

PRODUCT LIST G8.5

WORKING FOR YOUR SUCCESS



WORKING FOR YOUR SUCCESS

Since 1952



HELION TOOLS S.L.U is owned by Molins family with more than 70 years of experience in the machining industry. *HELION TOOLS S.L.U es una empresa propiedad de la Familia Molins con más de 70 años de experiencia en el sector del mecanizado.*

They offer solutions and collaborate back-to-back with their partners.

Since its foundation in 1952, it has grown continuously with the attitude and business philosophy of: "We work for your success". The success of its customers is Helion's number one priority.

Specialist in the manufacturing of cutting tools

within its main market segment: endmills, drills and taps in the production facility in Manresa – Spain, a wholly-owned cutting tools production site at full capacity to serve both nationally and to another 40 countries.

Cutting tools in stock and its flexibility in producing

translates into immediate deliveries of purchase orders.

Thanks to its means of production, Helion Tools can ensure an optimal and agile service level to meet supply needs. Helion Tools brand guarantees products are developed, tested and commercialized with its factory.

Helion Tools is a relationship-driven company.

In its opinion, the most important resource is people. This is remarked and identifies its business culture while guaranteeing a solid foundation for its future.

Upright behavior is a deep-rooted value among Helion Tools. It is the commitment from both the company and its partners to carry out a fair competition within the market under the premise of respect, equity and forging their own future.

Nowadays, there must be a sense of great responsibility

towards society and the environment. They are convinced that the only way to be successful in the long term is to take always this factor into account. For this reason, Helion Tools uses natural resources in an efficient way, avoids contaminating and disposes of waste in an adequate manner.

"Each obstacle is a new challenge that encourages us to keep growing as we remain in the vanguard of state-of-the-art technologies, changing automation processes and the passion that keeps as all together for the mechanization sector...let's move forward together!" Josep Ma. Molins Pujol - President

AUSTRALIA / BELGIUM / CHINA / CZECH REPUBLIC / DENMARK / FINLAND / FRANCE / GREECE / HUNGARY
/ INDIA / ISRAEL / ITALY / MEXICO / MOROCCO / NETHERLANDS / POLAND / PORTUGAL / ROMANIA /
SLOVAKIA / SLOVENIA / SPAIN / TUNISIA / UNITED ARAB EMIRATES



Production facility located in Manresa – Spain, a wholly-owned cutting tools production site at full capacity to serve both nationally and to another 40 countries. *Planta de producción en Manresa – España, una producción propia de herramientas a pleno rendimiento en diferentes sectores industriales del país y una red de distribuidores con presencia en 40 países.*



Ofrece soluciones y acompaña a sus colaboradores en el proceso. Desde su fundación en el año 1952, ha crecido continuamente con la actitud de su filosofía de negocio: “Trabajamos para su éxito”. El triunfo de sus clientes es lo mejor que les puede pasar.

Especialistas en la fabricación de herramientas de corte en su segmento principal de fresas, brocas y herramientas de roscar en la planta de producción en Manresa – España, una producción propia de herramientas a pleno rendimiento en diferentes sectores industriales del país y una red de distribuidores con presencia en 40 países.

Herramientas en stock y flexibilidad en la producción que se traduce en la entrega inmediata de las órdenes de pedido. Disponen de medios de producción propios que aseguran un óptimo nivel de servicio y agilidad en el suministro. La marca Helion Tools, es 100% garante de productos desarrollados, probados y comercializados en su fábrica.

Helion Tools es una empresa cercana y convencida que el recurso más importante son las personas,

hecho que identifica a su cultura empresarial y les garantiza una sólida base de futuro.

La conducta íntegra tiene para Helion Tools un gran valor, es su compromiso y el de sus colaboradores llevar a cabo una competencia leal en el mercado bajo la premisa de respeto, equidad y proyección de futuro.

Conscientes que hoy más que nunca tienen una gran responsabilidad frente a la sociedad y el medio ambiente al estar convencidos de que el éxito a largo plazo dependerá de ello, de esta manera, disponen de los recursos naturales de forma eficiente, previniendo la contaminación y gestionando los residuos de forma adecuada.

“Cada dificultad es un nuevo reto que nos proyecta a continuar creciendo al mantenernos a la vanguardia de las nuevas tecnologías, crecientes procesos de automatización y la pasión que nos une por el sector del mecanizado... avancemos juntos!”

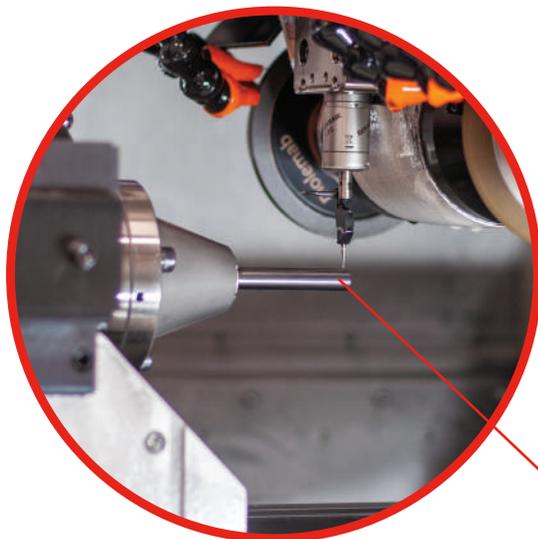
Josep Ma. Molins Pujol - Presidente



High Quality Tools, high performance and reliability

Herramientas de alta calidad, alto rendimiento y confiabilidad.

Development and production of precision tools for different industry sectors and active participation in the global market with the main segment of EndMills, Drills and Taps. *Desarrollo y producción de herramientas de precisión para los diferentes sectores de la industria y participación en el mercado global con el segmento principal de fresas, brocas y machos de roscar.*



High standards of quality and dimensional tolerance allow them to obtain the best results in the machining processes in the automotive, aeronautical, construction, structural engineering, mold and die sectors. *Altos estándares de calidad y tolerancia dimensional les permiten obtener los mejores resultados en los procesos de mecanizado en sectores de la industria automotriz, aeronáutica, construcción, ingeniería estructural, molde y matriz.*

Quality, Innovation and Service for a Higher Performance Production

Calidad, Innovación y servicio para una producción con mayor rendimiento

- ✓ High quality raw material
Materia prima de alta calidad
- ✓ Latest technology applied to our coatings
Última tecnología en recubrimientos.
- ✓ Maximum performance with optimized geometries
Rendimiento máximo con geometrías optimizadas.
- ✓ High-precision manufacturing and quality control with state-of-the-art machines
Fabricación de alta precisión y control de calidad con máquinas de última tecnología.
- ✓ Research and development in all our product *categories*
Investigación y desarrollo en todas las categorías de producto
- ✓ Environmentally-friendly production, recycling as a commitment to the planet
Producción verde, el reciclaje como compromiso con el planeta.



MILL LINE



90 HELIRUN

UNIVERSAL APPLICATION

APLICACIÓN UNIVERSAL

- * Higher productivity
Alta productividad
- * Steels up to 62 HRC
Aceros hasta 62 HRC
- * TOP performance
Rendimiento superior
- * High edge tolerance
Alta tolerancia en el filo de corte



91 HELITOP

EXOTIC MATERIALS HIGH ALLOYED STEELS

MATERIALES EXÓTICOS Y ACEROS DE ALTA ALEACIÓN

- * Latest coating technology
Última tecnología en recubrimiento
- * Improved geometry
Geometría mejorada
- * Heat resistance configuration
Configuración de resistencia al calor



92 HELIMOTION

STEELS UP TO 70 HRC

ACEROS HASTA 70 HRC

- * High alloyed steels and hardened materials
Aceros aleados y materiales templados
- * High speed cutting
Alta velocidad de corte
- * Super micro substrate
Super micro sustrato
- * Higher accurate dimensional tolerance
Tolerancia dimensional de mayor precisión



93 HELIHARD

SUPER HARD WITH CBN

MATERIALES TEMPLADOS CON CBN

- * Materials up to 75 HRC
Materiales hasta 75 HRc
- * High speed cutting in HHC
Alta velocidad de corte en mat. templados (HHC)
- * Sharp dimensional tolerance
Tolerancia dimensional muy precisa
- * Very good surface quality
Óptima calidad superficial



