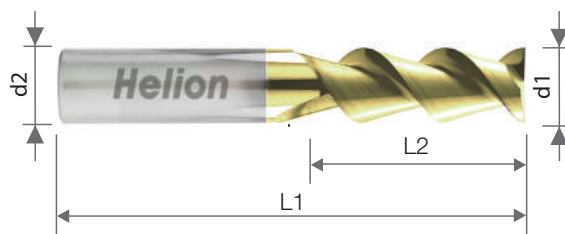


Cod.	d1	d2	L1	L2	Z	Price €
843302F14	1/4	1/4	2	3/4	2	
843302F516	5/16	5/16	2-1/2	5/8	2	
843302F38	3/8	3/8	2-1/2	1-1/4	2	
843302F12	1/2	1/2	3	1-1/4	2	
843302F58	5/8	5/8	3-1/2	1-5/8	2	

Unit: Inch / Unidad: Pulgadas

84.0303F

## Aluminum High Feed Helix End Mill



VARIABLE HELIX $\alpha \beta \gamma$	SPEED ZR	PLASTIC	ALU NE	
POLISHED	HA	HSC	HPC	
		AIR	NEW	HELION NORM



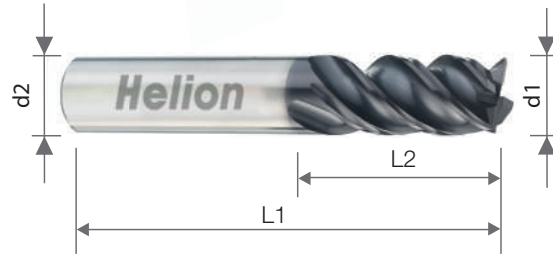
Cod.	d1	d2	L1	L2	Z	Price €
840303F18	1/8	1/8	1-1/2	3/8	3	
840303F316	3/16	3/16	2	9/16	3	
840303F14	1/4	1/4	2	3/4	3	
840303F516	5/16	5/16	2-1/2	5/8	3	
840303F38	3/8	3/8	2-1/2	1-1/4	3	
840303F12	1/2	1/2	3	1-1/4	3	
840303F58	5/8	5/8	3-1/2	1-5/8	3	

Unit: Inch / Unidad: Pulgadas



91.7404F

Helmax Helix Design Square End Mill



Product specifications and features:

- HELIX 35/38°
- ALTiN+B
- 600 1200 N/mm<sup>2</sup>
- 55 HRC
- INOX
- GG(G)
- NI ALLOYS
- TITAN INCONELL
- UNI
- HA
- HSC
- HHC
- AIR
- NEW
- HELION NORM



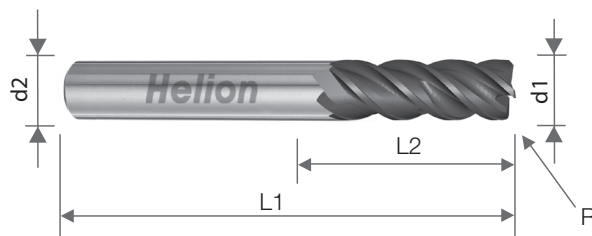
Cod.	d1	d2	L1	L2	Z	Price €
917404F14	1/4	1/4	2-1/2	1/2	4	
917404F516	5/16	5/16	2-1/2	13/16	4	
917404F38	3/8	3/8	2-1/2	7/8	4	
917404F12	1/2	1/2	3	1	4	
917404F58	5/8	5/8	3-1/2	1-1/4	4	

Unit: Inch / Unidad: Pulgadas

91.7414F

## Helmax Helix Design High Performance

Special For Exotic Materials



HELIX 30°	ALTiN + B		600 1200 N/mm <sup>2</sup>	55 HRC	NI ALLOYS	TITAN INCONEL
HA	HSC	HHC				
		AIR	NEW	HELION NORM		



Cod.	R	d1	d2	L1	L2	Z	Price €
917414F141	0.015	1/4	1/4	2-1/2	9/16	4	
917414F142	0.030	1/4	1/4	2-1/2	9/16	4	
917414F143	0.060	1/4	1/4	2-1/2	9/16	4	
917414F5161	0.015	5/16	5/16	2-1/2	11/16	4	
917414F5162	0.030	5/16	5/16	2-1/2	11/16	4	
917414F5163	0.06	5/16	5/16	2-1/2	11/16	4	
917414F381	0.020	3/8	3/8	2-1/2	13/16	4	
917414F382	0.030	3/8	3/8	2-1/2	13/16	4	
917414F383	0.060	3/8	3/8	2-1/2	13/16	4	
917414F384	0.090	3/8	3/8	2-1/2	13/16	4	
917414F121	0.020	1/2	1/2	3	1	4	
917414F122	0.030	1/2	1/2	3	1	4	
917414F123	0.060	1/2	1/2	3	1	4	
917414F124	0.090	1/2	1/2	3	1	4	
917414F125	0.125	1/2	1/2	3	1	4	
917414F581	0.030	5/8	5/8	3-1/2	1-1/4	4	
917414F582	0.060	5/8	5/8	3-1/2	1-1/4	4	
917414F583	0.090	5/8	5/8	3-1/2	1-1/4	4	
917414F584	0.125	5/8	5/8	3-1/2	1-1/4	4	

