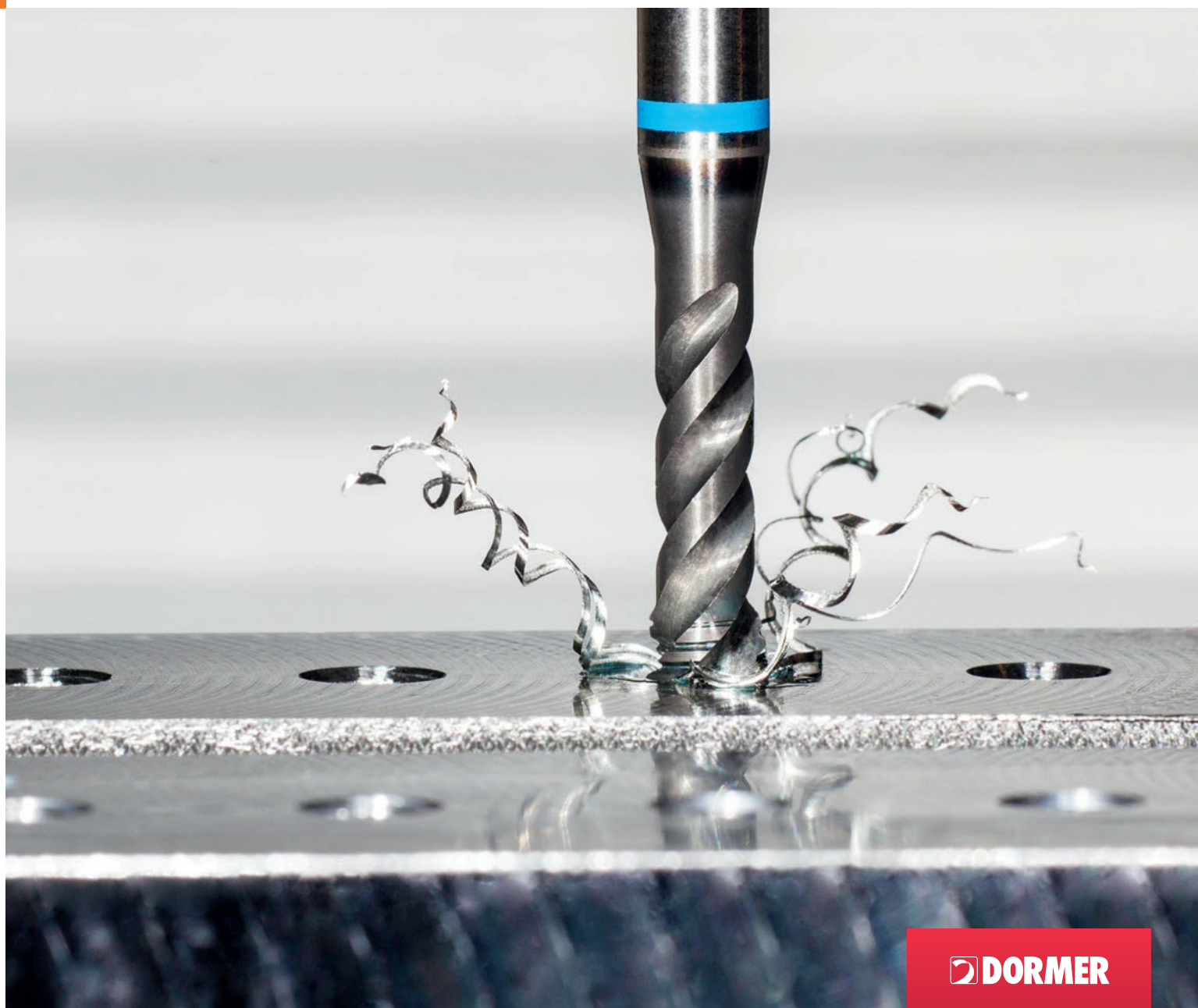


DORMER  PRAMET

THREADING

2021 – 2022



 DORMER



THREADING – GENERAL CONTENT

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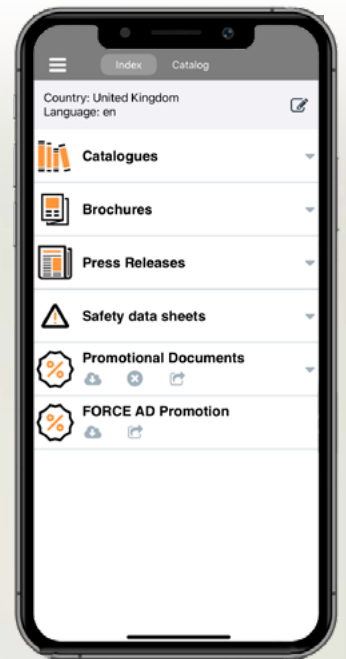
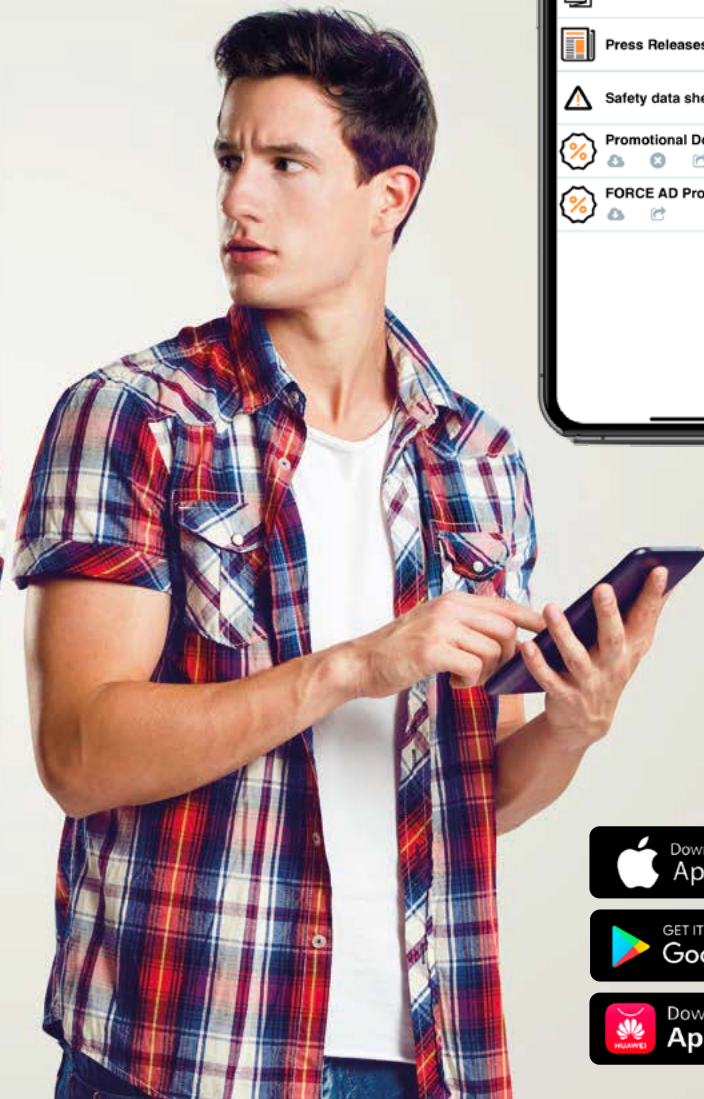


DORMER PRAMET



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| PRODUCT FAMILY | | PRODUCT FAMILY | | PRODUCT FAMILY | | PRODUCT FAMILY | |
|----------------|-----|----------------|-----|----------------|-----|----------------|-----|
| E | | E282 | 186 | E605 | 116 | F150 | 255 |
| E000 | 96 | E286 | 169 | E606 | 99 | F170 | 256 |
| E000TIN | 97 | E287 | 156 | E610 | 91 | F180 | 257 |
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| E266 | 101 | E547 | 187 | F110 | 251 | T210 | 21 |
| E268 | 127 | E550 | 197 | F120 | 252 | T215 | 24 |
| E275 | 146 | E570 | 170 | F130 | 253 | | |
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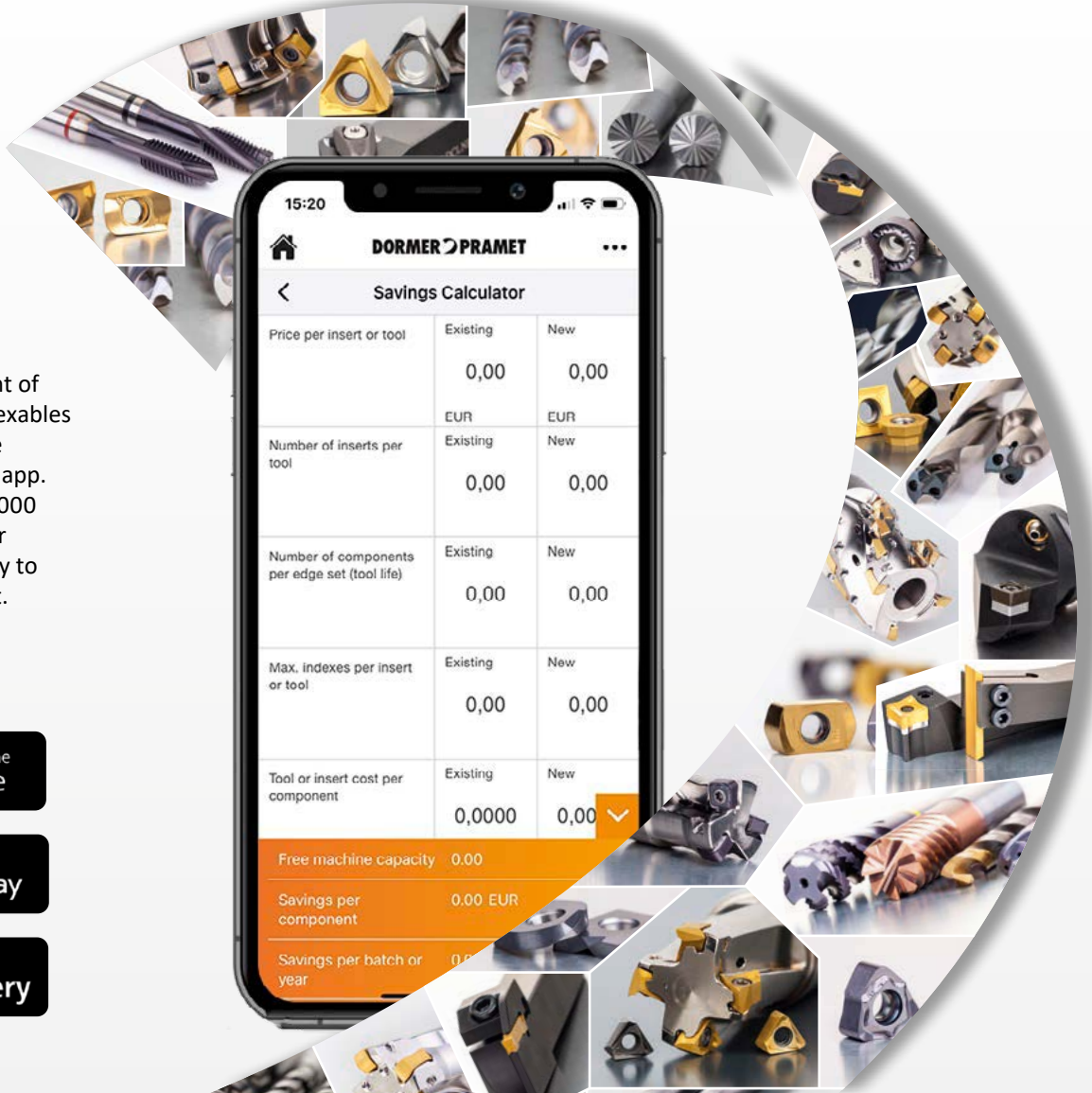


DORMER PRAMET



ALL TOOLS TOGETHER

Our entire assortment of rounds tools and indexables is included within the machining calculator app. That's more than 40,000 items! Whatever your machining we're likely to have something for it.
Simply Reliable.



| DORMER PRAMET | | |
|---|--------------------|-------------|
| Savings Calculator | | |
| Price per insert or tool | Existing 0,00 | New 0,00 |
| | EUR | EUR |
| Number of inserts per tool | Existing 0,00 | New 0,00 |
| Number of components per edge set (tool life) | Existing 0,00 | New 0,00 |
| Max. indexes per insert or tool | Existing 0,00 | New 0,00 |
| Tool or insert cost per component | Existing 0,0000 | New 0,00 |
| Free machine capacity | 0.00 | |
| Savings per component | 0.00 EUR | |
| Savings per batch or year | 0.00 | |





THREADING – GENERAL CONTENT

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WORKPIECE MATERIAL GROUPS (WMG)

ISO To select a cutting grade and geometry for a broad range of workpiece materials

General definition
i.e. Steel, Stainless Steel...

P **M** **K** **N** **S** **H**

Subgroup To navigate and select a tool by suitability for a more specific range of workpiece materials

Definition by structure/composition
i.e. Plain Carbon Steel, Alloy Steel...

P **M** **K** **N** **S** **H**

P1

P2

P3

P4

WMG To select and provide cutting conditions within a bandwidth of $\pm 10\%$

Definition by hardness/ultimate tensile strength
i.e. $160 < 220$ HB, $620 < 900$ N/mm² ...

P

P1 **P1.1** **P1.2** **P1.3**

P2 **P2.1** **P2.2** **P2.3**

P3 **P3.1** **P3.2** **P3.3**

P4 **P4.1** **P4.2** **P4.3**

ABOUT DORMER PRAMET'S WORKPIECE MATERIAL CLASSIFICATION

Workpiece **Material Groups (WMG)** are used to support easy and reliable selection of the right cutting tool and starting values for machining conditions in particular applications.

Dormer Pramet classifies workpiece materials into six different coloured groups;

- **Blue:** Steel and cast steel (P-group)
- **Yellow:** Stainless steel (M-group)
- **Red:** Cast iron (K-group)
- **Green:** Non-ferrous metals (N-group)
- **Brown:** High-temperature alloys (S-group)
- **Grey:** Hardened materials (H-group)

Each of these are divided into subgroups on the basis of their structure and/or composition. For example, P-group steel and cast steel is split into four subgroups, namely;

- **P1** – Free machining steel
- **P2** – Plain carbon steel
- **P3** – Alloy steel
- **P4** – Tool steel

A final division includes material properties, such as hardness and ultimate tensile strength. This is to provide our customers with a complete tool recommendation, including starting values for cutting speed and feed.

The table on the next page includes a description of each workpiece material group, as well as examples of commonly used designations.



WMG (WORK MATERIAL GROUP)

| ISO group | WMG (Work Material Group) | Hardness (HB or HRC) | Ultimate Tensile Strength (MPa) | | | |
|--------------|---------------------------|---|--|------------------------------------|---------------|--------------|
| P | P1 | P1.1 | Sulfurized | < 240 HB | ≤ 830 | |
| | | P1.2 | Free machining steel | Sulfurized and phosphorized | < 180 HB | ≤ 620 |
| | | P1.3 | (carbon steels with increased machinability) | Sulfurized/phosphorized and leaded | < 180 HB | ≤ 620 |
| | P2 | P2.1 | Plain carbon steel (steels comprised of mainly iron and carbon) | Containing <0.25 % C | < 180 HB | ≤ 620 |
| | | P2.2 | | Containing <0.55 % C | < 240 HB | ≤ 830 |
| | | P2.3 | | Containing >0.55 % C | < 300 HB | ≤ 1030 |
| | P3 | P3.1 | Alloy steel (carbon steels with an alloying content ≤ 10%) | Annealed | < 180 HB | ≤ 620 |
| | | P3.2 | | Hardened and tempered | 180 – 260 HB | > 620 ≤ 900 |
| | | P3.3 | | | 260 – 360 HB | > 900 ≤ 1240 |
| | P4 | P4.1 | Tool steel (special alloy steel for tools, dies and molds) | Annealed | < 26 HRC | ≤ 900 |
| P4.2 | | Hardened and tempered | | 26 – 39 HRC | > 900 ≤ 1240 | |
| P4.3 | | | | 39 – 45 HRC | > 1240 ≤ 1450 | |
| M | M1 | M1.1 | Ferritic stainless steel (straight chromium non-hardenable alloys) | < 160 HB | ≤ 520 | |
| | | | | 160 – 220 HB | > 520 ≤ 700 | |
| | M2 | M2.1 | Martensitic stainless steel (straight chromium hardenable alloys) | Annealed | < 200 HB | ≤ 670 |
| | | | | Quenched and tempered | 200 – 280 HB | > 670 ≤ 950 |
| | | | | Precipitation-hardened | 280 – 380 HB | > 950 ≤ 1300 |
| | M3 | M3.1 | Austenitic stainless steel (chromium-nickel and chromium-nickel-manganese alloys) | < 200 HB | ≤ 750 | |
| | | | | 200 – 260 HB | > 750 ≤ 870 | |
| | | | | 260 – 300 HB | > 870 ≤ 1040 | |
| | M4 | M4.1 | Austenitic-ferritic (DUPLEX) or super-austenitic stainless steel | < 300 HB | ≤ 990 | |
| | | M4.2 | Precipitation hardening austenitic stainless steel | 300 – 380 HB | ≤ 1320 | |
| K | K1 | K1.1 | Gray iron or Automotive Gray iron (GG) (iron-carbon castings with a lamellar graphite microstructure) | Ferritic or ferritic-pearlitic | < 180 HB | ≤ 190 |
| | | | | Ferritic-pearlitic or pearlitic | 180 – 240 HB | > 190 ≤ 310 |
| | | | | Pearlitic | 240 – 280 HB | > 310 ≤ 390 |
| | K2 | K2.1 | Malleable iron (GTS/GTW) (iron-carbon castings with a graphite-free microstructure) | Ferritic | < 160 HB | ≤ 400 |
| | | | | Ferritic or pearlitic | 160 – 200 HB | > 400 ≤ 550 |
| | | | | Pearlitic | 200 – 240 HB | > 550 ≤ 660 |
| | K3 | K3.1 | Ductile iron (GGG) (iron-carbon castings with a nodular graphite microstructure) | Ferritic | < 180 HB | ≤ 560 |
| | | | | Ferritic or pearlitic | 180 – 220 HB | > 560 ≤ 680 |
| | | | | Pearlitic | 220 – 260 HB | > 680 ≤ 800 |
| | K4 | K4.1 | Austenitic gray iron (ASTM A436) (iron-carbon alloy castings with an austenitic lamellar graphite microstructure) | < 180 HB | ≤ 190 | |
| | | | | < 240 HB | ≤ 740 | |
| | | K4.2 | Austenitic ductile iron (ASTM A439 or ASTM A571) (iron-carbon alloy castings with an austenitic nodular graphite microstructure) | < 280 HB | > 840 ≤ 980 | |
| | | | | 280 – 320 HB | > 980 ≤ 1130 | |
| 320 – 360 HB | | | | > 1130 ≤ 1280 | | |
| K5 | K5.1 | Compacted graphite iron CGI (ASTM A842) (iron-carbon castings with a vermicular graphite structure) | Ferritic | < 180 HB | ≤ 400 | |
| | | | Ferritic-pearlitic | 180 – 220 HB | > 400 ≤ 450 | |
| | | | Pearlitic | 220 – 260 HB | > 450 ≤ 500 | |
| N | N1 | N1.1 | Commercially pure wrought aluminium | < 60 HB | ≤ 240 | |
| | | | | 60 – 100 HB | > 240 ≤ 400 | |
| | | | | 100 – 150 HB | > 400 ≤ 590 | |
| | N2 | N2.1 | Wrought aluminium alloys | Half hard tempered | < 75 HB | ≤ 240 |
| | | | | Full hard tempered | 75 – 90 HB | > 240 ≤ 270 |
| | | | | 90 – 140 HB | > 270 ≤ 440 | |
| | N3 | N3.1 | Free-cutting copper-alloys materials with excellent machining properties | – | – | |
| | | | | – | – | |
| | | | | – | – | |
| | N4 | N4.1 | Short-chip copper-alloys with good to moderate machining properties | – | – | |
| | | | | – | – | |
| | | | | – | – | |
| | N5 | N5.1 | Electrolytic copper and long-chip copper-alloys with moderate to poor machining properties | – | – | |
| – | | | | – | | |
| – | | | | – | | |
| S | S1 | S1.1 | Thermoplastic polymers | – | – | |
| | | | | – | – | |
| | | | | – | – | |
| | S2 | S2.1 | Thermosetting polymers | – | – | |
| | | | | – | – | |
| | | | | – | – | |
| | S3 | S3.1 | Reinforced polymers or composites | – | – | |
| | | | | – | – | |
| | | | | – | – | |
| | S4 | S4.1 | Graphite | – | – | |
| | | | | – | – | |
| | | | | – | – | |
| H | S1 | S1.1 | Titanium or titanium alloys | < 200 HB | ≤ 660 | |
| | | | | 200 – 280 HB | > 660 ≤ 950 | |
| | | | | 280 – 360 HB | > 950 ≤ 1200 | |
| | S2 | S2.1 | Fe-based high-temperature alloys | < 200 HB | ≤ 690 | |
| | | | | 200 – 280 HB | > 690 ≤ 970 | |
| | | | | < 280 HB | ≤ 940 | |
| S3 | S3.1 | Ni-based high-temperature alloys | 280 – 360 HB | > 940 ≤ 1200 | | |
| | | | < 240 HB | ≤ 800 | | |
| | | | 240 – 320 HB | > 800 ≤ 1070 | | |
| H | H1 | H1.1 | Chilled cast iron | < 440 HB | – | |
| | | | | < 55 HRC | – | |
| | H2 | H2.1 | Hardened cast iron | > 55 HRC | – | |
| | | | | < 51 HRC | – | |
| H3 | H3.1 | Hardened steel <55 HRC | 51 – 55 HRC | – | | |
| | | | 55 – 59 HRC | – | | |
| H4 | H4.1 | Hardened steel >55 HRC | > 59 HRC | – | | |
| | | | – | – | | |

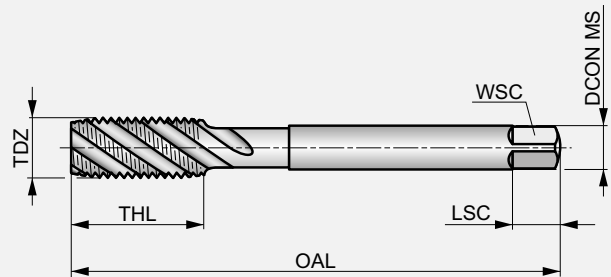
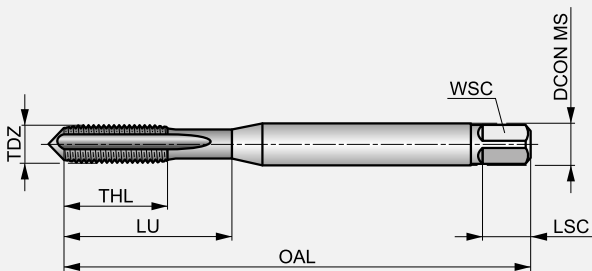


CUTTING TOOL PARAMETERS ACCORDING TO ISO 13399

All cutting tools are defined by a number of parameters according to the standard ISO 13399. This list contains all the parameters used in this catalogue and their definitions.

ISO 13399 is an international cutting tool information standard. It provides dimensions and parameters in a neutral format that is independent of any particular system or company nomenclature. When cutting tools are clearly defined according to a global standard, all types of software can process the electronic data more quickly, improving the quality of communication and helping to make the exchange of information run smoothly. Supporting a common language in our cutting tool descriptions this will assist system to system communication. It will save you a significant amount of time, providing an easier gathering of high-quality data across our 40,000 solid and indexable tools. By using an ISO 13399 compliant system, there will be no need to manually interpret data and key-enter it into your system.

EXAMPLES ONLY!



| ISO 13399 | Description |
|--------------------|---------------------------|
| BD | Body diameter |
| DCON MS | Connection diameter |
| DRVS | Drive size |
| LDP | Drill part length |
| LSC | Clamping length |
| LU | Usable Length |
| NOF | Flute count |
| OAL | Overall length |
| PHD | Premachined hole diameter |
| PRAT_HEADER | Description |

| ISO 13399 | Description |
|-------------|------------------------|
| TCL | Tap chamfer length |
| TD | Thread diameter |
| TDZ | Thread diameter size |
| THL | Threading length |
| TP | Thread pitch |
| TPI | Threads per inch |
| WSC | Clamping width |
| WSCN | Clamping width minimum |
| WSCX | Clamping width maximum |



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COMMENT



TAG



RE-TWEET





**SOLID CARBIDE,
MATERIAL SPECIFIC & HSS TAPS**





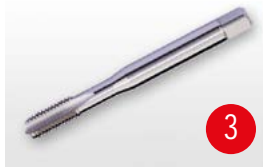
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SOLID CARBIDE TAPS – HSS TAPS – PAGE OVERVIEW

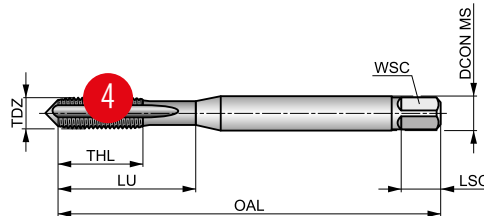
1 E200



HSS-E-PM Straight Flute Machine Tap, Metric, DIN371 Standard, Bright Finish

The straight flute design makes it suitable for both through and blind holes whilst the bright finish means workpiece material will not stick to the cutting edge, so giving you a more accurate finish on the thread. Suitable for a wide range of materials.

| | | |
|----------------|----------|----|
| M | DIN 371 | 6H |
| 1.5xD | HSS-E PM | |
| A 6-8 C 2-3 | R | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 |
| ■11 | ■12 | ■12 | ■9 | ■8 | ■7 | ■7 | ■6 | ■4 | ■13 | ■10 | ■8 | ■14 | ■11 |
| K3.1 | K3.2 | K4.1 | K4.2 | K5.1 | K5.2 | N1.3 | N2.1 | N2.2 | N2.3 | N3.1 | N3.2 | N4.2 | |
| ■12 | ■9 | ■12 | ■9 | ■12 | ■10 | ■12 | ■15 | ■14 | ■11 | ■21 | ■14 | ■8 | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|------|------|-------|------|---------|------|------|-----|------|-------|
| | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E200M2 | 2 | 0.40 | 45.0 | 6 | 2.80 | 2.10 | 5 | 3 | 1.60 | 9.00 |
| E200M2.5 | 2.5 | 0.45 | 50.0 | 8 | 2.80 | 2.10 | 5 | 3 | 2.05 | 12.50 |
| E200M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E200M3N01 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E200M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E200M4N01 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E200M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E200M5N01 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E200M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E200M6N01 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E200M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E200M8N01 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E200M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E200M10N01 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |

| Pos. | Description |
|------|---------------------------|
| 1 | Designation of taps |
| 2 | Product description |
| 3 | Illustrative picture |
| 4 | Schematic drawing of tool |

| Pos. | Description |
|------|--|
| 5 | Product features |
| 6 | Material group recommendations incl. speed and feed guidance |
| 7 | Product code |
| 8 | Product dimensions |

Typical page with tap holder displayed – specific page details will differ.



SOLID CARBIDE TAPS – HSS TAPS – ICONS OVERVIEW

General icons

| | | | |
|--|-------------|--|--------------|
| | Primary use | | Possible use |
|--|-------------|--|--------------|

Basic standard group (BSG)

| | | |
|---------------------------------------|---------------------------------|---|
| ANSI B94.9 – Tap Standard | DIN 352 – Thread Form Standard | DIN 5157 – Pipe Thread Standard |
| ANSI – Tap Standard | DIN 357 – Nut Tap Standard | DIN DORMER Standard |
| ANSI Dormer Standard | DIN 371 – Thread Form Standard | DIN Thread Standard (based on size range) DIN 371 if $\varnothing \leq 10\text{mm}$ / DIN 376 if $\varnothing \geq 12\text{mm}$ |
| DIN 2174 – Forming Tap Standard | DIN 374 – MF Thread Standard | ISO 2283 – Long Shank Tap Standard |
| DIN 2181 – Hand Tap Standard | DIN 376 – Thread Form Standard | ISO 2284 – Pipe Tap Standard |
| DIN 2184-1 – Tap Standard | DIN 40432 – PG Thread Standard | ISO 529 – Tap Standard |
| DIN 351 – Straight Flute Tap Standard | DIN 5156 – Thread Form Standard | ISO Dormer Standard |

Material code (BMC)

| | |
|----------|--|
| HSS-E PM | High Speed Cobalt Powder Metal Tool Material |
| HSS-E | High Speed Cobalt Steel Tool Material |
| HSS | High Speed Steel Tool Material |
| HM | Hard Material (Solid Carbide) |

Coating

| | | | |
|-----------|--|-----------|---|
| Bright | Bright (uncoated) | TiAlN Top | Titanium Aluminium Nitride Coating (with smoothing process) |
| Bright ST | Combination Bright and Steam Tempered | TiAlN | Titanium Aluminium Nitride Coating |
| Cr | Flash Chrome (Hard Chrome) Plating | TiN | Titanium Nitride Coating |
| Super B | Special TiAlN Coating (+ WC/C) | TiCN | Titanium Carbon Nitride Coating |
| ST | Steam Tempered (Steam Oxide) Surface Treatment | | |

Coolant exit style code (CXSC)

| | |
|--|------------------------------------|
| | Through Tool Coolant – Radial Exit |
| | Through Tool Coolant – Axial Exit |

Flute helix angle (FHA)

| | | | |
|-------|-------------------------|-------|-------------------------|
| λ 15° | 15° Helix Angle (Flute) | λ 40° | 40° Helix Angle (Flute) |
| λ 27° | 27° Helix Angle (Flute) | λ 45° | 45° Helix Angle (Flute) |
| λ 30° | 30° Helix Angle (Flute) | λ 48° | 48° Helix Angle (Flute) |
| λ 35° | 35° Helix Angle (Flute) | | |



SOLID CARBIDE TAPS – HSS TAPS – ICONS OVERVIEW

Flute Geometry (FDC)

| | |
|--|--------------------------------------|
| | Fluteless Geometry (Threadforming) |
| | Oil Grooves Geometry (Threadforming) |
| | Spiral Flute Geometry |

| | |
|--|-------------------------|
| | Spiral Point Geometry |
| | Straight Flute Geometry |

Hand (Cutting direction)

| | |
|--|-------------------------------|
| | Left Hand Rotation / Cutting |
| | Right Hand Rotation / Cutting |

Tap chamfer style (TCS)

| | |
|-------------------|---|
| E 1.5-2 | Full Bottoming Tap Chamfer (1.5-2 Pitch Lead) |
| B 3.5-5 | Plug Tap Chamfer (3.5-5 Pitch Lead) |

| | |
|-------------------|---|
| C 2-3 | Semi-Bottoming Tap Chamfer (2-3 Pitch Lead) |
| C 2-3.5 | Semi-Bottoming Tap Chamfer (2-3.5 Pitch Lead) |

| | |
|--------------------------------------|--|
| A 6-8 C 2-3 | Tap Chamfers; A = Taper (6-8 Pitch Lead) & C = Semi-Bottoming (2-3 Pitch Lead) |
| C 2-3 D 18-20 | Tap Chamfers; C = Semi-Bottoming (2-3 Pitch Lead) & D = Nut Style (18-20 Pitch Lead) |

Thread form type (THFT)

| | |
|-------------|---|
| NPSF | Thread Form, American National Pipe Straight Fuel (Dryseal) |
| NPSM | Thread Form, American National Pipe Straight Mechanical |
| NPT | Thread Form, American National Pipe Taper |
| NPTF | Thread Form, American National Pipe Taper Fuel (Dryseal) |
| BA | Thread Form, British Association Screw Threads |
| BSF | Thread Form, British Standard Fine |

| | |
|------------|---|
| G | Thread Form, British Standard Pipe (BSP) |
| Rc | Thread Form, British Standard Taper Pipe, 1:16 Taper (BSPT) |
| BSW | Thread Form, British Standard Whitworth |
| M | Thread Form, Metric Coarse |
| MF | Thread Form, Metric Fine |
| EGM | Thread Form, Metric ISO (Screw Thread Insert Type) |

| | |
|------------|---|
| PG | Thread Form, Steel Conduit DIN 40430 (electrical) |
| UNC | Thread Form, Unified Coarse |
| UNF | Thread Form, Unified Fine |
| UN | Thread Form, Unified National |

Thread Tolerance Zone class (TCTR)

| | |
|------------|--|
| 6H | DIN Thread Pitch Diameter Tolerance Zone (high basic pitch diameter) |
| 6G | DIN Thread Pitch Diameter Tolerance Zone (low basic pitch diameter) |
| 6HX | DIN Thread Pitch Diameter Tolerance Zone (with increased pitch diameter) |

| | |
|------------|--|
| 6GX | DIN Thread Pitch Diameter Tolerance Zone (with increased pitch diameter) |
| 2B | Internal Inch Thread Medium Class of Fit |
| 2BX | Internal Inch Thread Medium Class of Fit (with increased pitch diameter) |

| | |
|--------|----------------------------------|
| Medium | Medium Inch Thread Class of Fit |
| Normal | Normal Fit Class for Pipe Thread |

Threading application

| | |
|--|-----------------------------------|
| | Blind Hole Application |
| | Through Hole Application |
| | Through or Blind Hole Application |

Usable length diameter ratio (ULDR)

| | |
|--------------|---|
| 1.5xD | 1.5xD Usable Tool Depth to Diameter Ratio |
| 2.5xD | 2.5xD Usable Tool Depth to Diameter Ratio |
| 2xD | 2xD Usable Tool Depth to Diameter Ratio |

| | |
|--------------|---|
| 3.5xD | 3.5xD Usable Tool Depth to Diameter Ratio |
| 3xD | 3xD Usable Tool Depth to Diameter Ratio |




SOLID CARBIDE TAPS




SOLID CARBIDE TAPS – TOOL MATERIAL NAVIGATOR



Carbide materials

| | | |
|--|---|--|
| Carbide Materials (or Hard Materials) |  | <p>A sintered powder metallurgy substrate, consisting of a metallic carbide composite with binder metal. The most central raw material is tungsten carbide (WC). Tungsten carbide contributes to the hardness of the material. Tantalum carbide (TaC), titanium carbide (TiC) and niobium carbide (NbC) complements WC and adjusts the properties to what is desired. These three materials are called cubic carbides. Cobalt (Co) acts as a binder and keeps the material together.</p> <p>Carbide materials are often characterised by high compression strength, high hardness and therefore high wear resistance, but also by limited flexural strength and toughness. Carbide is used in taps, reamers, milling cutters, drills and thread milling cutters.</p> |
|--|---|--|

Surface Treatments

| | | |
|--------------------------|---|---|
| Bright (uncoated) |  | Bright finish (uncoated surface) improves chip flow in soft or non-ferrous materials and maintains sharp cutting edges in abrasive materials. |
|--------------------------|---|---|

Surface Coatings

| | | |
|---|---|---|
| Titanium Carbon Nitride Coating (TiCN) |  | Titanium Carbon Nitride is a ceramic coating applied by PVD coating technology. TiCN is harder than TiN and has a lower coefficient of friction. Its hardness and toughness in combination with good wear resistance ensures that it finds its principal application in the field of milling to enhance the performance of milling cutters. |
| Super-B Coating (TiAlN/WC/C) |  | Super B is a Titanium Aluminium Nitride + Tungsten Carbide + Carbon Coating used for wet and minimal lubrication machining in drilling, milling and tapping applications. Very effective for cast iron, hardened steels and heat resistant super alloys. |



DORMER PRAMET



ALWAYS CONNECT

No wifi or internet connection? The machining calculator works perfectly even when you are offline, making sure it's always available when you need it. **Simply Reliable.**





| Thread form (THFT) | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|-------------|-------------|-------------|---------------|---------------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Basic standard group (BSG) | DIN 371/376 | DIN 371/376 | DIN 371 | DIN 371/376 | DIN 371/376 | DIN 2174 | | | | | | | | | | | | | | | |
| Thread tolerance class (TCTR) | 6H | 6HX | 6HX | 6H | 6H | 6HX | | | | | | | | | | | | | | | |
| Threading application | | | | | | | | | | | | | | | | | | | | | |
| Usable length (ULDR) | 2xD | 2.5xD | 2xD | 2xD | 2.5xD | 3xD | | | | | | | | | | | | | | | |
| Material code (BMC) | HM | HM | HM | HM | HM | HM | | | | | | | | | | | | | | | |
| Tap chamfer style (TCS) | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3.5 | | | | | | | | | | | | | | | |
| Flute Geometry (FDC) | | | | | | | | | | | | | | | | | | | | | |
| Flute helix angle (FHA) | | | | λ 15° | λ 15° | | | | | | | | | | | | | | | | |
| Hand (Cutting direction) | | | | | | | | | | | | | | | | | | | | | |
| Coating | TiCN | Super B | TiCN | Bright | Bright | TiCN | | | | | | | | | | | | | | | |
| Coolant exit style (CXSC) | | | | | | | | | | | | | | | | | | | | | |
| Product Family Code | T200 | T201 | T210 | T205 | T206 | T215 | | | | | | | | | | | | | | | |
| | M3 - M12 | M5 - M16 | M3 - M12 | M3 - M12 | M5 - M12 | M3 - M10 | | | | | | | | | | | | | | | |
| | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | | | | | | | |
| P | P1 | | | | | ■ | | | | | | | | | | | | | | | |
| | P2 | | | | | ■ | | | | | | | | | | | | | | | |
| | P3 | | | | | ■ | | | | | | | | | | | | | | | |
| | P4 | | | | | ■ | | | | | | | | | | | | | | | |
| M | M1 | | | | | ■ | | | | | | | | | | | | | | | |
| | M2 | | | | | ■ | | | | | | | | | | | | | | | |
| | M3 | | | | | ■ | | | | | | | | | | | | | | | |
| | M4 | | | | | ▣ | | | | | | | | | | | | | | | |
| K | K1 | ▣ | ■ | | ▣ | ▣ | | | | | | | | | | | | | | | |
| | K2 | | ▣ | | ■ | ■ | | | | | | | | | | | | | | | |
| | K3 | | ▣ | | ■ | ■ | | | | | | | | | | | | | | | |
| | K4 | | ▣ | | ■ | ■ | | | | | | | | | | | | | | | |
| | K5 | | ▣ | | ■ | ■ | | | | | | | | | | | | | | | |
| N | N1 | | | | | ■ | | | | | | | | | | | | | | | |
| | N2 | | ▣ | | ■ | ■ | | | | | | | | | | | | | | | |
| | N3 | | | | | ■ | | | | | | | | | | | | | | | |
| | N4 | ▣ | ▣ | | ▣ | ▣ | | | | | | | | | | | | | | | |
| | N5 | | | | | | | | | | | | | | | | | | | | |
| S | S1 | | | | | | | | | | | | | | | | | | | | |
| | S2 | | | | | | | | | | | | | | | | | | | | |
| | S3 | | | | | | | | | | | | | | | | | | | | |
| | S4 | | | | | | | | | | | | | | | | | | | | |
| H | H1 | ■ | | ▣ | | | | | | | | | | | | | | | | | |
| | H2 | ▣ | | ▣ | | | | | | | | | | | | | | | | | |
| | H3 | ■ | | ▣ | | | | | | | | | | | | | | | | | |
| | H4 | ▣ | | ■ | | | | | | | | | | | | | | | | | |

■ Primary use ▣ Possible use



T200

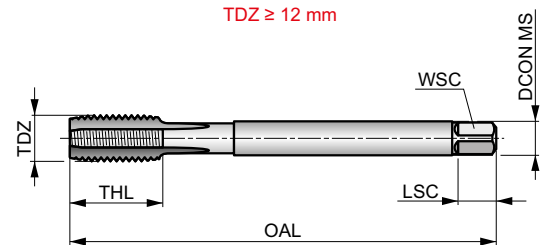
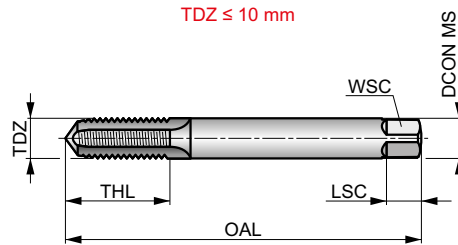


Carbide Straight Flute Machine Tap, Metric, with TiCN Coating, DIN Standard

Superior performance and great tool life at high speeds. Suitable for machine tapping in tool steels, high silicon aluminium and other hardened and abrasive materials. The straight flute design makes the taps ideal for threading both through and blind holes. TiCN coated to improve performance and extend tool life.



| | | |
|--|-------------|----|
| | DIN 371/376 | 6H |
| | 2xD | HM |
| | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| K1.1 ▣60 | K1.2 ▣44 | K1.3 ▣33 | N2.3 ▣60 | N3.2 ▣7 | N4.2 ▣50 | N4.3 ▣30 | H1.1 ■11 | H2.1 ■7 | H2.2 ▣5 | H3.1 ■7 | H3.2 ■6 | H4.1 ▣4 | H4.2 ▣3 |
|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------------|-----|------|-------|-----|---------|------|-----|-----|-------|-------|
| | | | | | | | | | | |
| T200M3 ¹⁾ | 3 | 0.50 | 56.0 | 10 | 3.50 | 2.70 | 6 | 3 | 2.60 | – |
| T200M4 ¹⁾ | 4 | 0.70 | 63.0 | 13 | 4.50 | 3.40 | 6 | 3 | 3.40 | – |
| T200M5 ¹⁾ | 5 | 0.80 | 70.0 | 16 | 6.00 | 4.90 | 8 | 3 | 4.30 | – |
| T200M6 | 6 | 1.00 | 80.0 | 19 | 6.00 | 4.90 | 8 | 3 | 5.10 | 30.00 |
| T200M8 | 8 | 1.25 | 90.0 | 22 | 8.00 | 6.20 | 9 | 3 | 6.90 | 35.00 |
| T200M10 | 10 | 1.50 | 100.0 | 24 | 10.00 | 8.00 | 11 | 3 | 8.70 | 39.00 |
| T200M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.40 | – |

¹⁾ Without neck.