MULTI LINE

SELECTION OF TOOLS FOR WIDE RANGE SOLUTIONS

*SELECCIÓN DE HERRAMIENTAS PARA UNA AMPLIA
GAMA DE SOLUCIONES*



94 HELIALU

ALLUMINIUM AND NON FERROUS IN HSC

ALUMINIO Y MAT. NO FÉRRICOS EN HSC

- * High speed cutting
Corte de alta velocidad
- * Improved capacity of chip removal rate
Mejora en la capacidad de arranque de viruta
- * Coating with lower friction coefficient
Recubrimiento con menor coeficiente de fricción
- * Agressive cutting edge
Filo de corte agresivo



INCH LINE

SOLID CARBIDE END MILL INCH SIZES

FRESAS EN METAL DURO CON MEDIDAS EN PULGADAS



96 HELIDIAMOND

ABRASSIVE MATERIALS

MATERIALES ABRASIVOS

- * Diamond coating (CVD)
Recubrimiento con diamante (CVD)
- * High resistance and performance in front of abrasive materials
Alta resistencia y rendimiento frente a materiales abrasivos



89 HELIHSS

HIGH PERFORMANCE HSS CUTTING TOOLS

HERRAMIENTAS DE CORTE EN HSS DE ALTO RENDIMIENTO

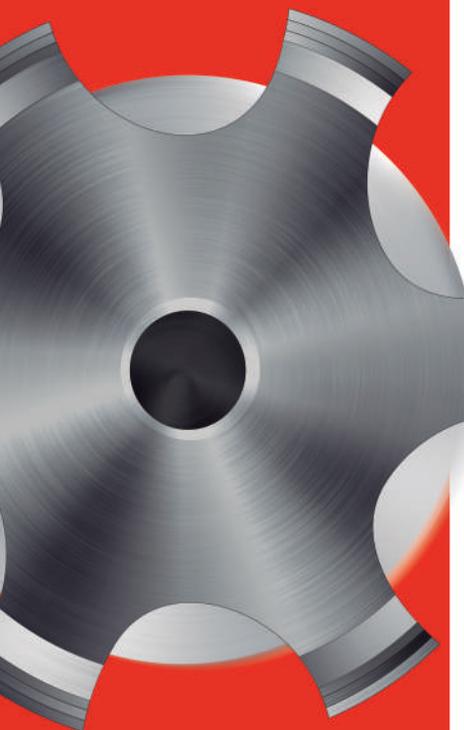
- * Universal cutter for efficient machining with HSS
Cortador universal para mecanizado eficiente con HSS
- * Special geometry for longer tool life
Geometría especial para la larga vida de la herramienta
- * High removal rate with soft cutting
Alta capacidad de arranque de viruta con corte suave



DRILL LINE



THREAD LINE



SCDRILLS

SOLID CARBIDE TOP PERFORMANCE DRILLS

*BROCAS DE ALTO RENDIMIENTO
DE METAL DURO*



HSSDRILLS

HSS DRILLS FOR UNIVERSAL PORPOUSE

*BROCAS DE HSS PARA USO
UNIVERSAL*



THREADINGMILL

HIGH PRODUCTIVITY AND SAFE OPERATION

*ALTA PRODUCTIVIDAD Y
OPERACIÓN SEGURA*



FORMINGTAP

TOP SPEED THREADING

*ROSCADO DE MÁXIMA
VELOCIDAD*



HSS TAP

HIGH PERFORMANCE CUTTING TAPS

*MACHOS DE CORTE DE ALTO
RENDIMIENTO*



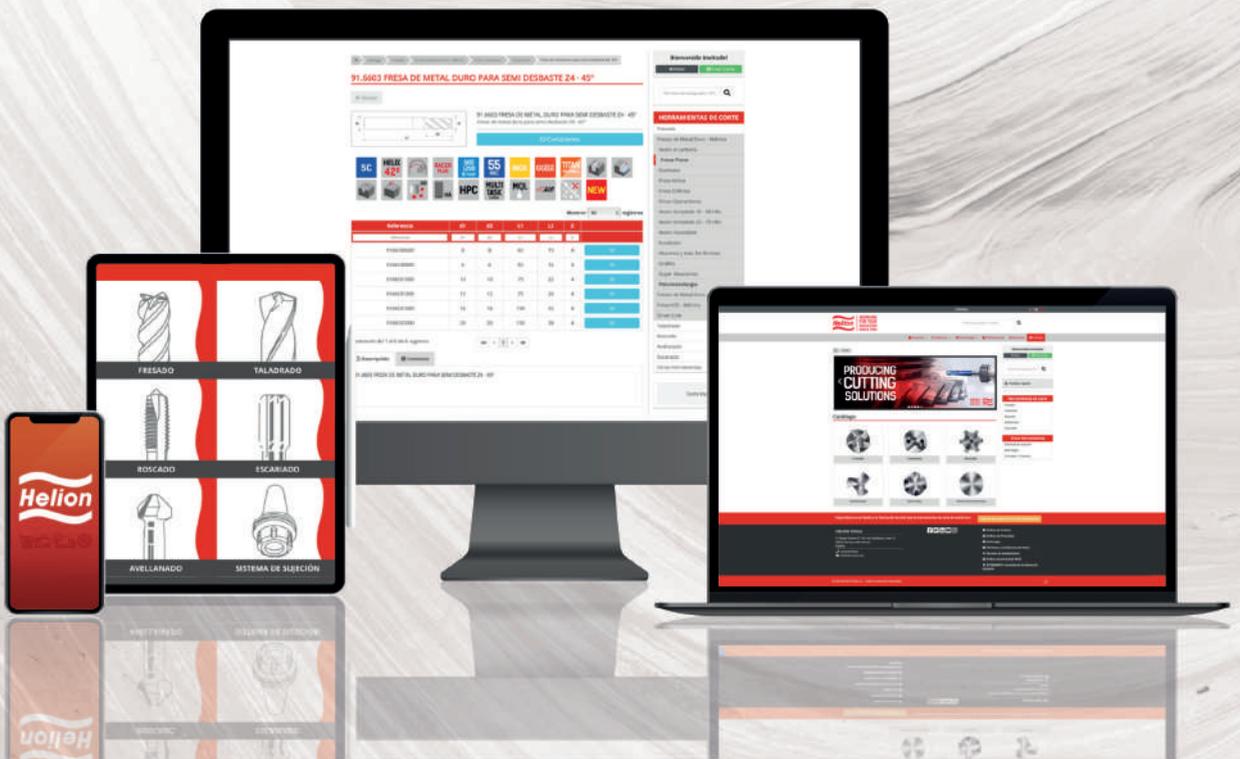
SC TAPS

MACHINE TAPS FOR HARDENED STEELS

*MACHOS DE MÁQUINA DE METAL
DURO PARA ACEROS TEMPLADOS*



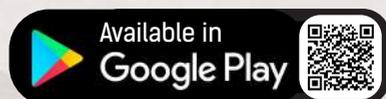
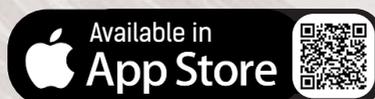
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MILL LINE INDEX

Índice de fresado

| Code. | Picture | Description | Page | Ø Range (mm) | Helix angle | Coat. | 600 | HRC | HRC | | |
|---------|---|----------------------------|------|--------------|-------------|--------------|---------------------------|-----|-----|----|----|
| | | | | | | | 1200 N/mm ² | 45 | 62 | 70 | 75 |
| 90.6221 |  | BALL NOSE Z2 | 26 | 0,5 - 12 | 35° | RACER | ● | ● | ○ | | |
| 90.6226 |  | BALL NOSE EXTRA LONG Z2 | 27 | 2 - 16 | 30° | RACER | ● | ● | ● | | |
| 82.7220 |  | BALL NOSE EXTRA LONG Z2 | 27 | 6 - 12 | 30° | RACER | ● | ● | ● | | |
| 90.6702 |  | SQUARE Z2 | 28 | 1 - 12 | 30° | RACER | ● | ● | | | |
| 90.6202 |  | SQUARE Z2 | 29 | 0,1 - 20 | 35° | RACER | ● | ● | ○ | | |
| 90.6204 |  | SQUARE LONG Z2 | 31 | 3 - 16 | 35° | RACER | ● | ● | ○ | | |
| 90.6704 |  | SQUARE Z4 | 32 | 3 - 12 | 30° | RACER | ● | ● | ○ | | |
| 90.6402 |  | SQUARE Z4 | 33 | 1 - 20 | 35° | RACER | ● | ● | ○ | | |
| 90.6404 |  | SQUARE LONG Z4 | 35 | 4 - 20 | 35° | RACER | ● | ● | ○ | | |
| 90.6811 |  | CORNER RADIUS LONG NECK Z2 | 36 | 0,5 - 6 | 30° | RACER | ● | ● | ● | | |
| 90.6815 |  | CORNER RADIUS LONG NECK Z4 | 38 | 1 - 6 | 30° | RACER | ● | ● | ● | | |
| 90.6412 |  | CORNER RADIUS Z4 | 40 | 2 - 16 | 30° | RACER PLUS | ● | ● | ● | | |
| 90.6413 |  | CORNER RADIUS LONG Z4 | 41 | 6 - 16 | 30° | RACER PLUS | ● | ● | ● | | |
| 90.5572 |  | TROCHOIDAL Z5 | 42 | 6 - 20 | 40° | RACER PLUS | ● | ● | | | |
| 90.6572 |  | SUPER FINISHING Z5 -Z6 | 43 | 3 - 20 | 40° - 42° | RACER PLUS | ● | ● | ● | | |
| 91.6424 |  | BALL NOSE Z4 | 46 | 6 - 12 | 42° | VOLCANO | ● | ● | | | |
| 91.6302 |  | SQUARE END MILL Z3 | 47 | 1 - 12 | 42° | VOLCANO | ● | ● | | | |
| 91.1479 |  | SQUARE END MILL Z4 | 48 | 3 - 20 | 35° - 38° | VOLCANO | ● | ● | | | |
| 91.5479 |  | SQUARE END MILL Z4 | 49 | 3 - 20 | 40° | VOLCANO PLUS | ● | ● | | | |

