



# SMART Line



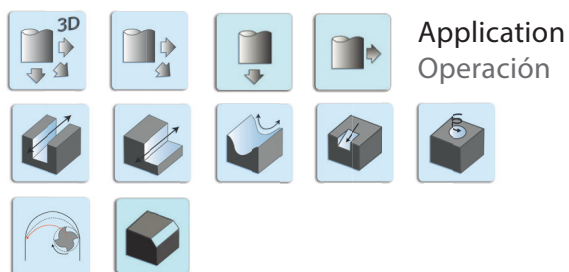
**PRECIOS DICIEMBRE 2021**

**MILL LINE**

**WORKING FOR YOUR SUCCESS since 1952**



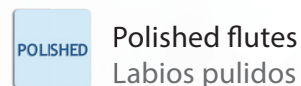
## ICONOGRAPHY · ICONOGRAFÍA



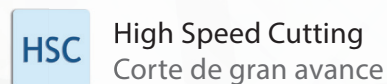
Application  
Operación



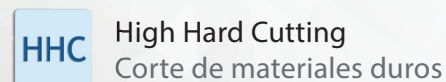
Coolant  
Refrigeración



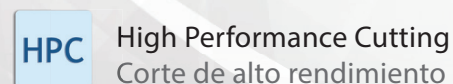
Polished flutes  
Labios pulidos



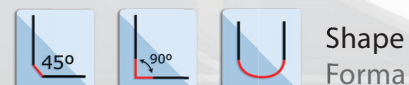
High Speed Cutting  
Corte de gran avance



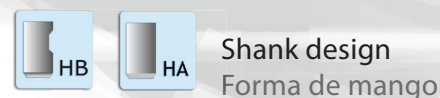
High Hard Cutting  
Corte de materiales duros



High Performance Cutting  
Corte de alto rendimiento



Shape  
Forma



Shank design  
Forma de mango



Helix angle  
Ángulo



Steel  
Acero



Coatings  
Recubrimiento



Stainless steel  
Acero inoxidable



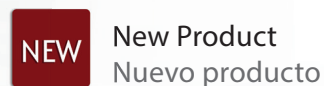
Cast iron  
Fundición



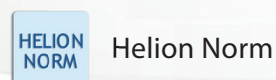
Non Ferrous  
No férricos



Exotic materials  
Materiales exóticos  
Nickel alloys  
Aleaciones base níquel



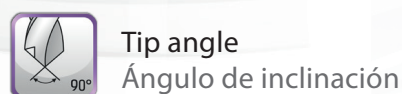
New Product  
Nuevo producto



Helion Norm



Universal application  
Aplicación universal



Tip angle  
Ángulo de inclinación

# VISIT OUR ONLINE STORE

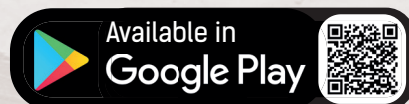
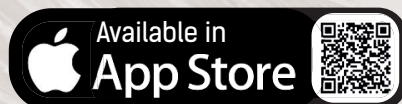
Tools 100% in stock for immediate delivery



## www.helion.tools/shop

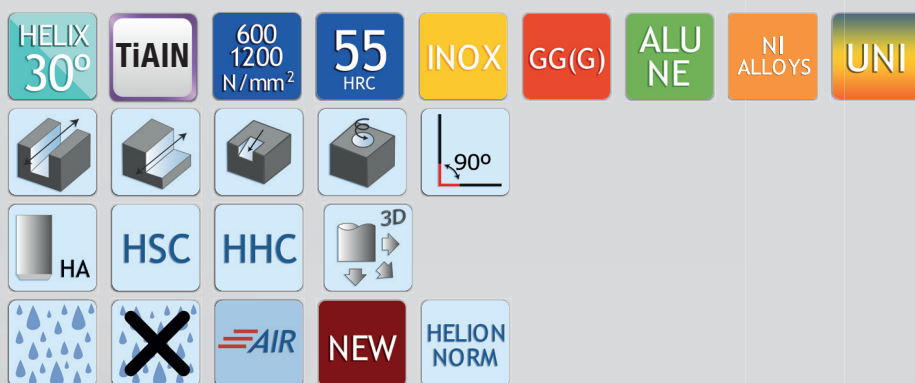
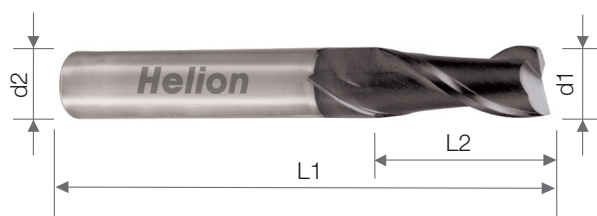