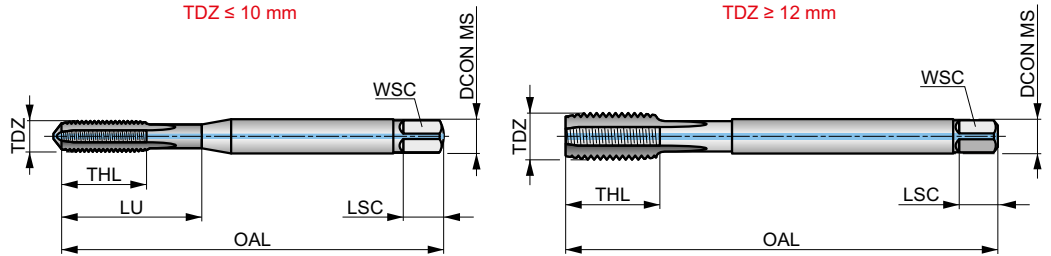
T201



Carbide Straight Flute Machine Tap with Coolant Feed, Metric, DIN Standard

Suitable for machine tapping in abrasive materials, such as cast iron and high silicon aluminium. It has a straight flute design with coolant feed, for efficient threading of blind holes. Super-B coated to improve performance and extend the tool life.

| | | |
|--|-------------|-----|
| | DIN 371/376 | 6HX |
| | 2.5xD | HM |
| | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| K1.1 ■ 60 | K1.2 ■ 44 | K1.3 ■ 33 | K2.1 ▣ 47 | K2.2 ▣ 38 | K2.3 ▣ 30 | K3.1 ▣ 41 | K3.2 ▣ 32 | K3.3 ▣ 26 | K4.1 ▣ 38 | K4.2 ▣ 29 | K4.3 ▣ 21 | K4.4 ▣ 18 | K4.5 ▣ 15 |
| K5.1 ▣ 43 | K5.2 ▣ 33 | K5.3 ▣ 25 | N2.2 ▣ 50 | N2.3 ■ 40 | N3.2 ▣ 10 | N4.2 ▣ 25 | N4.3 ▣ 15 | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------------|-----|------|-------|------|---------|------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| T201M5 ¹⁾ | 5 | 0.80 | 70.0 | 16 | 6.00 | 4.90 | 8 | 4 | 4.30 | – |
| T201M6 | 6 | 1.00 | 80.0 | 19 | 6.00 | 4.90 | 8 | 4 | 5.10 | 30.00 |
| T201M8 | 8 | 1.25 | 90.0 | 22 | 8.00 | 6.20 | 9 | 4 | 6.90 | 35.00 |
| T201M10 | 10 | 1.50 | 100.0 | 24 | 10.00 | 8.00 | 11 | 4 | 8.70 | 39.00 |
| T201M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 4 | 10.40 | – |
| T201M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 4 | 14.25 | – |

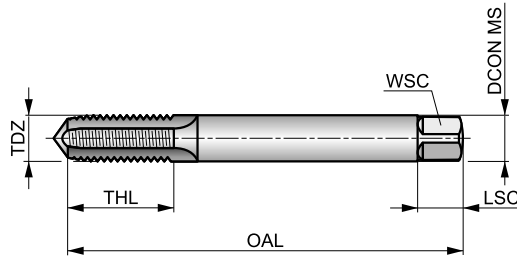
¹⁾ Without neck.



T210

Carbide Straight Flute Machine Tap, Metric, DIN Standard

Superior performance and great tool life at high speeds. Suitable for machine tapping of hardened steel. The straight flute design makes the taps ideal for threading both through and blind holes. TiCN coated to improve performance and extend the tool life.



| | | |
|-------|---------|-----|
| M | DIN 371 | 6HX |
| 2xD | | HM |
| C 2-3 | R | |
| TiCN | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | |
|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| H1.1 ▣11 | H2.1 ▣7 | H2.2 ■5 | H3.1 ▣7 | H3.2 ▣6 | H4.1 ■4 | H4.2 ■3 |
|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|-----------------------|-----|------|-------|------|---------|------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| T210M3 ¹⁾ | 3 | 0.50 | 56.0 | 8 | 3.50 | 2.70 | 6 | 4 | 2.60 |
| T210M4 ¹⁾ | 4 | 0.70 | 63.0 | 11 | 4.50 | 3.40 | 6 | 5 | 3.40 |
| T210M5 ¹⁾ | 5 | 0.80 | 70.0 | 13.5 | 6.00 | 4.90 | 8 | 5 | 4.30 |
| T210M6 ¹⁾ | 6 | 1.00 | 80.0 | 16.5 | 6.00 | 4.90 | 8 | 5 | 5.10 |
| T210M8 ¹⁾ | 8 | 1.25 | 90.0 | 21.5 | 8.00 | 6.20 | 9 | 5 | 6.90 |
| T210M10 ¹⁾ | 10 | 1.50 | 100.0 | 27 | 10.00 | 8.00 | 11 | 5 | 8.70 |
| T210M12 ¹⁾ | 12 | 1.75 | 110.0 | 32 | 12.00 | 9.00 | 12 | 6 | 10.40 |

¹⁾ Without neck.

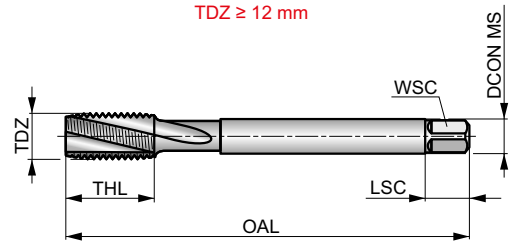
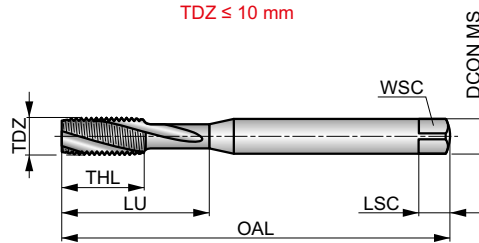
T205



Carbide 15° Spiral Flute Machine Tap, Metric, DIN Standard

Suitable for machine tapping in abrasive materials, such as cast iron and high silicon aluminium, making them a very versatile choice. The 15° spiral flute makes it great for threading holes which do not go all the way through the workpiece (blind holes). The bright finish ensures a clean and accurate result.

| | | |
|-----------------|----------------|----------|
| M | DIN 371/376 | 6H |
| | 2×D | HM |
| C 2-3 | | λ 15° |
| R | Bright | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| K1.1 ■ 40 | K1.2 ■ 30 | K1.3 ■ 22 | K2.1 ■ 31 | K2.2 ■ 25 | K2.3 ■ 20 | K3.1 ■ 27 | K3.2 ■ 21 | K3.3 ■ 17 | K4.1 ■ 25 | K4.2 ■ 19 | K4.3 ■ 14 | K4.4 ■ 12 | K4.5 ■ 10 |
| K5.1 ■ 29 | K5.2 ■ 21 | K5.3 ■ 17 | N2.1 ■ 54 | N2.2 ■ 48 | N2.3 ■ 35 | N4.2 ■ 25 | N4.3 ■ 15 | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------------|-----|------|-------|------|---------|------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| T205M3 ¹⁾ | 3 | 0.50 | 56.0 | 10 | 3.50 | 2.70 | 6 | 3 | 2.60 | – |
| T205M4 ¹⁾ | 4 | 0.70 | 63.0 | 13 | 4.50 | 3.40 | 6 | 3 | 3.40 | – |
| T205M5 ¹⁾ | 5 | 0.80 | 70.0 | 16 | 6.00 | 4.90 | 8 | 3 | 4.30 | – |
| T205M6 | 6 | 1.00 | 80.0 | 19 | 6.00 | 4.90 | 8 | 3 | 5.10 | 30.00 |
| T205M8 | 8 | 1.25 | 90.0 | 22 | 8.00 | 6.20 | 9 | 3 | 6.90 | 35.00 |
| T205M10 | 10 | 1.50 | 100.0 | 24 | 10.00 | 8.00 | 11 | 3 | 8.70 | 39.00 |
| T205M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.40 | – |

¹⁾ Without neck.



T206

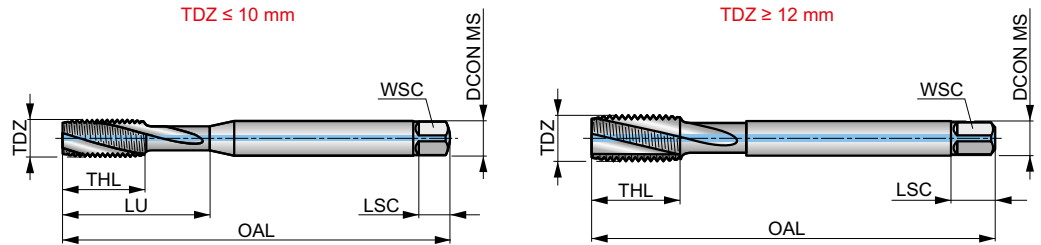


Carbide 15° Spiral Flute Machine Tap, Coolant Feed, Metric, DIN Standard

Premium carbide tap which provides superior performance, coupled with longer tool life. It can be used to machine tap in abrasive materials, such as cast iron and high silicon aluminium. The 15° spiral flute, makes it ideal for threading holes which do not go all the way through the workpiece (blind holes). Bright finish.



| | | |
|-----------------|----------------|----------|
| M | DIN 371/376 | 6H |
| | 2.5×D | HM |
| C 2-3 | | λ 15° |
| R | Bright | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| K1.1 ■40 | K1.2 ■30 | K1.3 ■22 | K2.1 ■31 | K2.2 ■25 | K2.3 ■20 | K3.1 ■27 | K3.2 ■21 | K3.3 ■17 | K4.1 ■25 | K4.2 ■19 | K4.3 ■14 | K4.4 ■12 | K4.5 ■10 |
| K5.1 ■29 | K5.2 ■21 | K5.3 ■17 | N2.1 ■54 | N2.2 ■48 | N2.3 ■35 | N4.2 ■25 | N4.3 ■15 | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------------|-----|------|-------|-----|---------|------|-----|-----|-------|-------|
| | | | | | | | | | | |
| T206M5 ¹⁾ | 5 | 0.80 | 70.0 | 16 | 6.00 | 4.90 | 8 | 3 | 4.30 | – |
| T206M6 | 6 | 1.00 | 80.0 | 19 | 6.00 | 4.90 | 8 | 3 | 5.10 | 30.00 |
| T206M8 | 8 | 1.25 | 90.0 | 22 | 8.00 | 6.20 | 9 | 3 | 6.90 | 35.00 |
| T206M10 | 10 | 1.50 | 100.0 | 24 | 10.00 | 8.00 | 11 | 3 | 8.70 | 39.00 |
| T206M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.40 | – |

¹⁾ Without neck.

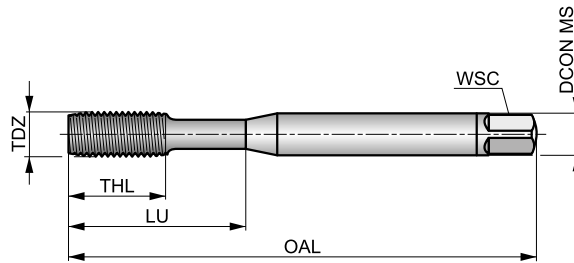


T215



Carbide Thread Forming Tap, Metric, DIN Standard

Forming tap for blind and through holes. Provides a strong, clean, chip free and accurate thread with excellent tolerance. The carbide material gives high process security and excellent tool life when forming threads in mild to medium strength steels, medium strength stainless steel and non-ferrous materials. TiCN coated.



| | | |
|---------|----------|-----|
| | DIN 2174 | 6HX |
| | 3xD | HM |
| C 2-3.5 | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 60 | P1.2 ■ 68 | P1.3 ■ 68 | P2.1 ■ 68 | P2.2 ■ 60 | P2.3 ■ 45 | P3.1 ■ 44 | P3.2 ■ 36 | P3.3 ■ 30 | P4.1 ■ 26 | P4.2 ■ 22 | M1.1 ■ 34 | M1.2 ■ 29 | M2.1 ■ 31 |
| M2.2 ■ 25 | M2.3 ■ 21 | M3.1 ■ 29 | M3.2 ■ 25 | M3.3 ■ 23 | M4.1 ■ 25 | M4.2 ■ 22 | N1.1 ■ 70 | N1.2 ■ 53 | N1.3 ■ 35 | N2.1 ■ 98 | N2.2 ■ 98 | N2.3 ■ 80 | N3.1 ■ 50 |
| N3.2 ■ 50 | N3.3 ■ 38 | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------------|-----|------|-------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| T215M3 ¹⁾ | 3 | 0.50 | 56.0 | 10 | 3.50 | 2.70 | 6 | 4 | 2.80 | – |
| T215M4 ¹⁾ | 4 | 0.70 | 63.0 | 13 | 4.50 | 3.40 | 6 | 5 | 3.70 | – |
| T215M5 ¹⁾ | 5 | 0.80 | 70.0 | 16 | 6.00 | 4.90 | 8 | 5 | 4.60 | – |
| T215M6 | 6 | 1.00 | 80.0 | 19 | 6.00 | 4.90 | 8 | 5 | 5.50 | 30.00 |
| T215M8 | 8 | 1.25 | 90.0 | 22 | 8.00 | 6.20 | 9 | 5 | 7.40 | 35.00 |
| T215M10 | 10 | 1.50 | 100.0 | 24 | 10.00 | 8.00 | 11 | 5 | 9.30 | 39.00 |

¹⁾ Without neck.



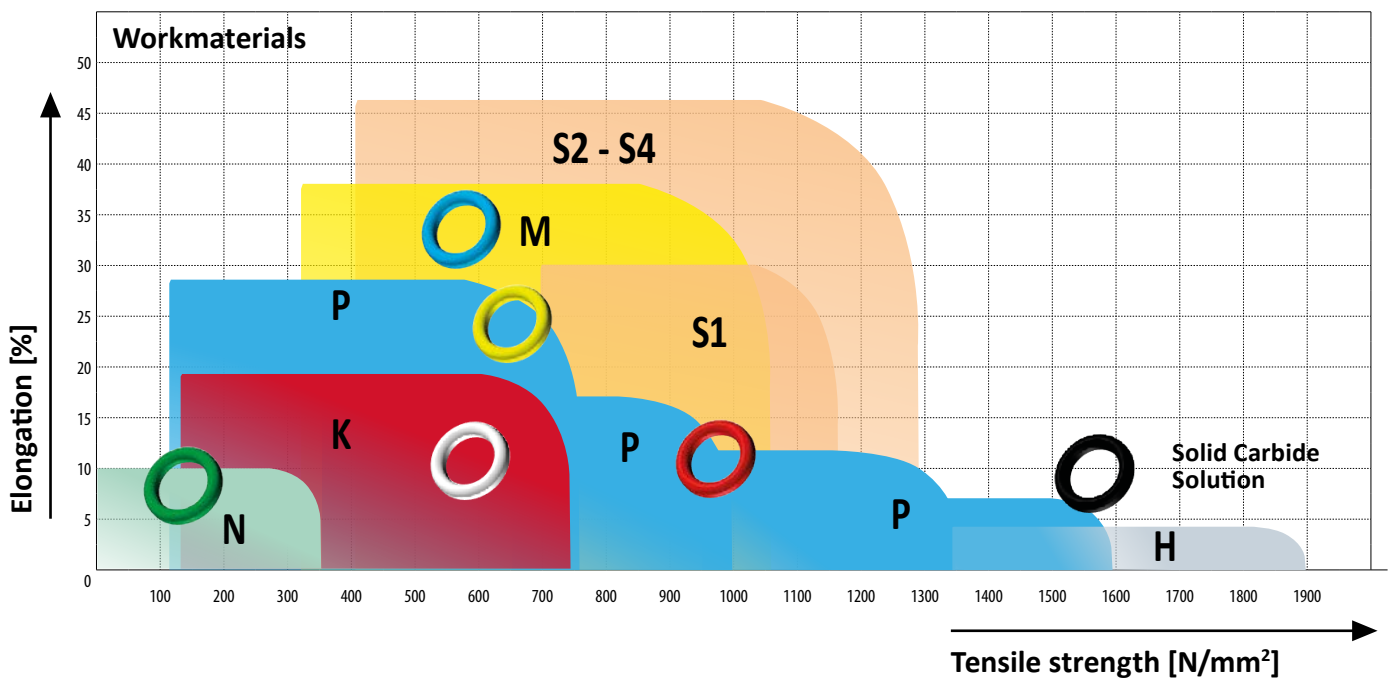
MATERIAL SPECIFIC TAPS



SHARK

MATERIAL SPECIFIC APPLICATION TAPS

Dormer's application-based ranges of DIN taps, branded Shark Line, are renowned for their high performance and are easily recognizable by their colored rings, denoting recommendation for use on specific materials.





SHARK

MATERIAL SPECIFIC APPLICATION TAPS

FEATURES AND BENEFITS

COLOUR RING CODING

- The colour ring on the tool shank identifies suitability for specific materials and enables **quick and easy tool selection**.

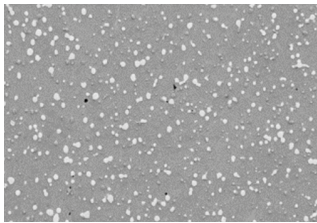
EDGE TREATMENT

(Black, Red, Yellow, Blue Shark)

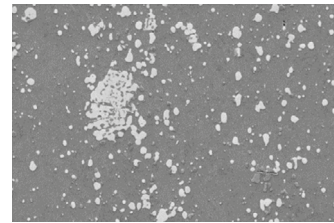
- Spiral flute taps incorporate a special edge treatment to increase strength and reduce the chance of micro-chipping on the cutting edges. This considerably improves **performance and tool life** as well as process security.

MATERIAL

Shark taps are manufactured from a unique powder metallurgy tool steel different from any other HSS-E-PM. This provides an unbeatable combination of toughness and edge strength, allowing the taps to perform at higher cutting temperatures while offering excellent performance and longer tool life.



Unique HSS-E-PM material used for **SHARK TAPS**
(note the evenly dispersed grain structure)



Traditional HSS-E (M35)
material





SHARK

MATERIAL SPECIFIC APPLICATION TAPS



STRUCTURAL, PLAIN CARBON & LOW ALLOY STEELS

YELLOW SHARK



• **SURFACE TREATMENT**

Hard chrome plating (Cr) with an additional edge treatment prevents built up edge when tapping in materials prone to sticking to the cutting edges.

• **FLUTE GEOMETRY**

Available in spiral point for through holes and spiral flute (40° angle) for blind holes. Special flute geometry on Yellow Shark spiral flute taps prevents nest formation of chips, reducing the risk of re-cutting chips on reversal.

• **THREAD FORMS**

Metric and Metric Fine

• **PRODUCT CODES**

E297, E298, E299, E300

YELLOW SHARK

3xD



• **SURFACE TREATMENT**

TiAlN-Top coating with an additional edge treatment.

• **FLUTE GEOMETRY**

Spiral flute angle of 48° facilitates smooth and fast chip evacuation, making it suitable for threading deep blind holes (3xD). The increased thread relief also enables higher cutting speeds in high strength steels.

• **CUTTING GEOMETRY**

The special three radii profile with a constant rake angle along the flute length leads to a better control of cutting properties and prevents nest formation of chips.

• **BACK TAPERED**

Back taper further facilitates chip evacuation, reducing chipping on the last threads of the taps and also reducing torque when the tap reverses.

• **TAPPING ATTACHMENT (RECOMMENDATION)**

When using 48° spiral flute Yellow Shark taps, it is recommended to use a tool holder with minimal float or soft start.

• **THREAD FORMS**

Metric

• **PRODUCT CODE**

E412

SHARK

MATERIAL SPECIFIC APPLICATION TAPS



STAINLESS STEELS

BLUE SHARK



- **SURFACE TREATMENT**
Steam-tempered or Super-B (TiAlN + WC/C) coated with an additional edge treatment.
- **FLUTE GEOMETRY**
Available in spiral point for through holes and spiral flute (40° angle) for blind holes.
- **BACK TAPERED**
Back taper on spiral flute taps further facilitates chip evacuation, reducing chipping on the last threads of the taps and also reducing torque when the tap reverses.
- **THREAD FORMS**
Metric, Metric Fine and G(BSP)
- **PRODUCT CODES**
E238, E239, E240, E241, E382, E383, E384

BLUE SHARK

3xD



- **SURFACE TREATMENT**
Super-B (TiAlN + WC/C) coating with an additional edge treatment.
- **FLUTE GEOMETRY**
Spiral flute angle of 48° facilitates smooth and fast chip evacuation, making it suitable for threading deep blind holes (3xD). The increased thread relief ensures process security when tapping resilient materials such as stainless steel.
- **CUTTING GEOMETRY**
The special three radii profile with a constant rake angle along the flute length leads to a better control of cutting properties and prevents nest formation of chips.
- **BACK TAPERED**
Back taper further facilitates chip evacuation, reducing chipping on the last threads of the taps and also reducing torque when the tap reverses.
- **TAPPING ATTACHMENT (RECOMMENDATION)**
When using 48° spiral flute Blue Shark taps, it is recommended to use a tool holder with minimal float or soft start.
- **THREAD FORMS**
Metric
- **PRODUCT CODE**
E414

SHARK

MATERIAL SPECIFIC APPLICATION TAPS



ALLOY STEELS

HIGH STRENGTH STEELS



- **SURFACE TREATMENT**
Bright or TiAlN-Top coated with an additional edge treatment.
- **FLUTE GEOMETRY**
Available in spiral point for through holes and spiral flute (45° angle) for blind holes.
- **BACK TAPERED**
Back taper on spiral flute taps further facilitates chip evacuation, reducing chipping on the last threads of the taps and also reducing torque when the tap reverses.
- **CUTTING GEOMETRY (SPIRAL FLUTE TAPS)**
The special three-radii profile with a constant rake angle along the flute length leads to better control of cutting properties and prevents nest formation of chips.
- **TAPPING ATTACHMENT (RECOMMENDATION)**
When using spiral flute Red Shark taps, it is recommended to use a tool holder with minimal float or soft start.
- **THREAD FORMS**
Metric
- **PRODUCT CODES**
E255, E256, E260, E261

- **SURFACE TREATMENT**
TiAlN-Top coating with an additional edge treatment.
- **FLUTE GEOMETRY**
Spiral point or low helix spiral flute geometries with low rake angle for good chip control and edge strength.
- **CUTTING GEOMETRY (SPIRAL FLUTE TAPS)**
The special three-radii profile with a constant rake angle along the flute length leads to better control of cutting properties and prevents nest formation of chips.
- **TAPPING ATTACHMENT (RECOMMENDATION)**
When using Black Shark taps, it is recommended to use synchronized (rigid) tapping.
- **THREAD FORMS**
Metric
- **PRODUCT CODES**
E334, E335

SHARK

MATERIAL SPECIFIC APPLICATION TAPS



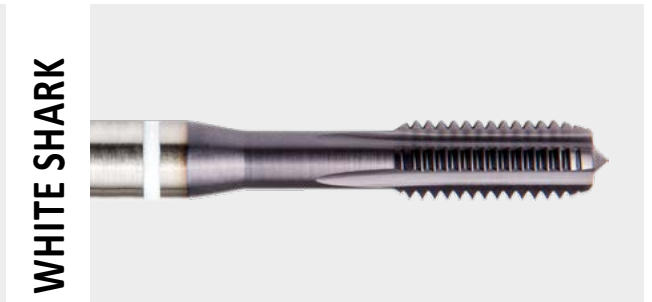
NON-FERROUS MATERIALS

CAST IRONS



GREEN SHARK

- **SURFACE TREATMENT**
Bright or Super-B (TiAlN + WC/C) coated.
- **FLUTE GEOMETRY**
Available in spiral point for through holes and spiral flute (35° angle) for blind holes.
- **CUTTING GEOMETRY (SPIRAL FLUTE TAPS)**
The special three radii profile with a constant rake angle along the flute length leads to a better control of cutting properties and prevents nest formation of chips.
- **THREAD FORMS**
Metric
- **PRODUCT CODES**
E471, E472, E473, E474




WHITE SHARK

- **SURFACE TREATMENT**
Steam-tempered or TiAlN-Top coated.
- **FLUTE GEOMETRY**
Straight flute design gives excellent performance when threading both through and blind holes in short chipping materials.
- **THREAD FORMS**
Metric
- **PRODUCT CODES**
E201, E252, E390





MATERIAL SPECIFIC TAPS – TOOL MATERIAL NAVIGATOR





Tool materials

| | | |
|---|---|---|
| Sintered Cobalt High Speed Steel |  | HSS-E-PM is a Cobalt High Speed Powder Metal substrate which has been produced using powder metal technology. High speed steel produced by this method exhibits superior toughness and grindability due to the uniform and consistent grain structure. High performance taps and end mills have a particular advantage when manufactured from this substrate. |
|---|---|---|

Surface Treatments

| | | |
|--------------------------|---|--|
| Bright (uncoated) |  | Bright finish (uncoated surface) improves chip flow in soft or non-ferrous materials and maintains sharp cutting edges in abrasive materials. |
| Steam Tempering |  | Steam tempering gives a strongly adhering blue oxide surface that acts to retain cutting fluid and prevent chip to tool welding, thereby counteracting the formation of a built-up edge. Steam tempering can be applied to any bright tool but is most effective on drills and taps. |

Surface Coatings

| | | |
|--|---|---|
| Titanium Aluminium Nitride Coatings (TiAlN & TiAlN-Top) |   | Titanium Aluminium Nitride is a multi layer ceramic coating applied by PVD coating technology, which exhibits high toughness and oxidation stability. These properties make it ideal for higher speeds and feeds, while at the same time improving tool life. TiAlN is used in drilling, tapping, and milling applications and can be suitable for use when machining without coolant. TiAlN-Top coating is the same as TiAlN but with a post-coating process designed to smooth out imperfections, enhance chip flow and reduce built up edge. |
| Super-B Coating (TiAlN/WC/C) |  | Super B is a Titanium Aluminium Nitride + Tungsten Carbide + Carbon Coating used for wet and minimal lubrication machining in drilling, milling and tapping applications. Very effective for cast iron, hardened steels and heat resistant super alloys. |
| Chromium Nitride Coating (CrN) |  | Hard chromium (Cr) for cutting tool applications provides excellent wear and abrasion resistance due to lowering the coefficient of friction. Only designed for machining soft and gummy materials to promote chip flow and to prevent workpiece materials from sticking to the tool. Hard chromium increases the surface hardness of the tool and is especially effective for tapping soft structural steels, copper and brass materials. |

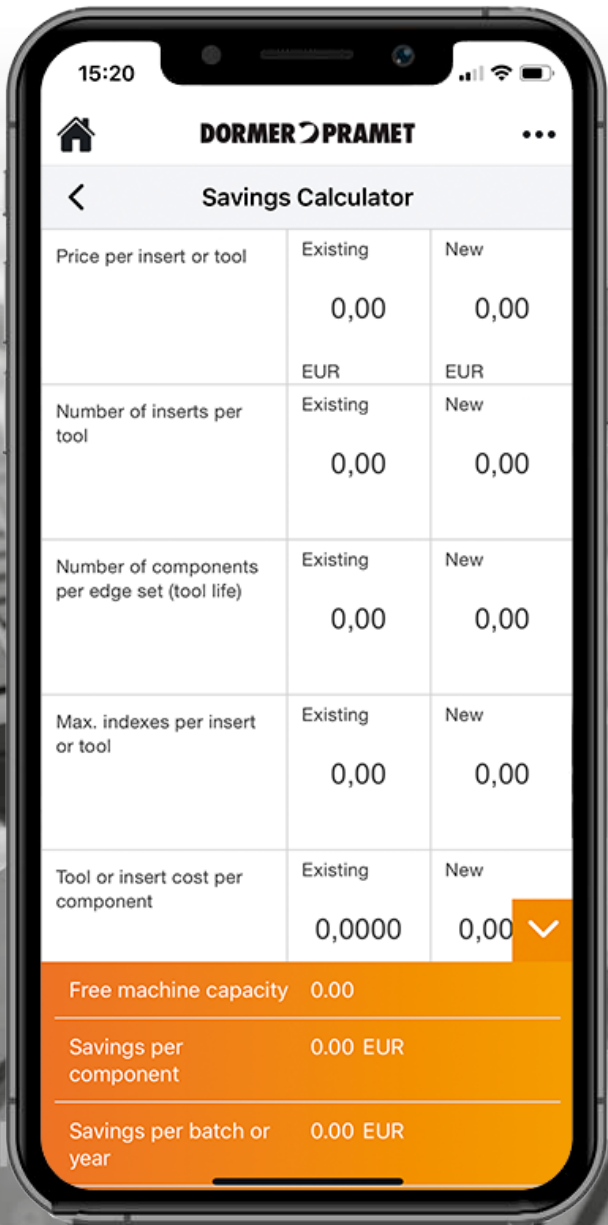


DORMER PRAMET



POCKET SAVER

Our machining calculator allows you to measure the savings based on different products and applications. A useful pocket-sized tool, which will help keep cash in your pockets! **Simply Reliable.**





| Thread form (THFT) | | | | | | | | | | | | | |
|-------------------------------|----------|----------|-------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|-------------|---------------|---------------|
| Basic standard group (BSG) | DIN 371 | DIN 376 | DIN 371/376 | DIN 371/376 | DIN 371/376 | DIN 371/376 | DIN DORNER | DIN 371/376 | DIN 371/376 | DIN 371/376 | DIN 371/376 | DIN 371/376 | DIN 371/376 |
| Thread tolerance class (TCTR) | 6HX | 6HX | 6HX | 6H | 6HX | 6HX | 6HX | 6H | 6H | 6H | 6H | 6H | 6H |
| Threading application | | | | | | | | | | | | | |
| Usable length (ULDR) | 2xD | 2xD | 2xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2xD | 3xD |
| Material code (BMC) | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM |
| Tap chamfer style (TCS) | C 2-3 | C 2-3 | C 2-3 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | C 2-3 | C 2-3 |
| Flute Geometry (FDC) | | | | | | | | | | | | | |
| Flute helix angle (FHA) | | | | | | | | | | | | λ 40° | λ 48° |
| Hand (Cutting direction) | | | | | | | | | | | | | |
| Coating | ST | ST | TAIN | Cr | Bright | TAIN Top | TAIN Top | ST | Super B | Bright | Super B | Cr | TAIN Top |
| Product Family Code | | | | | | | | | | | | | |
| | SHARK | SHARK | SHARK | SHARK | SHARK | SHARK | SHARK NEW | SHARK | SHARK | SHARK | SHARK | SHARK | SHARK |
| | E201 | E252 | E390 | E297 | E255 | E256 | E334 | E240 | E241 | E471 | E472 | E298 | E412 |
| | M3 - M10 | M8 - M24 | M3 - M20 | M3 - M30 | M3 - M20 | M3 - M20 | M3 - M12 | M3 - M30 | M3 - M20 | M3 - M20 | M3 - M20 | M3 - M30 | M3 - M30 |
| | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| P | P1 | | | ■ | | | | | | ■ | ■ | | ■ |
| | P2 | | | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | | ■ |
| | P3 | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ |
| | P4 | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ |
| M | M1 | | | | | | | ■ | ■ | | | | ■ |
| | M2 | | | | | | | ■ | ■ | | | | ■ |
| | M3 | | | | | | | ■ | ■ | | | | ■ |
| | M4 | | | | | | | ■ | ■ | | | | ■ |
| K | K1 | ■ | ■ | ■ | | | | | | | | | |
| | K2 | ■ | ■ | ■ | | | | | | | | | |
| | K3 | ■ | ■ | ■ | | | | | | | | | |
| | K4 | ■ | ■ | ■ | | | | | | | | | |
| | K5 | ■ | ■ | ■ | | | | | | | | | |
| N | N1 | | | | | | | | | ■ | ■ | | ■ |
| | N2 | | | | | | | | | ■ | ■ | | ■ |
| | N3 | ■ | ■ | ■ | ■ | | | | | ■ | ■ | ■ | ■ |
| | N4 | ■ | ■ | ■ | | | | | | ■ | ■ | | ■ |
| | N5 | | | | | | | | | ■ | ■ | | ■ |
| S | S1 | | | | | ■ | ■ | ■ | | | | | |
| | S2 | | | | | ■ | ■ | ■ | | | | | |
| | S3 | | | | | ■ | ■ | ■ | | | | | |
| | S4 | | | | | ■ | ■ | ■ | | | | | |
| H | H1 | | | | | | | | | | | | |
| | H2 | | | | | | | | | | | | |
| | H3 | | | | | | | ■ | | | | | |
| | H4 | | | | | | | | | | | | |

■ Primary use ■ Possible use



| | M | M | M | M | M | M | M | M | MF | MF | MF | MF | G |
|-------------|---------------|---------------|---------------------|---------------|---------------|---------------|---------------|---------------|----------|----------|---------------|---------------|---------------|
| DIN | 371/376 | 371/376 | DIN DORNER | 371/376 | 371/376 | 371/376 | 371/376 | 371/376 | 374 | 374 | 374 | 374 | 5156 |
| Grade | 6HX | 6HX | 6HX | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | Normal |
| Flute | | | | | | | | | | | | | |
| Length | 2.5xD | 2.5xD | 1.5xD | 2.5xD | 2.5xD | 3xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2xD | 2xD | 2xD |
| Material | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM |
| Coating | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | B 3.5-5 | B 3.5-5 | C 2-3 | C 2-3 | C 2-3 |
| Flute Angle | λ 45° | λ 45° | λ 15° | λ 40° | λ 40° | λ 48° | λ 35° | λ 35° | | | λ 40° | λ 40° | λ 40° |
| Rotation | | | | | | | | | | | | | |
| Finish | Bright | TiAIN Top | TiAIN Top | ST | Super B | Super B | Bright | Super B | Cr | ST | Cr | ST | ST |
| Image | | | | | | | | | | | | | |
| Model | SHARK | SHARK | SHARK NEW | SHARK | SHARK | SHARK | SHARK | SHARK | SHARK | SHARK | SHARK | SHARK | SHARK |
| Code | E260 | E261 | E335 | E238 | E239 | E414 | E473 | E474 | E299 | E384 | E300 | E383 | E382 |
| Size | M3 - M20 | M3 - M20 | M3 - M12 | M3 - M30 | M3 - M20 | M3 - M20 | M3 - M20 | M3 - M20 | M4 - M30 | M6 - M20 | M4 - M30 | M6 - M20 | 1/8 - 1" |
| Stock | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 |
| P1 | | | | | | | ■ | ■ | | | | | |
| P2 | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P3 | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ |
| P4 | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ |
| M1 | | | | ■ | ■ | ■ | | | | ■ | | ■ | ■ |
| M2 | | | | ■ | ■ | ■ | | | | ■ | | ■ | ■ |
| M3 | | | | ■ | ■ | ■ | | | | ■ | | ■ | ■ |
| M4 | | | | ■ | ■ | ■ | | | | ■ | | ■ | ■ |
| K1 | | | | | | | | | | | | | |
| K2 | | | | | | | | | | | | | |
| K3 | | | | | | | | | | | | | |
| K4 | | | | | | | | | | | | | |
| K5 | | | | | | | | | | | | | |
| N1 | | | | | | | ■ | ■ | | | | | |
| N2 | | | | | | | ■ | ■ | | | | | |
| N3 | | | | | | | ■ | ■ | ■ | | ■ | | |
| N4 | | | | | | | ■ | ■ | | | | | |
| N5 | | | | | | | | | | | | | |
| S1 | ■ | ■ | ■ | | | | | | | | | | |
| S2 | ■ | ■ | | | | | | | | | | | |
| S3 | ■ | ■ | ■ | | | | | | | | | | |
| S4 | ■ | ■ | | | | | | | | | | | |
| H1 | | | | | | | | | | | | | |
| H2 | | | | | | | | | | | | | |
| H3 | | | ■ | | | | | | | | | | |
| H4 | | | | | | | | | | | | | |



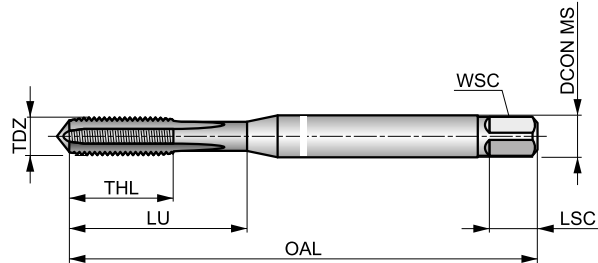
E201



White SHARK Straight Flute Metric Machine Tap, DIN Standard

Straight flute tap with reduced shank for blind and through holes in short chipping cast iron and high strength non-ferrous materials. HSS-E-PM substrate provides superior performance, consistency and extended tool life. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.