● First choice ○ Suitable

| | Stainless M | Cast Iron K | Non Ferrous N | Graphite | Super Alloy S | Pulvermetallurgic PM | HSC High Speed Cutting | HHC High Hard Cutting | HPC High Performance Cutting | Full Slot  | Side Milling  | Copy  | Interpolation  | Ramping  | Trochoidal  |
|--|----------------|----------------|------------------|----------|------------------|-------------------------|---------------------------|--------------------------|---------------------------------|--|---|---|---|--|---|
| | ● | ● | ○ | | ○ | | ● | ○ | | ○ | ○ | ● | ○ | ○ | |
| | ● | ● | ○ | | | | ● | ● | ● | ○ | ○ | ● | ○ | ○ | |
| | ● | ● | ○ | | | | ● | ● | ● | ○ | ○ | ● | ○ | ○ | |
| | ○ | ● | ○ | | ○ | | ● | ○ | | ● | ● | | ● | ● | |
| | ○ | ● | ○ | | ○ | | ● | ○ | | ● | ● | | ○ | ○ | |
| | ○ | ● | ○ | | ○ | | ● | ○ | | ● | ● | | ○ | ○ | |
| | ● | ● | ○ | | ○ | | ● | ○ | | ● | ● | | | | |
| | | ● | ○ | | ○ | | ● | ○ | | | ● | | ○ | ○ | ● |
| | | ● | ○ | | ○ | | ● | ○ | | | ● | | ○ | ○ | |
| | ● | ● | | | ○ | | ● | ● | ● | | ● | | ● | | |
| | ● | ● | | | ○ | | ● | ● | ● | | ● | | ● | | |
| | ● | ● | | | ○ | | ● | ● | ● | ● | ● | | ○ | ● | |
| | ● | ● | | | ○ | | ● | ● | ● | ● | ● | | ● | ○ | |
| | ● | ● | | | ● | | ● | | ● | ● | | ● | ● | ● | ● |
| | | ● | ○ | | ○ | | ● | ● | ● | | ● | | | | ○ |
| | ● | ○ | | | ● | | ● | | ● | | ○ | ● | | | |
| | ● | ○ | | | ● | | ● | | ● | ● | | ● | ● | ● | ○ |
| | ● | ● | | | ○ | | ● | | ● | ● | | ○ | ○ | | ● |
| | ● | ● | | | ● | | ● | | ● | ● | | ● | ● | ● | ● |

MILL LINE INDEX

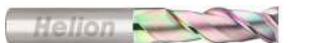
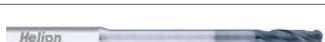
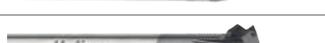
Índice de fresado

| | Code. | Picture | Description | Page | Ø Range (mm) | Helix angle | Coat. | 600 | HRC | HRC | | | |
|-------------|----------|---------|--------------------------------|----------------------|--------------|-------------|-------------------|-----------|-----|-----|----|----|---|
| | | | | | | | | 1200 | 45 | 62 | 70 | 75 | |
| | | | | | | | N/mm ² | | | | | | |
| HELITOP | 91.4472 | | SQUARE END MILL Z4 | 50 | 6 - 20 | 45° | VOLCANO GOLD | ● | ● | | | | |
| | 91.6410 | | CORNER RADIUS Z4 | 51 | 4 - 12 | 42° | VOLCANO | ● | ● | | | | |
| | 91.6614 | | ROUGHING END MILL Z4 - Z5 | 52 | 5 - 20 | 42° | VOLCANO | ● | ● | | | | |
| | 91.6505 | | MULTIFLUTES EXTRA LONG Z4 - Z6 | 53 | 3 - 32 | 45° | VOLCANO PLUS | ● | ● | ● | | | |
| HELI MOTION | 92.6228 | | BALL NOSE TAPER NECK Z2 | 56 | 1 - 12 | 30° | DEEP BLUE | ● | ● | ● | ● | | |
| | 92.6220 | | BALL NOSE Z2 | 57 | 0,5 - 12 | 30° | DEEP BLUE | ○ | ● | ● | ● | | |
| | 92.6224 | | BALL NOSE LONG Z2 | 58 | 1 - 12 | 30° | DEEP BLUE | ○ | ● | ● | ● | | |
| | 82.6228 | | BALL NOSE TAPER NECK Z2 | 59 | 1,5 - 12 | 30° | RACER PLUS | ○ | ● | ● | | | |
| | 82.6227 | | BALL NOSE TAPER NECK Z2 | 60 | 1 - 4 | 30° | RACER PLUS | ○ | ● | ● | | | |
| | 82.6229 | | BALL NOSE TAPER NECK Z2 | 61 | 2 - 4 | 30° | RACER PLUS | ○ | ● | ● | | | |
| | 92.6823 | | BALL NOSE LONG NECK Z2 | 62 | 0,1 - 5 | 30° | DEEP BLUE | ○ | ● | ● | ● | | |
| | 92.7534 | | BARREL CONICAL MILL Z6 | 65 | 4 - 8 | 30° | DEEP BLUE | ● | ● | ● | | | |
| | 92.6403 | | SQUARE END MILL Z4 | 66 | 1 - 16 | 45° | DEEP BLUE | ○ | ● | ● | ● | | |
| | 82.6217 | | CORNER RADIUS TAPER NECK Z2 | 67 | 1 - 12 | 30° | RACER PLUS | ○ | ● | ● | | | |
| | 92.6813 | | CORNER RADIUS LONG NECK Z2 | 68 | 0,2 - 6 | 30° | DEEP BLUE | ○ | ● | ● | ● | | |
| | 92.6415 | | CORNER RADIUS Z4 | 70 | 3 - 12 | 30° | DEEP BLUE | ○ | ● | ● | ● | | |
| | 92.6783 | | HIGH FEED END MILL Z4 - Z6 | 72 | 3 - 16 | 30° | DEEP BLUE | ● | ● | ● | ● | | |
| | 92.6505 | | FINISHING END MILL Z6 - Z8 | 73 | 3 - 25 | 45° | DEEP BLUE | ○ | ● | ● | ● | | |
| | HELIHARD | 93.1824 | | CBN BALL NOSE Z2 | 76 | 1 - 6 | 30° | CBN SOLID | | | ● | ● | ● |
| | | 93.1810 | | CBN CORNER RADIUS Z2 | 77 | 1 - 6 | 30° | CBN SOLID | | | ● | ● | ● |