Unit: Inch / Unidad: Pulgadas

## CUTTING CONDITIONS 80.7202F 80.7402F 80.7421F



## SIDE MILLING



	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536					ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100					TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2					TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2				
	Hardness BRINELL	≤ 175					≤ 275					≤ 375					> 375 ≤ 475			
HRC	≤ 6.4					≤ 28					≤ 39.8					> 39.8 ≤ 49.1				
Vc (SFM)	437	(350-525)				318	(255-382)				320	(256-384)				166	(133-199)			
MILL DIA. (inch)	RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)		
			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes
1/16	26709	0.00013	6.9	10.4	13.9	19451	0.00009	3.50	5.25	7.00	19498	0.00013	5.1	7.6	10.1	10150	0.00009	1.8	2.7	3.7
5/64	21368	0.00018	7.7	11.5	15.4	15561	0.00012	3.66	5.49	7.31	15598	0.00018	5.6	8.4	11.2	8120	0.00012	1.9	2.9	3.8
3/32	17806	0.00023	8.2	12.3	16.4	12968	0.00015	3.76	5.64	7.52	12999	0.00023	6.0	9.0	12.0	6766	0.00015	2.0	2.9	3.9
7/64	15263	0.00027	8.2	12.4	16.5	11115	0.00017	3.83	5.75	7.67	11142	0.00027	6.0	9.0	12.0	5800	0.00017	2.0	3.0	4.0
1/8	13355	0.00030	8.0	12.0	16.0	9726	0.00020	3.89	5.84	7.78	9749	0.00030	5.8	8.8	11.7	5075	0.00020	2.0	3.0	4.1
3/16	8903	0.00055	9.8	14.7	19.6	6484	0.00040	5.19	7.78	10.37	6499	0.00055	7.1	10.7	14.3	3383	0.00040	2.7	4.1	5.4
1/4	6677	0.00080	10.7	16.0	21.4	4863	0.00060	5.84	8.75	11.67	4874	0.00080	7.8	11.7	15.6	2537	0.00060	3.0	4.6	6.1
5/16	5342	0.00115	12.3	18.4	24.6	3890	0.00085	6.61	9.92	13.23	3900	0.00115	9.0	13.5	17.9	2030	0.00085	3.5	5.2	6.9
3/8	4452	0.00150	13.4	20.0	26.7	3242	0.00110	7.13	10.70	14.26	3250	0.00150	9.7	14.6	19.5	1692	0.00110	3.7	5.6	7.4
1/2	3339	0.00200	13.4	20.0	26.7	2431	0.00150	7.29	10.94	14.59	2437	0.00200	9.7	14.6	19.5	1269	0.00150	3.8	5.7	7.6
5/8	2671	0.00220	11.8	17.6	23.5	1945	0.00165	6.42	9.63	12.84	1950	0.00220	8.6	12.9	17.2	1015	0.00165	3.3	5.0	6.7

	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2					CAST IRONS Gray, Malleable, Ductile					STAINLESS STEELS (Free Machining) 303, 416, 420F, 430F 440F					STAINLESS STEELS 304, 304L, 316, 316L				
	Hardness BRINELL	> 475 ≤ 655					≤ 220					≤ 275					≤ 275			
HRC	> 50 ≤ 65					≤ 18.8					≤ 28					≤ 28				
Vc (SFM)	71	(57-85)				335	(255-382)				318	(281-422)				242	(194-290)			
MILL DIA. (inch)	RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)		
			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes
1/16	4274	0.00005	0.4	0.6	0.8	19451	0.00013	5.1	7.6	10.1	21484	0.00009	3.9	5.8	7.7	14806	0.00008	2.4	3.6	4.7
5/64	3419	0.00006	0.4	0.6	0.8	15561	0.00018	5.6	8.4	11.2	17187	0.00012	4.0	6.1	8.1	11845	0.00011	2.6	3.9	5.2
3/32	2849	0.00007	0.4	0.6	0.8	12968	0.00023	6.0	8.9	11.9	14322	0.00015	4.2	6.2	8.3	9871	0.00014	2.8	4.1	5.5
7/64	2442	0.00009	0.4	0.6	0.8	11115	0.00027	6.0	9.0	12.0	12276	0.00017	4.2	6.4	8.5	8461	0.00017	2.9	4.3	5.8
1/8	2137	0.00010	0.4	0.6	0.9	9726	0.00030	5.8	8.8	11.7	10742	0.00020	4.3	6.4	8.6	7403	0.00020	3.0	4.4	5.9
3/16	1425	0.00020	0.6	0.9	1.1	6484	0.00055	7.1	10.7	14.3	7161	0.00040	5.7	8.6	11.5	4935	0.00035	3.5	5.2	6.9
1/4	1068	0.00030	0.6	1.0	1.3	4863	0.00080	7.8	11.7	15.6	5371	0.00060	6.4	9.7	12.9	3702	0.00050	3.7	5.6	7.4
5/16	855	0.00043	0.7	1.1	1.5	3890	0.00115	8.9	13.4	17.9	4297	0.00085	7.3	11.0	14.6	2961	0.00070	4.1	6.2	8.3
3/8	712	0.00055	0.8	1.2	1.6	3242	0.00150	9.7	14.6	19.5	3581	0.00110	7.9	11.8	15.8	2468	0.00090	4.4	6.7	8.9
1/2	534	0.00075	0.8	1.2	1.6	2431	0.00200	9.7	14.6	19.5	2685	0.00150	8.1	12.1	16.1	1851	0.00120	4.4	6.7	8.9
5/8	427	0.00083	0.7	1.1	1.4	1945	0.00220	8.6	12.8	17.1	2148	0.00165	7.1	10.6	14.2	1481	0.00130	3.8	5.8	7.7

**80.7421F**

ae(Z2)=0.05xd1  
ae(Z3)=0.25xd1  
ae(Z4)=0.25xd1

**80.7202F - 80.7402F**

ae(Z2)=0.05xd1  
ae(Z3)=0.25xd1  
ae(Z4)=0.25xd1

Depth of cut

Fz and total feed expressed in inches, for metric multiply the values by 25.4. / Fz y avance total expresado en pulgadas, para métrico multiplicar los valores por 25.4.