SHARK



| | | |
|-------|----------|-----|
| M | DIN 371 | 6HX |
| 2xD | HSS-E PM | |
| C 2-3 | R | |
| ST | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|
| K1.1 ■ 15 | K1.2 ■ 11 | K1.3 ■ 8 | K2.1 ■ 18 | K2.2 ■ 15 | K2.3 ▣ 12 | K3.1 ■ 16 | K3.2 ■ 12 | K3.3 ▣ 10 | K4.1 ■ 15 | K4.2 ■ 11 | K4.3 ▣ 8 | K4.4 ▣ 7 | K4.5 ▣ 6 |
| K5.1 ■ 17 | K5.2 ■ 13 | K5.3 ▣ 10 | N2.3 ▣ 15 | N3.2 ▣ 20 | N4.2 ■ 10 | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E201M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E201M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 4 | 3.30 | 21.00 |
| E201M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 4 | 4.20 | 25.00 |
| E201M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 4 | 5.00 | 30.00 |
| E201M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 4 | 6.80 | 35.00 |
| E201M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 4 | 8.50 | 39.00 |



E252

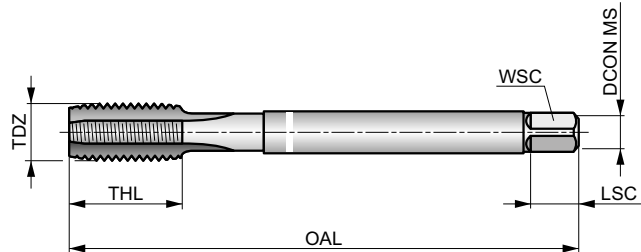
DORMER



White SHARK Straight Flute Metric Machine Tap, DIN Standard

Straight flute tap with reinforced shank for blind and through holes in short chipping cast iron and high strength non-ferrous materials. HSS-E-PM substrate provides superior performance, consistency and extended tool life. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.

SHARK



| | | |
|-------|---------|----------|
| | DIN 376 | 6HX |
| | 2xD | HSS-E PM |
| C 2-3 | | |
| ST | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|
| K1.1 ■ 15 | K1.2 ■ 11 | K1.3 ■ 8 | K2.1 ■ 18 | K2.2 ■ 15 | K2.3 ▣ 12 | K3.1 ■ 16 | K3.2 ■ 12 | K3.3 ▣ 10 | K4.1 ■ 15 | K4.2 ■ 11 | K4.3 ▣ 8 | K4.4 ▣ 7 | K4.5 ▣ 6 |
| K5.1 ■ 17 | K5.2 ■ 13 | K5.3 ▣ 10 | N2.3 ▣ 15 | N3.2 ▣ 20 | N4.2 ■ 10 | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|
| | | | | | | | | | |
| E252M8 | 8 | 1.25 | 90.0 | 18 | 6.00 | 4.90 | 8 | 4 | 6.80 |
| E252M10 | 10 | 1.50 | 100.0 | 20 | 7.00 | 5.50 | 8 | 4 | 8.50 |
| E252M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 4 | 10.30 |
| E252M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 4 | 12.00 |
| E252M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 4 | 14.00 |
| E252M18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 15.50 |
| E252M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 |
| E252M22 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 |
| E252M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 |



E390

DORMER

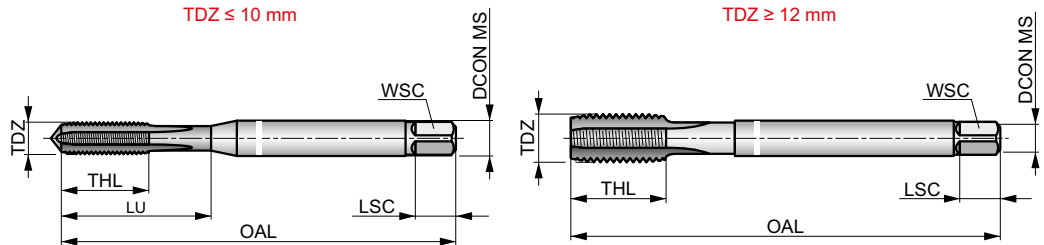


White SHARK Straight Flute Metric Machine Tap, DIN Standard

High performance TiAlN coated tap for blind and through holes in short chipping materials, such as cast iron and non-ferrous metals. Premium HSS-E-PM substrate provides superior performance, consistency and extended tool life. Up to M10 with reinforced and from M12 with reduced shank.

SHARK

| | | |
|-------|-------------|----------|
| | DIN 371/376 | 6HX |
| | 2xD | HSS-E PM |
| C 2-3 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

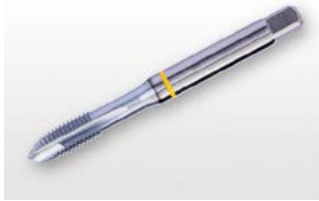
| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| K1.1 ■ 30 | K1.2 ■ 22 | K1.3 ■ 17 | K2.1 ■ 43 | K2.2 ■ 35 | K2.3 ▣ 28 | K3.1 ■ 38 | K3.2 ■ 29 | K3.3 ▣ 24 | K4.1 ■ 35 | K4.2 ■ 27 | K4.3 ▣ 20 | K4.4 ▣ 17 | K4.5 ▣ 14 |
| K5.1 ■ 40 | K5.2 ■ 30 | K5.3 ▣ 23 | N2.3 ▣ 20 | N3.2 ▣ 30 | N4.2 ■ 15 | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|-------|------|---------|-------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E390M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E390M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 4 | 3.30 | 21.00 |
| E390M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 4 | 4.20 | 25.00 |
| E390M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 4 | 5.00 | 30.00 |
| E390M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 4 | 6.80 | 35.00 |
| E390M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 4 | 8.50 | 39.00 |
| E390M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 4 | 10.30 | – |
| E390M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 4 | 14.00 | – |
| E390M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |



E297

DORMER

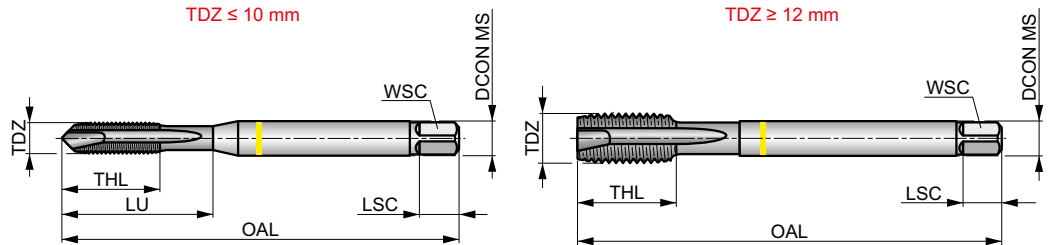


Yellow SHARK Spiral Point Metric Machine Tap, DIN Standard

High performance through hole tap for low carbon and alloyed steel and non-ferrous materials. Unique HSS-E-PM substrate with additional edge treatment provides consistency and process security. Hard chrome coated to increase the surface hardness and reduce built-up edge for increased performance and tool life.

SHARK

| | | |
|--|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E-PM |
| | B 3.5-5 | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 24 | P1.2 ■ 27 | P1.3 ■ 28 | P2.1 ■ 20 | P2.2 ■ 18 | P2.3 ■ 16 | P3.1 ■ 15 | P3.2 ■ 12 | P4.1 ■ 9 | N3.1 ■ 51 | N3.2 ■ 30 | N3.3 ■ 15 |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|

Products from this series are also available in set with drills. Please see L114.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E297M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E297M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E297M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E297M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E297M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E297M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E297M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | — |
| E297M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 | — |
| E297M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 | — |
| E297M18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 3 | 15.50 | — |
| E297M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 3 | 17.50 | — |
| E297M22 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 | — |
| E297M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 | — |
| E297M27 | 27 | 3.00 | 160.0 | 38 | 20.00 | 16.00 | 19 | 4 | 24.00 | — |
| E297M30 | 30 | 3.50 | 180.0 | 45 | 22.00 | 18.00 | 21 | 4 | 26.50 | — |



E255

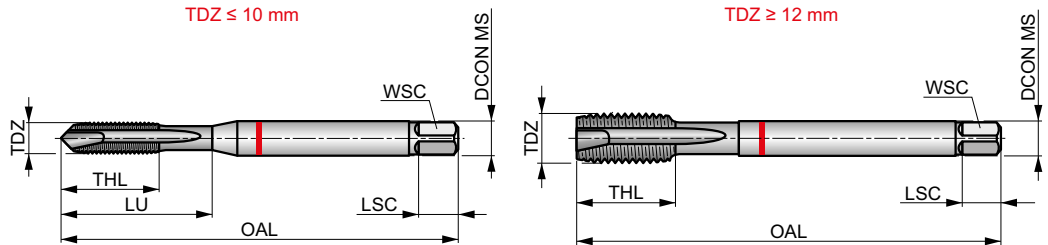


Red SHARK, Spiral Point Metric Machine Tap, DIN Standard

Through hole tap with reinforced or reduced shank for medium to high strength steels. Unique HSS-E-PM steel with bright surface finish provide consistency and process security.

SHARK

| | | |
|-------------------|----------------|-------------|
| M | DIN 371/376 | 6HX |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | R |
| Bright | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU | Material Group Suitability | | | | | | | | | |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|----------------------------|------|------|------|------|------|------|------|------|------|
| | | | | | | | | | | | P2.3 | P3.1 | P3.2 | P3.3 | P4.1 | P4.2 | S1.2 | S2.1 | S3.1 | S4.1 |
| E255M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 | ■11 | ■10 | ■8 | ■7 | ■6 | ■5 | ▣2 | ▣3 | ▣2 | ▣2 |
| E255M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 | | | | | | | | | | |
| E255M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 | | | | | | | | | | |
| E255M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 | | | | | | | | | | |
| E255M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 | | | | | | | | | | |
| E255M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 | | | | | | | | | | |
| E255M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | – | | | | | | | | | | |
| E255M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 | – | | | | | | | | | | |
| E255M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 | – | | | | | | | | | | |
| E255M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | – | | | | | | | | | | |



E256



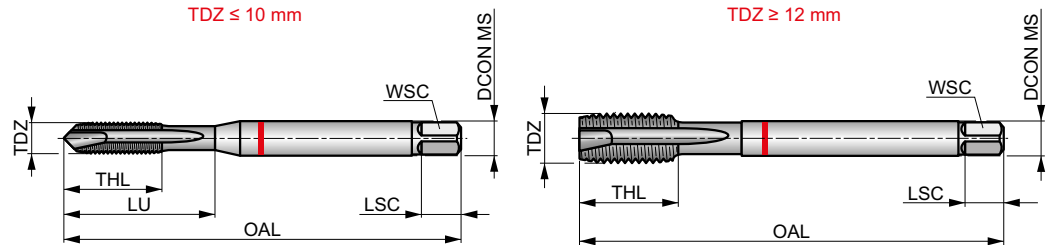
Red SHARK Spiral Point Metric Machine Tap, DIN Standard

High performance through hole tap with reinforced or reduced shank for medium to high strength steel. Unique HSS-E-PM substrate along with TiAlN-Top coating and edge treatment provide superior performance, consistency, extended tool life and higher process security.

SHARK



| | | |
|--|-------------|----------|
| | DIN 371/376 | 6HX |
| | 2.5xD | HSS-E-PM |
| | B 3.5-5 | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|
| P2.3 ■ 27 | P3.1 ■ 25 | P3.2 ■ 20 | P3.3 ■ 17 | P4.1 ■ 15 | P4.2 ■ 13 | P4.3 ■ 10 | S1.2 ■ 3 | S2.1 ■ 4 | S3.1 ■ 3 | S4.1 ■ 3 |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E256M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E256M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E256M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E256M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E256M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E256M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E256M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | – |
| E256M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 | – |
| E256M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |



E334

DORMER

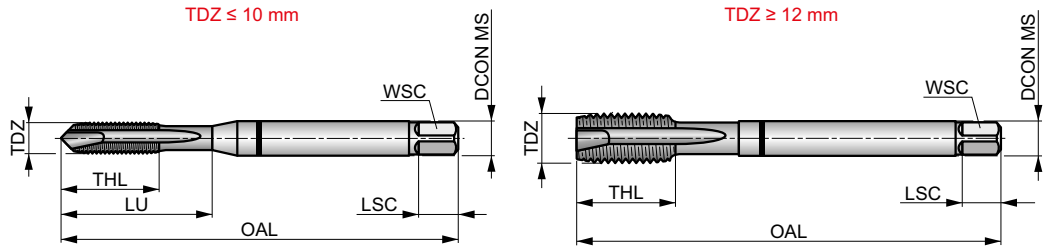


Red SHARK 45° Spiral Flute Metric Machine Tap, DIN Standard

Blind hole tap with reinforced or reduced shank for medium to high strength steels. Unique HSS-E-PM substrate with bright surface finish. Extra back taper to further facilitate chip evacuation, preventing chipping on the last threads of the tap and also reduces torque when the tap reverses.

SHARK

| | | |
|------------|---------------|-------------|
| | DIN DORMER | 6HX |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|
| P3.3 ■ 17 | P4.2 ■ 13 | P4.3 ■ 10 | S1.2 ■ 13 | S1.3 ■ 8 | S3.1 ■ 5 | S3.2 ■ 3 | H3.1 ▣ 7 |
|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|------|---------|------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E334M3 | 3 | 0.50 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 2.50 | 12.00 |
| E334M4 | 4 | 0.70 | 70.0 | 17 | 6.00 | 4.90 | 8 | 3 | 3.30 | 17.00 |
| E334M5 | 5 | 0.80 | 80.0 | 20 | 6.00 | 4.90 | 8 | 3 | 4.20 | 20.00 |
| E334M6 | 6 | 1.00 | 90.0 | 24 | 8.00 | 6.20 | 9 | 3 | 5.00 | 24.00 |
| E334M8 | 8 | 1.25 | 100.0 | 32 | 10.00 | 8.00 | 11 | 3 | 6.80 | 32.00 |
| E334M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E334M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 4 | 10.30 | – |



E240



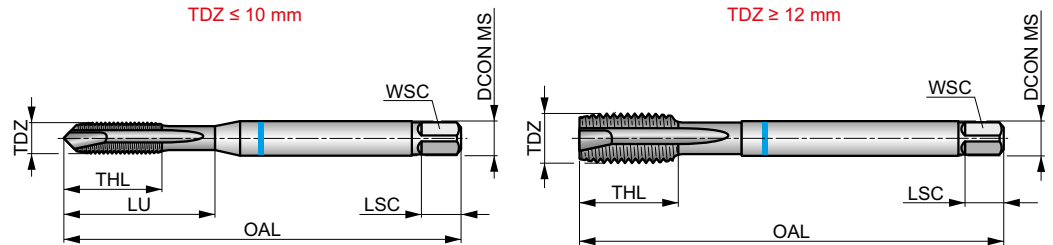
Blue SHARK Spiral Point Metric Machine Tap, DIN Standard

Through hole tap with reinforced or reduced shank for medium strength stainless steel. Unique HSS-E-PM substrate along with additional edge treatment provide consistency and process security. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.

SHARK



| | | |
|--|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E-PM |
| | B 3.5-5 | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | |
|-------------------|--------------------|-------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P2.3 ■8 | P3.3 ■10 | P4.1 ■9 | P4.2 ■7 | M1.1 ■11 | M1.2 ■9 | M2.1 ■10 | M2.2 ■8 | M3.1 ■8 | M3.2 ■7 | M3.3 ■6 | M4.1 ■5 |
|-------------------|--------------------|-------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

Products from this series are also available in set with drills. Please see L114.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|------|---------|-------|-----|-----|-------|-------|
| | | | [mm] | [mm] | | | | | | |
| E240M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E240M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E240M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E240M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E240M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E240M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E240M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 4 | 10.30 | — |
| E240M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 4 | 12.00 | — |
| E240M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 4 | 14.00 | — |
| E240M18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 15.50 | — |
| E240M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | — |
| E240M22 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 | — |
| E240M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 | — |
| E240M27 | 27 | 3.00 | 160.0 | 38 | 20.00 | 16.00 | 19 | 4 | 24.00 | — |
| E240M30 | 30 | 3.50 | 180.0 | 45 | 22.00 | 18.00 | 21 | 4 | 26.50 | — |



E241

DORMER

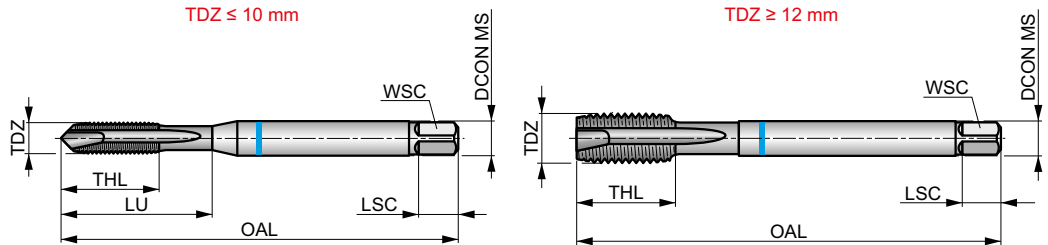


Blue SHARK Spiral Point Metric Machine Tap, DIN Standard

High performance through hole tap with reinforced or reduced shank for medium strength stainless steel. Unique HSS-E-PM substrate with Super-B coating and additional edge treatment providing superior performance, consistency and extended tool life.

SHARK

| | | |
|---------|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|
| P2.3 ▣16 | P3.3 ▣14 | P4.1 ▣11 | P4.2 ▣9 | M1.1 ■19 | M1.2 ■16 | M2.1 ■17 | M2.2 ■14 | M2.3 ▣12 | M3.1 ■12 | M3.2 ■10 | M3.3 ■9 | M4.1 ■6 | M4.2 ▣5 |
|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E241M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E241M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E241M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E241M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E241M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E241M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E241M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 4 | 10.30 | – |
| E241M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 4 | 12.00 | – |
| E241M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 4 | 14.00 | – |
| E241M18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 15.50 | – |
| E241M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |



E471



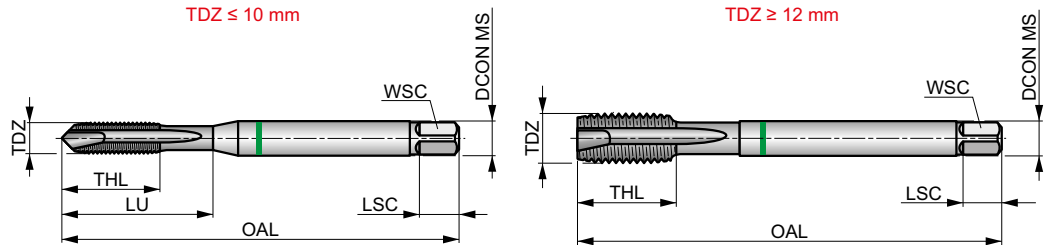
Green SHARK Spiral Point Metric Machine Tap, DIN Standard

Through hole tap with reinforced or reduced shank for non-ferrous materials. Unique HSS-E-PM substrate with polished flutes to avoid chip sticking, provide consistency and process security.

SHARK



| | | |
|--|----------------|-------------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E PM |
| | B 3.5-5 | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU | Workpiece material group suitability and starting values for cutting speed (m/min) | | | | | | | | | | | | | |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|--|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| | | | | | | | | | | | P1.2 | P1.3 | P2.1 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 | N2.3 | N3.1 | N3.2 | N3.3 | N4.1 | |
| | | | | | | | | | | | | ■23 | ■24 | ■16 | ■16 | ■12 | ■8 | ■31 | ■28 | ■20 | ■51 | ■30 | ■15 | ■25 |
| E471M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 2 | 2.50 | 18.00 | | | | | | | | | | | | | | |
| E471M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 2 | 3.30 | 21.00 | | | | | | | | | | | | | | |
| E471M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 2 | 4.20 | 25.00 | | | | | | | | | | | | | | |
| E471M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 | | | | | | | | | | | | | | |
| E471M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 | | | | | | | | | | | | | | |
| E471M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 | | | | | | | | | | | | | | |
| E471M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | – | | | | | | | | | | | | | | |
| E471M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 4 | 14.00 | – | | | | | | | | | | | | | | |
| E471M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | – | | | | | | | | | | | | | | |



E472

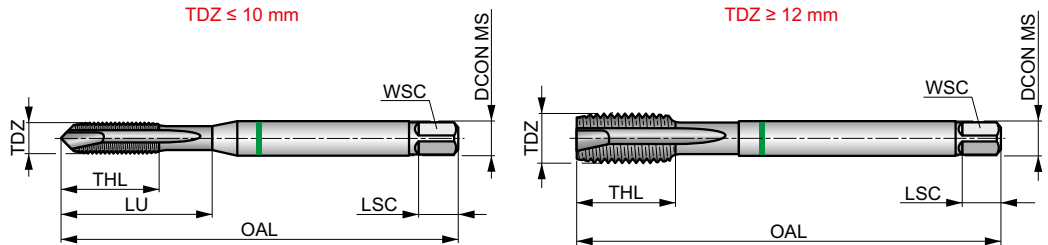


Green SHARK Spiral Point Metric Machine Tap, DIN Standard

High performance through hole tap with reinforced or reduced shank for non-ferrous materials. Unique HSS-E-PM substrate with Super-B coating to avoid chip sticking, providing superior performance, consistency and extended tool life.

SHARK

| | | |
|---------|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 | N2.3 | N3.1 | N3.2 | N4.1 |
| 34 | 38 | 40 | 29 | 24 | 35 | 26 | 18 | 46 | 42 | 30 | 76 | 45 | 30 |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E472M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 2 | 2.50 | 18.00 |
| E472M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 2 | 3.30 | 21.00 |
| E472M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 2 | 4.20 | 25.00 |
| E472M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E472M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E472M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E472M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | - |
| E472M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 4 | 14.00 | - |
| E472M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | - |



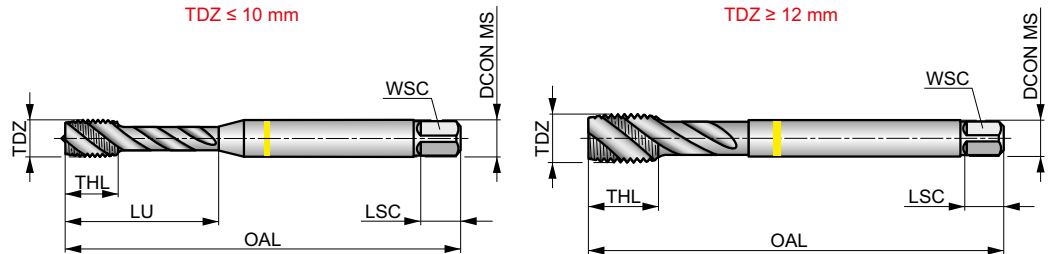
E298



Yellow SHARK 40° Spiral Flute Metric Machine Tap, DIN Standard

High performance blind hole tap for low carbon and alloyed steel and non-ferrous materials. Unique HSS-E-PM substrate with additional edge treatment to provide consistency and process security. Hard chrome coated to increase the surface hardness, reducing built-up edge and extend tool life.

SHARK



| | | |
|-----------------|-------------|-----------------|
| M | DIN 371/376 | 6H |
| | 2xD | HSS-E PM |
| C 2-3 | | λ 40° |
| R | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 23 | P1.2 ■ 25 | P1.3 ■ 26 | P2.1 ■ 19 | P2.2 ■ 17 | P2.3 ■ 15 | P3.1 ■ 14 | P3.2 ■ 11 | P4.1 ■ 8 | N3.1 ■ 48 | N3.2 ■ 28 | N3.3 ■ 14 |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|

Products from this series are also available in set with drills. Please see L114.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E298M3 | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E298M4 | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E298M5 | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E298M6 | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E298M8 | 8 | 1.25 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E298M10 | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E298M12 | 12 | 1.75 | 110.0 | 16 | 9.00 | 7.00 | 10 | 3 | 10.30 | — |
| E298M14 | 14 | 2.00 | 110.0 | 20 | 11.00 | 9.00 | 12 | 3 | 12.00 | — |
| E298M16 | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | — |
| E298M18 | 18 | 2.50 | 125.0 | 25 | 14.00 | 11.00 | 14 | 4 | 15.50 | — |
| E298M20 | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | — |
| E298M22 | 22 | 2.50 | 140.0 | 25 | 18.00 | 14.50 | 17 | 4 | 19.50 | — |
| E298M24 | 24 | 3.00 | 160.0 | 30 | 18.00 | 14.50 | 17 | 4 | 21.00 | — |
| E298M27 | 27 | 3.00 | 160.0 | 30 | 20.00 | 16.00 | 19 | 4 | 24.00 | — |
| E298M30 | 30 | 3.50 | 160.0 | 36 | 22.00 | 18.00 | 21 | 4 | 26.50 | — |



E412

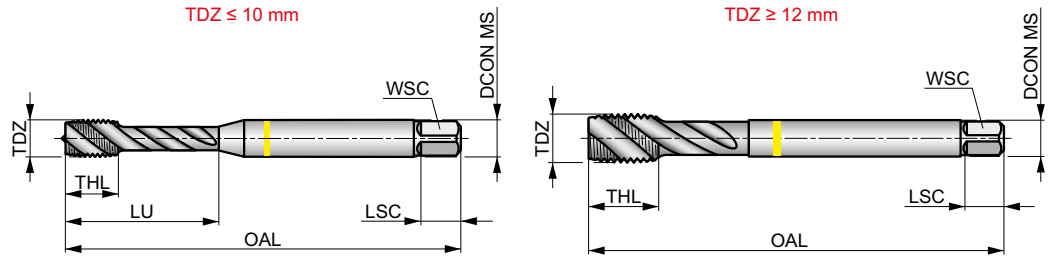


Yellow SHARK 48° Spiral Flute Metric Machine Tap, DIN Standard

High performance quick spiral tap for deep blind holes in medium strength steels. Unique HSS-E-PM substrate with TiAlN-Top coating and additional edge treatment provide superior performance. Extra back taper facilitates chip evacuation and reduces torque on reversal. Recommended for synchronous feed tap holders.



SHARK



| | | |
|-----------------|-------------|------------------|
| M | DIN 371/376 | 6H |
| 3×D | HSS-E PM | |
| C 2-3 | | λ 48° |
| R | TiAlN Top | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 46 | P1.2 ■ 52 | P1.3 ■ 54 | P2.1 ■ 40 | P2.2 ■ 35 | P2.3 ■ 31 | P3.1 ■ 24 | P3.2 ■ 19 | P3.3 ■ 16 | P4.1 ■ 14 | P4.2 ■ 12 | M1.1 ■ 19 | M1.2 ■ 16 | M2.1 ■ 17 |
| M2.2 ■ 14 | M3.1 ■ 12 | M3.2 ■ 10 | M3.3 ■ 9 | M4.1 ■ 6 | N1.1 ■ 16 | N1.2 ■ 12 | N1.3 ■ 8 | N2.1 ■ 54 | N2.2 ■ 48 | N2.3 ■ 35 | N3.1 ■ 60 | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|------|---------|-------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E412M3 | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E412M4 | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E412M5 | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E412M6 | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E412M8 | 8 | 1.25 | 90.0 | 13 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E412M10 | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E412M12 | 12 | 1.75 | 110.0 | 18 | 9.00 | 7.00 | 10 | 3 | 10.30 | – |
| E412M14 | 14 | 2.00 | 110.0 | 20 | 11.00 | 9.00 | 12 | 3 | 12.00 | – |
| E412M16 | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | – |
| E412M20 | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |
| E412M22 | 22 | 2.50 | 140.0 | 25 | 18.00 | 14.50 | 17 | 4 | 19.50 | – |
| E412M24 | 24 | 3.00 | 160.0 | 30 | 18.00 | 14.50 | 17 | 4 | 21.00 | – |
| E412M27 | 27 | 3.00 | 160.0 | 30 | 20.00 | 16.00 | 19 | 4 | 24.00 | – |
| E412M30 | 30 | 3.50 | 180.0 | 36 | 22.00 | 18.00 | 21 | 4 | 26.50 | – |



E260



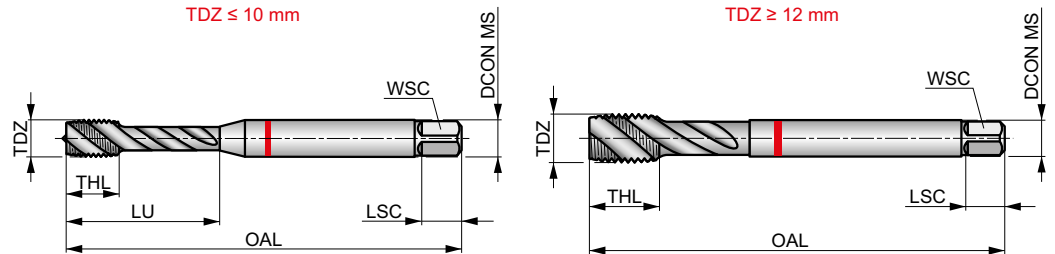
Red SHARK 45° Spiral Flute Metric Machine Tap, DIN Standard

Through hole tap with reinforced or reduced shank for medium to high strength steels. Unique HSS-E-PM substrate with bright surface finish. Extra back taper to further facilitate chip evacuation, preventing chipping on the last threads of the tap and also reduces torque when the tap reverses.

SHARK



| | | |
|--|-------------|---------------|
| | DIN 371/376 | 6HX |
| | 2.5xD | HSS-E PM |
| | C 2-3 | λ 45° |
| | Bright | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| P2.3 ■ 10 | | | | | | | | | | |
| P3.1 ■ 9 | | | | | | | | | | |
| P3.2 ■ 7 | | | | | | | | | | |
| P3.3 ■ 6 | | | | | | | | | | |
| P4.1 ■ 5 | | | | | | | | | | |
| P4.2 ■ 4 | | | | | | | | | | |
| S1.2 ■ 2 | | | | | | | | | | |
| S2.1 ■ 3 | | | | | | | | | | |
| S3.1 ■ 2 | | | | | | | | | | |
| S4.1 ■ 2 | | | | | | | | | | |
| E260M3 | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E260M4 | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E260M5 | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E260M6 | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E260M8 | 8 | 1.25 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E260M10 | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E260M12 | 12 | 1.75 | 110.0 | 16 | 9.00 | 7.00 | 10 | 3 | 10.30 | – |
| E260M14 | 14 | 2.00 | 110.0 | 20 | 11.00 | 9.00 | 12 | 3 | 12.00 | – |
| E260M16 | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | – |
| E260M20 | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |



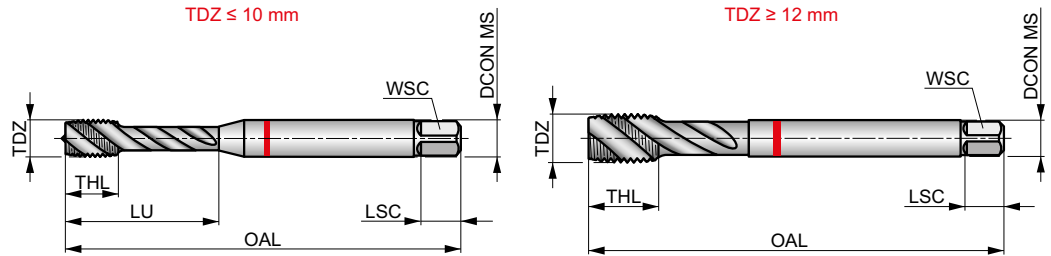
E261



Red SHARK 45° Spiral Flute Metric Machine Tap, DIN Standard

High performance blind hole tap for medium to high strength steels. Unique HSS-E-PM substrate with TiAIN-Top coating and additional edge treatment provide superior performance, consistency and extended tool life. Extra back taper further facilitates chip evacuation and reduces torque on tap reversal.

SHARK



| | | |
|-----------------|-------------|-----------|
| M | DIN 371/376 | 6HX |
| | 2.5xD | HSS-E PM |
| C 2-3 | | λ 45° |
| R | | TiAIN Top |

Workpiece material group suitability and starting values for cutting speed (m/min).

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU | Workpiece material group suitability and starting values for cutting speed (m/min) | | | | | | | | | | | |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|--|------|------|------|------|------|------|------|------|------|------|--|
| | | | | | | | | | | | P2.3 | P3.1 | P3.2 | P3.3 | P4.1 | P4.2 | P4.3 | S1.2 | S2.1 | S3.1 | S4.1 | |
| E261M3 | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 | ■ 26 | ■ 24 | ■ 19 | ■ 16 | ■ 14 | ■ 12 | ▣ 9 | ▣ 2 | ▣ 3 | ▣ 2 | ▣ 2 | |
| E261M4 | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 | | | | | | | | | | | | |
| E261M5 | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 | | | | | | | | | | | | |
| E261M6 | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 | | | | | | | | | | | | |
| E261M8 | 8 | 1.25 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 | | | | | | | | | | | | |
| E261M10 | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 | | | | | | | | | | | | |
| E261M12 | 12 | 1.75 | 110.0 | 16 | 9.00 | 7.00 | 10 | 3 | 10.30 | – | | | | | | | | | | | | |
| E261M16 | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | – | | | | | | | | | | | | |
| E261M20 | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | – | | | | | | | | | | | | |



E335

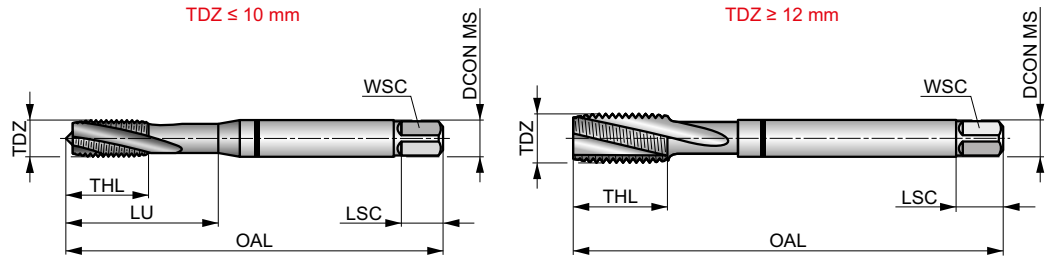


Black SHARK 15° Spiral Flute Metric Machine Tap, DIN Standard

High performance blind hole tap for efficient tapping in high strength steels and titanium alloys. A 15° slow spiral allows the chips to be pulled slightly upwards, yet without weakening the cutting edge, as higher spiral taps would. Unique HSS-E-PM substrate along with TiAlN-Top coating for superior performance.

SHARK

| | | |
|----------|---------|-------------|
| | DIN | 6HX |
| | 1.5×D | HSS-E PM |
| C 2-3 | | λ 15° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | |
|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|--------------------|--------------------|
| P3.3 ■ 16 | P4.2 ■ 12 | P4.3 ■ 9 | S1.2 ■ 12 | S1.3 ■ 7 | S3.1 ■ 4 | S3.2 ■ 2 | H3.1 ▣ 6 |
|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|--------------------|--------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|-----|---------|------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E335M3 | 3 | 0.50 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 2.50 | 12.00 |
| E335M4 | 4 | 0.70 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 3.30 | 13.00 |
| E335M5 | 5 | 0.80 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 4.20 | 15.00 |
| E335M6 | 6 | 1.00 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 5.00 | 18.00 |
| E335M8 | 8 | 1.25 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 6.80 | 20.00 |
| E335M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E335M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 4 | 10.30 | - |



E238

DORMER

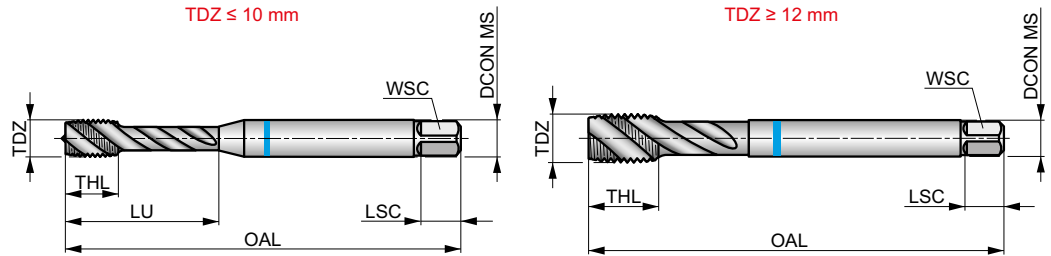


Blue SHARK 40° Spiral Flute Metric Machine Tap, DIN Standard

Blind hole tap with reinforced or reduced shank for medium strength stainless steel. Unique HSS-E-PM substrate, along with additional edge treatment, provide consistency and process security. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.