● First choice ○ Suitable

MILL LINE INDEX

Índice de fresado

| Code. | Picture | Description | Page | Ø Range (mm) | Helix angle | Coat. | 600 | HRC | HRC | | | |
|-----------|---|---|---|-------------------------------|-------------|-----------|-------------------|---------|-----|----|----|--|
| | | | | | | | 1200 | 45 | 62 | 70 | 75 | |
| | | | | | | | N/mm ² | | | | | |
| HELIALU | 94.3223 |  | BALL NOSE END MILL Z2 | 80 | 1 - 12 | 45° | SPEED | | | | | |
| | 94.0100 |  | SQUARE END MILL Z1 | 81 | 3 - 12 | 30° | BRIGHT | | | | | |
| | 94.0201 |  | SQUARE END MILL Z2 | 82 | 3 - 20 | 45° | BRIGHT | | | | | |
| | 94.3203 |  | SQUARE END MILL Z2 | 83 | 3 - 20 | 45° | TaC | | | | | |
| | 94.3302 |  | SQUARE END MILL Z3 | 84 | 3 - 25 | 43° - 47° | SPEED ZR | | | | | |
| | 94.3409 |  | SQUARE END MILL Z4 | 85 | 3 - 20 | 43° - 47° | SPEED ZR | | | | | |
| | 94.3213 |  | CORNER RADIUS Z2 | 86 | 1 - 12 | 45° | SPEED | | | | | |
| | 94.3535 |  | END MILL FINISHING Z6 | 87 | 6 - 20 | 45° | SPEED ZR | | | | | |
| | HELIDIAMOND | 96.8822 |  | BALL NOSE END MILL DIAMOND Z2 | 90 | 0,2 - 12 | 30° | DIAMOND | | | | |
| 96.8814 | |  | CORNER RADIUS END MILL DIAMOND Z2 | 92 | 0,2 - 6 | 30° | DIAMOND | | | | | |
| 96.8415 | |  | CORNER RADIUS END MILL DIAMOND Z4 | 96 | 2 - 12 | 30° | DIAMOND | | | | | |
| MULTILINE | 70.6480 |  | SC QUADRANT ROUND MILL Z4 | 100 | R 0,2 - 10 | - | RACER | ● | ● | ○ | | |
| | 70.6045 |  | TWIN DEBURRING TOOL 90° Z4 | 101 | 2 - 16 | - | RACER | ● | ● | ○ | | |
| | 70.6160 |  | END MILL GRAVER 60° Z1 | 102 | 3 - 6 | 30° | RACER | ● | ● | ○ | | |
| | 90.6460 |  | DEBURRING TOOL 60° Z4- Z6 | 103 | 4 - 20 | - | RACER PLUS | ● | ● | ○ | | |
| | 90.6490 |  | DEBURRING TOOL 90° Z3-Z6 | 104 | 1 - 20 | - | RACER PLUS | ● | ● | ○ | | |
| | 85.0050 |  | SLITTING SAW FINE PITCH DIN 1837 A | 106 | 15 - 200 | - | BRIGHT | ● | ● | ○ | | |
| 85.0051 |  | SLITTING SAW COARSE PITCH DIN 1838 B | 110 | 15 - 200 | - | BRIGHT | ● | ● | ○ | | | |

● First choice ○ Suitable

| | Stainless M | Cast Iron K | Non Ferrous N | Graphite | Super Alloy S | Pulvimetalurgic PM | HSC High Speed Cutting | HHC High Hard Cutting | HPC High Performance Cutting | Full Slot  | Side Milling  | Copy  | Interpolation  | Ramping  | Trochoidal  |
|--|----------------|----------------|------------------|----------|------------------|-----------------------|---------------------------|--------------------------|---------------------------------|--|---|---|---|--|---|
| | | | ● | | | | ● | | ● | | | ● | | | |
| | | | ● | | | | | | ● | | | | | | |
| | | | ● | | | | ● | | ● | ● | | ● | ● | | |
| | | | ● | | | | ● | | ● | ● | | ● | ● | | |
| | | | ● | | | | ● | ● | ● | ● | | ● | ● | | |
| | | | ● | | | | ● | ● | ● | ● | | ● | ● | | ● |
| | | | ● | | | | ● | ● | ● | ● | | ○ | ○ | | |
| | | | ● | | | | ● | ● | ● | ● | | ● | ● | | ● |
| | | | | ● | | | ● | ● | | ○ | ● | ○ | ● | | |
| | | | | ● | | | ● | ● | ● | ● | | ○ | ● | | |
| | | | | ● | | | ● | ● | ● | ● | | ○ | ● | | ○ |
| | ● | ● | ○ | | ○ | | | | | | | | | | |
| | ● | ● | ○ | | ○ | | | | | Ch 45° | | | | | |
| | ● | ● | ○ | | ○ | | | | | | | | | | |
| | | ● | ○ | | ○ | | ● | ○ | | Ch 60° | ● | | | | |
| | | ● | ○ | | ○ | | ● | ○ | | Ch 90° | ● | | | | |
| | | ● | ○ | | ○ | | | | | | | | | | |
| | | ● | ○ | | ○ | | | | | | | | | | |

MILL LINE INDEX

Índice de fresado

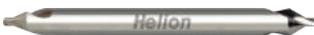
| | Code. | Picture | Description | Page | Ø Range (mm) | Helix angle | Coat. | 600 | HRC | HRC | | |
|----------|----------|---|--|------|--------------|-------------|------------|------|-----|-----|----|----|
| | | | | | | | | 1200 | 45 | 62 | 70 | 75 |
| | | | | | | | | | | | | |
| INCHLINE | 80.7421F |  | BALL NOSE END MILL Z2 | 116 | 1/16 - 5/8 | 35° | RACER PLUS | ● | ● | ○ | | |
| | 80.7202F |  | SQUARE END MILL Z2 | 117 | 1/16 - 5/8 | 35° | RACER PLUS | ● | ● | ○ | | |
| | 84.0303F |  | SQUARE END MILL ALU Z3 | 118 | 1/8 - 5/8 | 45° | BRIGHT | | | | | |
| | 84.3202F |  | SQUARE END MILL HIGH FEED HELIX ALU Z2 | 119 | 1/4 - 5/8 | 45° | SPEED ZR | | | | | |
| | 91.7414F |  | SQUARE CORNER RADIO Z4 | 120 | 1/4 - 5/8 | 43°-45° | RACER PLUS | ● | ● | | | |
| | 80.7402F |  | SQUARE END MILL Z4 | 121 | 1/16 - 5/8 | 35° | RACER PLUS | ● | ● | ○ | | |
| | 91.7404F |  | VARIABLE HELIX END MILL Z4 | 122 | 1/4 - 5/8 | 35°-38° | RACER PLUS | ● | ● | | | |
| HELIHSS | 89.0602 |  | ROUGHING END MILL HSS NR Z4 | 126 | 6 - 24 | 30° | BRIGHT | ● | | | | |
| | 89.0604 |  | ROUGHING END MILL HSS NR Z4 | 126 | 10 - 20 | 30° | BRIGHT | ● | | | | |
| | 89.0402 |  | SQUARE END MILL HSS N Z4 - Z6 | 127 | 2 - 32 | 30° | BRIGHT | ● | | | | |
| | 89.0404 |  | SQUARE END MILL HSS N Z4 - Z6 LONG | 129 | 3 - 40 | 30° | BRIGHT | ● | | | | |
| | 89.0202 |  | SQUARE END MILL HSS N Z2 | 130 | 3 - 20 | 30° | BRIGHT | ● | | | | |
| | 89.0204 |  | SQUARE END MILL HSS N Z2 LONG | 131 | 3 - 20 | 30° | BRIGHT | ● | | | | |
| | 89.0302 |  | SQUARE END MILL HSS N Z3 | 132 | 2,8 - 20 | 30° | BRIGHT | ● | | | | |
| | 89.0221 |  | BALL NOSE END MILL HSS N Z2 | 133 | 2 - 20 | 30° | BRIGHT | ● | | | | |
| | 89.0223 |  | BALL NOSE END MILL HSS N Z2 LONG | 134 | 3 - 20 | 30° | BRIGHT | ● | | | | |

● First choice ○ Suitable

| | Stainless M | Cast Iron K | Non Ferrous N | Graphite | Super Alloy S | Pulvimetallurgic PM | HSC High Speed Cutting | HHC High Hard Cutting | HPC High Performance Cutting | Full Slot  | Side Milling  | Copy  | Interpolation  | Ramping  | Trochoidal  |
|--|----------------|----------------|------------------|----------|------------------|------------------------|---------------------------|--------------------------|---------------------------------|--|---|---|---|--|---|
| | ● | ● | ○ | | ○ | | ● | ○ | | ○ | ○ | ● | ○ | ○ | |
| | ○ | ● | ○ | | ○ | | ● | ○ | ● | ● | | ○ | ○ | | |
| | | | ● | | | | ● | | ● | ● | | ● | ● | | |
| | | | ● | | | | ● | | ● | ● | | ● | ● | | |
| | ● | ○ | | | ● | | ● | | ● | ● | | | | | ● |
| | | ● | ○ | | ○ | | ● | ○ | | ○ | ● | | ○ | ○ | ● |
| | ● | ● | | | ○ | | ● | | ● | ● | | ○ | ○ | | ● |
| | ○ | ● | ○ | | ○ | | | | ● | ● | | | | | |
| | ○ | ● | ○ | | ○ | | | | ● | ● | | | | | |
| | ○ | ● | ○ | | ○ | | | | ● | ● | | | | | |
| | ○ | ● | ○ | | ○ | | | | ● | ● | | | | | |
| | ○ | ● | ○ | | ○ | | | | ● | ● | | | | | |
| | ○ | ● | ○ | | ○ | | | | ● | ● | | | | | |
| | ○ | ● | ○ | | ○ | | | | ● | ● | | | | | |
| | ○ | ● | ○ | | ○ | | | | | | | ● | | | |
| | ○ | ● | ○ | | ○ | | | | | | | ● | | | |