**CUTTING CONDITIONS 80.7202F  
80.7402F  
80.7421F**



**SIDE MILLING**



Hardness BRINELL	SUPER ALLOYS (NICKEL, COBALT, IRON, BASE) Inconel 601, 617, 625, 718, Incooly 800, Monel 400, Rene, Waspalloy					TITANIUM ALLOYS Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti10Al2Fe3Al, Ti5Al53Mo3Cr, Ti7Al4Mo, Ti3Al8 V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti52 Cr3Sn3Al					GRAPHITE				
	≤ 300					≤ 350									
HRC	≤ 32					≤ 37.9									
Vc (SFM)	62	(49-74)				170	(137-205)				627	(502-752)			
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 2 flutes 3 flutes 4 flutes			RPM	Fz	Feed (IPM) 2 flutes 3 flutes 4 flutes			RPM	Fz	Feed (IPM) 2 flutes 3 flutes 4 flutes		
1/16	3774	0.00006	0.5	0.7	0.9	10452	0.00008	1.7	2.5	3.3	38322	0.00026	19.9	29.9	39.9
5/64	3019	0.00010	0.6	0.9	1.1	8361	0.00011	1.8	2.8	3.7	30658	0.00036	22.1	33.1	44.1
3/32	2516	0.00013	0.7	1.0	1.3	6968	0.00014	2.0	2.9	3.9	25548	0.00046	23.5	35.3	47.0
7/64	2157	0.00017	0.7	1.1	1.4	5972	0.00017	2.0	3.0	4.1	21898	0.00054	23.7	35.5	47.3
1/8	1887	0.00020	0.8	1.1	1.5	5226	0.00020	2.1	3.1	4.2	19161	0.00060	23.0	34.5	46.0
3/16	1258	0.00030	0.8	1.1	1.5	3484	0.00035	2.4	3.7	4.9	12774	0.00110	28.1	42.2	56.2
1/4	944	0.00040	0.8	1.1	1.5	2613	0.00050	2.6	3.9	5.2	9581	0.00160	30.7	46.0	61.3
5/16	755	0.00060	0.9	1.4	1.8	2090	0.00070	2.9	4.4	5.9	7664	0.00230	35.3	52.9	70.5
3/8	629	0.00080	1.0	1.5	2.0	1742	0.00090	3.1	4.7	6.3	6387	0.00300	38.3	57.5	76.6
1/2	472	0.00100	0.9	1.4	1.9	1306	0.00120	3.1	4.7	6.3	4790	0.00400	38.3	57.5	76.6
5/8	377	0.00110	0.8	1.2	1.7	1045	0.00130	2.7	4.1	5.4	3832	0.00440	33.7	50.6	67.4

**80.7421F**

ae(Z2)=0.05xd1  
ae(Z3)=0.25xd1  
ae(Z4)=0.25xd1

**80.7202F - 80.7402F**

ap(Z2)=1.5xd1  
ap(Z3)=1.5xd1  
ap(Z4)=1.5xd1

F<sub>z</sub> and total feed expressed in inches, for metric multiply the values by 25.4. / F<sub>z</sub> y avance total expresado en pulgadas, para métrico multiplicar los valores por 25.4.

## CUTTING CONDITIONS 80.7202F 80.7402F



## SLOT MILLING



		CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536					ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100					TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2					TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2				
Hardness BRINELL	≤ 175					≤ 275					≤ 375					> 375 ≤ 475					
HRC	≤ 6.4					≤ 28					≤ 39.8					> 39.8 ≤ 49.1					
Vc (SFM)	350	(278-418)				255	(203-306)				256	(205-307)				133	(106-159)				
MILL DIA. (inch)	RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			
			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes	
1/16	21368	0.00013	5.6	8.3	11.1	15561	0.00009	2.80	4.20	5.60	15598	0.00013	4.1	6.1	8.1	8120	0.00009	1.5	2.2	2.9	
5/64	17094	0.00018	6.2	9.2	12.3	12449	0.00012	2.93	4.39	5.85	12479	0.00018	4.5	6.7	9.0	6496	0.00012	1.5	2.3	3.1	
3/32	14245	0.00023	6.6	9.8	13.1	10374	0.00015	3.01	4.51	6.02	10399	0.00023	4.8	7.2	9.6	5413	0.00015	1.6	2.4	3.1	
7/64	12210	0.00027	6.6	9.9	13.2	8892	0.00017	3.07	4.60	6.14	8913	0.00027	4.8	7.2	9.6	4640	0.00017	1.6	2.4	3.2	
1/8	10684	0.00030	6.4	9.6	12.8	7781	0.00020	3.11	4.67	6.22	7799	0.00030	4.7	7.0	9.4	4060	0.00020	1.6	2.4	3.2	
3/16	7123	0.00055	7.8	11.8	15.7	5187	0.00040	4.15	6.22	8.30	5199	0.00055	5.7	8.6	11.4	2707	0.00040	2.2	3.2	4.3	
1/4	5342	0.00080	8.5	12.8	17.1	3890	0.00060	4.67	7.00	9.34	3900	0.00080	6.2	9.4	12.5	2030	0.00060	2.4	3.7	4.9	
5/16	4274	0.00115	9.8	14.7	19.7	3112	0.00085	5.29	7.94	10.58	3120	0.00115	7.2	10.8	14.4	1624	0.00085	2.8	4.1	5.5	
3/8	3561	0.00150	10.7	16.0	21.4	2594	0.00110	5.71	8.56	11.41	2600	0.00150	7.8	11.7	15.6	1353	0.00110	3.0	4.5	6.0	
1/2	2671	0.00200	10.7	16.0	21.4	1945	0.00150	5.84	8.75	11.67	1950	0.00200	7.8	11.7	15.6	1015	0.00150	3.0	4.6	6.1	
5/8	2137	0.00220	9.4	14.1	18.8	1556	0.00165	5.14	7.70	10.27	1560	0.00220	6.9	10.3	13.7	812	0.00165	2.7	4.0	5.4	

		TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2					CAST IRONS Gray, Malleable, Ductile					STAINLESS STEELS (Free Machining) 303, 416, 420F, 430F 440F					STAINLESS STEELS 304, 304L, 316, 316L				
Hardness BRINELL	> 475 ≤ 655					≤ 220					≤ 275					≤ 275					
HRC	> 50 ≤ 65					≤ 18.8					≤ 28					≤ 28					
Vc (SFM)	57	(46-68)				255	(204-306)				281	(225-337)				194	(154-231)				
MILL DIA. (inch)	RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			
			2 flutes	3 flutes	4			2 flutes	3 flutes	4			2 flutes	3 flutes	4			2 flutes	3 flutes	4	
1/16	3419	0.00005	0.3	0.5	0.6	15561	0.00013	4.0	6.1	8.1	17187	0.00009	3.1	4.6	6.2	11845	0.00008	1.9	2.8	3.8	
5/64	2735	0.00006	0.3	0.5	0.6	12449	0.00018	4.5	6.7	9.0	13750	0.00012	3.2	4.8	6.5	9476	0.00011	2.1	3.1	4.2	
3/32	2279	0.00007	0.3	0.5	0.7	10374	0.00023	4.8	7.2	9.5	11458	0.00015	3.3	5.0	6.6	7897	0.00014	2.2	3.3	4.4	
7/64	1954	0.00009	0.3	0.5	0.7	8892	0.00027	4.8	7.2	9.6	9821	0.00017	3.4	5.1	6.8	6769	0.00017	2.3	3.5	4.6	
1/8	1709	0.00010	0.3	0.5	0.7	7781	0.00030	4.7	7.0	9.3	8593	0.00020	3.4	5.2	6.9	5923	0.00020	2.4	3.6	4.7	
3/16	1140	0.00020	0.5	0.7	0.9	5187	0.00055	5.7	8.6	11.4	5729	0.00040	4.6	6.9	9.2	3948	0.00035	2.8	4.1	5.5	
1/4	855	0.00030	0.5	0.8	1.0	3890	0.00080	6.2	9.3	12.4	4297	0.00060	5.2	7.7	10.3	2961	0.00050	3.0	4.4	5.9	
5/16	684	0.00043	0.6	0.9	1.2	3112	0.00115	7.2	10.7	14.3	3437	0.00085	5.8	8.8	11.7	2369	0.00070	3.3	5.0	6.6	
3/8	570	0.00055	0.6	0.9	1.3	2594	0.00150	7.8	11.7	15.6	2864	0.00110	6.3	9.5	12.6	1974	0.00090	3.6	5.3	7.1	
1/2	427	0.00075	0.6	1.0	1.3	1945	0.00200	7.8	11.7	15.6	2148	0.00150	6.4	9.7	12.9	1481	0.00120	3.6	5.3	7.1	
5/8	342	0.00083	0.6	0.8	1.1	1556	0.00220	6.8	10.3	13.7	1719	0.00165	5.7	8.5	11.3	1185	0.00130	3.1	4.6	6.2	

Depth of cut

$ae(Z2)=1xd1$      $ae(Z3)=1xd1$      $ae(Z4)=1xd1$   
 $ap(Z2)=1xd1$      $ap(Z3)=0.5xd1$      $ap(Z4)=0.4xd1$

F<sub>Z</sub> and total feed expressed in inches, for metric multiply the values by 25.4. / F<sub>Z</sub> y avance total expresado en pulgadas, para métrico multiplicar los valores por 25.4.