SHARK

| | | |
|--|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E-PM |
| | | λ 40° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | |
|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P2.3 ■7 | P3.3 ■9 | P4.1 ■8 | P4.2 ■7 | M1.1 ■10 | M1.2 ■8 | M2.1 ■9 | M2.2 ■7 | M3.1 ■7 | M3.2 ■6 | M3.3 ■5 | M4.1 ■4 |
|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

Products from this series are also available in set with drills. Please see L114.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|------|---------|-------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E238M3 | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E238M4 | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E238M5 | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E238M6 | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E238M8 | 8 | 1.25 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.80 | 33.00 |
| E238M10 | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E238M12 | 12 | 1.75 | 110.0 | 16 | 9.00 | 7.00 | 10 | 4 | 10.30 | – |
| E238M14 | 14 | 2.00 | 110.0 | 20 | 11.00 | 9.00 | 12 | 4 | 12.00 | – |
| E238M16 | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | – |
| E238M18 | 18 | 2.50 | 125.0 | 25 | 14.00 | 11.00 | 14 | 4 | 15.50 | – |
| E238M20 | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |
| E238M22 | 22 | 2.50 | 140.0 | 25 | 18.00 | 14.50 | 17 | 4 | 19.80 | – |
| E238M24 | 24 | 3.00 | 160.0 | 30 | 18.00 | 14.50 | 17 | 4 | 21.00 | – |
| E238M27 | 27 | 3.00 | 160.0 | 30 | 20.00 | 16.00 | 19 | 4 | 24.00 | – |
| E238M30 | 30 | 3.50 | 180.0 | 36 | 22.00 | 18.00 | 21 | 4 | 26.50 | – |



E239

DORMER

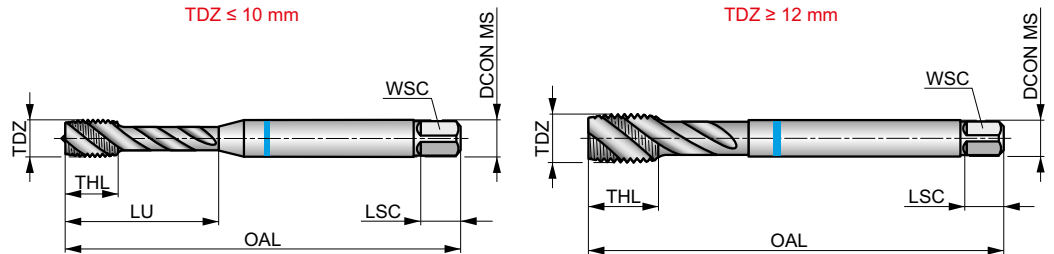


Blue SHARK 40° Spiral Flute Metric Machine Tap, DIN Standard

High performance blind hole tap for medium strength stainless steel. Unique HSS-E-PM substrate with Super-B coating and additional edge treatment providing superior performance, consistency and extended tool life. Back taper on spiral flute taps facilitates chip evacuation and reduces torque when the tap reverses.

SHARK

| | | |
|--|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5×D | HSS-E PM |
| | | λ 40° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| P2.3 | P3.3 | P4.1 | P4.2 | M1.1 | M1.2 | M2.1 | M2.2 | M2.3 | M3.1 | M3.2 | M3.3 | M4.1 | M4.2 |
| ▣15 | ▣13 | ▣10 | ▣8 | ■18 | ■15 | ■16 | ■13 | ▣11 | ■11 | ■9 | ■8 | ■5 | ▣4 |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E239M3 | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E239M4 | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E239M5 | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E239M6 | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E239M8 | 8 | 1.25 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.80 | 33.00 |
| E239M10 | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E239M12 | 12 | 1.75 | 110.0 | 16 | 9.00 | 7.00 | 10 | 4 | 10.30 | – |
| E239M14 | 14 | 2.00 | 110.0 | 20 | 11.00 | 9.00 | 12 | 4 | 12.00 | – |
| E239M16 | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | – |
| E239M20 | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |



E414

DORMER

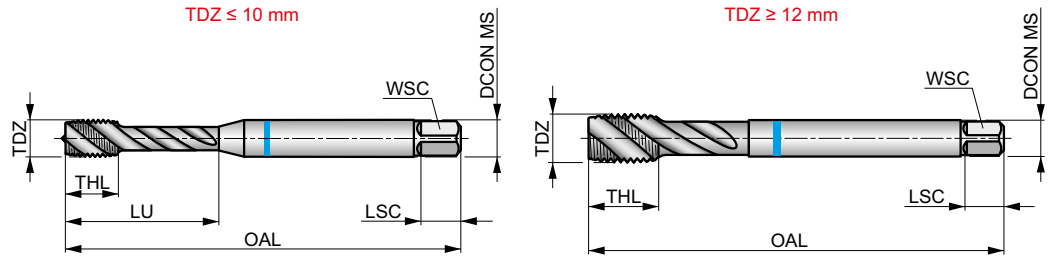


Blue SHARK 48° Spiral Flute Metric Machine Tap, DIN Standard

High performance quick spiral tap for deep blind holes in stainless steels. Unique HSS-E-PM substrate with Super-B coating and additional edge treatment provide superior performance. Extra back taper facilitates chip evacuation and reduces torque on reversal. Recommended to be used with synchronous feed tap holders.

SHARK

| | | |
|-----------------|-------------|------------------|
| M | DIN 371/376 | 6H |
| 3×D | HSS-E PM | |
| C 2-3 | | λ 48° |
| R | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P2.2 ■32 | P2.3 ■28 | P3.2 ■15 | P3.3 ■13 | P4.1 ■11 | P4.2 ■10 | M1.1 ■22 | M1.2 ■19 | M2.1 ■20 | M2.2 ■16 | M2.3 ■13 | M3.1 ■14 | M3.2 ■12 | M3.3 ■11 |
| M4.1 ■8 | M4.2 ■7 | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E414M3 | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E414M4 | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E414M5 | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E414M6 | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E414M8 | 8 | 1.25 | 90.0 | 13 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E414M10 | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E414M12 | 12 | 1.75 | 110.0 | 18 | 9.00 | 7.00 | 10 | 3 | 10.30 | – |
| E414M14 | 14 | 2.00 | 110.0 | 20 | 11.00 | 9.00 | 12 | 3 | 12.00 | – |
| E414M16 | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | – |
| E414M20 | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |



E473

DORMER

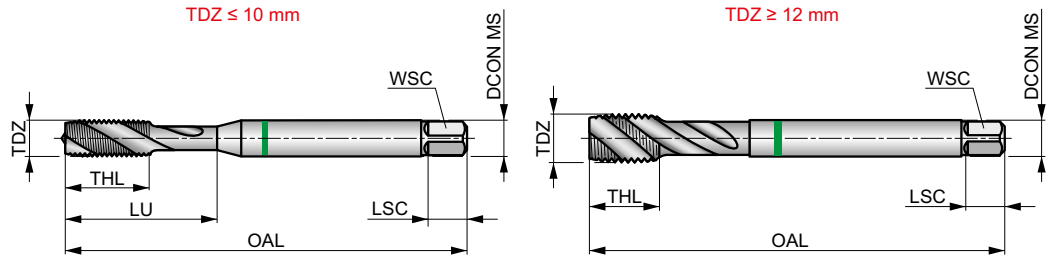


Green SHARK 35° Spiral Flute Metric Machine Tap, DIN Standard

Blind hole tap with reinforced or reduced shank for non-ferrous materials. Unique HSS-E-PM substrate with polished flutes provide consistency and process security.

SHARK

| | | |
|--|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E PM |
| | | λ 35° |
| | Bright | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.2 ■ 22 | P1.3 ■ 23 | P2.1 ■ 15 | N1.1 ■ 15 | N1.2 ■ 11 | N1.3 ■ 7 | N2.1 ■ 29 | N2.2 ■ 27 | N2.3 ■ 19 | N3.1 ■ 48 | N3.2 ■ 28 | N3.3 ■ 14 | N4.1 ■ 24 |
|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E473M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 2 | 2.50 | 18.00 |
| E473M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 2 | 3.30 | 21.00 |
| E473M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 2 | 4.20 | 25.00 |
| E473M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 2 | 5.00 | 30.00 |
| E473M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 2 | 6.80 | 35.00 |
| E473M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 2 | 8.50 | 39.00 |
| E473M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | – |
| E473M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 | – |
| E473M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 3 | 17.50 | – |



E474

DORMER

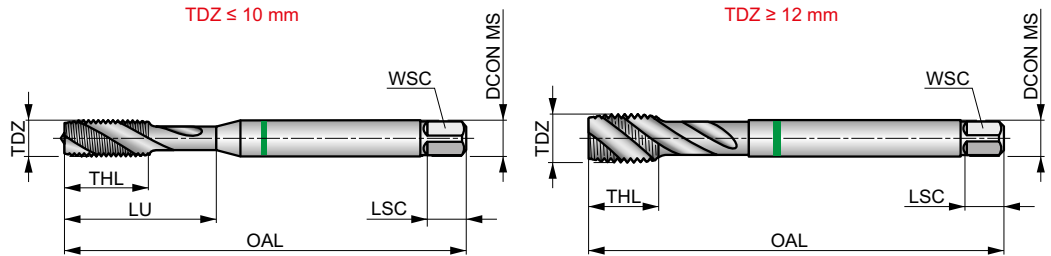


Green SHARK 35° Spiral Flute Metric Machine Tap, DIN Standard

High performance blind hole tap with reinforced or reduced shank for non-ferrous materials. Unique HSS-E-PM substrate with Super-B to avoid chip sticking, providing superior performance, consistency and extended tool life.

SHARK

| | | |
|-----------------|----------------|-------------------------|
| M | DIN 371/376 | 6H |
| | 2.5xD | HSS-E PM |
| C 2-3 | | λ 35° |
| R | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 32 | P1.2 36 | P1.3 38 | P2.1 27 | P2.2 22 | N1.1 33 | N1.2 24 | N1.3 17 | N2.1 44 | N2.2 40 | N2.3 28 | N3.1 72 | N3.2 43 | N4.1 28 |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E474M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 2 | 2.50 | 18.00 |
| E474M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 2 | 3.30 | 21.00 |
| E474M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 2 | 4.20 | 25.00 |
| E474M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 2 | 5.00 | 30.00 |
| E474M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 2 | 6.80 | 35.00 |
| E474M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 2 | 8.50 | 39.00 |
| E474M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | – |
| E474M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 | – |
| E474M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 3 | 17.50 | – |



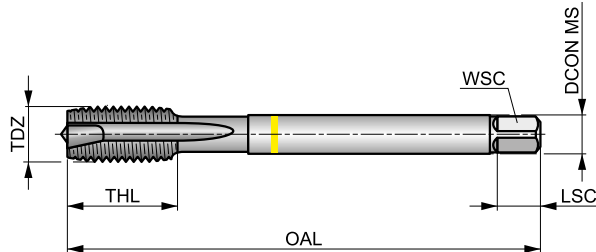
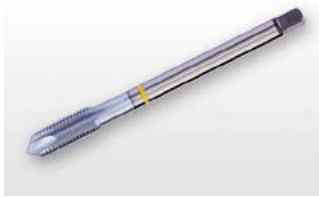
E299



Yellow SHARK Spiral Point Metric-Fine Machine Tap, DIN Standard

High performance through hole tap for low carbon and alloyed steel and non-ferrous materials. Unique HSS-E-PM substrate with additional edge treatment, provide consistency and process security. Hard chrome coated to increase the surface hardness and reduce built-up edge, increasing performance and tool life.

SHARK



| | | |
|---------|---------|----------|
| | DIN 374 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | N3.1 | N3.2 | N3.3 |
| ■ 24 | ■ 27 | ■ 28 | ■ 20 | ■ 18 | ▣ 16 | ■ 15 | ▣ 12 | ▣ 9 | ■ 51 | ■ 30 | ▣ 15 |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|--------------|-----|------|-------|-----|---------|-------|-----|-----|-------|
| | | | | | | | | | |
| E299M4X.5 | 4 | 0.50 | 63.0 | 12 | 2.80 | 2.10 | 5 | 3 | 3.50 |
| E299M5X.5 | 5 | 0.50 | 70.0 | 13 | 3.50 | 2.70 | 6 | 3 | 4.50 |
| E299M6X.75 | 6 | 0.75 | 80.0 | 15 | 4.50 | 3.40 | 6 | 3 | 5.30 |
| E299M8X.75 | 8 | 0.75 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 7.30 |
| E299M8X1.0 | 8 | 1.00 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| E299M10X.75 | 10 | 0.75 | 90.0 | 20 | 7.00 | 5.50 | 8 | 3 | 9.30 |
| E299M10X1.0 | 10 | 1.00 | 90.0 | 20 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| E299M10X1.25 | 10 | 1.25 | 100.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| E299M12X1.0 | 12 | 1.00 | 100.0 | 21 | 9.00 | 7.00 | 10 | 4 | 11.00 |
| E299M12X1.25 | 12 | 1.25 | 100.0 | 21 | 9.00 | 7.00 | 10 | 4 | 10.80 |
| E299M12X1.5 | 12 | 1.50 | 110.0 | 21 | 9.00 | 7.00 | 10 | 4 | 10.50 |
| E299M14X1.0 | 14 | 1.00 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 13.00 |
| E299M14X1.25 | 14 | 1.25 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 12.80 |
| E299M14X1.5 | 14 | 1.50 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 12.50 |
| E299M16X1.0 | 16 | 1.00 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 15.00 |
| E299M16X1.5 | 16 | 1.50 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 14.50 |
| E299M18X1.0 | 18 | 1.00 | 110.0 | 24 | 14.00 | 11.00 | 14 | 4 | 17.00 |
| E299M18X1.5 | 18 | 1.50 | 110.0 | 24 | 14.00 | 11.00 | 14 | 4 | 16.50 |
| E299M20X1.5 | 20 | 1.50 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 18.50 |
| E299M22X1.5 | 22 | 1.50 | 125.0 | 25 | 18.00 | 14.50 | 17 | 4 | 20.50 |
| E299M24X1.5 | 24 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 22.50 |
| E299M24X2.0 | 24 | 2.00 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 22.00 |
| E299M27X2.0 | 27 | 2.00 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 25.00 |
| E299M30X2.0 | 30 | 2.00 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 28.00 |



E384

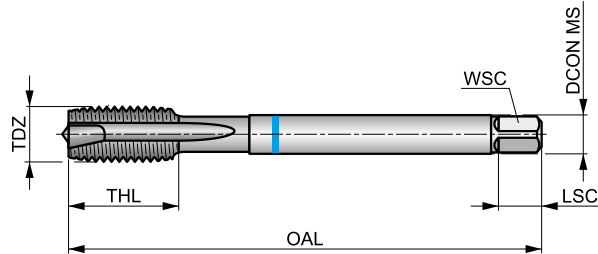
DORMER

Blue SHARK Spiral Point Metric-Fine Machine Tap, DIN Standard

Through hole tap with reinforced or reduced shank for medium strength stainless steel. Unique HSS-E-PM substrate along with additional edge treatment, provide consistency and process security. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



SHARK



| | | |
|-------------------|----------------|-----------------|
| MF | DIN 374 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | R |
| ST | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|-------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| P2.3 ■8 | P3.1 ■15 | P3.2 ■12 | P3.3 ■10 | P4.1 ■9 | P4.2 ■7 | P4.3 ■6 | M1.1 ■11 | M1.2 ■9 | M2.1 ■10 | M2.2 ■8 | M2.3 ■7 | M3.1 ■8 | M3.2 ■7 |
| M3.3 ■6 | M4.1 ■5 | M4.2 ■4 | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|---------------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E384M6X.75 | 6 | 0.75 | 80.0 | 15 | 4.50 | 3.40 | 6 | 3 | 5.30 |
| E384M8X1.0 | 8 | 1.00 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| E384M10X1.0 | 10 | 1.00 | 90.0 | 20 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| E384M10X1.25 | 10 | 1.25 | 100.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| E384M12X1.0 | 12 | 1.00 | 100.0 | 21 | 9.00 | 7.00 | 10 | 4 | 11.00 |
| E384M12X1.25 | 12 | 1.25 | 100.0 | 21 | 9.00 | 7.00 | 10 | 4 | 10.80 |
| E384M12X1.5 | 12 | 1.50 | 100.0 | 21 | 9.00 | 7.00 | 10 | 4 | 10.50 |
| E384M14X1.5 | 14 | 1.50 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 12.50 |
| E384M16X1.5 | 16 | 1.50 | 100.0 | 21 | 12.00 | 9.00 | 12 | 5 | 14.50 |
| E384M18X1.5 | 18 | 1.50 | 110.0 | 24 | 14.00 | 11.00 | 14 | 5 | 16.50 |
| E384M20X1.5 | 20 | 1.50 | 125.0 | 24 | 16.00 | 12.00 | 15 | 5 | 18.50 |



E300

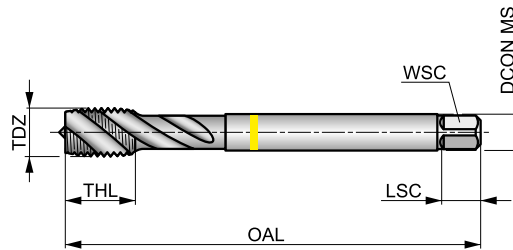
DORMER

Yellow SHARK 40° Spiral Flute Metric-Fine Machine Tap, DIN Standard

High performance blind hole tap for low carbon and alloyed steel and non-ferrous materials. Unique HSS-E-PM substrate with additional edge treatment, provide consistency and process security. Hard chrome coated to increase the surface hardness, reduces built-up edge, resulting in increased performance and tool life.



SHARK



| | | |
|-------|----------|----|
| MF | DIN 374 | 6H |
| 2xD | HSS-E PM | |
| C 2-3 | λ 40° | |
| R | Cr | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 23 | P1.2 ■ 25 | P1.3 ■ 26 | P2.1 ■ 19 | P2.2 ■ 17 | P2.3 ■ 15 | P3.1 ■ 14 | P3.2 ■ 11 | P4.1 ■ 8 | N3.1 ■ 48 | N3.2 ■ 28 | N3.3 ■ 14 |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|--------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E300M4X.5 | 4 | 0.50 | 63.0 | 6.5 | 2.80 | 2.10 | 5 | 3 | 3.50 |
| E300M5X.5 | 5 | 0.50 | 70.0 | 7.5 | 3.50 | 2.70 | 6 | 3 | 4.50 |
| E300M6X.75 | 6 | 0.75 | 80.0 | 10 | 4.50 | 3.40 | 6 | 3 | 5.30 |
| E300M8X.75 | 8 | 0.75 | 80.0 | 13 | 6.00 | 4.90 | 8 | 3 | 7.30 |
| E300M8X1.0 | 8 | 1.00 | 90.0 | 13 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| E300M10X.75 | 10 | 0.75 | 90.0 | 13 | 7.00 | 5.50 | 8 | 3 | 9.30 |
| E300M10X1.0 | 10 | 1.00 | 90.0 | 12 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| E300M10X1.25 | 10 | 1.25 | 100.0 | 15 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| E300M12X1.0 | 12 | 1.00 | 100.0 | 15 | 9.00 | 7.00 | 10 | 4 | 11.00 |
| E300M12X1.25 | 12 | 1.25 | 100.0 | 13 | 9.00 | 7.00 | 10 | 4 | 10.80 |
| E300M12X1.5 | 12 | 1.50 | 100.0 | 13 | 9.00 | 7.00 | 10 | 4 | 10.50 |
| E300M14X1.0 | 14 | 1.00 | 100.0 | 15 | 11.00 | 9.00 | 12 | 4 | 13.00 |
| E300M14X1.25 | 14 | 1.25 | 100.0 | 15 | 11.00 | 9.00 | 12 | 4 | 12.80 |
| E300M14X1.5 | 14 | 1.50 | 100.0 | 15 | 11.00 | 9.00 | 12 | 4 | 12.50 |
| E300M16X1.0 | 16 | 1.00 | 100.0 | 15 | 12.00 | 9.00 | 12 | 5 | 15.00 |
| E300M16X1.5 | 16 | 1.50 | 100.0 | 15 | 12.00 | 9.00 | 12 | 5 | 14.50 |
| E300M18X1.0 | 18 | 1.00 | 110.0 | 17 | 14.00 | 11.00 | 14 | 5 | 17.00 |
| E300M18X1.5 | 18 | 1.50 | 110.0 | 17 | 14.00 | 11.00 | 14 | 5 | 16.50 |
| E300M20X1.5 | 20 | 1.50 | 125.0 | 17 | 16.00 | 12.00 | 15 | 5 | 18.50 |
| E300M22X1.5 | 22 | 1.50 | 125.0 | 17 | 18.00 | 14.50 | 17 | 5 | 20.50 |
| E300M24X1.5 | 24 | 1.50 | 140.0 | 20 | 18.00 | 14.50 | 17 | 5 | 22.50 |
| E300M24X2.0 | 24 | 2.00 | 140.0 | 20 | 18.00 | 14.50 | 17 | 5 | 22.00 |
| E300M27X2.0 | 27 | 2.00 | 140.0 | 20 | 20.00 | 16.00 | 19 | 5 | 25.00 |
| E300M30X2.0 | 30 | 2.00 | 150.0 | 20 | 22.00 | 18.00 | 21 | 5 | 28.00 |



E383

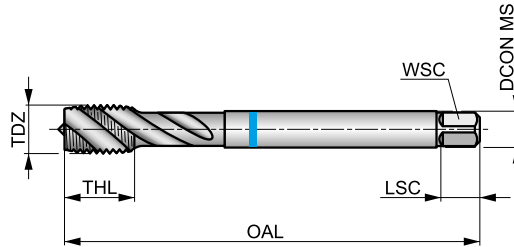
DORMER

Blue SHARK 40° Spiral Flute Metric-Fine Machine Tap, DIN Standard

Blind hole tap with reduced shank for medium strength stainless steel. Unique HSS-E-PM substrate along with additional edge treatment, provide consistency and process security. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



SHARK



| | | |
|-------|---------|----------|
| | DIN 374 | 6H |
| | 2xD | HSS-E PM |
| C 2-3 | | λ 40° |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| P2.3 | P3.3 | P4.1 | P4.2 | M1.1 | M1.2 | M2.1 | M2.2 | M3.1 | M3.2 | M3.3 | M4.1 |
| ■7 | ■9 | ■8 | ■7 | ■10 | ■8 | ■9 | ■7 | ■7 | ■6 | ■5 | ■4 |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|--------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E383M6X.75 | 6 | 0.75 | 80.0 | 10 | 4.50 | 3.40 | 6 | 3 | 5.30 |
| E383M8X1.0 | 8 | 1.00 | 90.0 | 13 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| E383M10X1.0 | 10 | 1.00 | 90.0 | 12 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| E383M10X1.25 | 10 | 1.25 | 100.0 | 15 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| E383M12X1.0 | 12 | 1.00 | 100.0 | 13 | 9.00 | 7.00 | 10 | 4 | 11.00 |
| E383M12X1.25 | 12 | 1.25 | 100.0 | 13 | 9.00 | 7.00 | 10 | 4 | 10.80 |
| E383M12X1.5 | 12 | 1.50 | 100.0 | 13 | 9.00 | 7.00 | 10 | 4 | 10.50 |
| E383M14X1.5 | 14 | 1.50 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 12.50 |
| E383M16X1.5 | 16 | 1.50 | 100.0 | 21 | 12.00 | 9.00 | 12 | 5 | 14.50 |
| E383M18X1.5 | 18 | 1.50 | 110.0 | 24 | 14.00 | 11.00 | 14 | 5 | 16.50 |
| E383M20X1.5 | 20 | 1.50 | 125.0 | 24 | 16.00 | 12.00 | 15 | 5 | 18.50 |



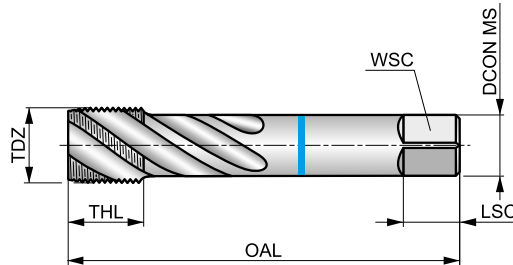
E382



Blue SHARK 40° Spiral Flute G(BSP) Machine Tap, DIN Standard

Blind hole tap with reduced shank for medium strength stainless steel. Unique HSS-E-PM substrate along with additional edge treatment, provide consistency and process security. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.

SHARK



| | | |
|-----------------|----------|----------|
| G | DIN 5156 | Normal |
| | 2xD | HSS-E PM |
| C 2-3 | | λ 40° |
| R | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|----------------|-----|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E3821/8 | 1/8 | 28 | 9.730 | 90.0 | 12 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| E3821/4 | 1/4 | 19 | 13.160 | 100.0 | 15 | 11.00 | 9.00 | 12 | 4 | 11.80 |
| E3823/8 | 3/8 | 19 | 16.660 | 100.0 | 15 | 12.00 | 9.00 | 12 | 4 | 15.25 |
| E3821/2 | 1/2 | 14 | 20.960 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| E3823/4 | 3/4 | 14 | 26.440 | 140.0 | 20 | 20.00 | 16.00 | 19 | 4 | 24.50 |
| E3821 | 1" | 11 | 33.250 | 160.0 | 24 | 25.00 | 20.00 | 23 | 4 | 30.75 |





HSS HAND & MACHINE TAPS






HSS HAND & MACHINE TAPS – TOOL MATERIAL NAVIGATOR


Tool materials

| | | |
|---|---|---|
| High Speed Steel |  | A medium-alloyed high speed steel that has good machinability and good performance. HSS exhibits hardness, toughness and wear resistance characteristics that make it attractive in a wide range of applications, for example in drills and taps. |
| Sintered Cobalt High Speed Steel |  | HSS-E-PM is a Cobalt High Speed Powder Metal substrate which has been produced using powder metal technology. High speed steel produced by this method exhibits superior toughness and grindability due to the uniform and consistent grain structure. High performance taps and end mills have a particular advantage when manufactured from this substrate. |

Surface Treatments

| | | |
|--|---|--|
| Bright (uncoated) |  | Bright finish (uncoated surface) improves chip flow in soft or non-ferrous materials and maintains sharp cutting edges in abrasive materials. |
| Combination Bright and Steam Tempered |  | Combination of bright and steam tempering can be effective as the blue oxide more porous surface acts to retain and pull cutting fluid into the hole while the bright surface assists in chip evacuation. This combination is achieved by grinding the bright surface after tempering. |
| Steam Tempering |  | Steam tempering gives a strongly adhering blue oxide surface that acts to retain cutting fluid and prevent chip to tool welding, thereby counteracting the formation of a built-up edge. Steam tempering can be applied to any bright tool but is most effective on drills and taps. |

Surface Coatings

| | | |
|-------------------------------|---|---|
| Titanium Nitride (TiN) |  | Titanium Nitride is a gold coloured ceramic coating applied by physical vapour deposition (PVD). High hardness combined with low friction properties ensures considerably longer tool life, or alternatively, better cutting performance from tools which have not been coated. TiN coatings are used mainly for drills and taps. |
|-------------------------------|---|---|



| Thread form (THFT) | M | M | M | M | M | M | M | M | M | M | M | M | M |
|-------------------------------|-------------|-------------|-------------|----------------|----------------|-------------|-------------|-------------|-------------|-------------|------------------|-------------|-------------|
| Basic standard group (BSG) | DIN 352 | DIN 352 | DIN 352 | DIN 371 | DIN 376 | DIN 371 | DIN 376 | ISO 529 | ISO 529 | ISO 529 | DIN 357 | ISO 2283 | ISO 2283 |
| Thread tolerance class (TCTR) | 6H | 6HX | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H |
| Threading application | | | | | | | | | | | | | |
| Usable length (ULDR) | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 2xD | 1.5xD | 1.5xD |
| Material code (BMC) | HSS | HSS-E | HSS | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS | HSS | HSS | HSS-E | HSS-E PM | HSS-E PM |
| Tap chamfer style (TCS) | C 2-3 | C 2-3 | C 2-3 | A 6-8 C 2-3 | A 6-8 C 2-3 | C 2-3 | C 2-3 | | | | C 2-3 D 18-20 | C 2-3 | C 2-3 |
| Flute Geometry (FDC) | | | | | | | | | | | | | |
| Flute helix angle (FHA) | | | | | | | | | | | | | |
| Hand (Cutting direction) | | | | | | | | | | | | | |
| Coating | Bright | ST | Bright | Bright | Bright | Bright | Bright | Bright | Bright | TiN | Bright | Bright | TiN |
| Coolant exit style (CXSC) | | | | | | | | | | | | | |
| Product Family Code | E100 | E102 | E101 | E200 | E250 | E237 | E251 | E500 | E501 | E504 | E303 | E600 | E610 |
| | M1.6 - M52 | M3 - M30 | M4 - M16 | M2 - M10 | M3 - M52 | M3 - M10 | M12 - M24 | M1 - M56 | M3 - M24 | M3 - M10 | M3 - M20 | M3 - M20 | M3 - M16 |
| | 74 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 86 | 88 | 89 | 90 | 91 |
| P | P1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M | M1 | | ■ | | | | | | | | | | |
| | M2 | | ■ | | | | | | | | | | |
| | M3 | | ■ | | | | | | | | | | |
| | M4 | | ■ | | | | | | | | | | |
| K | K1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | K2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | K3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | K4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | K5 | | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N | N1 | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | N2 | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | N3 | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | N4 | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | N5 | | | | | | | | | | | | |
| S | S1 | | ■ | | | | | | | | | | |
| | S2 | | ■ | | | | | | | | | | |
| | S3 | | ■ | | | | | | | | | | |
| | S4 | | ■ | | | | | | | | | | |
| H | H1 | | | | | | | | | | | | |
| | H2 | | | | | | | | | | | | |
| | H3 | | | | | | | | | | | | |
| | H4 | | | | | | | | | | | | |

■ Primary use ■ Possible use



| | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M |
|----|-------------|-------------|-------------|-------------|------------|----------|------------|----------|----------|-----------|----------|-----------|----------|----------|----------|
| | DIN 371/376 | DIN 371/376 | DIN 371/376 | DIN 371/376 | ISO 529 | ISO 529 | ISO 529 | ISO 2283 | DIN 371 | DIN 376 | DIN 371 | DIN 376 | DIN 371 | DIN 376 | DIN 371 |
| | 6H | 6G | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H |
| | | | | | | | | | | | | | | | |
| | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 3xD | 3xD | 3xD | 3xD | 3xD | 1.5xD | 1.5xD |
| | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM |
| | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | C 2-3 | C 2-3 |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | Bright | Bright | TIN | ST | Bright | TIN | ST | Bright | Bright | Bright | TIN | TIN | Bright | Bright | TIN |
| | | | | | | | | | | | | | | | |
| | EP006H | EP006G | EP00TIN | EP016H | E000 | E000TIN | E001 | E606 | E216 | E266 | E422 | E423 | E207 | E258 | E212 |
| | M2 - M30 | M3 - M20 | M3 - M30 | M2 - M30 | M1.6 - M24 | M3 - M20 | M1.6 - M24 | M3 - M24 | M3 - M10 | M12 - M24 | M3 - M10 | M12 - M24 | M2 - M10 | M4 - M36 | M3 - M10 |
| | | | | | | | | | | | | | | | |
| P1 | ■ | ■ | ■ | ☑ | ■ | ■ | ☑ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P3 | ☑ | ☑ | ■ | ■ | ☑ | ■ | ■ | ☑ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P4 | ☑ | ☑ | ■ | ■ | ☑ | ☑ | ■ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| M1 | | | ■ | ☑ | | ■ | ☑ | | | | | | | | |
| M2 | | | ■ | ☑ | | ■ | ☑ | | | | | | | | |
| M3 | | | ■ | ☑ | | ■ | ☑ | | | | | | | | |
| M4 | | | ☑ | ☑ | | ☑ | ☑ | | | | | | | | |
| K1 | | | ☑ | ☑ | | ☑ | ☑ | | | | | | | | |
| K2 | | | ☑ | ☑ | | ☑ | ☑ | | | | | | | | |
| K3 | | | ☑ | ☑ | | ☑ | ☑ | | | | | | | | |
| K4 | | | ☑ | ☑ | | ☑ | ☑ | | | | | | | | |
| K5 | | | ☑ | ☑ | | ☑ | ☑ | | | | | | | | |
| N1 | ■ | ■ | ■ | | ■ | ■ | | ☑ | ■ | ■ | ■ | ■ | ☑ | ☑ | ☑ |
| N2 | ■ | ■ | ■ | | ■ | ■ | | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| N3 | ☑ | ☑ | ☑ | | ■ | ■ | | ☑ | ☑ | ☑ | ■ | ■ | ■ | ■ | ■ |
| N4 | ☑ | ☑ | ☑ | | ☑ | ☑ | | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| N5 | | | | | | | | | | | | | | | |
| S1 | | | | | | | | | | | | | | | |
| S2 | | | | | | | | | | | | | | | |
| S3 | | | | | | | | | | | | | | | |
| S4 | | | | | | | | | | | | | | | |
| H1 | | | | | | | | | | | | | | | |
| H2 | | | | | | | | | | | | | | | |
| H3 | | | | | | | | | | | | | | | |
| H4 | | | | | | | | | | | | | | | |

■ Primary use ☑ Possible use



| Thread form (THFT) | M | M | M | M | M | M | M | M | M | M | M | M | M |
|-------------------------------|-------------|---------------|---------------|----------------|---------------|-------------|----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Basic standard group (BSG) | DIN 376 | DIN 371/376 | DIN 371/376 | DIN 371/376 | DIN 371/376 | ISO 529 | ISO 529 | ISO 529 | ISO BORNER | ISO 2283 | DIN 2174 | DIN 2174 | DIN 2174 |
| Thread tolerance class (TCTR) | 6H | 6H | 6G | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6HX | 6HX | 6HX |
| Threading application | | | | | | | | | | | | | |
| Usable length (ULDR) | 1.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 1.5xD | 2xD | 3xD | 3xD | 3.5xD |
| Material code (BMC) | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS | HSS-E PM | HSS-E | HSS-E | HSS-E |
| Tap chamfer style (TCS) | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3.5 | C 2-3.5 | C 2-3.5 |
| Flute Geometry (FDC) | | | | | | | | | | | | | |
| Flute helix angle (FHA) | λ 15° | λ 45° | λ 45° | λ 45° | λ 45° | λ 45° | λ 45° | λ 45° | λ 30° | λ 40° | | | |
| Hand (Cutting direction) | | | | | | | | | | | | | |
| Coating | TIN | Bright | Bright | TIN | ST | Bright | TIN | ST | ST | Bright | Bright | TIN | TIN |
| Coolant exit style (CXSC) | | | | | | | | | | | | | |
| Product Family Code | E263 | EX006H | EX006G | EX00TIN | EX016H | E002 | E002TIN | E003 | E650 | E605 | E291 | E292 | E294 |
| | M12 - M36 | M2 - M64 | M3 - M20 | M3 - M30 | M2 - M64 | M2 - M24 | M3 - M20 | M2 - M24 | M3 - M16 | M3 - M20 | M1.6 - M16 | M1.6 - M16 | M3 - M16 |
| | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 |
| P | P1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M | M1 | | | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ |
| | M2 | | | | ■ | ■ | ■ | ■ | | | | ■ | ■ |
| | M3 | | | | ■ | ■ | ■ | ■ | | | | ■ | ■ |
| | M4 | | | | ■ | ■ | ■ | ■ | | | | ■ | ■ |
| K | K1 | | | | | | | | | | | | |
| | K2 | | | | | | | | | | | | |
| | K3 | | | | | | | | | | | | |
| | K4 | | | | | | | | | | | | |
| | K5 | | | | | | | | | | | | |
| N | N1 | ■ | ■ | ■ | | ■ | | | ■ | ■ | ■ | ■ | ■ |
| | N2 | ■ | ■ | ■ | ■ | | ■ | | | ■ | ■ | ■ | ■ |
| | N3 | | | | | | | | ■ | | ■ | ■ | ■ |
| | N4 | | | | | | | | ■ | | | ■ | ■ |
| | N5 | | | | | | | | | | | | |
| S | S1 | | | | | | | | | | | | |
| | S2 | | | | | | | | | | | | |
| | S3 | | | | | | | | | | | | |
| | S4 | | | | | | | | | | | | |
| H | H1 | | | | | | | | | | | | |
| | H2 | | | | | | | | | | | | |
| | H3 | | | | | | | | | | | | |
| | H4 | | | | | | | | | | | | |

■ Primary use ■ Possible use



| | M | M | M | M | MF | MF | MF | MF | MF | MF | MF | MF | MF | MF | MF |
|----|----------|----------|----------|----------|------------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|
| | DIN 2174 | DIN 2174 | DIN 2174 | DIN 2174 | DIN 2181 | DIN 374 | DIN 371 | DIN 374 | ISO 529 | DIN 374 | DIN 374 | DIN 374 | ISO 529 | DIN 374 | DIN 374 |
| | 6HX | 6HX | 6GX | 6GX | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H |
| | | | | | | | | | | | | | | | |
| | 3.5xD | 3xD | 3xD | 3xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD |
| | HSS-E | HSS-E | HSS-E | HSS-E | HSS | HSS-E PM | HSS-E PM | HSS-E PM | HSS | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM |
| | C 2-3.5 | E 1.5-2 | C 2-3.5 | E 1.5-2 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | | B 3.5-5 | B 3.5-5 | B 3.5-5 | B 3.5-5 | C 2-3 | C 2-3 |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | TIN | TIN | TIN | TIN | Bright | Bright | Bright | Bright | Bright | Bright | TIN | ST | ST | Bright | TIN |
| | | | | | | | | | | | | | | | |
| | E289 | E293 | E295 | E296 | E105 | E268 | E242 | E290 | E513 | EP10 | EP10TIN | EP11 | E011 | EX10 | EX10TIN |
| | M5 - M12 | M3 - M16 | M3 - M12 | M3 - M10 | M2.5 - M50 | M4 - M50 | M8 - M10 | M12 - M24 | M3 - M50 | M4 - M30 | M8 - M20 | M4 - M30 | M4 - M24 | M4 - M30 | M8 - M20 |
| | | | | | | | | | | | | | | | |
| P1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| K1 | | | | | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | | |
| K2 | | | | | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | | |
| K3 | | | | | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | | |
| K4 | | | | | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | | |
| K5 | | | | | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | | |
| N1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N5 | | | | | | | | | | | | | | | |
| S1 | | | | | | | | | | | | | | | |
| S2 | | | | | | | | | | | | | | | |
| S3 | | | | | | | | | | | | | | | |
| S4 | | | | | | | | | | | | | | | |
| H1 | | | | | | | | | | | | | | | |
| H2 | | | | | | | | | | | | | | | |
| H3 | | | | | | | | | | | | | | | |
| H4 | | | | | | | | | | | | | | | |



| Thread form (THFT) | MF | MF | MF | UNC | UNC | UNC | UNC | UNC | UNC | UNC | UNC | UNC | UNC |
|-------------------------------|---------------|---------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|---------------|---------------|---------------|
| Basic standard group (BSG) | DIN 374 | ISO 529 | DIN 2174 | DIN 352 | DIN 371 | DIN 376 | ISO 529 | DIN 2184-1 | DIN 2184-1 | ISO 529 | DIN 2184-1 | DIN 2184-1 | ISO 529 |
| Thread tolerance class (TCTR) | 6H | 6H | 6HX | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B |
| Threading application | | | | | | | | | | | | | |
| Usable length (ULDR) | 2.5xD | 2.5xD | 3xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD |
| Material code (BMC) | HSS-E PM | HSS-E PM | HSS-E | HSS | HSS-E PM | HSS-E PM | HSS | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM |
| Tap chamfer style (TCS) | C 2-3 | C 2-3 | C 2-3.5 | C 2-3 | C 2-3 | C 2-3 | | B 3.5-5 | B 3.5-5 | B 3.5-5 | C 2-3 | C 2-3 | C 2-3 |
| Flute Geometry (FDC) | | | | | | | | | | | | | |
| Flute helix angle (FHA) | λ 45° | λ 45° | | | | | | | | | λ 45° | λ 45° | λ 45° |
| Hand (Cutting direction) | | | | | | | | | | | | | |
| Coating | ST | ST | TiN | Bright | Bright | Bright | Bright | Bright | Bright | ST | ST | Bright | ST |
| Coolant exit style (CXSC) | | | | | | | | | | | | | |
| Product Family Code | EX11 | E013 | E288 | E108 | E225 | E275 | E515 | EP20 | EP21 | E021 | EX20 | EX21 | E023 |
| | M4 - M30 | M4 - M22 | M5 - M12 | No.5 - 1" | No.4 - 1/4 | 5/16 - 1.1/2 | No.1 - 2" | No.4 - 1" | No.4 - 1" | No.2 - 1" | No.4 - 1" | No.4 - 1" | No.2 - 1" |
| | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 149 | 150 | 151 | 152 | 153 | 154 |
| P | P1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M | M1 | ■ | ■ | ■ | | | | | | ■ | ■ | ■ | ■ |
| | M2 | ■ | ■ | ■ | | | | | | ■ | ■ | ■ | ■ |
| | M3 | ■ | ■ | ■ | | | | | | ■ | ■ | ■ | ■ |
| | M4 | ■ | ■ | ■ | | | | | | ■ | ■ | ■ | ■ |
| K | K1 | | | | ■ | ■ | ■ | ■ | | ■ | ■ | | |
| | K2 | | | | ■ | ■ | ■ | ■ | | ■ | ■ | | |
| | K3 | | | | ■ | ■ | ■ | ■ | | ■ | ■ | | |
| | K4 | | | | ■ | ■ | ■ | ■ | | ■ | ■ | | |
| | K5 | | | | ■ | ■ | ■ | ■ | | ■ | ■ | | |
| N | N1 | | | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | |
| | N2 | | | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | |
| | N3 | | | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | |
| | N4 | | | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | |
| | N5 | | | | ■ | ■ | ■ | ■ | ■ | | ■ | | |
| S | S1 | | | | | | | | | | | | |
| | S2 | | | | | | | | | | | | |
| | S3 | | | | | | | | | | | | |
| | S4 | | | | | | | | | | | | |
| H | H1 | | | | | | | | | | | | |
| | H2 | | | | | | | | | | | | |
| | H3 | | | | | | | | | | | | |
| | H4 | | | | | | | | | | | | |