DRILL LINE INDEX

Índice de brocas

| | Code. | Picture | Description | Page | Ø Range (mm) | Front Angle | LxD | Norm | Shank Design | |
|---------------|---------|---|---|-------------------------------|--------------|---|------|-----------|--------------|----|
| SOLID CARBIDE | 60.6003 |  | DRILL 3XD | 138 | 3 - 20 | 140° | 3xD | DIN 6537K | HA | |
| | 60.6005 |  | DRILL 5XD | 140 | 3 - 20 | 140° | 5xD | DIN 6537L | HA | |
| | 60.6803 |  | DRILL 3XD INTERNAL COOLANT | 144 | 3 - 20 | 140° | 3xD | DIN 6537L | HA | |
| | 60.6805 |  | DRILL 5XD INTERNAL COOLANT | 146 | 3 - 20 | 140° | 5xD | DIN 6537L | HA | |
| | 60.6808 |  | DRILL 8XD INTERNAL COOLANT | 148 | 3 - 20 | 140° | 8xD | HELION | HA | |
| | 60.6812 |  | DRILL 12XD INTERNAL COOLANT | 150 | 3 - 20 | 135° | 12xD | HELION | HA | |
| | 62.0010 |  | SOLID CARBIDE TAP DESTROYING TOOL | 152 | M3 - M20 | - | - | HELION | HA | |
| | 62.6000 |  | SOLID CARBIDE SPECIAL DRILL | 153 | 2,6 - 14,10 | - | 3xD | DIN 6537K | HA | |
| | 67.6885 |  | SOLID CARBIDE DRILL REAMER 5XD | 154 | 5,98 - 20 | 140° | 5xD | HELION | HA | |
| | HSS | 11.1360 |  | HSSCO DRILL DIN 1897 | 155 | 1 - 14 | 118° | - | DIN 1897 | HA |
| 11.2360 | |  | HSSCO DRILL DIN 338 | 158 | 1 - 14 | 118° | - | DIN 338 | HA | |
| 10.2000 | |  | HSS DRILL DIN 338 | 160 | 1 - 16 | 118° | - | DIN 338 | HA | |
| 12.2105 | |  | HSS DRILL DIN 338 | 162 | 1 - 13 | 118° | - | DIN 338 | HA | |
| 10.5690 | |  | HSSCO SPOTTING DRILL · NC 90° | 165 | 3 - 20 | 90° | - | HELION | HB | |
| 10.5612 | |  | HSSCO SPOTTING DRILL · NC 120° | 166 | 3 - 20 | 120° | - | HELION | HB | |
| 10.5510 | |  | HSS CENTER DRILL | 167 | 0,5 - 12,5 | 118° | - | HELION | HA | |
| 10.5514 | |  | HSS CENTER DRILL EXTRA LONG | 168 | 2 - 3,15 | 118° | - | HELION | HA | |
| BOX | | BOX SC4200 |  | BOX SOLID CARBIDE TDS UNISSET | 143 | 40.1060 M4-12 60.6005 Ø3,3 - 10,2 21.2300 Ø6,3 y 16,5 | | | | HA |
| | | BOX HS4100 |  | BOX HSS TDS UNISSET | 164 | 40.1060 M3-10 12.2105 Ø2,5 - 8,5 21.0300 Ø6,3 y 12,4 | | | | HA |

● First choice ○ Suitable

| Coat. | Internal Coolant | Tolerance | 600 1200 N/mm ² | HRC | Stainless M | Cast Iron K | Non Ferrous N | Super Alloy S | UNI | HSC | HHC | HPC |
|-----------|------------------|-----------|----------------------------------|---------|----------------|----------------|------------------|------------------|-----------|--------------------|-------------------|--------------------------|
| | | | | | | | | | Universal | High Speed Cutting | High Hard Cutting | High Performance Cutting |
| DRILLANT | | m7 | ● | 55 | ● | ● | ○ | ○ | ● | ● | | ● |
| DRILLANT | | m7 | ● | 55 | ● | ● | ○ | ○ | ● | ● | | ● |
| DRILLANT | ● | m7 | ● | 55 | ● | ● | ○ | ○ | ● | ● | | ● |
| DRILLANT | ● | m7 | ● | 55 | ● | ● | ○ | ○ | ● | ● | | ● |
| DRILLANT | ● | m7 | ● | 55 | ● | ● | ○ | ○ | ● | ● | | ● |
| DRILLANT | ● | h7 | ● | 55 | ● | ● | ○ | ○ | ● | ● | | ● |
| TIN Up | | - | | 65 | | | | | ● | | | |
| RACER | | - | | 55 - 65 | | | | | | | ● | ● |
| RACER | ● | D1 (H7) | ● | 55 | ● | ● | | ○ | ● | | | ● |
| TIN Up | | h8 | ● | | ● | ● | ○ | ○ | ● | | | ● |
| TIN Up | | h8 | ● | | ● | ● | ○ | ○ | ● | | | |
| BLACK HVA | | h8 | ● | | ○ | ● | ○ | ○ | ● | | | |
| TIN Up | | h8 | ● | | ○ | ● | ○ | ○ | ● | | | |
| RACER | | h6 | ● | | ● | ● | ● | ● | ● | | | |
| RACER | | h6 | ● | | ● | ● | ● | ● | ● | | | |
| BRIGHT | | - | ● | | ● | ● | ● | ● | ● | | | |
| BRIGHT | | - | ● | | ● | ● | ● | ● | ● | | | |
| SC | HSS-E | HSS | | | | | | | ● | | | |
| HSS | HSS-E | | | | | | | | ● | | | |

THREAD LINE INDEX

Índice de machos

| Code. | Picture | Description | Page | Form | Thread Style | Range | Coat. |
|---------|---|--|------|------|--------------|------------------|-----------|
| 4990 |  | SC MICRO THREAD MILL R10° 2XD | 176 | - | M | 2 - 12 | RACER |
| 4991 |  | SC THREAD MILL R9° - R10° 2XD | 177 | - | M MF | 4 - 16 8 - 16 | RACER |
| 48.7010 |  | FORMING TAP HSS-E | 180 | C | M | 3 - 10 | TIN Up |
| 48.7016 |  | FORMING TAP HSS-E | 181 | C | M | 12 - 20 | TIN Up |
| 40.1040 |  | UNIVERSAL MACHINE TAP HSS-E | 182 | B | M | 3 - 10 | BLACK HVA |
| 40.1046 |  | UNIVERSAL MACHINE TAP HSS-E | 182 | B | M | 12 - 20 | BLACK HVA |
| 40.1640 |  | UNIVERSAL MACHINE TAP HSS-E TOLERANCE 6G | 183 | B | M | 3 - 10 | BLACK HVA |
| 40.1140 |  | UNIVERSAL MACHINE TAP HSS-E | 184 | B | MF | 4 - 20 | BLACK HVA |
| 40.1240 |  | UNIVERSAL MACHINE TAP HSS-E | 185 | B | GAS BSP | 1/8 - 1" | BLACK HVA |
| 40.1340 |  | UNIVERSAL MACHINE TAP HSS-E | 186 | B | UNF SAE | 4 - 5/8 | BLACK HVA |
| 40.1440 |  | UNIVERSAL MACHINE TAP HSS-E | 187 | B | UNC | 4 - 3/8 | BLACK HVA |
| 40.1446 |  | UNIVERSAL MACHINE TAP HSS-E | 187 | B | UNC | 7/16 - 3/4 | BLACK HVA |
| 41.6040 |  | UNIVERSAL MACHINE TAP PERFORMANCE HSS-E-PM | 188 | B | M | 2 - 10 | TIN Up |
| 41.6046 |  | UNIVERSAL MACHINE TAP PERFORMANCE HSS-E-PM | 189 | B | M | 12 - 20 | TIN Up |
| 45.5040 |  | HIGH PERFORMANCE MACHINE TAP HSS-E | 190 | B | M | 2 - 10 | DSC |
| 45.5046 |  | HIGH PERFORMANCE MACHINE TAP HSS-E | 191 | B | M | 12 - 30 | DSC |
| 45.5144 |  | HIGH PERFORMANCE MACHINE TAP HSS-E | 192 | B | MF | 6 - 24 | DSC |
| 45.5245 |  | HIGH PERFORMANCE MACHINE TAP HSS-E | 193 | B | GAS BSP | 1/16 - 1" | DSC |
| 44.0040 |  | MACHINE TAP FOR ALUMINIUM HSS-E | 194 | B | M | 3 - 10 | BRIGHT |