### DISCOVER OUR APP



70.6202

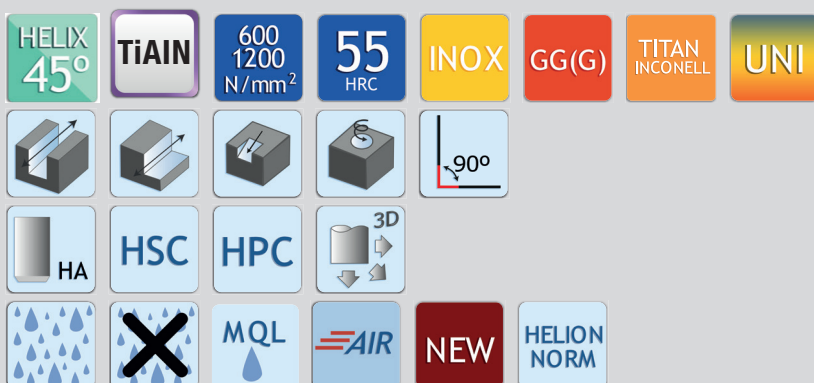
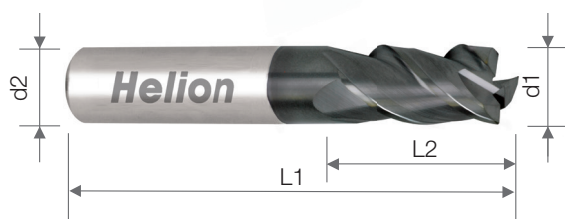
## Solid Carbide End Mill Z2



| Cod.       | d1  | d2 | L2 | L1  | Z | Price € |
|------------|-----|----|----|-----|---|---------|
| 7062020100 | 1   | 3  | 3  | 38  | 2 |         |
| 7062020150 | 1,5 | 3  | 4  | 38  | 2 |         |
| 7062020200 | 2   | 3  | 6  | 38  | 2 |         |
| 7062020300 | 3   | 3  | 8  | 38  | 2 |         |
| 7062020400 | 4   | 4  | 11 | 50  | 2 |         |
| 7062020500 | 5   | 5  | 13 | 50  | 2 |         |
| 7062020600 | 6   | 6  | 16 | 50  | 2 |         |
| 7062020800 | 8   | 8  | 19 | 60  | 2 |         |
| 7062021000 | 10  | 10 | 22 | 72  | 2 |         |
| 7062021200 | 12  | 12 | 26 | 75  | 2 |         |
| 7062021400 | 14  | 14 | 30 | 84  | 2 |         |
| 7062021600 | 16  | 16 | 32 | 92  | 2 |         |
| 7062021800 | 18  | 18 | 38 | 100 | 2 |         |
| 7062022000 | 20  | 20 | 38 | 100 | 2 |         |

70.6302

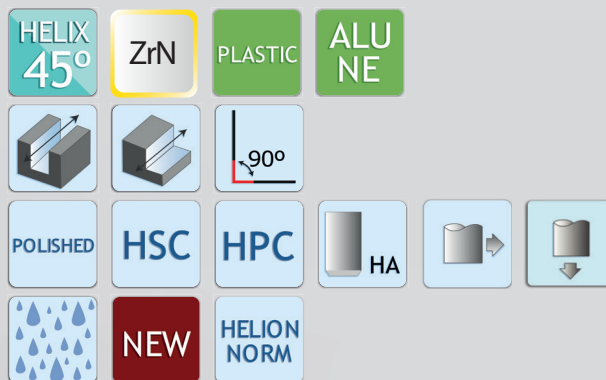
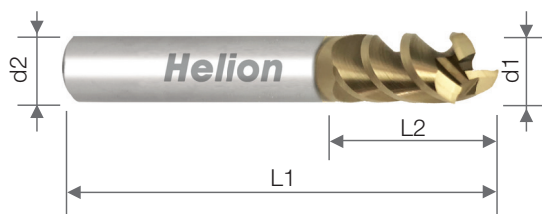
## Solid Carbide End Mill Z3