■ Primary use ■ Possible use



| | UNC | UNC | UNF | UNF | UNF | UNF | UNF | UNF | UNF | UNF | UNF | UNF | UNF | UN | | |
|----|------------------|---------------|-------------|-------------|--------------|--------------|---------------|---------------|-------------|------------------|------------------|------------------|------------------|---------------|--------------|--------|
| | DIN DORNER | DIN 2184-1 | DIN 2181 | DIN 371 | DIN 374 | ISO 529 | DIN 2184-1 | DIN 2184-1 | ISO 529 | DIN 2184-1 | DIN 2184-1 | ISO 529 | DIN DORNER | DIN 2184-1 | ISO 529 | |
| | 2B | 2BX | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | Medium | 2BX | 2B | |
| | | | | | | | | | | | | | | | | |
| | 1.5xD | 3.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 1.5xD | 3.5xD | 1.5xD | |
| | HSS | HSS-E | HSS | HSS-E PM | HSS-E PM | HSS | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS | HSS-E | HSS | |
| | C 2-3 | C 2-3.5 | C 2-3 | C 2-3 | C 2-3 | | C 2-3 | C 2-3 | B 3.5-5 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3.5 | C 2-3 | |
| | | | | | | | | | | | | | | | | |
| | λ 30° | | | | | | | | | λ 45° | λ 45° | λ 45° | λ 30° | | | |
| | | | | | | | | | | | | | | | | |
| | ST | TIN | Bright | Bright | Bright | Bright | Bright | Bright | ST | ST | Bright | ST | ST | ST | TIN | Bright |
| | | | | | | | | | | | | | | | | |
| | E651 | E287 | E111 | E229 | E278 | E524 | EP30 | EP31 | E031 | EX30 | EX31 | E033 | E654 | E286 | E570 | |
| | No.6 - 5/8 | No.4 - 1/2 | No.5 - 1" | No.2 - 1/4 | 5/16 - 1.1/2 | No.0 - 1.1/2 | No.8 - 1" | No.8 - 1" | No.8 - 1" | No.8 - 1" | No.8 - 1" | No.8 - 1" | No.8 - 5/8 | No.4 - 1/2 | 1/4 - 1.5/16 | |
| | 155 | 156 | 157 | 158 | 159 | 160 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | |
| P1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| P2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| P3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| P4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| M1 | | ■ | | | | | | ■ | ■ | | ■ | ■ | | | | |
| M2 | | ■ | | | | | | ■ | ■ | | ■ | ■ | | | | |
| M3 | | ■ | | | | | | ■ | ■ | | ■ | ■ | | | | |
| M4 | | ■ | | | | | | ■ | ■ | | ■ | ■ | | | | |
| K1 | | | ■ | ■ | ■ | ■ | | ■ | ■ | | | | | | ■ | |
| K2 | | | ■ | ■ | ■ | ■ | | ■ | ■ | | | | | | ■ | |
| K3 | | | ■ | ■ | ■ | ■ | | ■ | ■ | | | | | | ■ | |
| K4 | | | ■ | ■ | ■ | ■ | | ■ | ■ | | | | | | ■ | |
| K5 | | | ■ | ■ | ■ | ■ | | ■ | ■ | | | | | | ■ | |
| N1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | | | ■ | ■ | ■ | |
| N2 | | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | | | | ■ | ■ | |
| N3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | ■ | ■ | ■ | |
| N4 | ■ | | ■ | ■ | ■ | ■ | ■ | | | | | | ■ | | ■ | |
| N5 | | | | | | | | | | | | | | | | |
| S1 | | | | | | | | | | | | | | | | |
| S2 | | | | | | | | | | | | | | | | |
| S3 | | | | | | | | | | | | | | | | |
| S4 | | | | | | | | | | | | | | | | |
| H1 | | | | | | | | | | | | | | | | |
| H2 | | | | | | | | | | | | | | | | |
| H3 | | | | | | | | | | | | | | | | |
| H4 | | | | | | | | | | | | | | | | |



| Thread form (THFT) | BSW | BSW | BSW | BSW | BSF | BSF | BSF | BA | BA | BA | G | G | G |
|-------------------------------|-------------|-------------|-------------|---------------|-------------|-------------|---------------|--------------|--------------|---------------|-------------|--------------|-------------|
| Basic standard group (BSG) | DIN 351 | ISO 529 | ISO 529 | ISO 529 | ISO 529 | ISO 529 | ISO 529 | ISO 529 | ISO 529 | ISO 529 | DIN 5157 | DIN 5156 | ISO 2284 |
| Thread tolerance class (TCTR) | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Normal | Normal | Normal | Normal | Normal | Normal |
| Threading application | | | | | | | | | | | | | |
| Usable length (ULDR) | 1.5xD | 1.5xD | 2.5xD | 2xD | 1.5xD | 2.5xD | 2xD | 1.5xD | 2.5xD | 2xD | 1.5xD | 1.5xD | 1.5xD |
| Material code (BMC) | HSS | HSS | HSS | HSS | HSS | HSS | HSS | HSS | HSS | HSS | HSS | HSS-EP PM | HSS |
| Tap chamfer style (TCS) | C 2-3 | | B 3.5-5 | C 2-3 | | B 3.5-5 | C 2-3 | | B 3.5-5 | C 2-3 | C 2-3 | C 2-3 | C 2-3 |
| Flute Geometry (FDC) | | | | | | | | | | | | | |
| Flute helix angle (FHA) | | | | λ 40° | | | λ 40° | | | λ 40° | | | |
| Hand (Cutting direction) | | | | | | | | | | | | | |
| Coating | Bright | Bright | ST | Bright ST | Bright | ST | Bright ST | Bright | ST | Bright ST | Bright | Bright | Bright |
| Coolant exit style (CXSC) | | | | | | | | | | | | | |
| Product Family Code | E115 | E531 | E534 | E533 | E536 | E539 | E538 | E542 | E545 | E544 | E119 | E282 | E547 |
| | 1/8 - 1" | 1/8 - 1" | 1/8 - 3/4 | 1/8 - 3/4 | 3/16 - 1" | 1/4 - 1/2 | 1/4 - 1/2 | No.10 - No.0 | No.10 - No.2 | No.8 - No.2 | 1/8 - 3" | 1/8 - 1.1/2 | 1/8 - 2" |
| | 171 | 172 | 174 | 175 | 176 | 178 | 179 | 180 | 182 | 183 | 184 | 186 | 187 |
| P | P1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| | P4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M | M1 | | | ■ | ■ | | ■ | | ■ | ■ | | | |
| | M2 | | | ■ | ■ | | ■ | | ■ | ■ | | | |
| | M3 | | | ■ | ■ | | ■ | | ■ | ■ | | | |
| | M4 | | | ■ | ■ | | ■ | | ■ | ■ | | | |
| K | K1 | ■ | ■ | ■ | | ■ | ■ | | ■ | ■ | | ■ | ■ |
| | K2 | ■ | ■ | ■ | | ■ | ■ | | ■ | ■ | | ■ | ■ |
| | K3 | ■ | ■ | ■ | | ■ | ■ | | ■ | ■ | | ■ | ■ |
| | K4 | ■ | ■ | ■ | | ■ | ■ | | ■ | ■ | | ■ | ■ |
| | K5 | ■ | ■ | ■ | | ■ | ■ | | ■ | ■ | | ■ | ■ |
| N | N1 | ■ | ■ | | | ■ | | ■ | | ■ | ■ | ■ | ■ |
| | N2 | ■ | ■ | | ■ | ■ | | ■ | | ■ | ■ | ■ | ■ |
| | N3 | ■ | ■ | | ■ | ■ | | ■ | | ■ | ■ | ■ | ■ |
| | N4 | ■ | ■ | | | ■ | | ■ | | ■ | ■ | ■ | ■ |
| | N5 | | | | | | | | | | | | |
| S | S1 | | | | | | | | | | | | |
| | S2 | | | | | | | | | | | | |
| | S3 | | | | | | | | | | | | |
| | S4 | | | | | | | | | | | | |
| H | H1 | | | | | | | | | | | | |
| | H2 | | | | | | | | | | | | |
| | H3 | | | | | | | | | | | | |
| | H4 | | | | | | | | | | | | |

■ Primary use ■ Possible use



| | | | | | | | | | | | | | | |
|-------------------|-------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|-----------------|
| G | G | G | G | G | G | EGM | EGM | Rc | NPT | NPT | NPT | NPT | NPT | NPTF |
| DIN 5156 | DIN 5156 | ISO DORMER | DIN 5156 | DIN 5156 | ISO DORMER | ISO DORMER | ISO DORMER | ISO 2284 | ANSI DORMER | ANSI B94.9 | ANSI B94.9 | ANSI B94.9 | ANSI | ANSI B94.9 |
| Normal | Normal | Normal | Normal | Normal | Normal | 6H | 6H | Normal | Normal | Normal | Normal | Normal | Normal | Normal |
| | | | | | | | | | | | | | | |
| 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 2.5xD | 1.5xD | 2xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD |
| HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS-E PM | HSS | HSS | HSS | HSS-E PM | HSS | HSS | HSS | HSS | HSS |
| B 3.5-5 | B 3.5-5 | B 3.5-5 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | C 2-3 | | C 2-3 |
| | | | | | | | | | | | | | | |
| | | | λ 45° | λ 45° | λ 45° | | λ 40° | | | | | | λ 27° | |
| R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Bright | ST | ST | Bright | ST | ST | Bright | Bright | Bright | Bright | Bright | Bright | TiN | Bright | Bright |



| | EP40 | EP41 | E041 | EX40 | EX41 | E043 | E620 | E621 | E550 | E714 | E710 | E721 | E711 | E653 | E712 |
|--|----------|----------|-----------|-------------|-------------|-----------|----------|----------|----------|----------|-----------|----------|-------------|----------|--------------|
| | 1/8 - 1" | 1/8 - 1" | 1/8 - 3/4 | 1/8 - 1.1/2 | 1/8 - 1.1/2 | 1/8 - 3/4 | M3 - M16 | M3 - M16 | 1/8 - 2" | 1/8 - 1" | 1/16 - 2" | 1/8 - 1" | 1/8 - 1.1/2 | 1/8 - 1" | 1/16 - 1.1/4 |
| | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 |















| | | | | | | | | | | | | | | | |
|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M1 | | ■ | ■ | | ■ | ■ | | | ■ | | | | | | |
| M2 | | ■ | ■ | | ■ | ■ | | | ■ | | | | | | |
| M3 | | ■ | ■ | | ■ | ■ | | | ■ | | | | | | |
| M4 | | ■ | ■ | | ■ | ■ | | | ■ | | | | | | |
| K1 | | ■ | ■ | | | | ■ | | ■ | ■ | ■ | ■ | ■ | | ■ |
| K2 | | ■ | ■ | | | | ■ | | ■ | ■ | ■ | ■ | ■ | | ■ |
| K3 | | ■ | ■ | | | | ■ | | ■ | ■ | ■ | ■ | ■ | | ■ |
| K4 | | ■ | ■ | | | | ■ | | ■ | ■ | ■ | ■ | ■ | | ■ |
| K5 | | ■ | ■ | | | | ■ | | ■ | ■ | ■ | ■ | ■ | | ■ |
| N1 | ■ | | | ■ | | | ■ | | ■ | | | | | ■ | |
| N2 | ■ | | | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ |
| N3 | ■ | | | | | | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N4 | ■ | | | | | | ■ | | ■ | | ■ | ■ | ■ | ■ | ■ |
| N5 | | | | | | | | | | | | | | | |
| S1 | | | | | | | | | | | | | | | |
| S2 | | | | | | | | | | | | | | | |
| S3 | | | | | | | | | | | | | | | |
| S4 | | | | | | | | | | | | | | | |
| H1 | | | | | | | | | | | | | | | |
| H2 | | | | | | | | | | | | | | | |
| H3 | | | | | | | | | | | | | | | |
| H4 | | | | | | | | | | | | | | | |

■ Primary use ■ Possible use



| | | | | | | | | |
|-------------------------------|-------------|-------------|-------------|--------------|-------------|---------------|-------------|-------------|
| Thread form (THFT) | | | | | | | | |
| Basic standard group (BSG) | ANSI B94.9 | ANSI B94.9 | ANSI B94.9 | DIN 40432 | DIN 352 | ISO DORMER | | |
| Thread tolerance class (TCTR) | Normal | Normal | Normal | Normal | 6H | 6H | | |
| Threading application | | | | | | | | |
| Usable length (ULDR) | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | 1.5xD | | |
| Material code (BMC) | HSS | HSS | HSS | HSS | HSS | HSS | | |
| Tap chamfer style (TCS) | C 2-3 | C 2-3 | C 2-3 | | C 2-3 | C 2-3 | | |
| Flute Geometry (FDC) | | | | | | | | |
| Flute helix angle (FHA) | | | | | | λ 30° | | |
| Hand (Cutting direction) | | | | | | | | |
| Coating | Bright | TIN | Bright | Bright | Bright | ST | | |
| Coolant exit style (CXSC) | | | | | | | | |
| | | | | | | | | |
| Product Family Code | E709 | E720 | E708 | E243 | L119 | L126 | L113 | L114 |
| | 1/8 - 3/4 | 1/8 - 3/4 | 1/8 - 1" | No.7 - No.36 | Set | Set | Set | Set |
| | 204 | 205 | 206 | 207 | 208 | 208 | 209 | 209 |
| P | P1 | ■ | ■ | ■ | | | | |
| | P2 | ■ | ■ | ■ | | | | |
| | P3 | ■ | ■ | ■ | | | | |
| | P4 | ■ | ■ | ■ | | | | |
| M | M1 | | | | | | | |
| | M2 | | | | | | | |
| | M3 | | | | | | | |
| | M4 | | | | | | | |
| K | K1 | ■ | ■ | ■ | | | | |
| | K2 | ■ | ■ | ■ | | | | |
| | K3 | ■ | ■ | ■ | | | | |
| | K4 | ■ | ■ | ■ | | | | |
| | K5 | ■ | ■ | ■ | | | | |
| N | N1 | | | | | | | |
| | N2 | ■ | ■ | ■ | | | | |
| | N3 | ■ | ■ | ■ | | | | |
| | N4 | ■ | ■ | ■ | | | | |
| | N5 | | | | | | | |
| S | S1 | | | | | | | |
| | S2 | | | | | | | |
| | S3 | | | | | | | |
| | S4 | | | | | | | |
| H | H1 | | | | | | | |
| | H2 | | | | | | | |
| | H3 | | | | | | | |
| | H4 | | | | | | | |

■ Primary use ■ Possible use

| |  |  |  |  |  |  |  | |
|----|---|---|---|---|--|---|---|--|
| | L115 | L000 | L001 | L002 | L120 | L110 | L112 | |
| | Set | Set | Set | Set | Set | 16.00 - 4" | BT1 - No.7 | |
| |  210 |  210 |  211 |  212 |  213 |  214 |  215 | |
| P1 | | | | | | | | |
| P2 | | | | | | | | |
| P3 | | | | | | | | |
| P4 | | | | | | | | |
| M1 | | | | | | | | |
| M2 | | | | | | | | |
| M3 | | | | | | | | |
| M4 | | | | | | | | |
| K1 | | | | | | | | |
| K2 | | | | | | | | |
| K3 | | | | | | | | |
| K4 | | | | | | | | |
| K5 | | | | | | | | |
| N1 | | | | | | | | |
| N2 | | | | | | | | |
| N3 | | | | | | | | |
| N4 | | | | | | | | |
| N5 | | | | | | | | |
| S1 | | | | | | | | |
| S2 | | | | | | | | |
| S3 | | | | | | | | |
| S4 | | | | | | | | |
| H1 | | | | | | | | |
| H2 | | | | | | | | |
| H3 | | | | | | | | |
| H4 | | | | | | | | |

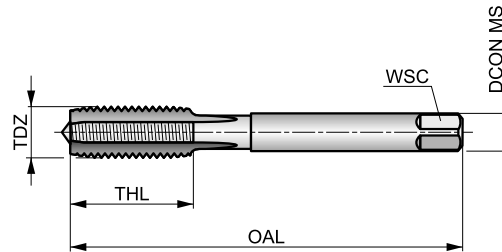


E100



HSS Straight Flute Serial Hand Taps, Metric, DIN Standard, Bright Finish

Ideal for hand tapping tough materials. The straight flute design makes it ideal for both through and blind holes. Available as a single finishing tap or as a set of three serial taps, which should be used one after the other to create the full thread. Bright finish.



| | | |
|--|---------|-----|
| | DIN 352 | 6H |
| | 1.5xD | HSS |
| | | |
| | | |

Workpiece material group suitability.

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| K3.1 | K3.2 | K4.1 | K4.2 | K5.1 | K5.2 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 | N2.3 | N3.1 | N3.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N3.3 | N4.2 | N4.3 | | | | | | | | | | | |
| ■ | ■ | ■ | | | | | | | | | | | |

Products from this series are also available in set of sizes or with dies. Please see L119 or L120.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | NOF | PHD |
|-------------|-----|------|------|------|---------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E100M1.6N03 | 1.6 | 0.35 | 32.0 | 7 | 2.50 | 2.10 | 3 | 1.25 |
| E100M1.6N08 | 1.6 | 0.35 | 32.0 | 7 | 2.50 | 2.10 | 3 | 1.25 |
| E100M2N03 | 2 | 0.40 | 36.0 | 8 | 2.80 | 2.10 | 3 | 1.60 |
| E100M2N08 | 2 | 0.40 | 36.0 | 8 | 2.80 | 2.10 | 3 | 1.60 |
| E100M2.5N03 | 2.5 | 0.45 | 40.0 | 9 | 2.80 | 2.10 | 3 | 2.05 |
| E100M2.5N08 | 2.5 | 0.45 | 40.0 | 9 | 2.80 | 2.10 | 3 | 2.05 |
| E100M3N03 | 3 | 0.50 | 40.0 | 10 | 3.50 | 2.70 | 3 | 2.50 |
| E100M3N08 | 3 | 0.50 | 40.0 | 10 | 3.50 | 2.70 | 3 | 2.50 |
| E100M3.5N03 | 3.5 | 0.60 | 45.0 | 10 | 4.00 | 3.00 | 3 | 2.90 |
| E100M3.5N08 | 3.5 | 0.60 | 45.0 | 10 | 4.00 | 3.00 | 3 | 2.90 |
| E100M4N03 | 4 | 0.70 | 45.0 | 12 | 4.50 | 3.40 | 3 | 3.30 |
| E100M4N08 | 4 | 0.70 | 45.0 | 12 | 4.50 | 3.40 | 3 | 3.30 |
| E100M5N03 | 5 | 0.80 | 50.0 | 14 | 6.00 | 4.90 | 3 | 4.20 |
| E100M5N08 | 5 | 0.80 | 50.0 | 14 | 6.00 | 4.90 | 3 | 4.20 |
| E100M6N03 | 6 | 1.00 | 56.0 | 16 | 6.00 | 4.90 | 3 | 5.00 |
| E100M6N08 | 6 | 1.00 | 56.0 | 16 | 6.00 | 4.90 | 3 | 5.00 |
| E100M7N03 | 7 | 1.00 | 56.0 | 16 | 6.00 | 4.90 | 3 | 6.00 |
| E100M7N08 | 7 | 1.00 | 56.0 | 16 | 6.00 | 4.90 | 3 | 6.00 |
| E100M8N03 | 8 | 1.25 | 63.0 | 19 | 6.00 | 4.90 | 3 | 6.80 |
| E100M8N08 | 8 | 1.25 | 63.0 | 19 | 6.00 | 4.90 | 3 | 6.80 |
| E100M9N03 | 9 | 1.25 | 63.0 | 20 | 7.00 | 5.50 | 3 | 7.80 |
| E100M9N08 | 9 | 1.25 | 63.0 | 20 | 7.00 | 5.50 | 3 | 7.80 |
| E100M10N03 | 10 | 1.50 | 70.0 | 22 | 7.00 | 5.50 | 3 | 8.50 |
| E100M10N08 | 10 | 1.50 | 70.0 | 22 | 7.00 | 5.50 | 3 | 8.50 |
| E100M12N03 | 12 | 1.75 | 75.0 | 25 | 9.00 | 7.00 | 4 | 10.30 |
| E100M12N08 | 12 | 1.75 | 75.0 | 25 | 9.00 | 7.00 | 4 | 10.30 |
| E100M14N03 | 14 | 2.00 | 80.0 | 25 | 11.00 | 9.00 | 4 | 12.00 |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | NOF | PHD |
|------------|-----|------|-------|------|---------|-------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E100M14N08 | 14 | 2.00 | 80.0 | 25 | 11.00 | 9.00 | 4 | 12.00 |
| E100M16N03 | 16 | 2.00 | 80.0 | 25 | 12.00 | 9.00 | 4 | 14.00 |
| E100M16N08 | 16 | 2.00 | 80.0 | 25 | 12.00 | 9.00 | 4 | 14.00 |
| E100M18N03 | 18 | 2.50 | 95.0 | 32 | 14.00 | 11.00 | 4 | 15.50 |
| E100M18N08 | 18 | 2.50 | 95.0 | 32 | 14.00 | 11.00 | 4 | 15.50 |
| E100M20N03 | 20 | 2.50 | 95.0 | 32 | 16.00 | 12.00 | 4 | 17.50 |
| E100M20N08 | 20 | 2.50 | 95.0 | 32 | 16.00 | 12.00 | 4 | 17.50 |
| E100M22N03 | 22 | 2.50 | 100.0 | 34 | 18.00 | 14.50 | 4 | 19.50 |
| E100M22N08 | 22 | 2.50 | 100.0 | 34 | 18.00 | 14.50 | 4 | 19.50 |
| E100M24N03 | 24 | 3.00 | 110.0 | 38 | 18.00 | 14.50 | 4 | 21.00 |
| E100M24N08 | 24 | 3.00 | 110.0 | 38 | 18.00 | 14.50 | 4 | 21.00 |
| E100M27N03 | 27 | 3.00 | 110.0 | 38 | 20.00 | 16.00 | 4 | 24.00 |
| E100M27N08 | 27 | 3.00 | 110.0 | 38 | 20.00 | 16.00 | 4 | 24.00 |
| E100M30N03 | 30 | 3.50 | 125.0 | 45 | 22.00 | 18.00 | 4 | 26.50 |
| E100M30N08 | 30 | 3.50 | 125.0 | 45 | 22.00 | 18.00 | 4 | 26.50 |
| E100M33N03 | 33 | 3.50 | 125.0 | 50 | 25.00 | 20.00 | 4 | 29.50 |
| E100M33N08 | 33 | 3.50 | 125.0 | 50 | 25.00 | 20.00 | 4 | 29.50 |
| E100M36N03 | 36 | 4.00 | 150.0 | 56 | 28.00 | 22.00 | 4 | 32.00 |
| E100M36N08 | 36 | 4.00 | 150.0 | 56 | 28.00 | 22.00 | 4 | 32.00 |
| E100M39N03 | 39 | 4.00 | 150.0 | 60 | 32.00 | 24.00 | 4 | 35.00 |
| E100M39N08 | 39 | 4.00 | 150.0 | 60 | 32.00 | 24.00 | 4 | 35.00 |
| E100M42N03 | 42 | 4.50 | 150.0 | 60 | 32.00 | 24.00 | 4 | 37.50 |
| E100M42N08 | 42 | 4.50 | 150.0 | 60 | 32.00 | 24.00 | 4 | 37.50 |
| E100M45N03 | 45 | 4.50 | 160.0 | 65 | 36.00 | 29.00 | 6 | 40.50 |
| E100M45N08 | 45 | 4.50 | 160.0 | 65 | 36.00 | 29.00 | 6 | 40.50 |
| E100M48N03 | 48 | 5.00 | 180.0 | 70 | 36.00 | 29.00 | 6 | 43.00 |
| E100M48N08 | 48 | 5.00 | 180.0 | 70 | 36.00 | 29.00 | 6 | 43.00 |
| E100M52N03 | 52 | 5.00 | 180.0 | 70 | 40.00 | 32.00 | 6 | 47.00 |
| E100M52N08 | 52 | 5.00 | 180.0 | 70 | 40.00 | 32.00 | 6 | 47.00 |

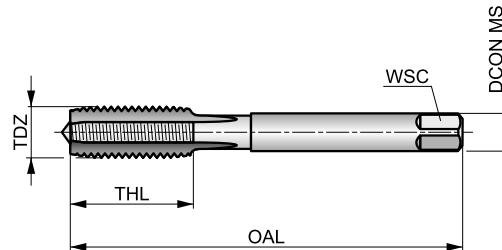


E102



HSS-E Straight Flute Serial Hand Taps, Metric, DIN Standard

Ideal for hand tapping tough materials. The straight flute design makes it ideal for both through and blind holes. Available as a set of three serial taps, which should be used one after the other to create the full thread. Steam tempered surface acts to retain cutting fluid to improve lubrication and provide smoother cutting.



| | | |
|--|---------|-------|
| | DIN 352 | 6HX |
| | 1.5xD | HSS-E |
| | | |
| | | |

Workpiece material group suitability.

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P3.3 | P4.1 | P4.2 | M1.1 | M1.2 | M2.1 |
| ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| M2.2 | M3.1 | M3.2 | M3.3 | M4.1 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 | K2.3 | K3.1 | K3.2 | K3.3 |
| ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| K4.1 | K4.2 | K4.3 | K5.1 | K5.2 | K5.3 | S1.1 | S2.1 | S3.1 | S4.1 | | | | |
| ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | | | | |

No4 with pilot guide.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | NOF | PHD |
|------------|-----|------|-------|------|---------|-------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E102M3N08 | 3 | 0.50 | 40.0 | 10 | 3.50 | 2.70 | 3 | 2.50 |
| E102M4N08 | 4 | 0.70 | 45.0 | 12 | 4.50 | 3.40 | 3 | 3.30 |
| E102M5N08 | 5 | 0.80 | 50.0 | 14 | 6.00 | 4.90 | 3 | 4.20 |
| E102M6N08 | 6 | 1.00 | 56.0 | 16 | 6.00 | 4.90 | 3 | 5.00 |
| E102M8N08 | 8 | 1.25 | 63.0 | 19 | 6.00 | 4.90 | 3 | 6.80 |
| E102M10N08 | 10 | 1.50 | 70.0 | 22 | 7.00 | 5.50 | 3 | 8.50 |
| E102M12N08 | 12 | 1.75 | 75.0 | 25 | 9.00 | 7.00 | 4 | 10.30 |
| E102M14N08 | 14 | 2.00 | 80.0 | 25 | 11.00 | 9.00 | 4 | 12.00 |
| E102M16N08 | 16 | 2.00 | 80.0 | 25 | 12.00 | 9.00 | 4 | 14.00 |
| E102M18N08 | 18 | 2.50 | 95.0 | 32 | 14.00 | 11.00 | 4 | 15.50 |
| E102M20N08 | 20 | 2.50 | 95.0 | 32 | 16.00 | 12.00 | 4 | 17.50 |
| E102M24N08 | 24 | 3.00 | 110.0 | 38 | 18.00 | 14.50 | 4 | 21.00 |
| E102M27N08 | 27 | 3.00 | 110.0 | 38 | 20.00 | 16.00 | 4 | 24.00 |
| E102M30N08 | 30 | 3.50 | 125.0 | 45 | 22.00 | 18.00 | 4 | 26.50 |

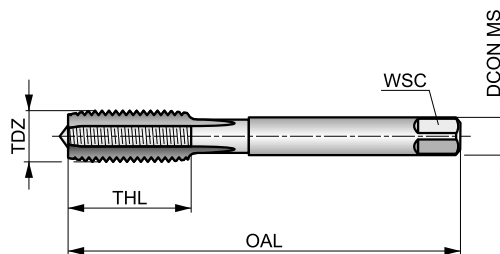


E101



HSS Straight Flute Serial Hand Taps, Metric, DIN Standard, Left-Handed

Ideal for hand tapping tough materials. The straight flute design makes it ideal for both through and blind holes. Available as a single finishing tap or as a set of three serial taps, which should be used one after the other to create the full thread. Bright finish.



| | | |
|-----------------|-------------------|------------|
| M | DIN 352 | 6H |
| | 1.5xD | HSS |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability.

| | | | | | | | | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 |
| ■ | ■ | ■ | ■ | ■ | ☑ | ■ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| K3.1 | K3.2 | K4.1 | K4.2 | K5.1 | K5.2 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 | N2.3 | N3.1 | N3.2 |
| ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N3.3 | N4.2 | N4.3 | | | | | | | | | | | |
| ■ | ■ | ■ | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | NOF | PHD |
|------------|-----|------|------|-----|---------|------|-----|-------|
| | | | | | | | | |
| E101M4N03 | 4 | 0.70 | 45.0 | 12 | 4.50 | 3.40 | 3 | 3.30 |
| E101M4N08 | 4 | 0.70 | 45.0 | 12 | 4.50 | 3.40 | 3 | 3.30 |
| E101M5N03 | 5 | 0.80 | 50.0 | 14 | 6.00 | 4.90 | 3 | 4.20 |
| E101M5N08 | 5 | 0.80 | 50.0 | 14 | 6.00 | 4.90 | 3 | 4.20 |
| E101M6N03 | 6 | 1.00 | 56.0 | 16 | 6.00 | 4.90 | 3 | 5.00 |
| E101M6N08 | 6 | 1.00 | 56.0 | 16 | 6.00 | 4.90 | 3 | 5.00 |
| E101M8N03 | 8 | 1.25 | 63.0 | 19 | 6.00 | 4.90 | 3 | 6.80 |
| E101M8N08 | 8 | 1.25 | 63.0 | 19 | 6.00 | 4.90 | 3 | 6.80 |
| E101M10N03 | 10 | 1.50 | 70.0 | 22 | 7.00 | 5.50 | 3 | 8.50 |
| E101M10N08 | 10 | 1.50 | 70.0 | 22 | 7.00 | 5.50 | 3 | 8.50 |
| E101M12N03 | 12 | 1.75 | 75.0 | 25 | 9.00 | 7.00 | 4 | 10.30 |
| E101M12N08 | 12 | 1.75 | 75.0 | 25 | 9.00 | 7.00 | 4 | 10.30 |
| E101M14N03 | 14 | 2.00 | 80.0 | 25 | 11.00 | 9.00 | 4 | 12.00 |
| E101M14N08 | 14 | 2.00 | 80.0 | 25 | 11.00 | 9.00 | 4 | 12.00 |
| E101M16N03 | 16 | 2.00 | 80.0 | 25 | 12.00 | 9.00 | 4 | 14.00 |
| E101M16N08 | 16 | 2.00 | 80.0 | 25 | 12.00 | 9.00 | 4 | 14.00 |

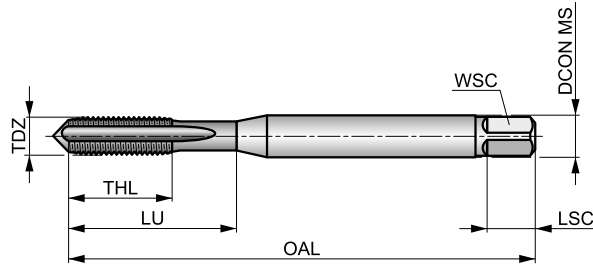


E200



HSS-E-PM Straight Flute Machine Tap, Metric, DIN Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reinforced shank increases strength against torsional twist.



| | | |
|----------------|---------|----------|
| | DIN 371 | 6H |
| | 1.5xD | HSS-E PM |
| A 6-8 C 2-3 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 12 | K3.2 ▣ 9 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|-----|------|-------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E200M2 | 2 | 0.40 | 45.0 | 6 | 2.80 | 2.10 | 5 | 3 | 1.60 | 9.00 |
| E200M2.5 | 2.5 | 0.45 | 50.0 | 8 | 2.80 | 2.10 | 5 | 3 | 2.05 | 12.50 |
| E200M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E200M3N01 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E200M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E200M4N01 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E200M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E200M5N01 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E200M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E200M6N01 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E200M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E200M8N01 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E200M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| E200M10N01 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |

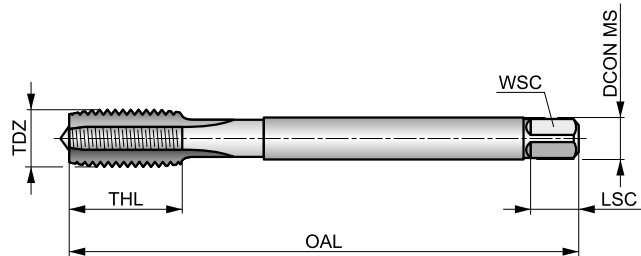


E250



HSS-E-PM Straight Flute Machine Tap, Metric, DIN Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reduced shank increases the reach of the tap.



| | | |
|----------------|---------|----------|
| | DIN 376 | 6H |
| | 1.5xD | HSS-E PM |
| A 6-8 C 2-3 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 12 | K3.2 ▣ 9 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|-----------------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E250M3 | 3 | 0.50 | 56.0 | 10 | 2.20 | 1.80 | 5 | 3 | 2.50 |
| E250M4 | 4 | 0.70 | 63.0 | 12 | 2.80 | 2.10 | 5 | 3 | 3.30 |
| E250M5 | 5 | 0.80 | 70.0 | 13 | 3.50 | 2.70 | 6 | 3 | 4.20 |
| E250M6 | 6 | 1.00 | 80.0 | 15 | 4.50 | 3.40 | 6 | 3 | 5.00 |
| E250M6N01 | 6 | 1.00 | 80.0 | 15 | 4.50 | 3.40 | 6 | 3 | 5.00 |
| E250M8 | 8 | 1.25 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 6.80 |
| E250M8N01 | 8 | 1.25 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 6.80 |
| E250M10 | 10 | 1.50 | 100.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.50 |
| E250M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 |
| E250M12N01 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 |
| E250M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 |
| E250M14N01 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 |
| E250M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 |
| E250M16N01 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 |
| E250M18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 3 | 15.50 |
| E250M18N01 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 3 | 15.50 |
| E250M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 3 | 17.50 |
| E250M20N01 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 3 | 17.50 |
| E250M22 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 |
| E250M22N01 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 |
| E250M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 |
| E250M27 | 27 | 3.00 | 160.0 | 38 | 20.00 | 16.00 | 19 | 4 | 24.00 |
| E250M30 | 30 | 3.50 | 180.0 | 45 | 22.00 | 18.00 | 21 | 4 | 26.50 |
| E250M33 | 33 | 3.50 | 180.0 | 50 | 25.00 | 20.00 | 23 | 4 | 29.50 |
| E250M36 | 36 | 4.00 | 200.0 | 55 | 28.00 | 22.00 | 25 | 4 | 32.00 |
| E250M39 | 39 | 4.00 | 200.0 | 60 | 32.00 | 24.00 | 27 | 4 | 35.00 |
| E250M42 ¹⁾ | 42 | 4.50 | 200.0 | 60 | 32.00 | 24.00 | 27 | 4 | 37.50 |
| E250M45 ¹⁾ | 45 | 4.50 | 220.0 | 65 | 36.00 | 29.00 | 32 | 6 | 40.50 |
| E250M48 ¹⁾ | 48 | 5.00 | 250.0 | 70 | 36.00 | 29.00 | 32 | 6 | 43.00 |
| E250M52 ¹⁾ | 52 | 5.00 | 250.0 | 70 | 40.00 | 32.00 | 35 | 6 | 47.00 |

¹⁾ HSS-E.