● First choice ○ Suitable

| Tolerance | Through Hole | Blind Hole | Norm | 600 1200 N/mm ² | HRC | | Stainless M | Cast Iron K | Non Ferrous N | Super Alloy S | HSC | HHC | HPC |
|-----------|--------------|------------|-------------|----------------------------------|-------|-------|----------------|----------------|------------------|------------------|--------------------|-------------------|--------------------------|
| | | | | | 42-54 | 48-63 | | | | | High Speed Cutting | High Hard Cutting | High Performance Cutting |
| - | ● | ● | HELION | ● | ● | | ● | ● | ○ | ● | ● | ● | ● |
| - | ● | ● | HELION | ● | ● | | ● | ● | ○ | ● | ● | ● | ● |
| 6HX | ● | ● | DIN 2174 | ● | | | ● | ● | ○ | | ● | | ● |
| 6HX | ● | ● | DIN 2174 | ● | | | ● | ● | ○ | | ● | | ● |
| 6H | ● | | DIN 371 | ● | | | ● | ● | ○ | | | | |
| 6H | ● | | DIN 371 | ● | | | ● | ● | ○ | | | | |
| 6G | ● | | DIN 371 | ● | | | ● | ● | ○ | | | | |
| 6H | ● | | DIN 376 | ● | | | ● | ● | ○ | | | | |
| - | ● | | DIN 5156 | ● | | | ● | ● | ○ | | | | |
| 2B | ● | | DIN 374 | ● | | | ● | ● | ○ | | | | |
| 2B | ● | | DIN 371/376 | ● | | | ● | ● | ○ | | | | |
| 2B | ● | | DIN 371/376 | ● | | | ● | ● | ○ | | | | |
| 6H | ● | | DIN 371 | ● | | | ● | ○ | | | ● | | ● |
| 6H | ● | | DIN 371 | ● | | | ● | ○ | | | ● | | ● |
| 6HX | ● | | DIN 371 | ● | | | ● | ○ | | | ● | | ● |
| 6HX | ● | | DIN 376 | ● | | | ● | ○ | | | ● | | ● |
| 6HX | ● | | DIN 374 | ● | | | ● | ○ | | | ● | | ● |
| - | ● | | DIN 5156 | ○ | | | ● | ○ | ○ | ○ | ● | | ● |
| 6H | ● | | DIN 371 | ● | | | | | ● | | ● | | ● |

THREAD LINE INDEX

Índice de machos

| Code. | Picture | Description | Page | Form | Thread Style | Range | Coat. |
|---------|---|--|------|------|--------------|------------|-----------|
| 44.0046 |  | MACHINE TAP FOR ALUMINIUM HSS-E | 195 | B | M | 12 - 20 | BRIGHT |
| 43.2810 |  | HIGH PERFORMANCE MACHINE TAP HSS-E-PM | 196 | C | M | 5 - 10 | SHARK |
| 43.2816 |  | HIGH PERFORMANCE MACHINE TAP HSS-E-PM | 196 | C | M | 10 - 14 | SHARK |
| 43.2117 |  | HIGH PERFORMANCE MACHINE TAP HSS-E-PM | 197 | C | MF | 5 - 16 | SHARK |
| 46.4040 |  | HIGH PERFORMANCE MACHINE TAP HSS-E-PM | 198 | B | M | 3 - 10 | SHARK |
| 46.4046 |  | HIGH PERFORMANCE MACHINE TAP HSS-E-PM | 199 | B | M | 12 - 16 | SHARK |
| 43.2010 |  | HIGH PERFORMANCE MACHINE TAP HSS-E-PM | 200 | D | M | 3 - 16 | SHARK |
| 47.9010 |  | SC MACHINE TAP HARDENED STEELS | 201 | D | M | 3 - 16 | SHARK |
| 40.1060 |  | UNIVERSAL MACHINE TAP HSS-E | 202 | C | M | 3 - 10 | BLACK HVA |
| 40.1066 |  | UNIVERSAL MACHINE TAP HSS-E | 203 | C | M | 12 - 24 | BLACK HVA |
| 40.1050 |  | UNIVERSAL MACHINE TAP HSS-E | 204 | E | M | 3 - 10 | BLACK HVA |
| 40.1660 |  | UNIVERSAL MACHINE TAP HSS-E TOLERANCE 6G | 205 | C | M | 3 - 10 | BLACK HVA |
| 40.1160 |  | UNIVERSAL MACHINE TAP HSS-E | 206 | C | MF | 4 - 20 | BLACK HVA |
| 40.1260 |  | UNIVERSAL MACHINE TAP HSS-E | 207 | C | GAS BSP | 1/8 - 1" | BLACK HVA |
| 40.1360 |  | UNIVERSAL MACHINE TAP HSS-E | 208 | C | UNF SAE | 4 - 5/8 | BLACK HVA |
| 40.1460 |  | UNIVERSAL MACHINE TAP HSS-E | 209 | C | UNC | 4 - 3/8 | BLACK HVA |
| 40.1466 |  | UNIVERSAL MACHINE TAP HSS-E | 209 | C | UNC | 7/16 - 3/4 | BLACK HVA |
| 40.7068 |  | UNIVERSAL MACHINE TAP LONG HSS-E | 210 | C | M | 3 - 20 | TIN Up |
| 40.7060 |  | UNIVERSAL MACHINE TAP HSS-E | 212 | C | M | 2 - 10 | TIN Up |

● First choice ○ Suitable

| Tolerance | Through Hole | Blind Hole | Norm | 600 1200 N/mm ² | HRC | | Stainless M | Cast Iron K | Non Ferrous N | Super Alloy S | HSC | HHC | HPC |
|-----------|--------------|------------|-------------|----------------------------------|-------|-------|----------------|----------------|------------------|------------------|--------------------|-------------------|--------------------------|
| | | | | | 42-54 | 48-63 | | | | | High Speed Cutting | High Hard Cutting | High Performance Cutting |
| 6H | ● | | DIN 376 | | | | | | ● | | ● | | |
| 6HX | ● | ● | DIN 376 | ● | | | | ● | ○ | | | ● | |
| 6HX | ● | ● | DIN 371 | ● | | | | ● | ○ | | | ● | |
| 6HX | ● | ● | DIN 374 | ● | | | | ● | ○ | | | ● | |
| 6HX | ● | | DIN 371 | | | ○ | | | | ● | | ● | |
| 6HX | ● | | DIN 376 | | | ○ | | | | ● | | ● | |
| 6HX | ● | ● | DIN 371/376 | | ● | | | | | | ● | ● | |
| 6H | ● | ● | DIN 371 | | ○ | ● | | | | | ● | ● | |
| 6H | ○ | ● | DIN 371 | ● | | | ● | ● | ○ | | | | |
| 6H | ○ | ● | DIN 376 | ● | | | ● | ● | ○ | | | | |
| 6H | ○ | ● | DIN 371 | ● | | | ● | ● | ○ | | | | |
| 6G | ○ | ● | DIN 371 | ● | | | ● | ● | ○ | | | | |
| 6H | ○ | ● | DIN 374 | ● | | | ● | ● | ○ | | | | |
| - | ○ | ● | DIN 5156 | ● | | | ● | ● | ○ | | | | |
| 2B | ○ | ● | DIN 374 | ● | | | ● | ● | ○ | | | | |
| 2B | ○ | ● | DIN 371/376 | ● | | | ● | ● | ○ | | | | |
| 2B | ○ | ● | DIN 371/376 | ● | | | ● | ● | ○ | | | | |
| 6HX | ○ | ● | HELION | ● | | | ● | ● | | | | | |
| 6H | ○ | ● | DIN 371 | ● | | | ● | ● | | | | | |