| Cod.       | d1  | d2 | L2 | L1  | Z | Price € |
|------------|-----|----|----|-----|---|---------|
| 7063020100 | 1   | 4  | 3  | 50  | 3 |         |
| 7063020150 | 1,5 | 4  | 4  | 50  | 3 |         |
| 7063020200 | 2   | 4  | 6  | 50  | 3 |         |
| 7063020300 | 3   | 4  | 8  | 50  | 3 |         |
| 7063020400 | 4   | 6  | 11 | 50  | 3 |         |
| 7063020500 | 5   | 6  | 13 | 50  | 3 |         |
| 7063020600 | 6   | 6  | 16 | 50  | 3 |         |
| 7063020700 | 7   | 8  | 19 | 60  | 3 |         |
| 7063020800 | 8   | 8  | 19 | 60  | 3 |         |
| 7063021000 | 10  | 10 | 22 | 72  | 3 |         |
| 7063021200 | 12  | 12 | 26 | 75  | 3 |         |
| 7063021600 | 16  | 16 | 32 | 92  | 3 |         |
| 7063022000 | 20  | 20 | 38 | 100 | 3 |         |

74.6302

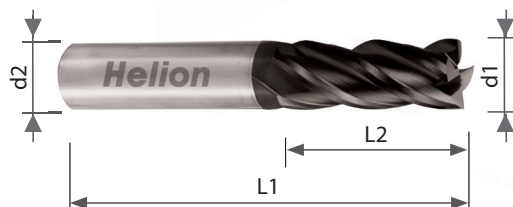
## Square End Mill Aluminium Z3 ZrN coated



| Cod.       | d1 | d2 | L2 | L1  | Z | Price € |
|------------|----|----|----|-----|---|---------|
| 7463020300 | 3  | 6  | 8  | 50  | 3 |         |
| 7463020400 | 4  | 6  | 11 | 50  | 3 |         |
| 7463020500 | 5  | 6  | 13 | 50  | 3 |         |
| 7463020600 | 6  | 6  | 16 | 50  | 3 |         |
| 7463020800 | 8  | 8  | 19 | 60  | 3 |         |
| 7463021000 | 10 | 10 | 25 | 72  | 3 |         |
| 7463021200 | 12 | 12 | 30 | 75  | 3 |         |
| 7463021400 | 14 | 14 | 35 | 84  | 3 |         |
| 7463021600 | 16 | 16 | 40 | 92  | 3 |         |
| 7463022000 | 20 | 20 | 45 | 100 | 3 |         |

70.6402

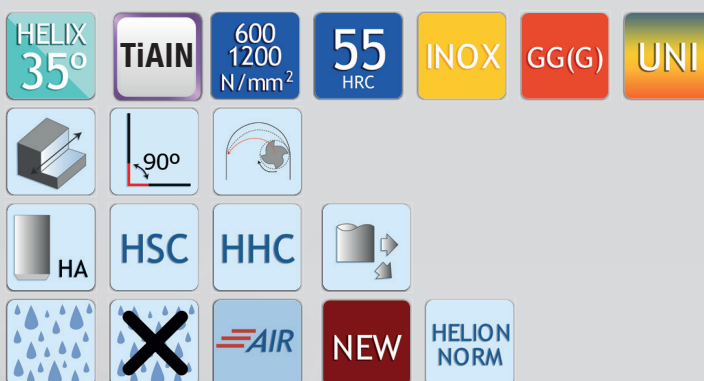
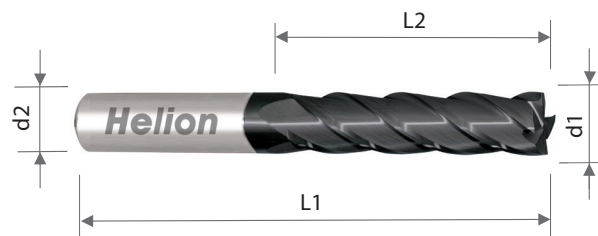
Solid Carbide End Mill Z4



| Cod.       | d1  | d2 | L2 | L1  | Z | Price € |
|------------|-----|----|----|-----|---|---------|
| 7064020200 | 2   | 3  | 6  | 38  | 4 |         |
| 7064020250 | 2,5 | 3  | 8  | 38  | 4 |         |
| 7064020300 | 3   | 3  | 8  | 38  | 4 |         |
| 7064020400 | 4   | 4  | 11 | 50  | 4 |         |
| 7064020500 | 5   | 5  | 13 | 50  | 4 |         |
| 7064020600 | 6   | 6  | 16 | 50  | 4 |         |
| 7064020800 | 8   | 8  | 19 | 60  | 4 |         |
| 7064021000 | 10  | 10 | 22 | 72  | 4 |         |
| 7064021200 | 12  | 12 | 26 | 75  | 4 |         |
| 7064021400 | 14  | 14 | 30 | 84  | 4 |         |
| 7064021600 | 16  | 16 | 32 | 92  | 4 |         |
| 7064021800 | 18  | 18 | 38 | 100 | 4 |         |
| 7064022000 | 20  | 20 | 38 | 100 | 4 |         |
| 7064022500 | 25  | 25 | 45 | 100 | 4 |         |