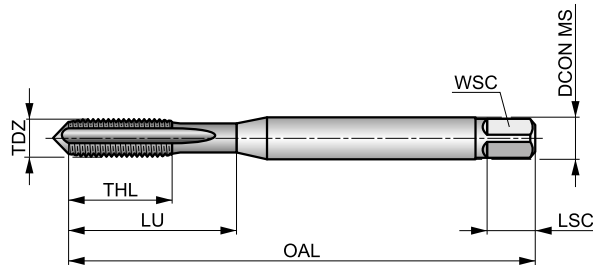


E237



HSS-E-PM Straight Flute Machine Tap, Metric, DIN Standard, Left-Handed

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reinforced shank increases strength against torsional twist.



| | | |
|-----------------|-------------------|---------------------|
| M | DIN 371 | 6H |
| | 1.5xD | HSS-E PM |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 13 | K3.2 ▣ 10 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

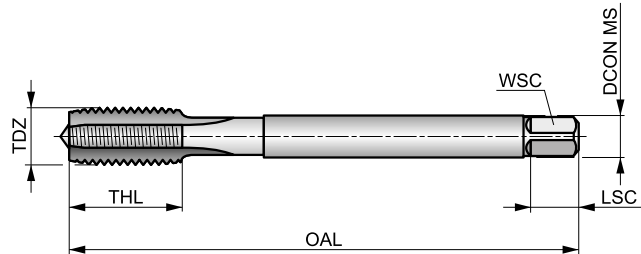
| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|-------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E237M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E237M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E237M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E237M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E237M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E237M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |



E251

HSS-E-PM Straight flute Machine tap, Metric, DIN Standard, Left-handed

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reduced shank increases the reach of the tap.



| | | |
|-----------------|-------------------|---------------------|
| M | DIN 376 | 6H |
| | 1.5xD | HSS-E PM |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 12 | K3.2 ▣ 9 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ▣ 14 | N4.2 ▣ 8 | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|----------------|-----|------|-------|-----|---------|-------|-----|-----|-------|
| | | | | | | | | | |
| E251M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 4 | 10.30 |
| E251M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 4 | 12.00 |
| E251M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 4 | 14.00 |
| E251M18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 15.50 |
| E251M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 |
| E251M22 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 |
| E251M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 |

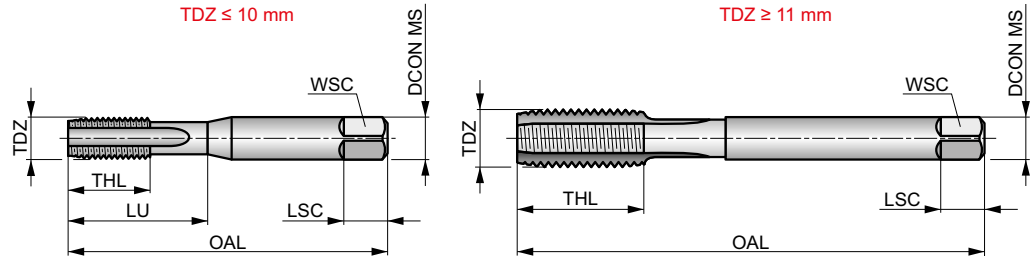


E500



Straight Flute Hand Taps, Metric, ISO Standard

A versatile tool, suitable for hand and machine tapping, with a straight flute design for both through and blind holes. As a hand tap set of three NO6 or two NO7 with different chamfer length, each producing a full thread. Or as a set NO8 with three serial taps to be used in sequence to create the full thread.



| | | |
|--|---------|--------|
| | ISO 529 | 6H |
| | 1.5xD | HSS |
| | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 7 | P1.2 ■ 7 | P1.3 ■ 8 | P2.1 ■ 6 | P2.2 ■ 5 | P2.3 ▣ 4 | P3.1 ■ 4 | P3.2 ▣ 4 | P4.1 ▣ 3 | P4.2 ▣ 2 | K1.1 ▣ 12 | K1.2 ▣ 9 | K1.3 ▣ 7 | K2.1 ▣ 12 |
| K2.2 ▣ 10 | K3.1 ▣ 11 | K3.2 ▣ 8 | K4.1 ▣ 10 | K4.2 ▣ 8 | K5.1 ▣ 11 | K5.2 ▣ 9 | N1.3 ▣ 8 | N2.1 ▣ 11 | N2.2 ▣ 10 | N2.3 ▣ 7 | N3.1 ▣ 17 | N3.2 ▣ 10 | N3.3 ▣ 5 |
| N4.2 ▣ 5 | N4.3 ▣ 3 | | | | | | | | | | | | |

Products from this series are also available in sets with drills or dies. Please see L115, L000 or L120.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------------------------|-----|------|------|------|---------|------|------|-----|------|------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E500M1N01 ¹⁾ | 1 | 0.25 | 38.0 | 4.5 | 2.50 | 2.00 | 4 | 2 | 0.75 | 4.50 |
| E500M1N02 ¹⁾ | 1 | 0.25 | 38.0 | 4.5 | 2.50 | 2.00 | 4 | 2 | 0.75 | 4.50 |
| E500M1N03 ¹⁾ | 1 | 0.25 | 38.0 | 4.5 | 2.50 | 2.00 | 4 | 2 | 0.75 | 4.50 |
| E500M1.2N01 ¹⁾ | 1.2 | 0.25 | 38.0 | 4.5 | 2.50 | 2.00 | 4 | 2 | 0.95 | 4.50 |
| E500M1.2N02 ¹⁾ | 1.2 | 0.25 | 38.0 | 4.5 | 2.50 | 2.00 | 4 | 2 | 0.95 | 4.50 |
| E500M1.2N03 ¹⁾ | 1.2 | 0.25 | 38.0 | 4.5 | 2.50 | 2.00 | 4 | 2 | 0.95 | 4.50 |
| E500M1.4N01 ¹⁾ | 1.4 | 0.30 | 40.0 | 6 | 2.50 | 2.00 | 4 | 2 | 1.10 | 6.00 |
| E500M1.4N02 ¹⁾ | 1.4 | 0.30 | 40.0 | 6 | 2.50 | 2.00 | 4 | 2 | 1.10 | 6.00 |
| E500M1.4N03 ¹⁾ | 1.4 | 0.30 | 40.0 | 6 | 2.50 | 2.00 | 4 | 2 | 1.10 | 6.00 |
| E500M1.6N01 | 1.6 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.25 | 8.00 |
| E500M1.6N02 | 1.6 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.25 | 8.00 |
| E500M1.6N03 | 1.6 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.25 | 8.00 |
| E500M1.6N06 | 1.6 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.25 | 8.00 |
| E500M1.7N01 | 1.7 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.35 | 8.00 |
| E500M1.7N02 | 1.7 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.35 | 8.00 |
| E500M1.7N03 | 1.7 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.35 | 8.00 |
| E500M1.7N06 | 1.7 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.35 | 8.00 |
| E500M1.7N08 | 1.7 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.35 | 8.00 |
| E500M1.8N01 | 1.8 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.45 | 8.00 |
| E500M1.8N02 | 1.8 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.45 | 8.00 |
| E500M1.8N03 | 1.8 | 0.35 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.45 | 8.00 |
| E500M2N01 | 2 | 0.40 | 41.0 | 8 | 2.50 | 2.00 | 4 | 3 | 1.60 | 8.00 |
| E500M2N02 | 2 | 0.40 | 41.0 | 8 | 2.50 | 2.00 | 4 | 3 | 1.60 | 8.00 |
| E500M2N03 | 2 | 0.40 | 41.0 | 8 | 2.50 | 2.00 | 4 | 3 | 1.60 | 8.00 |
| E500M2N06 | 2 | 0.40 | 41.0 | 8 | 2.50 | 2.00 | 4 | 3 | 1.60 | 8.00 |
| E500M2N08 | 2 | 0.40 | 41.0 | 8 | 2.50 | 2.00 | 4 | 3 | 1.60 | 8.00 |
| E500M2X.45N01 | 2 | 0.45 | 41.0 | 8 | 2.50 | 2.00 | 4 | 3 | 1.55 | 8.00 |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|------|------|---------|------|------|------|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| E500M2X.45N02 | 2 | 0.45 | 41.0 | 8 | 2.50 | 2.00 | 4 | 3 | 1.55 | 8.00 |
| E500M2X.45N03 | 2 | 0.45 | 41.0 | 8 | 2.50 | 2.00 | 4 | 3 | 1.55 | 8.00 |
| E500M2.2N01 | 2.2 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.75 | 9.50 |
| E500M2.2N02 | 2.2 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.75 | 9.50 |
| E500M2.2N03 | 2.2 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.75 | 9.50 |
| E500M2.3N01 | 2.3 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.85 | 9.50 |
| E500M2.3N02 | 2.3 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.85 | 9.50 |
| E500M2.3N03 | 2.3 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.85 | 9.50 |
| E500M2.5N01 | 2.5 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.05 | 9.50 |
| E500M2.5N02 | 2.5 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.05 | 9.50 |
| E500M2.5N03 | 2.5 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.05 | 9.50 |
| E500M2.5N06 | 2.5 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.05 | 9.50 |
| E500M2.5N08 | 2.5 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.05 | 9.50 |
| E500M2.6N01 | 2.6 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.15 | 9.50 |
| E500M2.6N02 | 2.6 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.15 | 9.50 |
| E500M2.6N03 | 2.6 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.15 | 9.50 |
| E500M3N01 | 3 | 0.50 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E500M3N02 | 3 | 0.50 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E500M3N03 | 3 | 0.50 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E500M3N06 | 3 | 0.50 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E500M3N07 | 3 | 0.50 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E500M3N08 | 3 | 0.50 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E500M3X.6N01 | 3 | 0.60 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.40 | 12.50 |
| E500M3X.6N02 | 3 | 0.60 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.40 | 12.50 |
| E500M3X.6N03 | 3 | 0.60 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.40 | 12.50 |
| E500M3.5N01 | 3.5 | 0.60 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.90 | 14.00 |
| E500M3.5N02 | 3.5 | 0.60 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.90 | 14.00 |
| E500M3.5N03 | 3.5 | 0.60 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.90 | 14.00 |
| E500M3.5N06 | 3.5 | 0.60 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.90 | 14.00 |
| E500M4N01 | 4 | 0.70 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.30 | 14.00 |
| E500M4N02 | 4 | 0.70 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.30 | 14.00 |
| E500M4N03 | 4 | 0.70 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.30 | 14.00 |
| E500M4N06 | 4 | 0.70 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.30 | 14.00 |
| E500M4N07 | 4 | 0.70 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.30 | 14.00 |
| E500M4N08 | 4 | 0.70 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.30 | 14.00 |
| E500M4X.75N01 | 4 | 0.75 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.25 | 14.00 |
| E500M4X.75N02 | 4 | 0.75 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.25 | 14.00 |
| E500M4X.75N03 | 4 | 0.75 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.25 | 14.00 |
| E500M4.5N01 | 4.5 | 0.75 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.80 | 18.00 |
| E500M4.5N02 | 4.5 | 0.75 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.80 | 18.00 |
| E500M4.5N03 | 4.5 | 0.75 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.80 | 18.00 |
| E500M4.5N06 | 4.5 | 0.75 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.80 | 18.00 |
| E500M5N01 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E500M5N02 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E500M5N03 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E500M5N06 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E500M5N07 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E500M5N08 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E500M5X.9N01 | 5 | 0.90 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.10 | 22.00 |
| E500M5X.9N02 | 5 | 0.90 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.10 | 22.00 |
| E500M5X.9N03 | 5 | 0.90 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.10 | 22.00 |
| E500M5.5X.9N01 | 5.5 | 0.90 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.60 | 21.00 |
| E500M5.5X.9N02 | 5.5 | 0.90 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.60 | 21.00 |
| E500M5.5X.9N03 | 5.5 | 0.90 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.60 | 21.00 |
| E500M6N01 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E500M6N02 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E500M6N03 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E500M6N06 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E500M6N07 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E500M6N08 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E500M7N01 | 7 | 1.00 | 66.0 | 13 | 7.10 | 5.60 | 8 | 3 | 6.00 | 26.00 |
| E500M7N02 | 7 | 1.00 | 66.0 | 13 | 7.10 | 5.60 | 8 | 3 | 6.00 | 26.00 |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|-----|------|-------|------|---------|-------|------|------|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| E500M7N03 | 7 | 1.00 | 66.0 | 13 | 7.10 | 5.60 | 8 | 3 | 6.00 | 26.00 |
| E500M7N06 | 7 | 1.00 | 66.0 | 13 | 7.10 | 5.60 | 8 | 3 | 6.00 | 26.00 |
| E500M8N01 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E500M8N02 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E500M8N03 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E500M8N06 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E500M8N07 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E500M8N08 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E500M9N01 | 9 | 1.25 | 72.0 | 16 | 9.00 | 7.10 | 10 | 3 | 7.80 | 29.00 |
| E500M9N02 | 9 | 1.25 | 72.0 | 16 | 9.00 | 7.10 | 10 | 3 | 7.80 | 29.00 |
| E500M9N03 | 9 | 1.25 | 72.0 | 16 | 9.00 | 7.10 | 10 | 3 | 7.80 | 29.00 |
| E500M9N06 | 9 | 1.25 | 72.0 | 16 | 9.00 | 7.10 | 10 | 3 | 7.80 | 29.00 |
| E500M10N01 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E500M10N02 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E500M10N03 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E500M10N06 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E500M10N07 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E500M10N08 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E500M11N01 | 11 | 1.50 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.50 | – |
| E500M11N02 | 11 | 1.50 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.50 | – |
| E500M11N03 | 11 | 1.50 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.50 | – |
| E500M11N06 | 11 | 1.50 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.50 | – |
| E500M12N01 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E500M12N02 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E500M12N03 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E500M12N06 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E500M12N07 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E500M12N08 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E500M14N01 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.00 | – |
| E500M14N02 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.00 | – |
| E500M14N03 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.00 | – |
| E500M14N06 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.00 | – |
| E500M14N07 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.00 | – |
| E500M14N08 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.00 | – |
| E500M16N01 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.00 | – |
| E500M16N02 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.00 | – |
| E500M16N03 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.00 | – |
| E500M16N06 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.00 | – |
| E500M16N07 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.00 | – |
| E500M16N08 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.00 | – |
| E500M18N01 | 18 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 15.50 | – |
| E500M18N02 | 18 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 15.50 | – |
| E500M18N03 | 18 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 15.50 | – |
| E500M18N06 | 18 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 15.50 | – |
| E500M20N01 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E500M20N02 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E500M20N03 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E500M20N06 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E500M20N07 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E500M20N08 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E500M22N01 | 22 | 2.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | – |
| E500M22N02 | 22 | 2.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | – |
| E500M22N03 | 22 | 2.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | – |
| E500M22N06 | 22 | 2.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | – |
| E500M24N01 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | – |
| E500M24N02 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | – |
| E500M24N03 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | – |
| E500M24N06 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | – |
| E500M24N07 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | – |
| E500M27N01 | 27 | 3.00 | 135.0 | 35 | 20.00 | 16.00 | 20 | 4 | 24.00 | – |
| E500M27N02 | 27 | 3.00 | 135.0 | 35 | 20.00 | 16.00 | 20 | 4 | 24.00 | – |
| E500M27N03 | 27 | 3.00 | 135.0 | 35 | 20.00 | 16.00 | 20 | 4 | 24.00 | – |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|-----|------|-------|------|---------|-------|------|------|-------|------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| E500M30N01 | 30 | 3.50 | 138.0 | 41 | 20.00 | 16.00 | 20 | 4 | 26.50 | — |
| E500M30N02 | 30 | 3.50 | 138.0 | 41 | 20.00 | 16.00 | 20 | 4 | 26.50 | — |
| E500M30N03 | 30 | 3.50 | 138.0 | 41 | 20.00 | 16.00 | 20 | 4 | 26.50 | — |
| E500M33N01 | 33 | 3.50 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 29.50 | — |
| E500M33N02 | 33 | 3.50 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 29.50 | — |
| E500M33N03 | 33 | 3.50 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 29.50 | — |
| E500M36N01 | 36 | 4.00 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 32.00 | — |
| E500M36N02 | 36 | 4.00 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 32.00 | — |
| E500M36N03 | 36 | 4.00 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 32.00 | — |
| E500M39N01 | 39 | 4.00 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 35.00 | — |
| E500M39N02 | 39 | 4.00 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 35.00 | — |
| E500M39N03 | 39 | 4.00 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 35.00 | — |
| E500M42N01 | 42 | 4.50 | 170.0 | 53 | 28.00 | 22.40 | 26 | 6 | 37.50 | — |
| E500M42N02 | 42 | 4.50 | 170.0 | 53 | 28.00 | 22.40 | 26 | 6 | 37.50 | — |
| E500M42N03 | 42 | 4.50 | 170.0 | 53 | 28.00 | 22.40 | 26 | 6 | 37.50 | — |
| E500M45N01 | 45 | 4.50 | 187.0 | 54 | 31.50 | 25.00 | 28 | 6 | 40.50 | — |
| E500M45N02 | 45 | 4.50 | 187.0 | 54 | 31.50 | 25.00 | 28 | 6 | 40.50 | — |
| E500M45N03 | 45 | 4.50 | 187.0 | 54 | 31.50 | 25.00 | 28 | 6 | 40.50 | — |
| E500M48N01 | 48 | 5.00 | 187.0 | 60 | 31.50 | 25.00 | 28 | 6 | 43.00 | — |
| E500M48N02 | 48 | 5.00 | 187.0 | 60 | 31.50 | 25.00 | 28 | 6 | 43.00 | — |
| E500M48N03 | 48 | 5.00 | 187.0 | 60 | 31.50 | 25.00 | 28 | 6 | 43.00 | — |
| E500M52N03 | 52 | 5.00 | 200.0 | 60 | 35.50 | 28.00 | 31 | 6 | 47.00 | — |
| E500M56N03 | 56 | 5.50 | 200.0 | 60 | 35.50 | 28.00 | 31 | 6 | 50.50 | — |

¹⁾ Supplied in 5H tolerance.

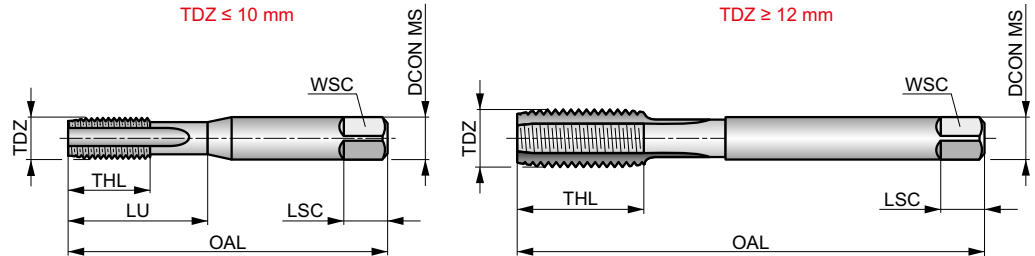


E501



HSS Straight Flute Hand Taps, Metric, ISO standard, Left-Handed

A versatile tool, suitable for hand and machine tapping. Available with taper lead NO1 for short through holes, plug lead NO2 for deeper through holes or bottoming lead NO3 for blind holes.



| | | |
|--|---------|--------|
| | ISO 529 | 6H |
| | 1.5xD | HSS |
| | L | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | P4.2 ■2 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 | K2.1 ■12 |
| K2.2 ■10 | K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 |
| N4.2 ■5 | N4.3 ■3 | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|-----|------|-------|------|---------|-------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E501M3N01 | 3 | 0.50 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E501M3N02 | 3 | 0.50 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E501M3N03 | 3 | 0.50 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E501M4N01 | 4 | 0.70 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.30 | 14.00 |
| E501M4N02 | 4 | 0.70 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.30 | 14.00 |
| E501M4N03 | 4 | 0.70 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.30 | 14.00 |
| E501M5N02 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E501M5N03 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E501M6N01 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E501M6N02 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E501M6N03 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E501M8N01 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E501M8N02 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E501M8N03 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E501M10N01 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E501M10N02 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E501M10N03 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E501M12N01 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | — |
| E501M12N02 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | — |
| E501M12N03 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | — |
| E501M14N01 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.00 | — |
| E501M14N02 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.00 | — |
| E501M14N03 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.00 | — |
| E501M16N01 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.00 | — |
| E501M16N02 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.00 | — |
| E501M16N03 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.00 | — |
| E501M18N03 | 18 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 15.50 | — |
| E501M20N01 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | — |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-------------------|-----|------|-------|------|---------|-------|------|------|-------|------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| E501M20N02 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | — |
| E501M20N03 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | — |
| E501M22N03 | 22 | 2.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | — |
| E501M24N02 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | — |
| E501M24N03 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | — |

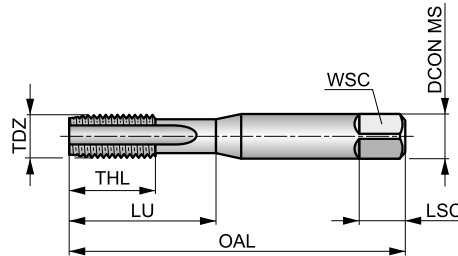


E504



HSS Straight Flute Hand Tap with TiN Coating, Metric, ISO Standard

A versatile tool, suitable for machine and also hand tapping, with a straight flute design and bottoming lead for blind and through holes. TiN coated to improve performance and extend tool life.



| | | |
|--|---------|-----|
| | ISO 529 | 6H |
| | 1.5xD | HSS |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 13 | P1.2 ■ 15 | P1.3 ■ 15 | P2.1 ■ 11 | P2.2 ■ 10 | P2.3 ▣ 9 | P3.1 ■ 9 | P3.2 ▣ 7 | P3.3 ▣ 6 | P4.1 ▣ 5 | P4.2 ▣ 4 | K1.1 ■ 18 | K1.2 ■ 13 | K1.3 ■ 10 |
| K2.1 ■ 27 | K2.2 ■ 22 | K3.1 ■ 24 | K3.2 ■ 18 | K4.1 ■ 22 | K4.2 ■ 17 | K5.1 ■ 25 | K5.2 ■ 19 | N1.3 ▣ 16 | N2.1 ▣ 22 | N2.2 ▣ 19 | N2.3 ▣ 14 | N3.1 ▣ 34 | N3.2 ▣ 20 |
| N3.3 ▣ 10 | N4.2 ▣ 10 | N4.3 ▣ 16 | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|-----|------|------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E504M3N03 | 3 | 0.50 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E504M4N03 | 4 | 0.70 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.30 | 14.00 |
| E504M5N03 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E504M6N03 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E504M8N03 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E504M10N03 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |

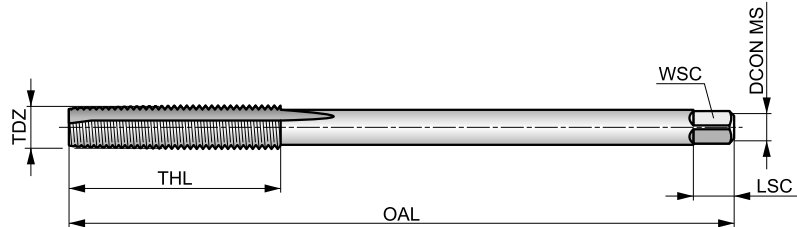


E303



HSS-E Straight Flute Nut Taps Metric, DIN Standard

Designed for efficient small production runs in conventional tapping machines, with either extra-long taper lead NO1 to reduce torque or with short bottoming lead NO3 to reduce cycle times.



| | | |
|------------------|---------|----------|
| M | DIN 357 | 6H |
| | 2xD | HSS-E |
| C 2-3 D 18-20 | | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|-------------------|--------------------|--------------------|-------------------|--------------------|-------------------|
| P1.1 ■9 | P1.2 ■10 | P1.3 ■10 | P2.1 ▣7 | P2.2 ▣6 | P2.3 ▣5 | P3.1 ■6 | P3.2 ▣5 | P4.1 ▣4 | K1.1 ▣11 | K1.2 ▣8 | K1.3 ▣6 | K2.1 ▣11 | K2.2 ▣9 |
| K3.1 ▣10 | K3.2 ▣7 | K4.1 ▣9 | K4.2 ▣7 | K5.1 ▣10 | K5.2 ▣8 | N1.3 ▣7 | N2.1 ▣10 | N2.2 ▣9 | N2.3 ▣6 | N3.1 ▣16 | N3.2 ▣9 | N4.2 ▣5 | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E303M3N01 | 3 | 0.50 | 70.0 | 22 | 2.20 | 2.10 | 5 | 3 | 2.50 |
| E303M3N03 | 3 | 0.50 | 70.0 | 22 | 2.20 | 2.10 | 5 | 3 | 2.50 |
| E303M4N01 | 4 | 0.70 | 90.0 | 25 | 2.80 | 2.10 | 5 | 3 | 3.30 |
| E303M4N03 | 4 | 0.70 | 90.0 | 25 | 2.80 | 2.10 | 5 | 3 | 3.30 |
| E303M5N01 | 5 | 0.80 | 100.0 | 28 | 3.50 | 2.70 | 6 | 3 | 4.20 |
| E303M5N03 | 5 | 0.80 | 100.0 | 28 | 3.50 | 2.70 | 6 | 3 | 4.20 |
| E303M6N01 | 6 | 1.00 | 110.0 | 32 | 4.50 | 3.40 | 6 | 3 | 5.00 |
| E303M6N03 | 6 | 1.00 | 110.0 | 32 | 4.50 | 3.40 | 6 | 3 | 5.00 |
| E303M8N01 | 8 | 1.25 | 125.0 | 40 | 6.00 | 4.90 | 8 | 3 | 6.80 |
| E303M8N03 | 8 | 1.25 | 125.0 | 40 | 6.00 | 4.90 | 8 | 3 | 6.80 |
| E303M10N01 | 10 | 1.50 | 140.0 | 45 | 7.00 | 5.50 | 8 | 3 | 8.50 |
| E303M10N03 | 10 | 1.50 | 140.0 | 45 | 7.00 | 5.50 | 8 | 3 | 8.50 |
| E303M12N01 | 12 | 1.75 | 180.0 | 50 | 9.00 | 7.00 | 10 | 3 | 10.30 |
| E303M12N03 | 12 | 1.75 | 180.0 | 50 | 9.00 | 7.00 | 10 | 3 | 10.30 |
| E303M14N01 | 14 | 2.00 | 200.0 | 56 | 11.00 | 9.00 | 12 | 3 | 12.00 |
| E303M14N03 | 14 | 2.00 | 200.0 | 56 | 11.00 | 9.00 | 12 | 3 | 12.00 |
| E303M16N01 | 16 | 2.00 | 200.0 | 63 | 12.00 | 9.00 | 12 | 3 | 14.00 |
| E303M16N03 | 16 | 2.00 | 200.0 | 63 | 12.00 | 9.00 | 12 | 3 | 14.00 |
| E303M20N01 | 20 | 2.50 | 250.0 | 70 | 16.00 | 12.00 | 15 | 3 | 17.50 |
| E303M20N03 | 20 | 2.50 | 250.0 | 70 | 16.00 | 12.00 | 15 | 3 | 17.50 |

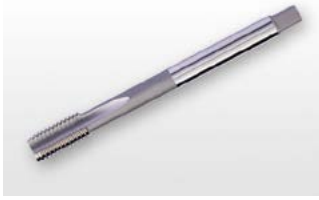


E600

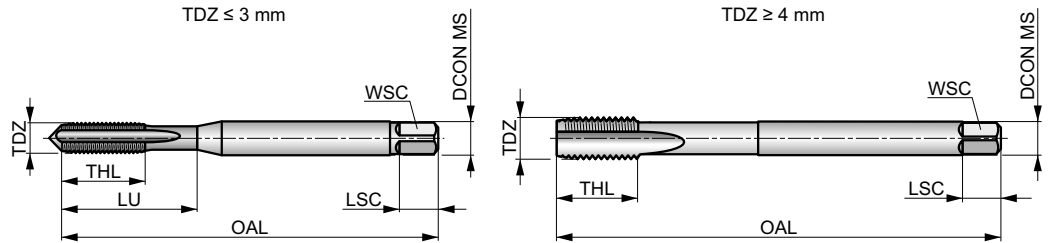


HSS-E-PM Straight Flute Long Series Machine Tap, Metric, ISO Standard

General purpose straight flute machine tap with taper lead N01 for short through holes, plug lead N02 for deeper through holes or bottoming lead N03 for blind holes. Bright finish to prevent material from sticking to the cutting edges. Longer design for extra reach when threading difficult to access holes.



| | | |
|--|----------|----------|
| | ISO 2283 | 6H |
| | 1.5xD | HSS-E PM |
| | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 9 | P1.2 ■ 8 | P1.3 ■ 8 | P2.1 ■ 7 | P2.2 ■ 6 | P2.3 ■ 5 | P3.1 ■ 6 | P3.2 ■ 5 | P4.1 ■ 3 | K1.1 ■ 12 | K1.2 ■ 9 | K1.3 ■ 7 | K2.1 ■ 12 | K2.2 ■ 10 |
| K3.1 ■ 11 | K3.2 ■ 8 | K4.1 ■ 10 | K4.2 ■ 8 | K5.1 ■ 11 | K5.2 ■ 9 | N1.3 ■ 8 | N2.1 ■ 11 | N2.2 ■ 10 | N2.3 ■ 7 | N3.1 ■ 17 | N3.2 ■ 10 | N3.3 ■ 5 | N4.2 ■ 5 |
| N4.3 ■ 3 | | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|-----|------|-------|------|---------|-------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E600M3N03 | 3 | 0.50 | 66.0 | 9 | 3.15 | 2.50 | 5 | 3 | 2.50 | 18.00 |
| E600M4N01 | 4 | 0.70 | 73.0 | 12 | 3.15 | 2.50 | 5 | 3 | 3.30 | — |
| E600M4N02 | 4 | 0.70 | 73.0 | 12 | 3.15 | 2.50 | 5 | 3 | 3.30 | — |
| E600M4N03 | 4 | 0.70 | 73.0 | 12 | 3.15 | 2.50 | 5 | 3 | 3.30 | — |
| E600M5N01 | 5 | 0.80 | 79.0 | 12 | 4.00 | 3.15 | 6 | 3 | 4.20 | — |
| E600M5N02 | 5 | 0.80 | 79.0 | 12 | 4.00 | 3.15 | 6 | 3 | 4.20 | — |
| E600M5N03 | 5 | 0.80 | 79.0 | 12 | 4.00 | 3.15 | 6 | 3 | 4.20 | — |
| E600M6N01 | 6 | 1.00 | 89.0 | 14 | 4.50 | 3.55 | 6 | 3 | 5.00 | — |
| E600M6N02 | 6 | 1.00 | 89.0 | 14 | 4.50 | 3.55 | 6 | 3 | 5.00 | — |
| E600M6N03 | 6 | 1.00 | 89.0 | 14 | 4.50 | 3.55 | 6 | 3 | 5.00 | — |
| E600M8N01 | 8 | 1.25 | 97.0 | 17 | 6.30 | 5.00 | 8 | 3 | 6.80 | — |
| E600M8N02 | 8 | 1.25 | 97.0 | 17 | 6.30 | 5.00 | 8 | 3 | 6.80 | — |
| E600M8N03 | 8 | 1.25 | 97.0 | 17 | 6.30 | 5.00 | 8 | 3 | 6.80 | — |
| E600M10N01 | 10 | 1.50 | 108.0 | 19 | 8.00 | 6.30 | 9 | 3 | 8.50 | — |
| E600M10N02 | 10 | 1.50 | 108.0 | 19 | 8.00 | 6.30 | 9 | 3 | 8.50 | — |
| E600M10N03 | 10 | 1.50 | 108.0 | 19 | 8.00 | 6.30 | 9 | 3 | 8.50 | — |
| E600M12N01 | 12 | 1.75 | 119.0 | 23 | 9.00 | 7.10 | 10 | 3 | 10.30 | — |
| E600M12N02 | 12 | 1.75 | 119.0 | 23 | 9.00 | 7.10 | 10 | 3 | 10.30 | — |
| E600M12N03 | 12 | 1.75 | 119.0 | 23 | 9.00 | 7.10 | 10 | 3 | 10.30 | — |
| E600M16N03 | 16 | 2.00 | 137.0 | 25 | 12.50 | 10.00 | 13 | 4 | 14.00 | — |
| E600M20N03 | 20 | 2.50 | 149.0 | 30 | 14.00 | 11.20 | 14 | 4 | 17.50 | — |

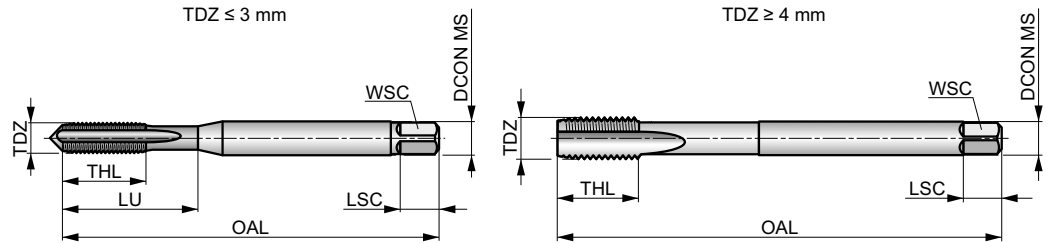


E610



HSS-E-PM Straight Flute Long Series Machine tap, Metric, ISO Standard

General purpose straight flute machine tap for through and blind holes. Longer design for extra reach when threading difficult to access holes. TiN coated to allow higher cutting speeds, improve performance and extend tool life.



| | | |
|--|----------|----------|
| | ISO 2283 | 6H |
| | 1.5xD | HSS-E PM |
| | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 16 | P1.2 ■ 18 | P1.3 ■ 18 | P2.1 ■ 15 | P2.2 ■ 13 | P2.3 ▣ 11 | P3.1 ■ 12 | P3.2 ■ 7 | P3.3 ▣ 16 | P4.1 ■ 5 | P4.2 ▣ 4 | K1.1 ■ 18 | K1.2 ■ 13 | K1.3 ■ 10 |
| K2.1 ■ 24 | K2.2 ■ 20 | K3.1 ■ 22 | K3.2 ■ 16 | K4.1 ■ 20 | K4.2 ■ 16 | K5.1 ■ 22 | K5.2 ■ 18 | N1.3 ▣ 16 | N2.1 ▣ 22 | N2.2 ▣ 19 | N2.3 ▣ 14 | N3.1 ▣ 34 | N3.2 ■ 20 |
| N3.3 ▣ 10 | N4.2 ▣ 10 | N4.3 ▣ 6 | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E610M3N03 | 3 | 0.50 | 66.0 | 9 | 3.15 | 2.50 | 5 | 3 | 2.50 | 18.00 |
| E610M4N03 | 4 | 0.70 | 73.0 | 12 | 3.15 | 2.50 | 5 | 3 | 3.30 | — |
| E610M5N03 | 5 | 0.80 | 79.0 | 12 | 4.00 | 3.15 | 6 | 3 | 4.20 | — |
| E610M6N03 | 6 | 1.00 | 89.0 | 14 | 4.50 | 3.55 | 6 | 3 | 5.00 | — |
| E610M8N03 | 8 | 1.25 | 97.0 | 17 | 6.30 | 5.00 | 8 | 3 | 6.80 | — |
| E610M10N03 | 10 | 1.50 | 108.0 | 19 | 8.00 | 6.30 | 9 | 3 | 8.50 | — |
| E610M12N03 | 12 | 1.75 | 119.0 | 23 | 9.00 | 7.10 | 10 | 3 | 10.30 | — |
| E610M16N03 | 16 | 2.00 | 137.0 | 25 | 12.50 | 10.00 | 13 | 4 | 14.00 | — |



EP006H

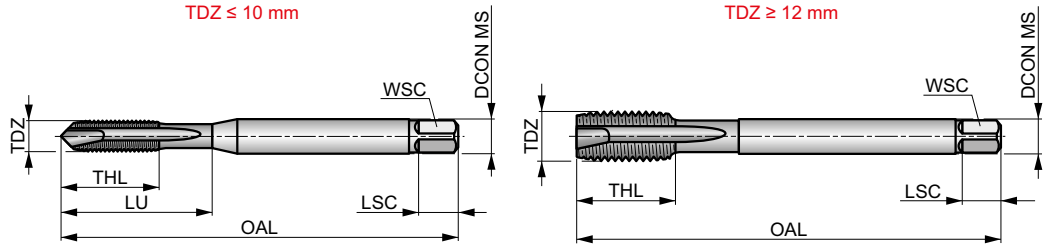


HSS-E-PM Spiral Point Machine Tap, Metric, DIN Standard

Machine tap to produce normal fit threads within 6H tolerance. The spiral point is suited for through holes only. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges.



| | | |
|---------|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| Bright | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 22 | P1.2 ■ 24 | P1.3 ■ 25 | P2.1 ■ 18 | P2.2 ■ 16 | P2.3 ■ 14 | P3.1 ■ 13 | P3.2 ■ 10 | P4.1 ■ 8 | N1.1 ■ 14 | N1.2 ■ 10 | N1.3 ■ 7 | N2.1 ■ 28 | N2.2 ■ 25 |
| N2.3 ■ 18 | N3.1 ■ 44 | N3.2 ■ 27 | N3.3 ■ 13 | N4.1 ■ 22 | | | | | | | | | |

Products from this series are also available in set with drills. Please see L114 or L001.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------------|------|------|-------|------|---------|-------|------|-----|-------|-------|
| | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| EP00M2 | 2 | 0.40 | 50.0 | 6 | 2.80 | 2.10 | 5 | 2 | 1.60 | 9.00 |
| EP00M2.5 | 2.5 | 0.45 | 50.0 | 8 | 2.80 | 2.10 | 5 | 2 | 2.10 | 12.50 |
| EP00M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| EP00M3DIN376 | 3 | 0.50 | 56.0 | 10 | 2.20 | 1.80 | 4 | 3 | 2.50 | 18.00 |
| EP00M3.5 | 3.5 | 0.60 | 56.0 | 11 | 4.00 | 3.00 | 6 | 3 | 2.90 | 20.00 |
| EP00M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| EP00M4DIN376 | 4 | 0.70 | 63.0 | 12 | 2.80 | 2.10 | 5 | 3 | 3.30 | 21.00 |
| EP00M4.5 | 4.5 | 0.75 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 3.80 | 25.00 |
| EP00M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| EP00M5DIN376 | 5 | 0.80 | 70.0 | 13 | 3.50 | 2.70 | 6 | 3 | 4.20 | 25.00 |
| EP00M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| EP00M6DIN376 | 6 | 1.00 | 80.0 | 15 | 4.50 | 3.40 | 6 | 3 | 5.00 | 30.00 |
| EP00M7 | 7 | 1.00 | 80.0 | 15 | 7.00 | 5.50 | 8 | 3 | 6.00 | 30.00 |
| EP00M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| EP00M8DIN376 | 8 | 1.25 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 6.80 | 35.00 |
| EP00M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EP00M10DIN376 | 10 | 1.50 | 100.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.50 | — |
| EP00M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | — |
| EP00M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 | — |
| EP00M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 | — |
| EP00M18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 15.50 | — |
| EP00M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | — |
| EP00M22 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 | — |
| EP00M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 | — |
| EP00M27 | 27 | 3.00 | 160.0 | 38 | 20.00 | 16.00 | 19 | 4 | 24.00 | — |
| EP00M30 | 30 | 3.50 | 180.0 | 45 | 22.00 | 18.00 | 21 | 4 | 26.50 | — |



EP006G

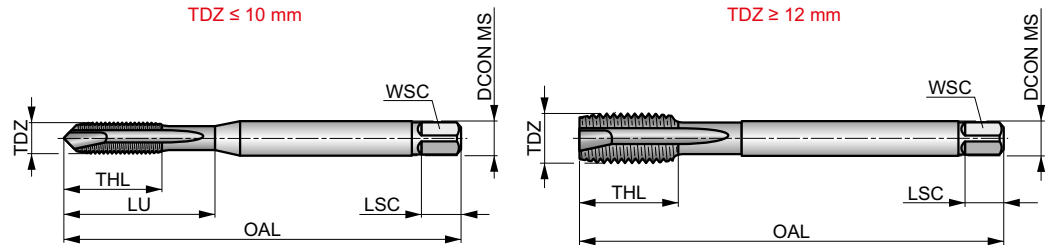


HSS-E-PM Spiral Point Machine Tap, Metric, DIN Standard

Machine tap to produce threads within 6G tolerance for a fit with large allowance. The spiral point is suited for through holes only. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges.