THREAD LINE INDEX

Índice de machos

| Code. | Picture | Description | Page | Form | Thread Style | Range | Coat. |
|---------|---|--|------|------|--------------|-----------|--------|
| 40.7066 |  | UNIVERSAL MACHINE TAP HSS-E | 213 | C | M | 12 - 24 | TIN Up |
| 41.6050 |  | UNIVERSAL MACHINE TAP PERFORMANCE HSS-E-PM | 214 | C | M | 3 - 10 | TIN Up |
| 41.6056 |  | UNIVERSAL MACHINE TAP PERFORMANCE HSS-E-PM | 214 | C | M | 12 - 20 | TIN Up |
| 45.4060 |  | HIGH PERFORMANCE MACHINE TAP HSS-E | 215 | C | M | 2 - 10 | RACER |
| 45.4066 |  | HIGH PERFORMANCE MACHINE TAP HSS-E | 215 | C | M | 12 - 30 | RACER |
| 45.4164 |  | HIGH PERFORMANCE MACHINE TAP HSS-E | 216 | C | MF | 6 - 24 | RACER |
| 45.3265 |  | HIGH PERFORMANCE MACHINE TAP HSS-E | 217 | C | GAS BSP | 1/16 - 1" | RACER |
| 44.0060 |  | MACHINE TAP FOR ALUMINIUM HSS-E | 218 | C | M | 3 - 10 | BRIGHT |
| 44.0066 |  | MACHINE TAP FOR ALUMINIUM HSS-E | 219 | C | M | 12 - 20 | BRIGHT |
| 46.4070 |  | HIGH PERFORMANCE MACHINE TAP HSS-E-PM | 220 | C | M | 3 - 10 | SHARK |
| 46.4076 |  | HIGH PERFORMANCE MACHINE TAP HSS-E-PM | 220 | C | M | 12 - 16 | SHARK |

● First choice ○ Suitable

| Tolerance | Through Hole  | Blind Hole  | Norm | 600 1200 N/mm² | HRC | | Stainless M | Cast Iron K | Non Ferrous N | Super Alloy S | HSC | HHC | HPC |
|-----------|---|---|----------|----------------------|-------|-------|----------------|----------------|------------------|------------------|--------------------|-------------------|--------------------------|
| | | | | | 42-54 | 48-63 | | | | | High Speed Cutting | High Hard Cutting | High Performance Cutting |
| 6HX | ○ | ● | DIN 376 | ● | | | ● | ● | | | | | |
| 6H | ○ | ● | DIN 371 | ● | | | ● | ● | | | | | |
| 6H | ○ | ● | DIN 371 | ● | | | ● | ● | | | | | |
| 6HX | ○ | ● | DIN 371 | ○ | | | ● | ○ | ○ | ○ | ● | | ● |
| 6HX | ○ | ● | DIN 376 | ○ | | | ● | ○ | ○ | ○ | ● | | ● |
| 6HX | ○ | ● | DIN 374 | ○ | | | ● | ○ | ○ | ○ | ● | | ● |
| 6HX | ○ | ● | DIN 5156 | ○ | | | ● | ○ | ○ | ○ | ● | | ● |
| 6H | ○ | ● | DIN 371 | | | | | | ● | | | | |
| 6H | ○ | ● | DIN 376 | | | | | | ● | | | | |
| 6HX | ○ | ● | DIN 371 | | | | ○ | | | ● | | | ● |
| 6HX | ○ | ● | DIN 376 | | | | ○ | | | ● | | | ● |

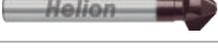
REAM LINE INDEX

Índice de escariadores

| | Code. | Picture | Description | Page | Ø Range (mm) | Tol. | Tech. | Shape | Coat. | 600 1200 N/mm ² | HRC 55 | Stainless M | Cast Iron K | Non Ferrous N |
|-----|---------|---|--|------|---------------|------|-------|-------|--------|----------------------------------|-----------|----------------|----------------|------------------|
| SC | 28.1202 |  | SOLID CARBIDE CNC MACHINE REAMER | 223 | 03 - 12 | H7 | UNI | 45° | BRIGHT | | ● | ○ | ● | ○ |
| | 29.1502 |  | SOLID CARBIDE CNC MACHINE REAMER | 224 | 0,98 12,05 | - | UNI | 45° | BRIGHT | ● | ● | ○ | ● | ○ |
| HSS | 25.0200 |  | HSS-E CNC MACHINE REAMER | 226 | 3,80 - 20 | H7 | UNI | 45° | BRIGHT | ● | | ○ | ● | ○ |
| | 25.1500 |  | MACHINE REAMER GAMMON HSS | 228 | 4 - 20 | H7 | UNI | 45° | BRIGHT | ● | | ○ | ● | ● |

COUNT LINE INDEX

Índice de avellanadores

| | Code. | Picture | Description | Page | Ø Range (mm) | Point angle | Coat. | 600 1200 N/mm ² | Stainless M | Cast Iron K | Non Ferrous N | Super Alloy S |
|-----|-------------|---|---|------|---|-------------|-----------|----------------------------------|----------------|----------------|------------------|------------------|
| SC | 20.6390 |  | HIGH PERFORMANCE COUNTERSINK 90° SC | 231 | 4,3 - 25 | 90° | RACER | ● | ● | ● | | |
| HSS | 21.0300 |  | COUNTERSINKER 90° HSS | 232 | 6,30 - 31 | 90° | BRIGHT | ● | ● | ● | ● | |
| | 21.2300 |  | COUNTERSINKER 90° HSS | 233 | 6,30 - 31 | 90° | RACER | ● | ● | ● | ○ | ● |
| | 21.7100 |  | COUNTERSINKER 180° FINE GUIDE TOL. HSS | 234 | M3 - M12 | 180° | TIN UP | ● | ● | ● | ○ | ● |
| | BOX 2100 |  | SET BOX 6 PCS. COUNTERSINK 90° HSS | 235 | 6,30 - 8,30 10,40 - 12,40 16,50 - 20,50 | 90° | BRIGHT | ● | ● | ● | ● | |
| | BOX 2123 |  | SET BOX 6 PCS. COUNTERSINK 90° HSS | 236 | 6,30 - 8,30 10,40 - 12,40 16,50 - 20,50 | 90° | RACER | ● | ● | ● | ○ | ● |

● First choice ○ Suitable

Implementing safety processes for perfect **PRODUCTION** series and **QUALITY**



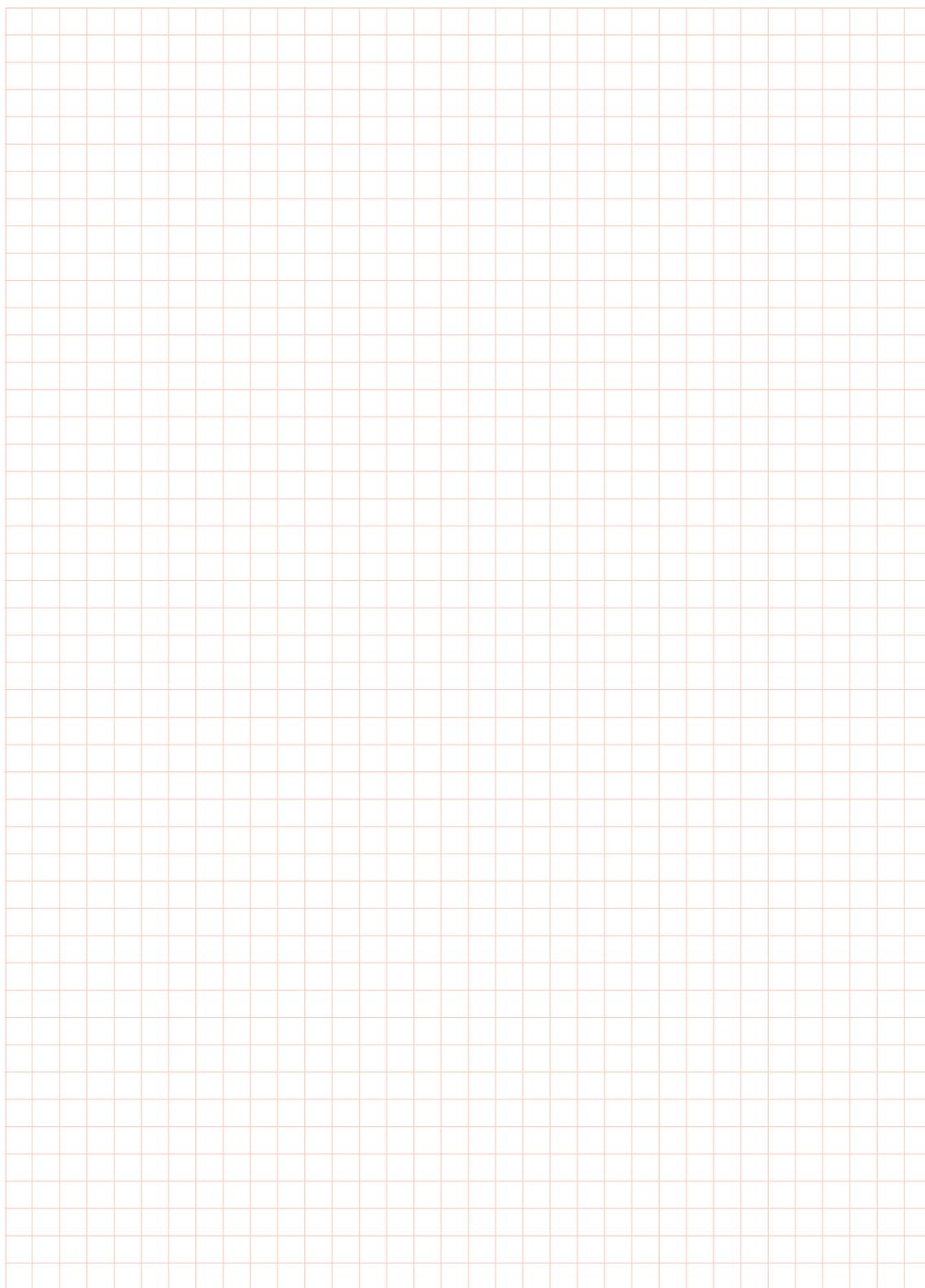
Use our **online store** and
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Helion Tools Coatings