70.6404

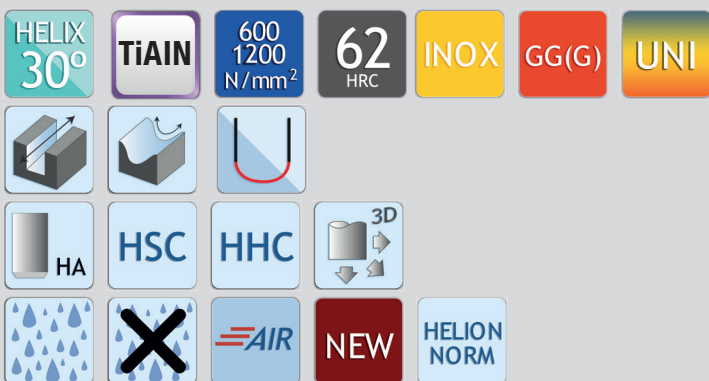
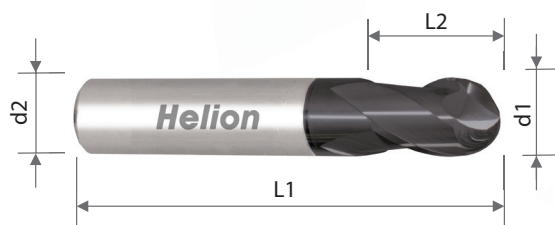
## Solid Carbide Square End Mill Z4 Long



| Cod.       | d1 | d2 | L2 | L1  | Z | Price € |
|------------|----|----|----|-----|---|---------|
| 7064040300 | 3  | 3  | 15 | 60  | 4 |         |
| 7064040400 | 4  | 4  | 20 | 80  | 4 |         |
| 7064040600 | 6  | 6  | 25 | 80  | 4 |         |
| 7064040800 | 8  | 8  | 35 | 90  | 4 |         |
| 7064041000 | 10 | 10 | 45 | 100 | 4 |         |
| 7064041200 | 12 | 12 | 50 | 100 | 4 |         |
| 7064041600 | 16 | 16 | 90 | 150 | 4 |         |
| 7064042000 | 20 | 20 | 90 | 150 | 4 |         |

70.6221

## Ball Nose Solid Carbide End Mill up to 62 HRC



| Cod.       | d1  | d2 | L2 | L1  | Z | Price € |
|------------|-----|----|----|-----|---|---------|
| 7062210100 | 1   | 3  | 2  | 38  | 2 |         |
| 7062210150 | 1,5 | 3  | 3  | 38  | 2 |         |
| 7062210200 | 2   | 3  | 4  | 38  | 2 |         |
| 7062210250 | 2,5 | 3  | 5  | 38  | 2 |         |
| 7062210300 | 3   | 3  | 6  | 38  | 2 |         |
| 7062210400 | 4   | 4  | 8  | 50  | 2 |         |
| 7062210500 | 5   | 5  | 10 | 50  | 2 |         |
| 7062210600 | 6   | 6  | 12 | 50  | 2 |         |
| 7062210800 | 8   | 8  | 15 | 60  | 2 |         |
| 7062211000 | 10  | 10 | 20 | 75  | 2 |         |
| 7062211200 | 12  | 12 | 20 | 75  | 2 |         |
| 7062211600 | 16  | 16 | 25 | 100 | 2 |         |

70.6502

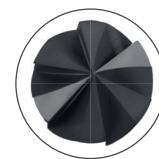
Solid Carbide Finishing End Mill Z6 up to 65 HRC



| Cod.       | d1 | d2 | L2 | L1  | Z | Price € |
|------------|----|----|----|-----|---|---------|
| 7065020600 | 6  | 6  | 16 | 50  | 6 |         |
| 7065020800 | 8  | 8  | 19 | 60  | 6 |         |
| 7065021000 | 10 | 10 | 22 | 75  | 6 |         |
| 7065021200 | 12 | 12 | 26 | 75  | 6 |         |
| 7065021600 | 16 | 16 | 50 | 100 | 6 |         |
| 7065022000 | 20 | 20 | 50 | 100 | 6 |         |