| | | |
|-------------------|----------------|-------------|
| M | DIN 371/376 | 6G |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | R |
| Bright | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 22 | P1.2 ■ 24 | P1.3 ■ 25 | P2.1 ■ 18 | P2.2 ■ 16 | P2.3 ▣ 14 | P3.1 ■ 13 | P3.2 ▣ 10 | P4.1 ▣ 8 | N1.1 ■ 14 | N1.2 ■ 10 | N1.3 ■ 7 | N2.1 ■ 28 | N2.2 ■ 25 |
| N2.3 ■ 18 | N3.1 ■ 44 | N3.2 ▣ 27 | N3.3 ▣ 13 | N4.1 ▣ 22 | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| EP006GM3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| EP006GM4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| EP006GM5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| EP006GM6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| EP006GM8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| EP006GM10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EP006GM12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | – |
| EP006GM16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 | – |
| EP006GM20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |



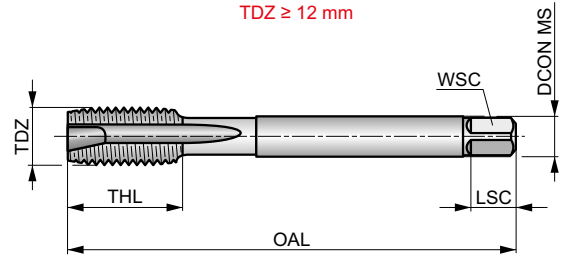
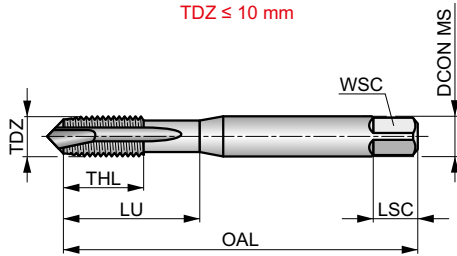
EPOOTIN



HSS-E-PM Spiral Point Machine Tap with TiN Coating, Metric, DIN Standard

High performance machine tap with spiral point for through holes only. Suited for a broad range of workpiece materials. TiN coated to allow higher cutting speeds, improve performance and extend tool life.

| | | |
|---------|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 34 | P1.2 ■ 38 | P1.3 ■ 40 | P2.1 ■ 29 | P2.2 ■ 24 | P2.3 ■ 20 | P3.1 ■ 19 | P3.2 ■ 14 | P3.3 ▧ 12 | P4.1 ■ 10 | P4.2 ▧ 9 | M1.1 ■ 11 | M1.2 ■ 9 | M2.1 ■ 10 |
| M2.2 ■ 8 | M3.1 ■ 8 | M3.2 ■ 7 | M3.3 ▧ 6 | M4.1 ▧ 5 | K1.1 ▧ 21 | K1.2 ▧ 16 | K1.3 ▧ 12 | K2.1 ▧ 30 | K2.2 ▧ 24 | K3.1 ▧ 26 | K3.2 ▧ 20 | K4.1 ▧ 24 | K4.2 ▧ 18 |
| K5.1 ▧ 28 | K5.2 ▧ 20 | N1.3 ■ 12 | N2.1 ■ 37 | N2.2 ■ 34 | N2.3 ■ 24 | N3.1 ▧ 60 | N3.2 ▧ 36 | N4.1 ▧ 26 | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|-----|------|-------|------|---------|-------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| EPOOTINM3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| EPOOTINM4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| EPOOTINM5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| EPOOTINM6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| EPOOTINM8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| EPOOTINM10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EPOOTINM12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | – |
| EPOOTINM14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 | – |
| EPOOTINM16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 | – |
| EPOOTINM18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 15.50 | – |
| EPOOTINM20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |
| EPOOTINM22 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 | – |
| EPOOTINM24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 | – |
| EPOOTINM27 | 27 | 3.00 | 160.0 | 38 | 20.00 | 16.00 | 19 | 4 | 24.00 | – |
| EPOOTINM30 | 30 | 3.50 | 180.0 | 45 | 22.00 | 18.00 | 21 | 4 | 26.50 | – |



EP016H

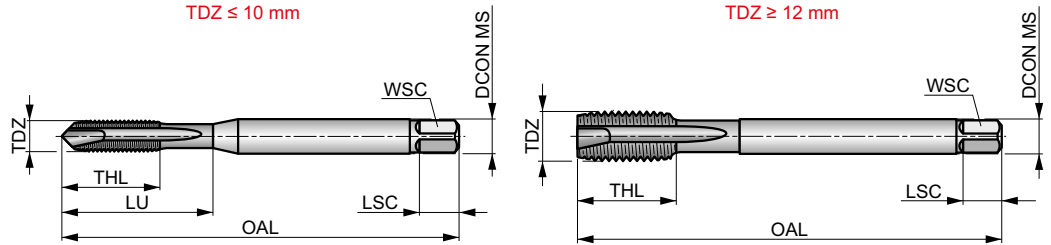


HSS-E-PM Spiral Point Machine Tap, Metric, DIN Standard

Machine tap to produce normal fit threads within 6H tolerance. The spiral point is suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|--|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E-PM |
| | B 3.5-5 | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ▣22 | P2.2 ▣16 | P2.3 ▣14 | P3.2 ▣10 | P3.3 ▣9 | P4.1 ▣8 | P4.2 ▣6 | M1.1 ▣10 | M1.2 ▣8 | M2.1 ▣9 | M2.2 ▣7 | M3.1 ▣7 | M3.2 ▣6 | M3.3 ▣5 |
| M4.1 ▣4 | K1.1 ▣13 | K1.2 ▣10 | K1.3 ▣7 | K2.1 ▣16 | K2.2 ▣13 | K3.1 ▣14 | K3.2 ▣10 | K4.1 ▣13 | K4.2 ▣9 | K5.1 ▣15 | K5.2 ▣11 | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| EP01M2 | 2 | 0.40 | 50.0 | 6 | 2.80 | 2.10 | 5 | 2 | 1.60 | 9.00 |
| EP01M2.5 | 2.5 | 0.45 | 50.0 | 8 | 2.80 | 2.10 | 5 | 2 | 2.10 | 12.50 |
| EP01M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| EP01M3DIN376 | 3 | 0.50 | 56.0 | 10 | 2.20 | 1.80 | 4 | 3 | 2.50 | 18.00 |
| EP01M3.5 | 3.5 | 0.60 | 56.0 | 11 | 4.00 | 3.00 | 6 | 3 | 2.90 | 20.00 |
| EP01M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| EP01M4DIN376 | 4 | 0.70 | 63.0 | 12 | 2.80 | 2.10 | 5 | 3 | 3.30 | 21.00 |
| EP01M4.5 | 4.5 | 0.75 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 3.80 | 25.00 |
| EP01M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| EP01M5DIN376 | 5 | 0.80 | 70.0 | 13 | 3.50 | 2.70 | 6 | 3 | 4.20 | 25.00 |
| EP01M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| EP01M6DIN376 | 6 | 1.00 | 80.0 | 15 | 4.50 | 3.40 | 6 | 3 | 5.00 | 30.00 |
| EP01M7 | 7 | 1.00 | 80.0 | 15 | 7.00 | 5.50 | 8 | 3 | 6.00 | 30.00 |
| EP01M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| EP01M8DIN376 | 8 | 1.25 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 6.80 | 35.00 |
| EP01M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EP01M10DIN376 | 10 | 1.50 | 100.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.50 | - |
| EP01M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 | - |
| EP01M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 | - |
| EP01M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 | - |
| EP01M18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 15.50 | - |
| EP01M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 4 | 17.50 | - |
| EP01M22 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 | - |
| EP01M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 | - |
| EP01M27 | 27 | 3.00 | 160.0 | 38 | 20.00 | 16.00 | 19 | 4 | 24.00 | - |
| EP01M30 | 30 | 3.50 | 180.0 | 45 | 22.00 | 18.00 | 21 | 4 | 26.50 | - |



E000

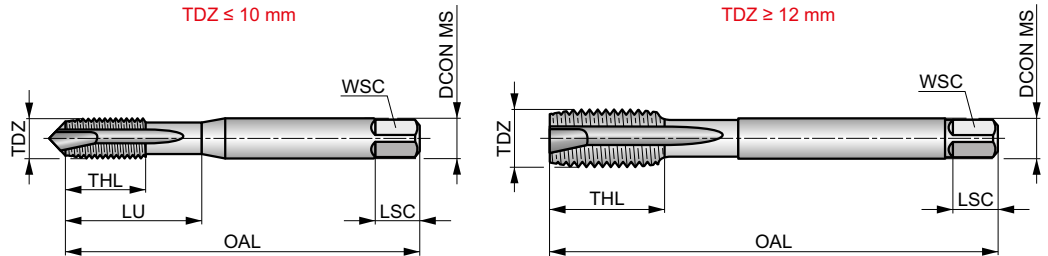
DORMER



HSS-E-PM Spiral Point Machine Tap, Metric, ISO Standard

Machine tap with spiral point suited for through holes only. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges.

| | | |
|---------|---------|----------|
| | ISO 529 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| Bright | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 22 | P1.2 ■ 24 | P1.3 ■ 25 | P2.1 ■ 18 | P2.2 ■ 16 | P2.3 ▣ 14 | P3.1 ■ 13 | P3.2 ▣ 10 | P4.1 ▣ 8 | N1.1 ■ 14 | N1.2 ■ 10 | N1.3 ■ 7 | N2.1 ■ 28 | N2.2 ■ 25 |
| N2.3 ■ 18 | N3.1 ■ 44 | N3.2 ▣ 27 | N3.3 ▣ 13 | N4.1 ▣ 22 | | | | | | | | | |

Products from this series are also available in set with drills. Please see L113 or L002.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------------|------|------|-------|------|---------|-------|------|-----|-------|-------|
| | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E000M1.6 | 1.6 | 0.35 | 41.0 | 7 | 2.50 | 2.00 | 4 | 2 | 1.25 | 7.00 |
| E000M2 | 2 | 0.40 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.60 | 8.00 |
| E000M2.5 | 2.5 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 2 | 2.05 | 9.50 |
| E000M3 | 3 | 0.50 | 48.0 | 15 | 3.15 | 2.50 | 5 | 3 | 2.50 | 15.00 |
| E000M3.5 | 3.5 | 0.60 | 50.0 | 16 | 3.55 | 2.80 | 5 | 3 | 2.90 | 16.00 |
| E000M4 | 4 | 0.70 | 53.0 | 17 | 4.00 | 3.15 | 6 | 3 | 3.30 | 17.00 |
| E000M5 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E000M6 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E000M8 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E000M10 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E000M12 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E000M14 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 3 | 12.00 | – |
| E000M16 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 3 | 14.00 | – |
| E000M18 | 18 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 15.50 | – |
| E000M20 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E000M22 | 22 | 2.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | – |
| E000M24 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | – |



E00TIN

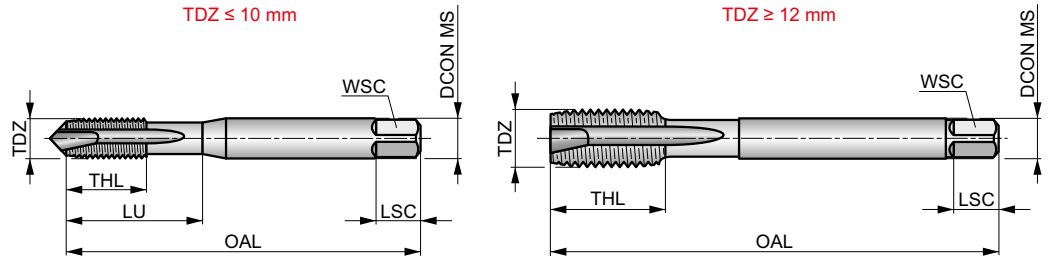


HSS-E-PM Spiral Point Machine Tap with TiN Coating, Metric, ISO Standard

High performance machine tap with spiral point for through holes only. Suited for a broad range of workpiece materials. TiN coated to allow higher cutting speeds, improve performance and extend tool life.



| | | |
|-------------------|-------------------|---------------------|
| M | ISO 529 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | R |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 34 | P1.2 ■ 38 | P1.3 ■ 40 | P2.1 ■ 29 | P2.2 ■ 24 | P2.3 ■ 20 | P3.1 ■ 19 | P3.2 ■ 14 | P3.3 □ 12 | P4.1 ■ 10 | P4.2 □ 9 | M1.1 ■ 11 | M1.2 ■ 9 | M2.1 ■ 10 |
| M2.2 ■ 8 | M3.1 ■ 8 | M3.2 ■ 7 | M3.3 □ 16 | M4.1 □ 15 | K1.1 □ 21 | K1.2 □ 16 | K1.3 □ 12 | K2.1 □ 30 | K2.2 □ 24 | K3.1 □ 26 | K3.2 □ 20 | K4.1 □ 24 | K4.2 □ 18 |
| K5.1 □ 28 | K5.2 □ 20 | N1.3 ■ 12 | N2.1 ■ 37 | N2.2 ■ 34 | N2.3 ■ 24 | N3.1 ■ 60 | N3.2 □ 36 | N4.1 □ 26 | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E00TINM3 | 3 | 0.50 | 48.0 | 15 | 3.15 | 2.50 | 5 | 3 | 2.50 | 15.00 |
| E00TINM4 | 4 | 0.70 | 53.0 | 17 | 4.00 | 3.15 | 6 | 3 | 3.30 | 17.00 |
| E00TINM5 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E00TINM6 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E00TINM8 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E00TINM10 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E00TINM12 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E00TINM16 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 3 | 14.00 | – |
| E00TINM20 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |



E001

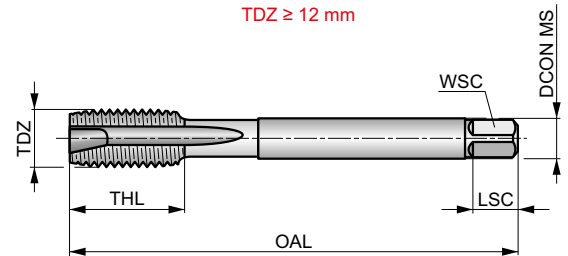
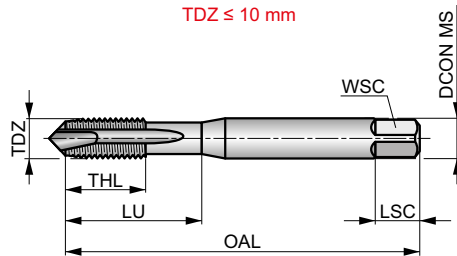


HSS-E-PM Spiral Point Machine Tap, Metric, ISO Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|---------|---------|----------|
| | ISO 529 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| ST | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ▽22 | P2.2 ▽16 | P2.3 ■14 | P3.2 ■10 | P3.3 ▽9 | P4.1 ■8 | P4.2 ▽16 | M1.1 ▽10 | M1.2 ▽8 | M2.1 ▽9 | M2.2 ▽7 | M3.1 ▽7 | M3.2 ▽6 | M3.3 ▽5 |
| M4.1 ▽4 | K1.1 ▽13 | K1.2 ▽10 | K1.3 ▽7 | K2.1 ▽16 | K2.2 ▽13 | K3.1 ▽14 | K3.2 ▽10 | K4.1 ▽13 | K4.2 ▽9 | K5.1 ▽15 | K5.2 ▽11 | | |

Products from this series are also available in set with drills. Please see L113.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E001M1.6 | 1.6 | 0.35 | 41.0 | 7 | 2.50 | 2.00 | 4 | 2 | 1.25 | 7.00 |
| E001M2 | 2 | 0.40 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.60 | 8.00 |
| E001M2.5 | 2.5 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 2 | 2.05 | 9.50 |
| E001M3 | 3 | 0.50 | 48.0 | 15 | 3.15 | 2.50 | 5 | 3 | 2.50 | 15.00 |
| E001M3.5 | 3.5 | 0.60 | 50.0 | 16 | 3.55 | 2.80 | 5 | 3 | 2.90 | 16.00 |
| E001M4 | 4 | 0.70 | 53.0 | 17 | 4.00 | 3.15 | 6 | 3 | 3.30 | 17.00 |
| E001M5 | 5 | 0.80 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E001M6 | 6 | 1.00 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.00 | 26.00 |
| E001M8 | 8 | 1.25 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.80 | 29.00 |
| E001M10 | 10 | 1.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E001M12 | 12 | 1.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E001M14 | 14 | 2.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 3 | 12.00 | – |
| E001M16 | 16 | 2.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 3 | 14.00 | – |
| E001M18 | 18 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 15.50 | – |
| E001M20 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E001M22 | 22 | 2.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | – |
| E001M24 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | – |



E606

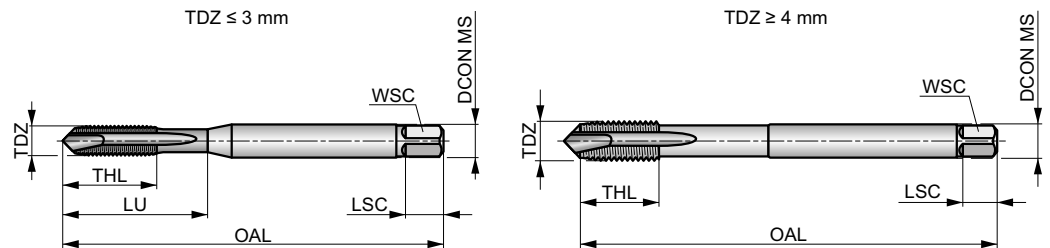


HSS-E-PM Spiral Point Long Series Machine Tap, Metric, ISO Standard

Longer design for extra reach when threading difficult to access holes. The spiral point drives the swarf forward ahead of the cutting edges for a safe and reliable process. Suited for through holes only.



| | | |
|-------------------|--------------------|---------------------|
| | ISO 2283 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| Bright | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 14 | P1.3 ■ 14 | P2.1 ■ 11 | P2.2 ■ 10 | P2.3 ▣ 9 | P3.1 ■ 9 | P3.2 ▣ 6 | P4.1 ▣ 4 | N1.1 ▣ 10 | N1.2 ▣ 8 | N1.3 ▣ 5 | N2.1 ▣ 20 | N2.2 ▣ 18 |
| N2.3 ▣ 13 | N3.1 ▣ 33 | N3.3 ▣ 10 | N4.1 ▣ 20 | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E606M3 | 3 | 0.50 | 66.0 | 9 | 3.15 | 2.50 | 5 | 3 | 2.50 | 18.00 |
| E606M4 | 4 | 0.70 | 73.0 | 12 | 3.15 | 2.50 | 5 | 3 | 3.30 | — |
| E606M5 | 5 | 0.80 | 79.0 | 12 | 4.00 | 3.15 | 6 | 3 | 4.20 | — |
| E606M6 | 6 | 1.00 | 89.0 | 14 | 4.50 | 3.55 | 6 | 3 | 5.00 | — |
| E606M8 | 8 | 1.25 | 97.0 | 17 | 6.30 | 5.00 | 8 | 3 | 6.80 | — |
| E606M10 | 10 | 1.50 | 108.0 | 19 | 8.00 | 6.30 | 9 | 3 | 8.50 | — |
| E606M12 | 12 | 1.75 | 119.0 | 23 | 9.00 | 7.10 | 10 | 3 | 10.30 | — |
| E606M14 | 14 | 2.00 | 127.0 | 25 | 11.20 | 9.00 | 12 | 3 | 12.00 | — |
| E606M16 | 16 | 2.00 | 137.0 | 25 | 12.50 | 10.00 | 13 | 3 | 14.00 | — |
| E606M20 | 20 | 2.50 | 149.0 | 30 | 14.00 | 11.20 | 14 | 4 | 17.50 | — |
| E606M24 | 24 | 3.00 | 172.0 | 36 | 18.00 | 14.00 | 18 | 4 | 21.00 | — |

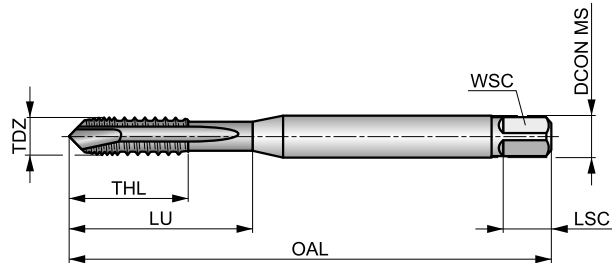


E216



HSS-E-PM Spiral Point Interrupted Thread Machine Tap, Metric, DIN Standard

Spiral point machine tap for through holes only. Interrupted threads are designed to lessen the damaging effects of chip wedging on both forward and reverse rotation and reduce friction, permit better lubrication and allow more space for the passage of chips. Reinforced shank increases strength against torsional twist.



| | | |
|-------------------|-------------------|---------------------|
| M | DIN 371 | 6H |
| | 3xD | HSS-E PM |
| B 3.5-5 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 21 | P1.2 ■ 24 | P1.3 ■ 25 | P2.1 ■ 18 | P2.2 ■ 16 | P2.3 ▣ 14 | P3.1 ■ 10 | P3.2 ▣ 8 | P4.1 ▣ 6 | N1.1 ■ 16 | N1.2 ■ 12 | N1.3 ▣ 8 | N2.1 ▣ 25 | N2.2 ▣ 22 |
| N2.3 ▣ 16 | N3.1 ■ 51 | N3.2 ▣ 26 | N3.3 ■ 15 | N4.1 ▣ 25 | | | | | | | | | |

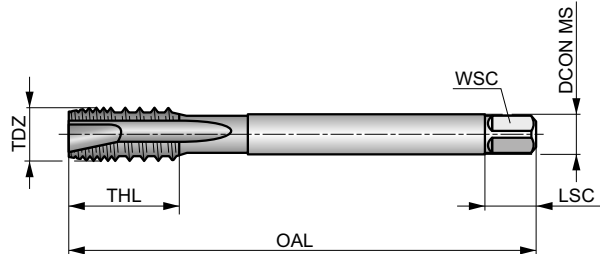
| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|-------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E216M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E216M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E216M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E216M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E216M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E216M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |



E266

HSS-E-PM Spiral Point Interrupted Thread Machine Tap, Metric, DIN Standard

Spiral point machine tap for through holes only. Interrupted threads to lessen the damaging effects of chip wedging on both forward and reverse rotation and reduce friction, permit better lubrication and allow more space for the passage of chips. The reduced shank increases the reach of the tap.



| | | |
|-------------------|-------------------|-------------|
| M | DIN 376 | 6H |
| | 3xD | HSS-E PM |
| B 3.5-5 | | |
| Bright | | |

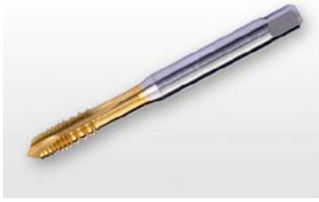
Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 21 | P1.2 ■ 24 | P1.3 ■ 25 | P2.1 ■ 18 | P2.2 ■ 16 | P2.3 ▣ 14 | P3.1 ■ 10 | P3.2 ▣ 8 | P4.1 ▣ 6 | N1.1 ■ 16 | N1.2 ■ 12 | N1.3 ▣ 8 | N2.1 ▣ 25 | N2.2 ▣ 22 |
| N2.3 ▣ 16 | N3.1 ■ 51 | N3.2 ▣ 30 | N3.3 ■ 15 | N4.1 ▣ 25 | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|----------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E266M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 |
| E266M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 |
| E266M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 |
| E266M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 3 | 17.50 |
| E266M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 |

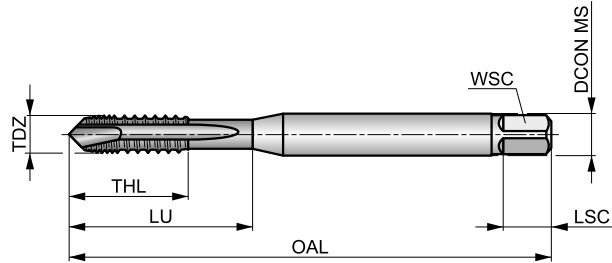


E422



HSS-E-PM Spiral Point Interrupted Thread Machine Tap, Metric, DIN Standard

High performance spiral point tap for through holes only. Interrupted threads to lessen the damaging effects of chip wedging, reduce friction, permit better lubrication and allow more space for the passage of chips. The reinforced shank increases the strength and TiN coating enables higher cutting speeds and performance.



| | | |
|---------|---------|----------|
| | DIN 371 | 6H |
| | 3xD | HSS-E PM |
| B 3.5-5 | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 37 | P1.2 ■ 42 | P1.3 ■ 43 | P2.1 ■ 32 | P2.2 ■ 28 | P2.3 ▣ 25 | P3.1 ■ 15 | P3.2 ▣ 12 | P4.1 ▣ 9 | N1.1 ■ 25 | N1.2 ■ 19 | N1.3 ▣ 13 | N2.1 ▣ 46 | N2.2 ▣ 42 |
| N2.3 ▣ 30 | N3.1 ■ 76 | N3.2 ▣ 45 | N3.3 ■ 23 | N4.1 ▣ 30 | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E422M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E422M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E422M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E422M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E422M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E422M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |

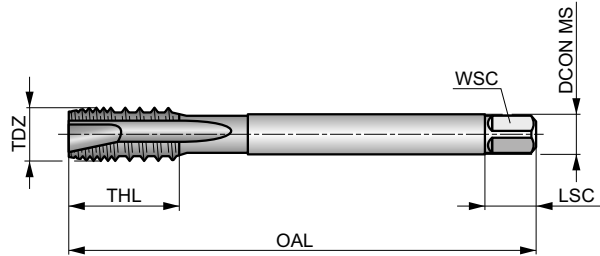


E423



HSS-E-PM Spiral Point Interrupted Thread Machine Tap, Metric, DIN Standard

High performance spiral point tap for through holes only. Interrupted threads to lessen the damaging effects of chip wedging, reduce friction, permit better lubrication and allow more space for the passage of chips. The reduced shank increases the reach and TiN coating enables higher cutting speeds and performance.



| | | |
|-------------------|-------------------|---------------------|
| M | DIN 376 | 6H |
| | 3xD | HSS-E PM |
| B 3.5-5 | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 37 | P1.2 ■ 42 | P1.3 ■ 43 | P2.1 ■ 32 | P2.2 ■ 28 | P2.3 ▣ 25 | P3.1 ■ 15 | P3.2 ▣ 12 | P4.1 ▣ 9 | N1.1 ■ 25 | N1.2 ■ 19 | N1.3 ▣ 13 | N2.1 ▣ 46 | N2.2 ▣ 42 |
| N2.3 ▣ 30 | N3.1 ■ 76 | N3.2 ▣ 45 | N3.3 ■ 23 | N4.1 ▣ 30 | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|----------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E423M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 |
| E423M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 |
| E423M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 |
| E423M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 3 | 17.50 |
| E423M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 |

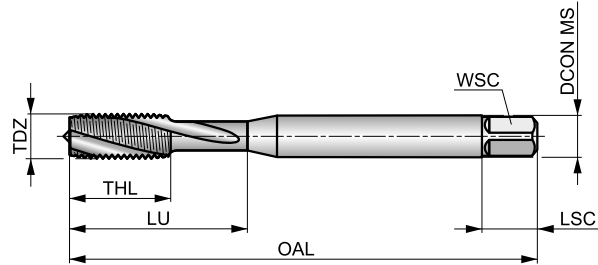


E207



HSS-E-PM 15° Spiral Flute Machine Tap, Metric, DIN Standard

Slow spiral flute tap for up to 1.5xD deep blind holes. With 15° helix for more stability threading in harder and higher strength steels. The reinforced shank increases strength against torsional twist.



| | | |
|-----------------|-------------------|-------------------------|
| M | DIN 371 | 6H |
| | 1.5xD | HSS-E PM |
| C 2-3 | | λ 15° |
| R | Bright | |

Workpiece material group suitability and starting values for cutting speed (m/min).

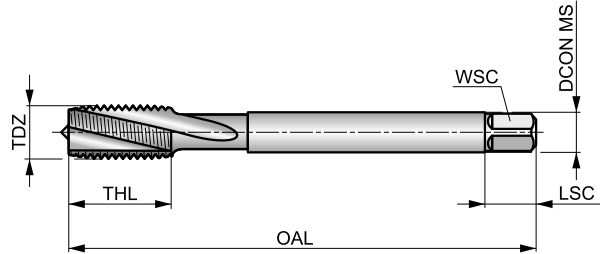
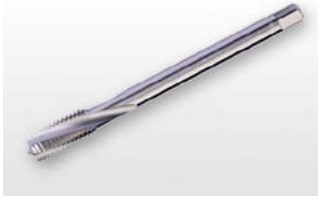
| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------------|-----|------|-------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E207M2 | 2 | 0.40 | 45.0 | 4 | 2.80 | 2.10 | 5 | 3 | 1.60 | 9.00 |
| E207M2.5 | 2.5 | 0.45 | 50.0 | 4 | 2.80 | 2.10 | 5 | 3 | 2.05 | 12.50 |
| E207M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| E207M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| E207M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| E207M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 |
| E207M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| E207M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |



E258

HSS-E-PM 15° Spiral Flute Machine Tap, Metric, DIN Standard

Slow spiral flute tap for up to 1.5xD deep blind holes. With 15° helix for more stability threading in harder and higher strength steels. The reduced shank increases the reach of the tap.



| | | |
|-----------------|-------------------|-------------------------|
| M | DIN 376 | 6H |
| | 1.5xD | HSS-E PM |
| C 2-3 | | λ 15° |
| R | Bright | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|
| P2.2 ■ 16 | P2.3 ■ 14 | P3.1 ■ 10 | P3.2 ■ 8 | P4.1 ■ 6 | N1.3 ■ 16 | N2.1 ■ 23 | N2.2 ■ 21 | N2.3 ■ 15 |
|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|---------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E258M4 | 4 | 0.70 | 63.0 | 12 | 2.80 | 2.10 | 5 | 3 | 3.30 |
| E258M5 | 5 | 0.80 | 70.0 | 13 | 3.50 | 2.70 | 6 | 3 | 4.20 |
| E258M6 | 6 | 1.00 | 80.0 | 15 | 4.50 | 3.40 | 6 | 3 | 5.00 |
| E258M8 | 8 | 1.25 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 6.80 |
| E258M10 | 10 | 1.50 | 100.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.50 |
| E258M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 |
| E258M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 |
| E258M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 |
| E258M18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 3 | 15.50 |
| E258M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 3 | 17.50 |
| E258M22 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 |
| E258M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 |
| E258M27 | 27 | 3.00 | 160.0 | 38 | 20.00 | 16.00 | 19 | 4 | 24.00 |
| E258M30 | 30 | 3.50 | 180.0 | 45 | 22.00 | 18.00 | 21 | 4 | 26.50 |
| E258M36 | 36 | 4.00 | 200.0 | 55 | 28.00 | 22.00 | 25 | 4 | 32.00 |

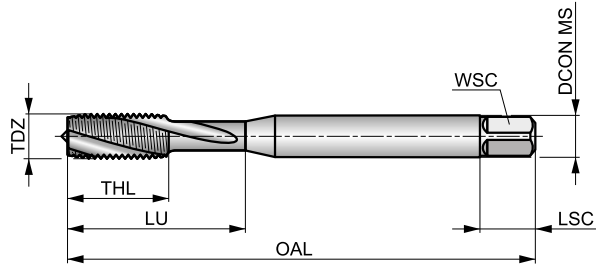


E212



HSS-E-PM 15° Spiral Flute Machine Tap, Metric, DIN Standard

High performance slow spiral flute tap for up to 1.5xD deep holes. With 15° helix for more stability threading of harder and higher strength steels. The reinforced shank increases strength against torsional twist. TiN coated to allow higher cutting speeds, improve performance and extend tool life.



| | | |
|-----------------|-------------------|-------------------------|
| M | DIN 371 | 6H |
| | 1.5xD | HSS-E PM |
| C 2-3 | | λ 15° |
| R | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU | Material Group Suitability | | | | | | | | | |
|----------------|-----|------|-------|-----|---------|------|-----|-----|------|-------|----------------------------|------|------|------|------|------|------|------|------|--|
| | | | | | | | | | | | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | N1.3 | N2.1 | N2.2 | N2.3 | |
| | | | | | | | | | | | ■ 28 | ▣ 25 | ■ 15 | ■ 12 | ■ 9 | ▣ 8 | ▣ 31 | ▣ 28 | ▣ 20 | |
| E212M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 | | | | | | | | | | |
| E212M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 | | | | | | | | | | |
| E212M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 | | | | | | | | | | |
| E212M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 5.00 | 30.00 | | | | | | | | | | |
| E212M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 | | | | | | | | | | |
| E212M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 | | | | | | | | | | |

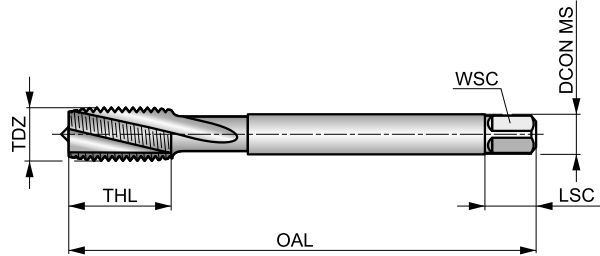


E263



HSS-E-PM 15° Spiral Flute Machine Tap, Metric, DIN Standard

High performance slow spiral flute tap for up to 1.5xD deep holes. With 15° helix for more stability threading of harder and higher strength steels. The reduced shank increases the reach of the tap. TiN coated to allow higher cutting speeds, improve performance and extend tool life.



| | | |
|-----------------|-------------------|-------------------------|
| M | DIN 376 | 6H |
| | 1.5xD | HSS-E PM |
| C 2-3 | | λ 15° |
| R | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P2.2 ■ 28 | P2.3 ■ 25 | P3.1 ■ 15 | P3.2 ■ 12 | P4.1 ■ 9 | N1.3 ■ 8 | N2.1 ■ 31 | N2.2 ■ 28 | N2.3 ■ 20 |
|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|----------------|-----|------|-------|-----|---------|-------|-----|-----|-------|
| | | | | | | | | | |
| E263M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.30 |
| E263M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.00 |
| E263M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.00 |
| E263M18 | 18 | 2.50 | 125.0 | 30 | 14.00 | 11.00 | 14 | 3 | 15.50 |
| E263M20 | 20 | 2.50 | 140.0 | 30 | 16.00 | 12.00 | 15 | 3 | 17.50 |
| E263M22 | 22 | 2.50 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 |
| E263M24 | 24 | 3.00 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 21.00 |
| E263M27 | 27 | 3.00 | 160.0 | 38 | 20.00 | 16.00 | 19 | 4 | 24.00 |
| E263M30 | 30 | 3.50 | 180.0 | 45 | 22.00 | 18.00 | 21 | 4 | 26.50 |
| E263M36 | 36 | 4.00 | 200.0 | 55 | 28.00 | 22.00 | 25 | 4 | 32.00 |



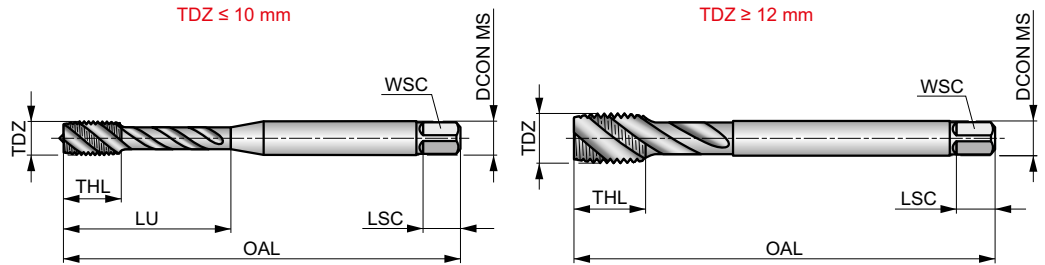
EX006H



HSS-E-PM 45° Spiral Flute Tap, Metric, DIN Standard

Machine tap to produce normal fit threads within 6H tolerance. The spiral flute is suited for blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges.

| | | |
|-----------------|---------------------|------------------|
| M | DIN 371/376 | 6H |
| 2.5xD | HSS-E PM | |
| C 2-3 | | λ 45° |
| R | Bright | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 21 | P1.2 ■ 23 | P1.3 ■ 24 | P2.1 ■ 17 | P2.2 ■ 15 | P2.3 ■ 13 | P3.1 ■ 12 | P3.2 ■ 9 | P4.1 ■ 7 | N1.1 ■ 13 | N1.2 ■ 9 | N1.3 ■ 6 | N2.1 ■ 27 | N2.2 ■ 24 |
| N2.3 ■ 17 | | | | | | | | | | | | | |

Products from this series are also available in set with drills. Please see L114 or L001.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| EX00M2 ¹⁾ | 2 | 0.40 | 45.0 | 4 | 2.80 | 2.10 | 5 | 3 | 1.60 | 9.00 |
| EX00M2.5 ¹⁾ | 2.5 | 0.45 | 50.0 | 4 | 2.80 | 2.10 | 5 | 3 | 2.05 | 12.50 |
| EX00M3 | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| EX00M3.5 | 3.5 | 0.60 | 56.0 | 7 | 4.00 | 3.00 | 6 | 3 | 2.90 | 20.00 |
| EX00M4 | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| EX00M5 | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| EX00M6 | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 31.00 |
| EX00M6DIN376 | 6 | 1.00 | 80.0 | 10 | 4.50 | 3.40 | 6 | 3 | 5.00 | 31.00 |
| EX00M7 | 7 | 1.00 | 80.0 | 10 | 7.00 | 5.50 | 8 | 3 | 6.00 | 31.00 |
| EX00M8 | 8 | 1.25 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| EX00M8DIN376 | 8 | 1.25 | 90.0 | 13 | 6.00 | 4.90 | 8 | 3 | 6.80 | 35.00 |
| EX00M10 | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EX00M10DIN376 | 10 | 1.50 | 100.0 | 15 | 7.00 | 5.50 | 8 | 3 | 8.50 | 39.00 |
| EX00M12 | 12 | 1.75 | 110.0 | 16 | 9.00 | 7.00 | 10 | 3 | 10.30 | — |
| EX00M14 | 14 | 2.00 | 110.0 | 20 | 11.00 | 9.00 | 12 | 3 | 12.00 | — |
| EX00M16 | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | — |
| EX00M18 | 18 | 2.50 | 125.0 | 25 | 14.00 | 11.00 | 14 | 4 | 15.50 | — |
| EX00M20 | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | — |
| EX00M22 | 22 | 2.50 | 140.0 | 25 | 18.00 | 14.50 | 17 | 4 | 19.50 | — |
| EX00M24 | 24 | 3.00 | 160.0 | 30 | 18.00 | 14.50 | 17 | 4 | 21.00 | — |
| EX00M27 | 27 | 3.00 | 160.0 | 30 | 20.00 | 16.00 | 19 | 4 | 24.00 | — |
| EX00M30 | 30 | 3.50 | 180.0 | 36 | 22.00 | 18.00 | 21 | 4 | 26.50 | — |
| EX00M33 | 33 | 3.50 | 180.0 | 36 | 25.00 | 20.00 | 23 | 4 | 29.50 | — |
| EX00M36 | 36 | 4.00 | 200.0 | 40 | 28.00 | 22.00 | 25 | 4 | 32.00 | — |
| EX00M39 | 39 | 4.00 | 200.0 | 40 | 32.00 | 24.00 | 27 | 4 | 35.00 | — |
| EX00M42 ¹⁾ | 42 | 4.50 | 200.0 | 45 | 32.00 | 24.00 | 27 | 4 | 37.50 | — |
| EX00M48 ¹⁾ | 48 | 5.00 | 250.0 | 50 | 36.00 | 29.00 | 32 | 4 | 43.00 | — |
| EX00M52 ¹⁾ | 52 | 5.00 | 250.0 | 50 | 40.00 | 32.00 | 35 | 5 | 47.00 | — |
| EX00M56 ¹⁾ | 56 | 5.50 | 250.0 | 55 | 40.00 | 32.00 | 35 | 5 | 50.50 | — |
| EX00M64 ¹⁾ | 64 | 6.00 | 315.0 | 60 | 50.00 | 39.00 | 42 | 6 | 58.00 | — |

¹⁾ HSS-E.