Recubrimiento de herramientas Helion Tools

| COATING <i>Recubrimiento</i> | HARDNESS <i>Dureza (HV)</i> | FRICTION COEFFICIENT <i>C. Fricción</i> | THICKNESS <i>Espesor (µm)</i> | OXIDATION RESISTANCE <i>T. Oxidación °C</i> | COATING MATERIAL BASIS <i>Base del material de recubrimiento</i> |
|---------------------------------|--|--|----------------------------------|--|---|
| Racer | 3500 | 0,5 | 3+ - 1 | 900°C | TiAlN |
| Racer Plus | 3500 | 0,4 | 3+ - 1 | 1000°C | AlTiN NANO |
| Volcano | 3400 | 0,4 | 3+ - 1 | 1100° | AlCrTiN |
| Volcano Plus | 3700 | 0,3 | 4,5+ - 1 | 1200°C | AlTiN |
| Volcano Gold | 3700 | 0,3 | 4,5+ - 1 | 1200°C | AlTiN / TiN Gold |
| Deep Blue | 3600 | 0,5 | 3+ - 1 | 900° | AlTiN / TiSiN |
| Speed | 2500 | 0,5 | 3+ - 1 | 700° | ZrN |
| Speed Zr | 2900 | 0,6 | 2+ - 0,7 | 950° | AlTiN / ZrN |
| Drillant | 3100 | 0,5 | 3,5+ - 0,8 | 790°C | TiN - TiAlN |
| TiN UP | 2400 | 0,3 | 3+ - 0,7 | 600°C | TiN |
| DSC | 3300 | 0,3 | 3+ - 0,6 | 1100°C | AlTiN / CW2 |
| Shark | 3000 | 0,25 | 3+ - 0,7 | 750°C | TiCN |
| TaC | 5000~8000 | 0.01~0.1 | 0.3~10 | 600°C | ta-C |
| Diamond | 10000 | - | 4+ - 0,5 | 900°C | Diamond |
| Bright | Without coating / Sin recubrimiento | | | | |
| Black HVA | Coating technology: CVD Chemical Vapour Deposition | | | | |



SALES TERM

Condiciones de venta

Payment • Pago

Payment shall be made in accordance with terms and conditions notified to the buyer. In case of non-payment / outstanding payment on the agreed date, we will apply the legal 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.*

Transfer of property • Reserva de dominio

The property of the goods does not pass to the buyer until it has been fully paid. The Company reserves the right to repossess any goods in which payment is overdue and the buyer shall cooperate in the event of the Company notifying its intentions of repossess the goods. *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 30 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 30 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 must be done through: - *La reclamación deberá realizarse a través de:*

Logistics Division • Departamento de logística

- logistics@helion-tools.com +34 93 877 08 69

Comercial Division • Departamento comercial

- ventas@helion-tools.com +34 93 877 08 69

Export Division • Departamento exportación

- export@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. *Helion Tools 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.*

*** Material will only be accepted in the following case:** - *Solo se aceptará devolución de material en los siguientes casos:*

a) The return of non-defective goods, as a rule, will not be accepted. However, in special situations and as an exception, the return will be accepted with previous conformity of HELION TOOLS and always with prior check of the goods. In these cases, there will be a surcharge of 15% applied of the value of the goods as management and administration expenses.

The transportation costs 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) Defective material at the moment of reception of goods: If the material is defective from origin, it must be informed to Helion Tools and once a return number is assigned, it will be dispatched to HELION TOOLS with its original packaging. No returns will be accepted without the comply of these specifications: original packaging and unused material. *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 go together with the invoice or delivery note.** *Toda devolución debe ir acompañada de la factura o albarán de compra.*

Delivery • Entrega

Once the purchase order is received we proceed with the production process to supply the order in the shortest time 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.*

Warranty • Garantía

The warranty of all our products will be established by HELION TOOLS. There is no warranty 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 neither damages and their consequences, nor losses due to 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 the 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.*

ORDERS | PEDIDOSEShop | *Tienda en línea*

www.helion.tools/shop

APP IOS / APP ANDROID

Phone | *Teléfono* +34 93 877 08 69

Email: ventas@helion-tools.com

export@helion-tools.com

CUSTOMER SERVICES | SERVICIO AL CLIENTEPhone | *Teléfono* +34 93 877 08 69

Email: info@helion-tools.com

TECHNICAL QUESTIONS | CONSULTA TÉCNICAPhone | *Teléfono* +34 93 877 08 69

Email: technical@helion-tools.com

DELIVERY CONDITIONS FOR PRODUCTS IN STOCK OUTSIDE SPAIN

For deliveries outside Spain, shipping costs will be charged taking into account the weight. Cost derived from customs and tariffs aren't included.

For European deliveries, these are shipped either within 24-48 hours by Express Shipment or 3-4 days by Standard Delivery. For the rest of the world, goods are delivered in 3 days by Express Shipment.

Helion Tools has established a Business Relationship with the transport company UPS for international shipments. However, there exists the possibility that customer organizes the shipment with the company of his/her choice when selecting the "To be agreed" option when purchasing through our e-shop.

DELIVERIES WITHIN SPAIN

Available products that are purchased through our e-shop within labor days and only before 17.30h, will be delivered the next labor day.

RETURN DELIVERIES – CLAIMS

At the end of this printed catalogue and in our webpage, you will be able to find the corresponding information. We appreciate that in cases of claims, use solely our models for a proper and correct incident handling. If the reason for returning all or part of an order is not due to an error on the part of Helion Tools, 15% of the total import will be charged. In case of special manufactured product, right of return will be excluded.

CONDICIONES DE ENTREGA PARA PRODUCTOS EN STOCK FUERA DE ESPAÑA

En el caso de envíos al extranjero los portes se facturarán teniendo en cuenta el peso y no se incluyen costos asociados al pago de aranceles.

En Europa las entregas se realizan en 24 – 48hr mediante envío exprés o 3 – 4 días envío estándar. Para el resto del mundo la entrega se realiza en 3 días mediante envío exprés.

Helion Tools dispone de un acuerdo con la empresa de transportes UPS para los envíos internacionales, no obstante, es posible que el cliente se haga cargo del envío con su empresa de confianza al seleccionar "To be agreed" al finalizar la orden de compra en la tienda online.

ENVÍOS DENTRO DE ESPAÑA

Los productos disponibles que se solicitan a través de nuestra tienda online en días laborables y antes de las 17:30hr se entregarán al día siguiente laborable.

DEVOLUCIONES – RECLAMACIONES

Al final de este catálogo impreso y en nuestra página web podrá encontrar la información correspondiente. Agradecemos en caso de reclamaciones usar únicamente nuestros modelos para la gestión correcta de la incidencia. Si el motivo de devolución total o parcial de un pedido no es debido a un error por parte de Helion Tools, se cargará el 15% del valor. En caso de fabricación de productos especiales queda excluido el derecho a devolución.



IMPORTANT INFORMATION FOR THE MANAGEMENT OF YOUR PURCHASE ORDERS

Información
importante para
la gestión de sus
órdenes de pedido



WORKING FOR YOUR
SUCCESS SINCE 1952
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