**CUTTING CONDITIONS 80.7202F**  
**80.7402F**  
**84.3302F**  
**84.0303F**

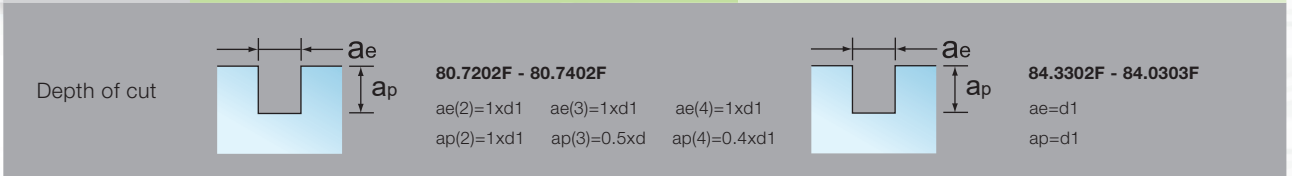


## SLOT MILLING



	SUPER ALLOYS (NICKEL, COBALT, IRON, BASE) Inconel 601, 617, 625, 718, Incoloy 800, Monel 400, Rene, Waspalloy					TITANIUM ALLOYS Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti10Al2Fe3Al, Ti5Al53Mo3Cr, Ti7Al4Mo, Ti3Al8 V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti52 Cr3Sn3Al					GRAPHITE				
Hardness BRINELL	≤ 300					≤ 350									
HRC	≤ 32					≤ 37.9									
Vc (SFM)	50	(37-56)				137	(108-162)				500	(399-599)			
MILL DIA. (inch)	RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)			RPM	Fz	Feed (IPM)		
			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes			2 flutes	3 flutes	4 flutes
1/16	3019	0.00006	0.4	0.5	0.7	8361	0.00008	1.3	2.0	2.7	30658	0.00026	15.9	23.9	31.9
5/64	2415	0.00010	0.5	0.7	0.9	6689	0.00011	1.5	2.2	2.9	24526	0.00036	17.7	26.5	35.3
3/32	2013	0.00013	0.5	0.8	1.0	5574	0.00014	1.6	2.3	3.1	20439	0.00046	18.8	28.2	37.6
7/64	1725	0.00017	0.6	0.9	1.1	4778	0.00017	1.6	2.4	3.2	17519	0.00054	18.9	28.4	37.8
1/8	1510	0.00020	0.6	0.9	1.2	4181	0.00020	1.7	2.5	3.3	15329	0.00060	18.4	27.6	36.8
3/16	1006	0.00030	0.6	0.9	1.2	2787	0.00035	2.0	2.9	3.9	10219	0.00110	22.5	33.7	45.0
1/4	755	0.00040	0.6	0.9	1.2	2090	0.00050	2.1	3.1	4.2	7664	0.00160	24.5	36.8	49.1
5/16	604	0.00060	0.7	1.1	1.4	1672	0.00070	2.3	3.5	4.7	6132	0.00230	28.2	42.3	56.4
3/8	503	0.00080	0.8	1.2	1.6	1394	0.00090	2.5	3.8	5.0	5110	0.00300	30.7	46.0	61.3
1/2	377	0.00100	0.8	1.1	1.5	1045	0.00120	2.5	3.8	5.0	3832	0.00400	30.7	46.0	61.3
5/8	302	0.00110	0.7	1.0	1.3	836	0.00130	2.2	3.3	4.3	3066	0.00440	27.0	40.5	54.0

	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075					COPPER ALLOYS Alum Bronze, C110, Muntz Brass			
Hardness BRINELL	≤ 150					≤ 140			
Vc (sfm)	810 (648-972)					446 (357-535)			
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 3 Flutes	Feed (IPM) 2 Flutes	RPM	Fz	Feed (IPM) 3 Flutes	Feed (IPM) 2 Flutes	
1/8	23504	0.00060	42.3	28.2	12954	0.00030	11.7	7.8	
3/16	15670	0.00110	51.7	34.5	8636	0.00055	14.2	9.5	
1/4	11752	0.00160	56.4	37.6	6477	0.00080	15.5	10.4	
5/16	9402	0.00230	64.9	43.2	5182	0.00115	17.9	11.9	
3/8	7835	0.00300	70.5	47.0	4318	0.00150	19.4	13.0	
1/2	5876	0.00400	70.5	47.0	3239	0.00200	19.4	13.0	
5/8	4701	0.00440	62.1	41.4	2591	0.00220	17.1	11.4	



F<sub>z</sub> and total feed expressed in inches, for metric multiply the values by 25.4. / F<sub>z</sub> y avance total expresado en pulgadas, para métrico multiplicar los valores por 25,4.

## CUTTING CONDITIONS 84.3302F 84.0303F 91.7404F



## SIDE MILLING

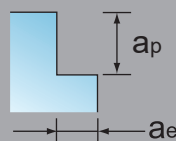


Hardness BRINELL	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536			ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100			TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2			TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2			TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		
	≤ 275	≤ 375		≤ 375	≤ 39.8		≤ 375	≤ 39.8		> 375 ≤ 475	> 475 ≤ 655		> 475 ≤ 655	> 50 ≤ 65	
HRC	≤ 28.5			≤ 39.8			≤ 39.8			> 39.8 ≤ 49.1			> 50 ≤ 65		
Vc (SFM)	555	(442-662)		315	(253-378)		405	(324-486)		210	(168-252)		90	(72-108)	
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes
1/4	8447	0.00100	33.8	4815	0.00080	15.41	6166	0.00120	29.6	3210	0.00010	1.3	1351	0.00005	0.3
5/16	6757	0.00145	39.2	3852	0.00110	16.95	4933	0.00175	34.5	2568	0.00145	14.9	1081	0.00073	3.1
3/8	5631	0.00190	42.8	3210	0.00140	17.97	4111	0.00230	37.8	2140	0.00190	16.3	901	0.00095	3.4
1/2	4223	0.00250	42.2	2407	0.00190	18.30	3083	0.00300	37.0	1605	0.00250	16.0	676	0.00125	3.4
5/8	3379	0.00310	41.9	1926	0.00240	18.49	2466	0.00390	38.5	1284	0.00320	16.4	541	0.00160	3.5