70.6490

Solid Carbide Deburring Tool 90°

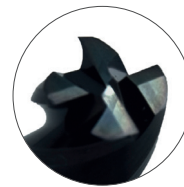
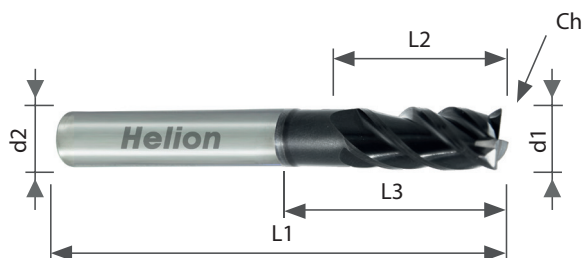


| Cod.       | d1 | d2 | Z | L1 | Price€ |
|------------|----|----|---|----|--------|
| 7064900400 | 4  | 4  | 4 | 50 |        |
| 7064900600 | 6  | 6  | 4 | 50 |        |
| 7064900800 | 8  | 8  | 4 | 60 |        |
| 7064901000 | 10 | 10 | 6 | 72 |        |
| 7064901200 | 12 | 12 | 6 | 75 |        |
| 7064901600 | 16 | 16 | 6 | 80 |        |

91.1480

## Solid Carbide End Mill Z4 UNEQUAL HELIX- GLADIATOR

**Special For Trochoidal Milling**  
**High Performance**



| Cod.       | d1 | d2 | L2 | L3 | Ch   | L1  | Z | *Special Launch Price € |
|------------|----|----|----|----|------|-----|---|-------------------------|
| 9114800300 | 3  | 6  | 8  | 20 | 0,07 | 57  | 4 |                         |
| 9114800400 | 4  | 6  | 11 | 20 | 0,09 | 57  | 4 |                         |
| 9114800500 | 5  | 6  | 13 | 20 | 0,12 | 57  | 4 |                         |
| 9114800600 | 6  | 6  | 13 | 21 | 0,2  | 57  | 4 |                         |
| 9114800800 | 8  | 8  | 19 | 27 | 0,25 | 63  | 4 |                         |
| 9114801000 | 10 | 10 | 22 | 32 | 0,35 | 73  | 4 |                         |
| 9114801200 | 12 | 12 | 26 | 38 | 0,35 | 83  | 4 |                         |
| 9114801600 | 16 | 16 | 32 | 44 | 0,4  | 92  | 4 |                         |
| 9114802000 | 20 | 20 | 38 | 55 | 0,4  | 104 | 4 |                         |