Hardness BRINELL	CAST IRONS LOW&MEDIUM ALLOY Gray, Malleable, Ductile			CAST IRONS (HIGH ALLOY) Gray, Malleable, Ductile			STAINLESS STEELS (FREE MACHINING ) 304, 416, 420F, 430F, 440F			STAINLESS STEELS 304, 304L, 316, 316L			STAINLESS STEELS(PH) 13-8 PH, 15-5PH, 17-4PH, Custom 450		
	≤ 220	≤ 260		> 220 ≤ 260	> 18.8 ≤ 26.6		≤ 275	≤ 28.5		≤ 275	≤ 28.5		≤ 325	≤ 34.4	
HRC	≤ 18.8			> 18.8 ≤ 26.6			≤ 28.5			≤ 28.5			≤ 34.4		
Vc (SFM)	355	(284-426)		340	(272-408)		490	(392-588)		340	(272-408)		310	(248-372)	
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes
1/4	5406	0.00100	21.6	5153	0.00070	14.40	7433	0.00070	20.8	5153	0.00060	12.4	4730	0.00060	11.4
5/16	4325	0.00140	24.2	4122	0.00105	17.30	5947	0.00105	25.0	4122	0.00085	14.0	3784	0.00085	12.9
3/8	3604	0.00180	25.9	3435	0.00140	19.20	4955	0.00140	27.8	3435	0.00110	15.1	3153	0.00110	13.9
1/2	2703	0.00240	25.9	2576	0.00180	18.50	3717	0.00180	26.8	2576	0.00140	14.4	2365	0.00140	13.2
5/8	2162	0.00300	25.9	2061	0.00230	19.00	2973	0.00230	27.4	2061	0.00180	14.8	1892	0.00180	13.6

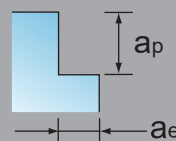
Hardness BRINELL	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075				COPPER ALLOYS Alum Bronze, C110, Muntz Brass							
	≤ 150								≤ 140			
Vc (sfm)	968 (810-1214)								533 (446-669)			
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 3 Flutes	Feed (IPM) 2 Flutes	RPM	Fz	Feed (IPM) 3 Flutes	Feed (IPM) 2 Flutes				
1/8	29380	0.00060	52.9	35.3	16193	0.00030	14.6	9.7				
3/16	19587	0.00110	64.6	43.1	10795	0.00055	17.8	11.9				
1/4	14690	0.00160	70.5	47.0	8096	0.00080	19.4	13.3				
5/16	11752	0.00230	81.1	54.1	6477	0.00115	22.3	14.9				
3/8	9793	0.00300	88.1	58.8	5398	0.00150	24.3	16.2				
1/2	7345	0.00400	88.1	58.8	4048	0.00200	24.3	16.2				
5/8	5876	0.00440	77.6	51.7	3239	0.00220	21.4	14.3				

Depth of cut



**84.3302F - 84.0303F**

ae=0.50xd1  
ap=1.00xd1



**91.7404F**

ae=0.05xd1  
ap=1.5xd1

Fz and total feed expressed in inches, for metric multiply the values by 25.4. / Fz y avance total expresado en pulgadas, para métrico multiplicar los valores por 25.4.

## CUTTING CONDITIONS 91.7404F 91.7414F

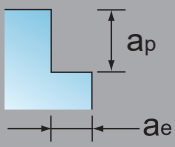
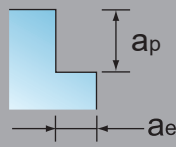


## SIDE MILLING



Hardness BRINELL	SUPER ALLOYS (NICKEL, COBALT, IRON, BASE) Inconel 601, 617, 625, Incoly 800, Monel 400			SUPER ALLOYS (NICKEL, COBALT, IRON, BASE) Inconel 718, 750X, Incoly 925, Waspalloy, Hastelloy, Rene			TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si			TITANIUM ALLOYS (DIFFICULT) Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3 Cr3Sn3Al		
	≤ 300			> 300			≤ 350			> 350 ≤ 440		
HRC	≤ 32.1			≤ 32.1								
Vc (SFM)	80	(64-96)		62	(50-74)		215	(172-258)		75	(60-90)	
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes
1/4	1183	0.00040	1.9	929	0.00030	1.10	3379	0.00050	6.8	1183	0.00050	2.4
5/16	946	0.00060	2.3	743	0.00040	1.20	2703	0.00075	8.1	946	0.00075	2.8
3/8	788	0.00080	2.5	619	0.00050	1.20	2252	0.00100	9.0	788	0.00100	3.2
1/2	591	0.00100	2.4	465	0.00070	1.30	1689	0.00130	8.8	591	0.00130	3.1
5/8	473	0.00130	2.5	372	0.00090	1.30	1351	0.00160	8.6	473	0.00160	3.0

TITANIUM ALLOYS Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3			
Hardness BRINELL	≤ 300		
HRC	≤ 31		
Vc (SFM)	60		
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 4 flutes
1/4	2507	0.0008	8.4
5/16	2008	0.0010	7.8
3/8	1671	0.0013	8.8
1/2	1254	0.0017	8.4
5/8	1008	0.0019	7.8

Depth of cut		<b>91.7414F</b> ae=0.4xd1 ap=1.5xd1		<b>91.7404F</b> ae=0.05xd1 ap=1.5xd1
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F<sub>z</sub> and total feed expressed in inches, for metric multiply the values by 25.4. / F<sub>z</sub> y avance total expresado en pulgadas, para métrico multiplicar los valores por 25,4.