\*Special Launch Prices / Lanzamiento Precios Especiales **TEST & SEE**



## CUTTING CONDITIONS FOR 91.1480 GLADIATOR • CONDICIONES DE CORTE PARA 91.1480 GLADIATOR

| Roughing<br>ap: 1,00 x d1   ae: 1,00 x d1 |                                                     |      |        |        |        |        |        |        |        |        |        |
|-------------------------------------------|-----------------------------------------------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                           |                                                     | d1   | d1     | d1     | d1     | d1     | d1     | d1     | d1     | d1     | d1     |
|                                           |                                                     | 3,00 | 4,00   | 5,00   | 6,00   | 8,00   | 10,00  | 12,00  | 16,00  | 20,00  |        |
|                                           |                                                     | Vc   | fz     | fz     | fz     | fz     | fz     | fz     | fz     | fz     | fz     |
| Steel                                     | General steels <500 N/mm² (<150 HB)                 | 156  | 0,0101 | 0,0168 | 0,0294 | 0,0294 | 0,0378 | 0,0631 | 0,0631 | 0,0841 | 0,1009 |
|                                           | General steels <700 N/mm² (<205 HB)                 | 141  | 0,0101 | 0,0168 | 0,0294 | 0,0294 | 0,0378 | 0,0631 | 0,0631 | 0,0841 | 0,1009 |
|                                           | Tempering steel <850 N/mm² (<25 HRC)                | 106  | 0,0101 | 0,0168 | 0,0210 | 0,0210 | 0,0378 | 0,0631 | 0,0631 | 0,0841 | 0,1009 |
|                                           | Tempering steel <1000 N/mm² (<32 HRC)               | 92   | 0,0076 | 0,0126 | 0,0210 | 0,0210 | 0,0269 | 0,0437 | 0,0437 | 0,0589 | 0,0706 |
|                                           | Tempering steel <1200 N/mm² (<44 HRC)               | 57   | 0,0076 | 0,0126 | 0,0210 | 0,0210 | 0,0269 | 0,0437 | 0,0437 | 0,0589 | 0,0706 |
| Cast Iron                                 | Grey Cast Iron <180HB GG                            | 127  | 0,0101 | 0,0168 | 0,0294 | 0,0294 | 0,0378 | 0,0631 | 0,0631 | 0,0841 | 0,1009 |
|                                           | Grey Cast Iron <300HB GG                            | 92   | 0,0101 | 0,0168 | 0,0294 | 0,0294 | 0,0378 | 0,0631 | 0,0631 | 0,0841 | 0,1009 |
|                                           | Nodular Cast iron <350HB GGG                        | 92   | 0,0101 | 0,0168 | 0,0294 | 0,0294 | 0,0378 | 0,0631 | 0,0631 | 0,0841 | 0,1009 |
| Inox                                      | Rust and acid resistant steels < 700N/mm² (<205 HB) | 67   | 0,0076 | 0,0126 | 0,0210 | 0,0210 | 0,0269 | 0,0437 | 0,0437 | 0,0589 | 0,0706 |
|                                           | Rust and acid resistant steels > 700N/mm² (<205 HB) | 37   | 0,0076 | 0,0126 | 0,0210 | 0,0210 | 0,0269 | 0,0437 | 0,0437 | 0,0589 | 0,0706 |
| Exotic materials                          | Titanium                                            | 35   | 0,0059 | 0,0076 | 0,0126 | 0,0126 | 0,0210 | 0,0269 | 0,0269 | 0,0437 | 0,0589 |
|                                           | Inconel, Hastelloy, Nimonic, Monel                  | 25   | 0,0059 | 0,0076 | 0,0126 | 0,0126 | 0,0210 | 0,0269 | 0,0269 | 0,0437 | 0,0589 |

| Finishing<br>ap: 1,00 x d1   ae: 0,50 x d1 |                                                     |      |        |        |        |        |        |        |        |        |        |
|--------------------------------------------|-----------------------------------------------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                            |                                                     | d1   | d1     | d1     | d1     | d1     | d1     | d1     | d1     | d1     |        |
|                                            |                                                     | 3,00 | 4,00   | 5,00   | 6,00   | 8,00   | 10,00  | 12,00  | 16,00  | 20,00  |        |
|                                            |                                                     | Vc   | fz     | fz     | fz     | fz     | fz     | fz     | fz     | fz     | fz     |
| Steel                                      | General steels <500 N/mm² (<150 HB)                 | 220  | 0,0120 | 0,030  | 0,052  | 0,052  | 0,070  | 0,110  | 0,110  | 0,150  | 0,180  |
|                                            | General steels <700 N/mm² (<205 HB)                 | 200  | 0,015  | 0,030  | 0,052  | 0,052  | 0,070  | 0,110  | 0,110  | 0,150  | 0,180  |
|                                            | Tempering steel <850 N/mm² (<25 HRC)                | 150  | 0,015  | 0,030  | 0,052  | 0,052  | 0,070  | 0,110  | 0,110  | 0,150  | 0,180  |
|                                            | Tempering steel <1000 N/mm² (<32 HRC)               | 130  | 0,015  | 0,030  | 0,052  | 0,052  | 0,070  | 0,110  | 0,110  | 0,150  | 0,180  |
|                                            | Tempering steel <1200 N/mm² (<44 HRC)               | 80   | 0,009  | 0,015  | 0,025  | 0,025  | 0,032  | 0,052  | 0,052  | 0,070  | 0,084  |
| Cast Iron                                  | Grey Cast Iron <180HB GG                            | 180  | 0,015  | 0,030  | 0,052  | 0,052  | 0,070  | 0,110  | 0,110  | 0,150  | 0,180  |
|                                            | Grey Cast Iron <300HB GG                            | 130  | 0,015  | 0,030  | 0,052  | 0,052  | 0,070  | 0,110  | 0,110  | 0,150  | 0,180  |
|                                            | Nodular Cast iron <350HB GGG                        | 130  | 0,015  | 0,030  | 0,052  | 0,052  | 0,070  | 0,110  | 0,110  | 0,150  | 0,180  |
| Inox                                       | Rust and acid resistant steels < 700N/mm² (<205 HB) | 95   | 0,0090 | 0,0150 | 0,0250 | 0,0250 | 0,0320 | 0,0520 | 0,0520 | 0,0700 | 0,0840 |
|                                            | Rust and acid resistant steels > 700N/mm² (<205 HB) | 53   | 0,0090 | 0,0150 | 0,0250 | 0,0250 | 0,0320 | 0,0520 | 0,0520 | 0,0700 | 0,0840 |
| Exotic materials                           | Titanium                                            | 50   | 0,0070 | 0,0090 | 0,0150 | 0,0150 | 0,0250 | 0,0320 | 0,0320 | 0,0520 | 0,0700 |
|                                            | Inconel, Hastelloy, Nimonic, Monel                  | 35   | 0,0070 | 0,0090 | 0,0150 | 0,0150 | 0,0250 | 0,0320 | 0,0320 | 0,0520 | 0,0700 |