## CUTTING CONDITIONS 91.7404F



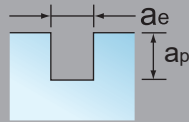
## SLOT MILLING



	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536			ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100			TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2			TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2			TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		
	Hardness BRINELL	≤ 275			≤ 375			≤ 375			> 375 ≤ 475			> 475 ≤ 655	
HRC	≤ 28.5			≤ 39.8			≤ 39.8			> 39.8 ≤ 49.1			> 50 ≤ 65		
Vc (SFM)	440	(352-528)		252	(201-303)		320	(256-384)		170	(136-204)		70	(56-84)	
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes
1/4	6757	0.00100	27.0	3081	0.00080	9.86	4933	0.00120	23.7	2568	0.00010	1.0	1081	0.00005	0.2
5/16	5406	0.00145	31.4	2465	0.00110	10.85	3946	0.00175	27.6	2054	0.00145	11.9	865	0.00073	2.5
3/8	4505	0.00190	34.2	2054	0.00140	11.50	3289	0.00230	30.3	1712	0.00190	13.0	721	0.00095	2.7
1/2	3379	0.00250	33.8	1541	0.00190	11.71	2466	0.00300	29.6	1284	0.00250	12.8	541	0.00125	2.7
5/8	2703	0.00310	33.5	1233	0.00240	11.83	1973	0.00390	30.8	1027	0.00320	13.1	432	0.00160	2.8

	CAST IRONS (LOW&MEDIUM ALLOY) Gray, Malleable, Ductile			CAST IRONS (HIGH ALLOY) Gray, Malleable, Ductile			STAINLESS STEELS (FREE MACHINING ) 304, 416,420F,430F,440F			STAINLESS STEELS 304, 304L,316,316L			STAINLESS STEELS(PH) 13-8 PH,15-5PH,17-4PH, Custom 450		
	Hardness BRINELL	≤ 220			> 220 ≤ 260			≤ 275			≤ 275			≤ 325	
HRC	≤ 18.8			> 18.8 ≤ 26.6			≤ 28.5			≤ 28.5			≤ 34.4		
Vc (SFM)	284	(356-534)		272	(216-324)		390	(312-468)		270	(216-324)		250	(200-300)	
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes
1/4	3460	0.00100	13.8	3298	0.00070	9.20	4757	0.00070	13.3	3298	0.00060	7.9	3027	0.00060	7.3
5/16	2768	0.00140	15.5	2638	0.00105	11.10	3806	0.00105	16.0	2638	0.00085	9.0	2422	0.00085	8.2
3/8	2307	0.00180	16.6	2198	0.00140	12.30	3172	0.00140	17.8	2198	0.00110	9.7	2018	0.00110	8.9
1/2	1730	0.00240	16.6	1649	0.00180	11.90	2379	0.00180	17.1	1649	0.00140	9.2	1514	0.00140	8.5
5/8	1384	0.00300	16.6	1319	0.00230	12.10	1903	0.00230	17.5	1319	0.00180	9.5	1211	0.00180	8.7

Depth of cut



ae=1xd1  
ap=1xd1

F<sub>z</sub> and total feed expressed in inches, for metric multiply the values by 25.4. / F<sub>z</sub> y avance total expresado en pulgadas, para métrico multiplicar los valores por 25.4.

## CUTTING CONDITIONS 91.7404F 91.7414F



## SLOT MILLING



Hardness BRINELL	SUPER ALLOYS (NICKEL, COBALT, IRON, BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400			SUPER ALLOYS (NICKEL, COBALT, IRON, BASE) Inconel 718, 750X, Incoloy 925, Waspalloy, Hastelloy, Rene			TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si			TITANIUM ALLOYS Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3 Cr3Sn3Al		
	≤ 300			> 300			≤ 350			> 350 ≤ 440		
HRC	≤ 32.1			≤ 32.1								
Vc (SFM)	65	(52-78)		50	(40-60)		170	(136-204)		60	(48-72)	
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes	RPM	Fz	Feed (IPM) 4 flutes
1/4	757	0.00040	1.2	595	0.00030	0.70	2162	0.00050	4.3	757	0.00050	1.5
5/16	605	0.00060	1.5	476	0.00040	0.80	1730	0.00075	5.2	605	0.00075	1.8
3/8	505	0.00080	1.6	396	0.00050	0.80	1442	0.00100	5.8	505	0.00100	2.0
1/2	378	0.00100	1.5	297	0.00070	0.80	1081	0.00130	5.6	378	0.00130	2.0
5/8	303	0.00130	1.6	238	0.00090	0.90	865	0.00160	5.5	303	0.00160	1.9

TITANIUM ALLOYS Ti10Al2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3			
Hardness BRINELL	≤ 300		
HRC	≤ 31		
Vc (SFM)	60		
MILL DIA. (inch)	RPM	Fz	Feed (IPM) 4 flutes
1/4	2006	0.0008	6.7
5/16	1607	0.0010	6.3
3/8	1338	0.0011	6.0
1/2	1003	0.0017	6.7
5/8	806	0.0017	5.6

**91.7414F**  
ae=1xd1  
ap=1.25xd1

**91.7404F**  
ae=1xd1  
ap=1xd1

Fz and total feed expressed in inches, for metric multiply the values by 25.4. / Fz y avance total expresado en pulgadas, para métrico multiplicar los valores por 25,4.