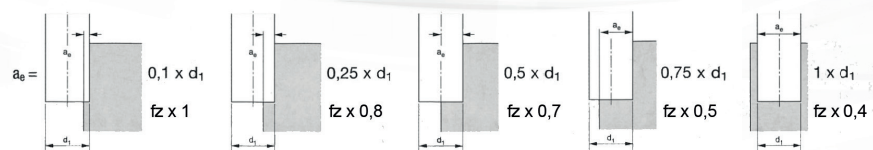
ORIENTATIVE WORK CONDITIONS. THEY COULD CHANGE DEPENDING ON EACH SPECIFIC CASE  
CONDICIONES ORIENTATIVAS DE TRABAJO. PODRÍAN CAMBIAR SEGÚN CADA CASO ESPECÍFICO



## GENERAL CUTTING CONDITIONS • CONDICIONES DE CORTE GENERALES

|                                                                |                                                                                    |                          |                                           |                            |     | d1       | d1    | d1    | d1    | d1    |
|----------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------|-------------------------------------------|----------------------------|-----|----------|-------|-------|-------|-------|
|                                                                |                                                                                    |                          |                                           |                            |     | 2-3      | 4-5   | 6-10  | 12-16 | 20    |
| General cutting conditions I<br>Condiciones de corte generales |                                                                                    |                          |                                           |                            |     | Vc m/min | fz mm | fz mm | fz mm | fz mm |
|                                                                |                                                                                    | Hardness I<br>Dureza     | DIN-Nr                                    | Material<br>n°             |     |          |       |       |       |       |
| Steel I<br>Acero                                               | Steel for automatic lathes I<br>Acero para tornos automáticos                      | <700 N/mm <sup>2</sup>   | 9SMn 28                                   | 1.0715                     | 150 | 0,02     | 0,04  | 0,05  | 0,08  | 0,12  |
|                                                                | Steel for construction I Acero de construcción                                     | <520 N/mm <sup>2</sup>   | St 52                                     | 1.0052                     | 150 | 0,02     | 0,03  | 0,04  | 0,07  | 0,08  |
|                                                                | Steel for construction I Acero de construcción                                     | <750 N/mm <sup>2</sup>   | CK 45<br>26 CrMo4                         | 1.1191<br>1.2241           | 120 | 0,02     | 0,03  | 0,04  | 0,07  | 0,08  |
|                                                                | Tempered steel medium resistance I<br>Acero de temple y revenido resistencia media | <950 N/mm <sup>2</sup>   | 42 CrMo 4<br>50 CrV 4                     | 1.7225<br>1.2241           | 100 | 0,02     | 0,03  | 0,04  | 0,07  | 0,08  |
|                                                                | Cermented steel I Acero cementado                                                  | <950 N/mm <sup>2</sup>   | 16 MnCr 5                                 | 1 7131                     | 100 | 0,02     | 0,03  | 0,04  | 0,07  | 0,08  |
|                                                                | Tempered steel high resistance I<br>Acero de temple y revenido muy resistente      | >1200 N/mm <sup>2</sup>  | 30 CrNiMo 8                               | 1 7225<br>1 6580           | 90  | 0,01     | 0,01  | 0,02  | 0,03  | 0,05  |
|                                                                | Acero para nitrurar bonificado                                                     | >1400 N/mm <sup>2</sup>  | 34 CrAl 6                                 | 1 8504                     | 90  | 0,01     | 0,01  | 0,02  | 0,04  | 0,06  |
|                                                                | Steel for tools I Acero para herramientas                                          | >1400 N/mm <sup>2</sup>  | x 38CrMoV 5 1<br>x 155 CrVMo 1 2          | 1 2343<br>1 2379           | 90  | 0,01     | 0,01  | 0,02  | 0,03  | 0,05  |
|                                                                | Steels I Aceros - 55 HRC                                                           | - 1800 N/mm <sup>2</sup> | Temperes steel<br>Acero templado          | -                          | 65  | 0,02     | 0,04  | 0,05  | 0,07  | 0,15  |