ORIENTATIVE WORK CONDITIONS. THEY COULD CHANGE DEPENDING ON EACH SPECIFIC CASE  
CONDICIONES ORIENTATIVAS DE TRABAJO. PODRÍAN CAMBIAR SEGÚN CADA CASO ESPECÍFICO

## SALES TERM • CONDICIONES DE VENTA

### Payment • Pago

Payment shall be made in accordance with terms and conditions notified to the buyer. In case of not payment on the agreed date, we will apply the delay interest. El pago se efectuará de conformidad con los términos y condiciones notificadas al comprador. En caso de impago en la fecha acordada, se devengará el interés legal de demora.

### Passing of property • Reserva de dominio

The property of the goods does not pass to the buyer until it becomes entirely his payment. The Company reserves the right to repossess any goods in respect on which payment is overdue and the buyer shall operate in the event of the Company notifying its intentions of repossess. La propiedad de los bienes no se transmitirá al comprador hasta que se haga efectivo por completo su pago. La Empresa se reserva el derecho de tomar posesión de los bienes respecto de los cuales exista mora en el pago.

### Transport • Transporte

Will be payed by the buyer. Será a cargo del comprador.

### Return Policy • Política de devolución

The customer will get 5 days from the reception of the goods to inform to HELION TOOLS about any claim of the goods supplied. Passed that period the goods will be considered as accepted by the customer. El cliente dispondrá de un plazo de 5 días a partir de la recepción del producto para enviar a HELION TOOLS cualquier reclamación en relación con el producto suministrado. Después de ese plazo los productos serán considerados como conformes por el cliente.

The claim will must do it through • La reclamación deberá realizarse a través de:

Logistics Division • Departamento de logística [logistics@helion-tools.com](mailto:logistics@helion-tools.com) +34 93 877 08 69

Comercial Division • Departamento comercial [ventas@helion-tools.com](mailto:ventas@helion-tools.com) +34 93 877 08 69

HELION TOOLS is not responsible and reserves the rights to refuse returns If the goods are in bad conditions due to improper use or transport damages. HT no se hace responsable y se reserva el derecho de rechazar posibles devoluciones en caso de mercancía en mal estado por uso indebido o daños de transporte.

\* Will be accepted material just in following case • Solo se aceptará devolución de material en los siguientes casos:

a) The return of the good non-defective, as a rule, will be not accepted. Anyway, in special situations and as an exception will be accepted the return with previous conformity of HELION TOOLS and once the material will be in HELION TOOLS have been controlled that all the requirements of the goods be correct. Then in the return will be apply an surcharge of 15% of the value of the goods as expenses of management and administration. The transportation cost will be at the customer's expense. La devolución de mercancía no defectuosa como norma no se acepta. Aun así, en casos especiales y como excepción se acepta la devolución, pero siempre con la previa aprobación de HT, y la posterior confirmación una vez recibida la mercancía de que reúne los requisitos exigidos. En estos casos de devolución se aplicará un recargo por gastos de gestión y administración del 15% del valor de la mercancía. Los gastos de transporte irán a cargo del comprador.

b) Material defective at the moment of the reception of it: If the material is defective in the origin, must be informed to HELION TOOLS and once assigned the return number the goods will be dispatched to HELION TOOLS with her original packaging. Will be not accepted the return of goods that are not according with the following specifications: original packaging and materials without using. Material defectuoso al momento de la recepción de este: Si el material está defectuoso de origen, se deberá realizar la comunicación a HT, y una vez asignado el nº de devolución, el producto será enviado a HT con su embalaje original. No se aceptarán devoluciones que no cumplan estos requisitos: embalaje original y sin usar.

All the returns must be together with the invoice or delivery note. Toda devolución debe ir acompañada de la factura o albarán de compra.

### \* Delivery • Entrega

Once received the purchase order, we proceed with the production process to supply the order in a short time as possible. Then we will not accept cancellations or modifications in purchase orders of special tools manufactured according with the specifications of the customer. Una vez recibido un pedido, procedemos a la ejecución de este en el plazo más breve posible y a partir de ese momento no se aceptarán cancelaciones ni modificaciones de un pedido que contenga herramientas especiales o fabricadas por petición del cliente.

### Garantía • Warranty

The guarantee of all our products will be established by HELION TOOLS. There is no guarantee for products manipulated or modified The responsibility of HELION TOOLS is limited just to the cost amount of the product and is not liable of damages and their consequences, nor of losses due lost profit of the buyer. La garantía de todos nuestros productos será la establecida por HT. No existe garantía de los productos que hayan sido manipulados o modificados. La responsabilidad de HT queda en todo caso limitada al importe del producto y no se hace responsable de daños y sus consecuencias, ni de pérdidas por lucro cesante del comprador.

### Jurisdiction • Jurisdicción

In case of dispute yhe Customer Will be subject to the jurisdiction of the courts of Manresa – Barcelona – Spain. En caso de litigio, el cliente estará sujeto a la jurisdicción de los tribunales de Manresa – Barcelona – España.



HELION TOOLS S.L.

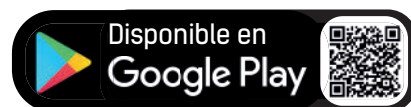
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## DESCUBRE NUESTRA APP



WORKING FOR YOUR SUCCESS SINCE 1952

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



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