|                                                                | Steels I Aceros - 65 HRC                                                           | - 2000 N/mm <sup>2</sup> | Temperes steel<br>Acero templado          | -                          | 45  | 0,02     | 0,04  | 0,05  | 0,07  | 0,15  |
| Inox                                                           | Stainless Steel Acid Resistant I<br>Acero inoxidable y resistente a los ácidos     | <900 N/mm <sup>2</sup>   | X 10 Cr 13<br>X12 CrMoS 17<br>X 35CrMo 17 | 1 4006<br>1 4104<br>1 4122 | 70  | 0,01     | 0,01  | 0,02  | 0,04  | 0,05  |
|                                                                | Stainless Steel Acid Resistant I<br>Acero inoxidable y resistente a los ácidos     | >900 N/mm <sup>2</sup>   | X 5 CrNi 18 10<br>x 10 CrNiMo 18 10       | 1 4301<br>1 4571           | 50  | 0,01     | 0,01  | 0,02  | 0,04  | 0,05  |
| Cast Iron I<br>Fundición                                       | Cast Iron GG I Fundición gris GG                                                   | 100-400                  | GG 25                                     | 0 6025                     | 120 | 0,02     | 0,03  | 0,05  | 0,08  | 0,12  |
|                                                                | Alloyd Cast iron GG I Fundición gris aleada GG                                     | 150-250                  | GGL- NiCr 35 2                            | 0 6678                     | 100 | 0,01     | 0,02  | 0,04  | 0,07  | 0,08  |
|                                                                | Spheroidal Cast iron GGG I<br>Fundición esferoidal GGG                             | 400-800                  | GGG 60                                    | 0 7060                     | 100 | 0,01     | 0,02  | 0,04  | 0,07  | 0,10  |
|                                                                | Malleable cast iron I Fundición maleable                                           | 350-700                  | GTS 55                                    | 0 8155                     | 60  | 0,02     | 0,03  | 0,05  | 0,08  | 0,12  |
| Non<br>ferrous I<br>No<br>férico                               | Copper I Aleación de cobre                                                         | > 550 N/mm <sup>2</sup>  | MS 63<br>CuAl 10 Ni                       | 2 0320<br>2 0975           | 280 | 0,01     | 0,02  | 0,04  | 0,07  | 0,10  |
|                                                                | Copper I Aleación de cobre                                                         | < 700 N/mm <sup>2</sup>  | Ms 68                                     | 2 0402                     | 250 | 0,01     | 0,02  | 0,04  | 0,07  | 0,10  |
|                                                                | Aluminium alloy I Aleación de<br>aluminio < 10% Si                                 | > 500 N/mm <sup>2</sup>  | AlMg 3                                    | 3 3535<br>3 4365           | 800 | 0,02     | 0,03  | 0,05  | 0,08  | 0,12  |
|                                                                | Aluminium alloy I Aleación de<br>aluminio > 10% Si                                 | < 600 N/mm <sup>2</sup>  | AlZnMgCu 1 5                              | 3 4365                     | 600 | 0,01     | 0,02  | 0,04  | 0,06  | 0,10  |
| Exotic<br>Materials I<br>Materiales<br>exóticos                | NiAlloys medium resistance I<br>Aleación níquel resistencia media                  | < 950 N/mm <sup>2</sup>  | NiCr 12Al 6 MoNo                          | 2 4670                     | 30  | 0,01     | 0,01  | 0,02  | 0,04  | 0,05  |
|                                                                | NiAlloys high resistance I<br>Aleación níquel resistencia alta                     | < 1400 N/mm <sup>2</sup> | NiCr 19 Fe<br>19NbMo                      | Inconel                    | 30  | 0,01     | 0,01  | 0,02  | 0,03  | 0,04  |
|                                                                | Hard cast iron I Fundición dura                                                    | < 600 N/mm <sup>2</sup>  | Ni-Hard, Ampco                            | -                          | 30  | 0,01     | 0,01  | 0,02  | 0,04  | 0,05  |

### Feed correction factors • Factores de corrección de avance



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 co-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 paid 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.



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