EX006G

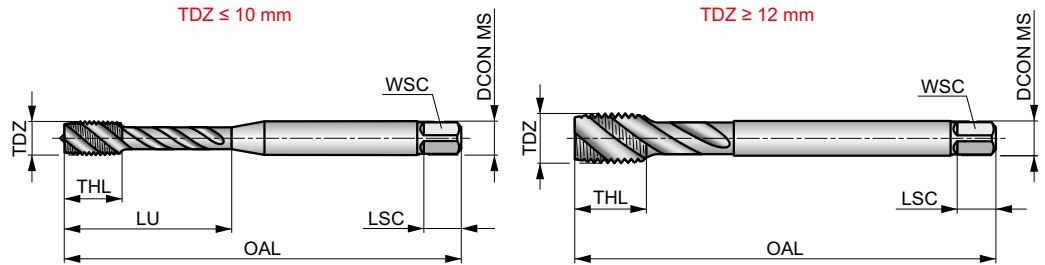


HSS-E-PM 45° Spiral Flute Tap, Metric, DIN Standard

Machine tap to produce threads within 6G tolerance for a fit with large allowance. The spiral flute is suited for blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges.



| | | |
|-----------------|----------------|-------------------------|
| M | DIN 371/376 | 6G |
| | 2.5xD | HSS-E PM |
| C 2-3 | | λ 45° |
| R | Bright | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 21 | P1.2 ■ 23 | P1.3 ■ 24 | P2.1 ■ 17 | P2.2 ■ 15 | P2.3 ■ 13 | P3.1 ■ 12 | P3.2 ■ 9 | P4.1 ■ 7 | N1.1 ■ 13 | N1.2 ■ 9 | N1.3 ■ 6 | N2.1 ■ 27 | N2.2 ■ 24 |
| N2.3 ■ 17 | | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| EX00M36G | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| EX00M46G | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| EX00M56G | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| EX00M66G | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 31.00 |
| EX00M86G | 8 | 1.25 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| EX00M106G | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EX00M126G | 12 | 1.75 | 110.0 | 16 | 9.00 | 7.00 | 10 | 3 | 10.30 | – |
| EX00M146G | 14 | 2.00 | 110.0 | 20 | 11.00 | 9.00 | 12 | 3 | 12.00 | – |
| EX00M166G | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | – |
| EX00M206G | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |



EXOOTIN

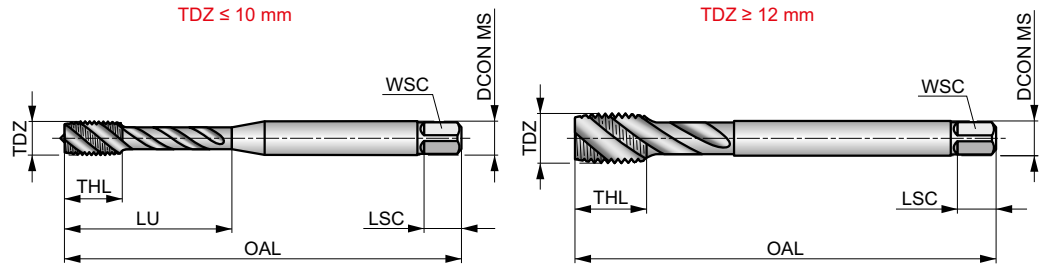


HSS-E-PM 45° Spiral Flute Machine Tap, Metric, DIN Standard

High performance machine tap with spiral flute for blind holes. Suited for a broad range of workpiece materials. TiN coated to allow higher cutting speeds, improve performance and extend tool life.



| | | |
|--|-------------|---------------|
| | DIN 371/376 | 6H |
| | 2.5xD | HSS-E PM |
| | | λ 45° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|
| P1.1 ■ 32 | P1.2 ■ 36 | P1.3 ■ 37 | P2.1 ■ 27 | P2.2 ■ 23 | P2.3 ■ 19 | P3.1 ■ 18 | P3.2 ■ 13 | P3.3 ■ 11 | P4.1 ■ 10 | P4.2 ■ 8 | M1.1 ■ 10 | M1.2 ■ 8 | M2.1 ■ 9 |
| M2.2 ■ 7 | M3.1 ■ 7 | M3.2 ■ 6 | M3.3 ■ 5 | M4.1 ■ 4 | N2.1 ■ 35 | N2.2 ■ 32 | N2.3 ■ 23 | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| EXOOTINM3 | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| EXOOTINM4 | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| EXOOTINM5 | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| EXOOTINM6 | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 31.00 |
| EXOOTINM8 | 8 | 1.25 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| EXOOTINM10 | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EXOOTINM12 | 12 | 1.75 | 110.0 | 16 | 9.00 | 7.00 | 10 | 3 | 10.30 | – |
| EXOOTINM14 | 14 | 2.00 | 110.0 | 20 | 11.00 | 9.00 | 12 | 3 | 12.00 | – |
| EXOOTINM16 | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | – |
| EXOOTINM18 | 18 | 2.50 | 125.0 | 25 | 14.00 | 11.00 | 14 | 4 | 15.50 | – |
| EXOOTINM20 | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | – |
| EXOOTINM22 | 22 | 2.50 | 140.0 | 25 | 18.00 | 14.50 | 17 | 4 | 19.50 | – |
| EXOOTINM24 | 24 | 3.00 | 160.0 | 30 | 18.00 | 14.50 | 17 | 4 | 21.00 | – |
| EXOOTINM27 | 27 | 3.00 | 160.0 | 30 | 20.00 | 16.00 | 19 | 4 | 24.00 | – |
| EXOOTINM30 | 30 | 3.50 | 180.0 | 36 | 22.00 | 18.00 | 21 | 4 | 26.50 | – |



EX016H

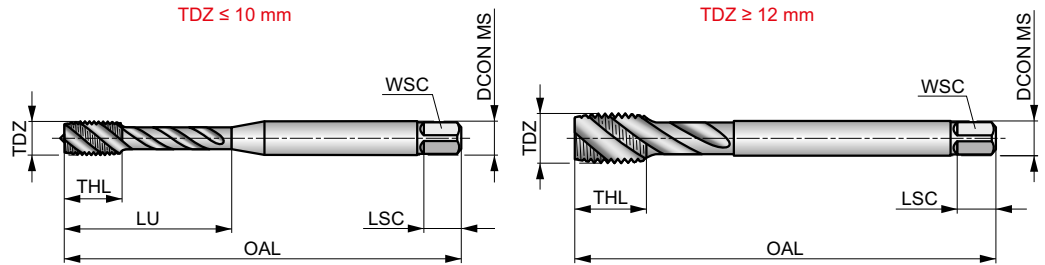


HSS-E-PM 45° Spiral Flute Machine Tap, Metric, DIN Standard

Machine tap to produce normal fit threads within 6H tolerance. The spiral flute is suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|-------|-------------|----------|
| | DIN 371/376 | 6H |
| | 2.5×D | HSS-E PM |
| C 2-3 | | λ 45° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 ▣21 | P2.2 ▣15 | P2.3 ▣13 | P3.2 ▣9 | P3.3 ▣8 | P4.1 ▣7 | P4.2 ▣5 | M1.1 ▣8 | M1.2 ▣6 | M2.1 ▣7 | M2.2 ▣5 | M3.1 ▣5 | M3.2 ▣4 | M3.3 ▣3 |
| M4.1 ▣3 | | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| EX01M2 ¹⁾ | 2 | 0.40 | 45.0 | 4 | 2.80 | 2.10 | 5 | 3 | 1.60 | 9.00 |
| EX01M2.5 ¹⁾ | 2.5 | 0.45 | 50.0 | 4 | 2.80 | 2.10 | 5 | 3 | 2.05 | 12.50 |
| EX01M3 | 3 | 0.50 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.50 | 18.00 |
| EX01M3.5 | 3.5 | 0.60 | 56.0 | 7 | 4.00 | 3.00 | 6 | 3 | 2.90 | 20.00 |
| EX01M4 | 4 | 0.70 | 63.0 | 7 | 4.50 | 3.40 | 6 | 3 | 3.30 | 21.00 |
| EX01M5 | 5 | 0.80 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.20 | 25.00 |
| EX01M6 | 6 | 1.00 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 5.00 | 31.00 |
| EX01M6DIN376 | 6 | 1.00 | 80.0 | 10 | 4.50 | 3.40 | 6 | 3 | 5.00 | 31.00 |
| EX01M7 | 7 | 1.00 | 80.0 | 10 | 7.00 | 5.50 | 8 | 3 | 6.00 | 31.00 |
| EX01M8 | 8 | 1.25 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.80 | 35.00 |
| EX01M8DIN376 | 8 | 1.25 | 90.0 | 13 | 6.00 | 4.90 | 8 | 3 | 6.80 | 35.00 |
| EX01M10 | 10 | 1.50 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EX01M10DIN376 | 10 | 1.50 | 100.0 | 15 | 7.00 | 5.50 | 8 | 3 | 8.50 | 39.00 |
| EX01M12 | 12 | 1.75 | 110.0 | 16 | 9.00 | 7.00 | 10 | 3 | 10.30 | — |
| EX01M14 | 14 | 2.00 | 110.0 | 20 | 11.00 | 9.00 | 12 | 3 | 12.00 | — |
| EX01M16 | 16 | 2.00 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.00 | — |
| EX01M18 | 18 | 2.50 | 125.0 | 25 | 14.00 | 11.00 | 14 | 4 | 15.50 | — |
| EX01M20 | 20 | 2.50 | 140.0 | 25 | 16.00 | 12.00 | 15 | 4 | 17.50 | — |
| EX01M22 | 22 | 2.50 | 140.0 | 25 | 18.00 | 14.50 | 17 | 4 | 19.50 | — |
| EX01M24 | 24 | 3.00 | 160.0 | 30 | 18.00 | 14.50 | 17 | 4 | 21.00 | — |
| EX01M27 | 27 | 3.00 | 160.0 | 30 | 20.00 | 16.00 | 19 | 4 | 24.00 | — |
| EX01M30 | 30 | 3.50 | 180.0 | 36 | 22.00 | 18.00 | 21 | 4 | 26.50 | — |
| EX01M33 | 33 | 3.50 | 180.0 | 36 | 25.00 | 20.00 | 23 | 4 | 29.50 | — |
| EX01M36 | 36 | 4.00 | 200.0 | 40 | 28.00 | 22.00 | 25 | 4 | 32.00 | — |
| EX01M39 | 39 | 4.00 | 200.0 | 40 | 32.00 | 24.00 | 27 | 4 | 35.00 | — |
| EX01M42 ¹⁾ | 42 | 4.50 | 200.0 | 45 | 32.00 | 24.00 | 27 | 4 | 37.50 | — |
| EX01M48 ¹⁾ | 48 | 5.00 | 250.0 | 50 | 36.00 | 29.00 | 32 | 4 | 43.00 | — |
| EX01M52 ¹⁾ | 52 | 5.00 | 250.0 | 50 | 40.00 | 32.00 | 35 | 5 | 47.00 | — |
| EX01M56 ¹⁾ | 56 | 5.50 | 250.0 | 55 | 40.00 | 32.00 | 35 | 5 | 50.50 | — |
| EX01M64 ¹⁾ | 64 | 6.00 | 315.0 | 60 | 50.00 | 39.00 | 42 | 6 | 58.00 | — |

¹⁾ HSS-E.



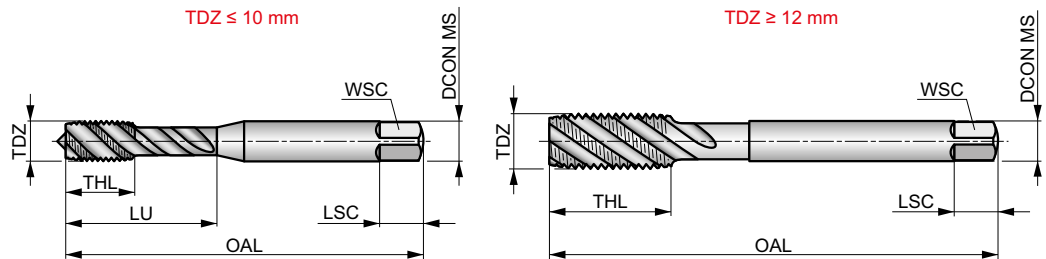
E002



HSS-E-PM 45° Spiral Flute Machine Tap, Metric, ISO Standard

Machine tap with spiral flute suited for blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges.

| | | |
|--|---------|---------------|
| | ISO 529 | 6H |
| | 2.5xD | HSS-E PM |
| | | λ 45° |
| | Bright | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 21 | P1.2 ■ 23 | P1.3 ■ 24 | P2.1 ■ 17 | P2.2 ■ 15 | P2.3 ■ 13 | P3.1 ■ 12 | P3.2 ■ 9 | P4.1 ■ 7 | N1.1 ■ 13 | N1.2 ■ 9 | N1.3 ■ 6 | N2.1 ■ 27 | N2.2 ■ 24 |
| N2.3 ■ 17 | | | | | | | | | | | | | |

Products from this series are also available in set with drills. Please see L113 or L002.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E002M2 ¹⁾ | 2 | 0.40 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.60 | 8.00 |
| E002M2.5 ¹⁾ | 2.5 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 2 | 2.05 | 9.50 |
| E002M3 | 3 | 0.50 | 48.0 | 6 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E002M4 | 4 | 0.70 | 53.0 | 7 | 4.00 | 3.15 | 6 | 3 | 3.30 | 19.00 |
| E002M5 | 5 | 0.80 | 58.0 | 8 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E002M6 | 6 | 1.00 | 66.0 | 10 | 6.30 | 5.00 | 8 | 3 | 5.00 | 27.00 |
| E002M8 | 8 | 1.25 | 72.0 | 12 | 8.00 | 6.30 | 9 | 3 | 6.80 | 31.00 |
| E002M10 | 10 | 1.50 | 80.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 35.00 |
| E002M12 | 12 | 1.75 | 89.0 | 16 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E002M14 | 14 | 2.00 | 95.0 | 18 | 11.20 | 9.00 | 12 | 3 | 12.00 | – |
| E002M16 | 16 | 2.00 | 102.0 | 18 | 12.50 | 10.00 | 13 | 4 | 14.00 | – |
| E002M18 | 18 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 15.50 | – |
| E002M20 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E002M22 | 22 | 2.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | – |
| E002M24 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | – |

¹⁾ HSS-E.



E002TIN

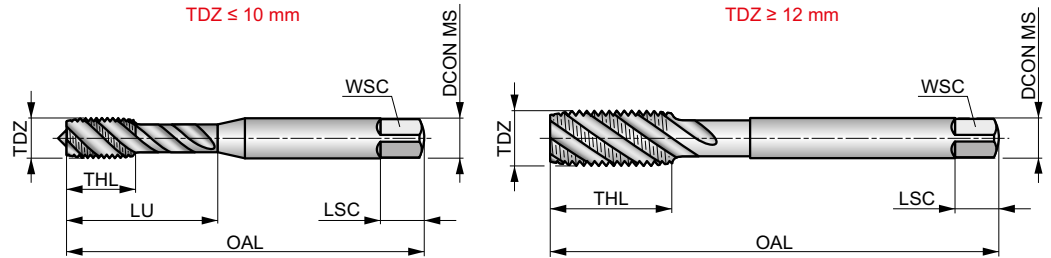


HSS-E-PM 45° Spiral Flute Machine Tap, Metric, ISO Standard

High performance machine tap with spiral flute for blind holes. Suited for a broad range of workpiece materials. TiN coated to allow higher cutting speeds, improve performance and extend tool life.



| | | |
|--|---------|---------------|
| | ISO 529 | 6H |
| | 2.5xD | HSS-E PM |
| | | λ 45° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|
| P1.1 ■ 32 | P1.2 ■ 36 | P1.3 ■ 37 | P2.1 ■ 27 | P2.2 ■ 23 | P2.3 ■ 19 | P3.1 ■ 18 | P3.2 ■ 13 | P3.3 ■ 11 | P4.1 ■ 10 | P4.2 ■ 8 | M1.1 ■ 10 | M1.2 ■ 8 | M2.1 ■ 9 |
| M2.2 ■ 7 | M3.1 ■ 7 | M3.2 ■ 6 | M3.3 ■ 5 | M4.1 ■ 4 | N2.1 ■ 35 | N2.2 ■ 32 | N2.3 ■ 23 | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E002TINM3 | 3 | 0.50 | 48.0 | 6 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E002TINM4 | 4 | 0.70 | 53.0 | 7 | 4.00 | 3.15 | 6 | 3 | 3.30 | 19.00 |
| E002TINM5 | 5 | 0.80 | 58.0 | 8 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E002TINM6 | 6 | 1.00 | 66.0 | 10 | 6.30 | 5.00 | 8 | 3 | 5.00 | 27.00 |
| E002TINM8 | 8 | 1.25 | 72.0 | 12 | 8.00 | 6.30 | 9 | 3 | 6.80 | 31.00 |
| E002TINM10 | 10 | 1.50 | 80.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 35.00 |
| E002TINM12 | 12 | 1.75 | 89.0 | 16 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E002TINM16 | 16 | 2.00 | 102.0 | 18 | 12.50 | 10.00 | 13 | 4 | 14.00 | – |
| E002TINM20 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |



E003

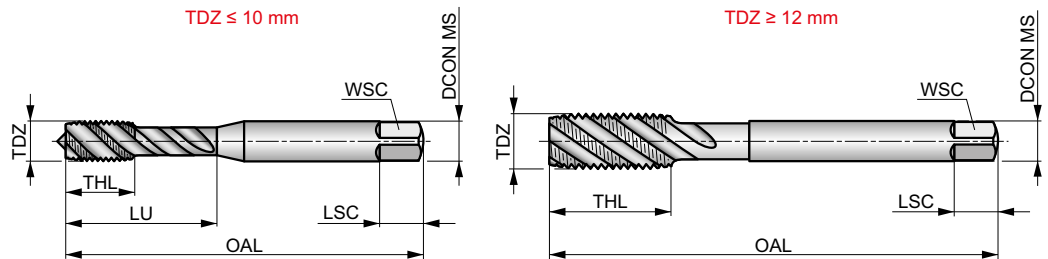
DORMER

HSS-E-PM 45° Spiral Flute Machine Tap, Metric, ISO Standard

Machine tap with spiral flute suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|--|---------|---------------|
| | ISO 529 | 6H |
| | 2.5xD | HSS-E PM |
| | | λ 45° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 ▣21 | P2.2 ▣15 | P2.3 ▣13 | P3.2 ▣9 | P3.3 ▣8 | P4.1 ▣7 | P4.2 ▣5 | M1.1 ▣8 | M1.2 ▣6 | M2.1 ▣7 | M2.2 ▣5 | M3.1 ▣5 | M3.2 ▣4 | M3.3 ▣3 |
| M4.1 ▣3 | | | | | | | | | | | | | |

Products from this series are also available in set with drills. Please see L113.

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E003M2 ¹⁾ | 2 | 0.40 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.60 | 8.00 |
| E003M2.5 ¹⁾ | 2.5 | 0.45 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 2 | 2.05 | 9.50 |
| E003M3 | 3 | 0.50 | 48.0 | 6 | 3.15 | 2.50 | 5 | 3 | 2.50 | 12.50 |
| E003M4 | 4 | 0.70 | 53.0 | 7 | 4.00 | 3.15 | 6 | 3 | 3.30 | 19.00 |
| E003M5 | 5 | 0.80 | 58.0 | 8 | 5.00 | 4.00 | 7 | 3 | 4.20 | 22.00 |
| E003M6 | 6 | 1.00 | 66.0 | 10 | 6.30 | 5.00 | 8 | 3 | 5.00 | 27.00 |
| E003M8 | 8 | 1.25 | 72.0 | 12 | 8.00 | 6.30 | 9 | 3 | 6.80 | 31.00 |
| E003M10 | 10 | 1.50 | 80.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 35.00 |
| E003M12 | 12 | 1.75 | 89.0 | 16 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E003M14 | 14 | 2.00 | 95.0 | 18 | 11.20 | 9.00 | 12 | 3 | 12.00 | – |
| E003M16 | 16 | 2.00 | 102.0 | 18 | 12.50 | 10.00 | 13 | 4 | 14.00 | – |
| E003M18 | 18 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 15.50 | – |
| E003M20 | 20 | 2.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E003M22 | 22 | 2.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | – |
| E003M24 | 24 | 3.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 21.00 | – |

¹⁾ HSS-E.

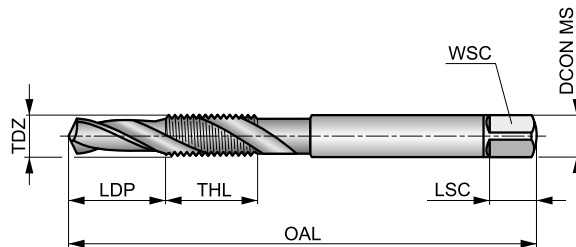


E650



HSS Drill-Tap Combination Tool with 30° Spiral Flute, Metric, ISO Standard

Combination of a core-hole drill and tap to produce a thread in one pass. This significantly reduces the time needed to produce the thread on site with the use of a hand-held power tool. There is no need for a tap wrench or tool change. Steam tempered surface acts to retain the lubricant and provide smoother cutting.



| | | |
|----------|---------------|----------|
| | ISO DORMER | 6H |
| | 1.5×D | HSS |
| C 2-3 | | λ 30° |
| R | ST | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 18 | P1.2 ■ 20 | P1.3 ■ 22 | P2.1 ■ 20 | P2.2 ▣ 18 | P3.1 ▣ 15 | P3.2 ▣ 12 | N1.2 ▣ 14 | N1.3 ▣ 19 | N3.1 ▣ 20 | N3.2 ▣ 15 | N4.1 ▣ 25 |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|

Products from this series are also available in set. Please see L126.

| Product | TDZ | TP | TD | OAL | THL | LDP | DCON MS | WSC | LSC | NOF |
|---------|-----|------|--------|-------|-----|-------|---------|-------|-----|-----|
| | | [mm] | [mm] | | | | | | | |
| E650M3 | 3 | 0.50 | 2.500 | 56.0 | 10 | 6.00 | 3.15 | 2.50 | 5 | 2 |
| E650M4 | 4 | 0.70 | 3.300 | 65.0 | 12 | 8.00 | 4.00 | 3.15 | 6 | 2 |
| E650M5 | 5 | 0.80 | 4.200 | 69.0 | 15 | 10.00 | 5.00 | 4.00 | 7 | 2 |
| E650M6 | 6 | 1.00 | 5.000 | 84.0 | 18 | 12.00 | 6.30 | 5.00 | 8 | 2 |
| E650M8 | 8 | 1.25 | 6.800 | 96.0 | 21 | 16.00 | 8.00 | 6.30 | 9 | 2 |
| E650M10 | 10 | 1.50 | 8.500 | 108.0 | 22 | 20.00 | 10.00 | 8.00 | 11 | 2 |
| E650M12 | 12 | 1.75 | 10.200 | 113.0 | 29 | 24.00 | 9.00 | 7.10 | 10 | 2 |
| E650M14 | 14 | 2.00 | 12.000 | 123.0 | 30 | 28.00 | 11.20 | 9.00 | 12 | 2 |
| E650M16 | 16 | 2.00 | 14.000 | 134.0 | 32 | 32.00 | 12.50 | 10.00 | 13 | 2 |



E605

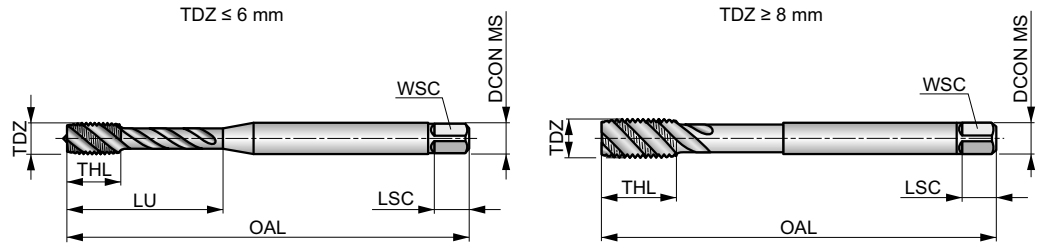


HSS-E-PM 40° Spiral Flute Long Series Machine Tap, Metric, ISO Standard

Longer design to give extra reach when threading difficult to access holes. The spiral flutes transport the swarf away from the cutting edges and out of the hole, avoiding packing of swarf in the flutes or at the bottom. Suited for blind holes.



| | | |
|-----------------|--------------------|-------------------------|
| | ISO 2283 | 6H |
| | 2xD | HSS-E PM |
| C 2-3 | | λ 40° |
| | Bright | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 13 | P1.3 ■ 13 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 5 | P4.1 ▣ 3 | N1.1 ▣ 9 | N1.2 ▣ 7 | N1.3 ▣ 4 | N2.1 ▣ 19 | N2.2 ▣ 17 |
| N2.3 ▣ 12 | | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E605M3 | 3 | 0.50 | 66.0 | 9 | 3.15 | 2.50 | 5 | 2 | 2.50 | 21.00 |
| E605M4 | 4 | 0.70 | 73.0 | 9 | 4.00 | 3.15 | 6 | 2 | 3.30 | 22.00 |
| E605M5 | 5 | 0.80 | 79.0 | 12 | 5.00 | 4.00 | 7 | 3 | 4.20 | 26.00 |
| E605M6 | 6 | 1.00 | 89.0 | 12 | 6.30 | 5.00 | 8 | 3 | 5.00 | 29.00 |
| E605M8 | 8 | 1.25 | 97.0 | 12 | 6.30 | 5.00 | 8 | 3 | 6.80 | – |
| E605M10 | 10 | 1.50 | 108.0 | 14 | 8.00 | 6.30 | 9 | 3 | 8.50 | – |
| E605M12 | 12 | 1.75 | 119.0 | 23 | 9.00 | 7.10 | 10 | 3 | 10.30 | – |
| E605M14 | 14 | 2.00 | 127.0 | 25 | 11.20 | 9.00 | 12 | 3 | 12.00 | – |
| E605M16 | 16 | 2.00 | 137.0 | 25 | 12.50 | 10.00 | 13 | 3 | 14.00 | – |
| E605M20 | 20 | 2.50 | 149.0 | 30 | 14.00 | 11.20 | 14 | 3 | 17.50 | – |



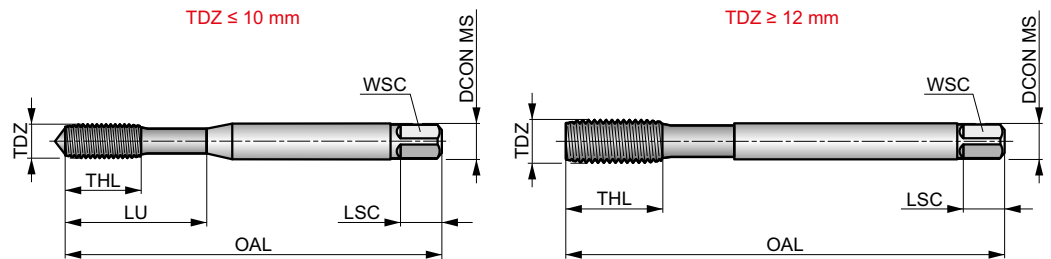
E291



HSS-E Thread Forming Tap, Metric, DIN Standard

Fluteless tap to produce high quality thread in blind and through holes. Provides a strong, clean, chip-free and accurate thread with excellent tolerance. Highly versatile for mild to medium strength steel and non-ferrous metal.

| | | |
|---------|----------|-------|
| | DIN 2174 | 6HX |
| | 3xD | HSS-E |
| C 2-3.5 | | |
| Bright | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P3.1 | P3.2 | P4.1 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 | N2.3 |
| ■ 23 | ■ 26 | ■ 26 | ■ 26 | ■ 23 | ■ 15 | ■ 12 | ■ 9 | ■ 26 | ■ 20 | ■ 13 | ■ 34 | ■ 30 | ■ 22 |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------|-----|------|-------|-----|---------|------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E291M1.6 | 1.6 | 0.35 | 40.0 | 8 | 2.50 | 2.10 | 5 | 3 | 1.40 | – |
| E291M2 | 2 | 0.40 | 45.0 | 6 | 2.80 | 2.10 | 5 | 3 | 1.80 | 11.00 |
| E291M2.5 | 2.5 | 0.45 | 50.0 | 8 | 2.80 | 2.10 | 5 | 3 | 2.30 | 12.50 |
| E291M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 4 | 2.80 | 18.00 |
| E291M3.5 | 3.5 | 0.60 | 56.0 | 11 | 4.00 | 3.00 | 6 | 4 | 3.20 | 20.00 |
| E291M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 5 | 3.70 | 21.00 |
| E291M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 5 | 4.60 | 25.00 |
| E291M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 5 | 5.50 | 30.00 |
| E291M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 5 | 7.40 | 35.00 |
| E291M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 5 | 9.30 | 39.00 |
| E291M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 5 | 11.20 | – |
| E291M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 6 | 15.00 | – |



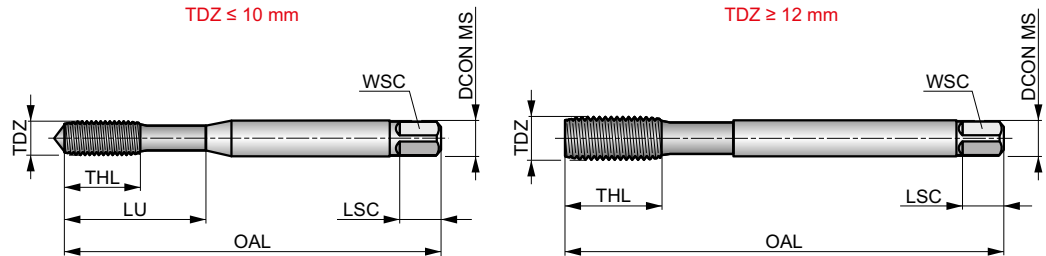
E292



HSS-E Thread Forming TiN Coated Tap, Metric, DIN Standard

High performance fluteless tap to produce high quality thread in blind and through holes. Provides a strong, clean, chip-free and accurate thread with excellent tolerance. Highly versatile for steel, stainless steel and non-ferrous metal. TiN coated to allow higher cutting speeds, improve performance and extend tool life.

| | | |
|---------|----------|-------|
| | DIN 2174 | 6HX |
| | 3xD | HSS-E |
| C 2-3.5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 45 | P1.2 ■ 51 | P1.3 ■ 51 | P2.1 ■ 51 | P2.2 ■ 45 | P3.1 ■ 29 | P3.2 ■ 24 | P3.3 ▣ 18 | P4.1 ■ 18 | P4.2 ▣ 13 | M1.1 ■ 25 | M1.2 ■ 21 | M2.1 ■ 22 | M2.2 ■ 18 |
| M3.1 ■ 17 | M3.2 ■ 15 | M3.3 ▣ 12 | M4.1 ▣ 8 | N1.1 ■ 55 | N1.2 ■ 41 | N1.3 ■ 28 | N2.1 ■ 62 | N2.2 ■ 55 | N2.3 ■ 40 | N3.1 ▣ 36 | N3.3 ▣ 12 | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------|-----|------|-------|-----|---------|------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E292M1.6 | 1.6 | 0.35 | 40.0 | 8 | 2.50 | 2.10 | 5 | 3 | 1.40 | - |
| E292M2 | 2 | 0.40 | 45.0 | 6 | 2.80 | 2.10 | 5 | 3 | 1.80 | 11.00 |
| E292M2.5 | 2.5 | 0.45 | 50.0 | 8 | 2.80 | 2.10 | 5 | 3 | 2.30 | 12.50 |
| E292M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 4 | 2.80 | 18.00 |
| E292M3.5 | 3.5 | 0.60 | 56.0 | 11 | 4.00 | 3.00 | 6 | 4 | 3.20 | 20.00 |
| E292M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 5 | 3.70 | 21.00 |
| E292M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 5 | 4.60 | 25.00 |
| E292M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 5 | 5.50 | 30.00 |
| E292M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 5 | 7.40 | 35.00 |
| E292M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 5 | 9.30 | 39.00 |
| E292M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 5 | 11.20 | - |
| E292M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 6 | 15.00 | - |



E294

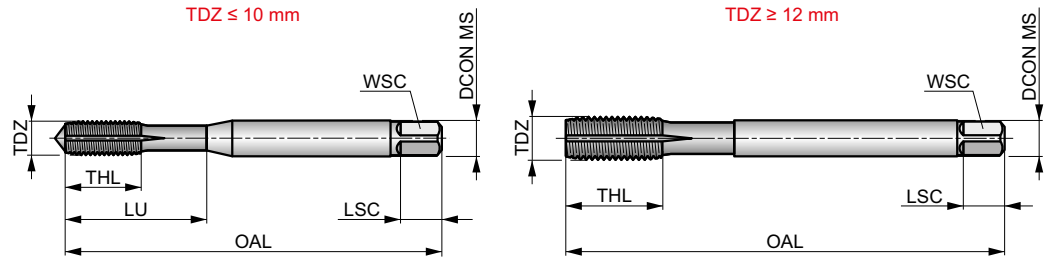


HSS-E Thread Forming TiN Coated Tap, Oil-Grooves, Metric, DIN Standard

High performance fluteless tap for blind and through holes. Provide strong, clean, chip-free and accurate threads with excellent tolerance. Highly versatile for steel, stainless steel and non-ferrous metal. TiN coated for higher cutting speeds, performance and tool life. With oil-grooves for better lubrication in deep holes.



| | | |
|-------------------|--------------------|--------------|
| M | DIN 2174 | 6HX |
| | 3.5xD | HSS-E |
| C 2-3.5 | | R |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 45 | P1.2 ■ 51 | P1.3 ■ 51 | P2.1 ■ 51 | P2.2 ■ 45 | P2.3 ▣ 40 | P3.1 ■ 29 | P3.2 ■ 24 | P3.3 ■ 20 | P4.1 ■ 18 | P4.2 ■ 15 | M1.1 ■ 25 | M1.2 ■ 21 | M2.1 ■ 22 |
| M2.2 ■ 18 | M2.3 ▣ 12 | M3.1 ■ 17 | M3.2 ■ 15 | M3.3 ■ 14 | M4.1 ■ 10 | N1.1 ■ 55 | N1.2 ■ 41 | N1.3 ■ 28 | N2.1 ■ 62 | N2.2 ■ 55 | N2.3 ■ 40 | N3.1 ▣ 40 | N3.3 ▣ 12 |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|-----|---------|------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E294M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 4 | 2.80 | 18.00 |
| E294M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 5 | 3.70 | 21.00 |
| E294M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 5 | 4.60 | 25.00 |
| E294M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 5 | 5.50 | 30.00 |
| E294M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 5 | 7.40 | 35.00 |
| E294M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 5 | 9.30 | 39.00 |
| E294M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 5 | 11.20 | – |
| E294M14 | 14 | 2.00 | 110.0 | 25 | 11.00 | 9.00 | 12 | 6 | 13.00 | – |
| E294M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 6 | 15.00 | – |



E289

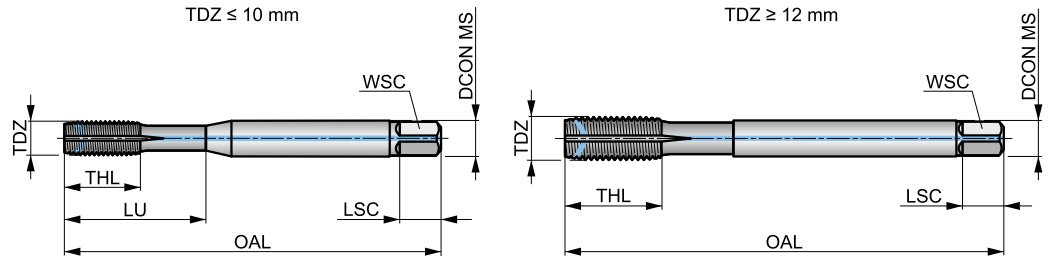
DORMER



HSS-E Thread Forming TiN Coated Tap, Through Coolant, Metric, DIN Standard

High performance fluteless tap for blind and through holes. Provide strong, clean, chip-free and accurate threads with excellent tolerance. Highly versatile for steel, stainless steel and non-ferrous metal. TiN coated for higher cutting speeds, performance and tool life. Through coolant and oil-grooves for optimal lubrication.

| | | |
|-------------------|--------------------|--------------|
| | DIN 2174 | 6HX |
| | 3.5xD | HSS-E |
| C 2-3.5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 50 | P1.2 ■ 56 | P1.3 ■ 56 | P2.1 ■ 56 | P2.2 ■ 49 | P2.3 ▣ 42 | P3.1 ■ 33 | P3.2 ■ 26 | P3.3 ■ 22 | P4.1 ■ 20 | P4.2 ■ 16 | M1.1 ■ 27 | M1.2 ■ 23 | M2.1 ■ 24 |
| M2.2 ■ 19 | M2.3 ▣ 12 | M3.1 ■ 18 | M3.2 ■ 16 | M3.3 ■ 14 | M4.1 ■ 10 | N1.1 ■ 60 | N1.2 ■ 55 | N1.3 ■ 31 | N2.1 ■ 68 | N2.2 ■ 60 | N2.3 ■ 44 | N3.1 ▣ 40 | N3.3 ▣ 14 |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|-------|------|---------|------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E289M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 5 | 4.60 | 25.00 |
| E289M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 5 | 5.50 | 30.00 |
| E289M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 5 | 7.40 | 35.00 |
| E289M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 5 | 9.30 | 39.00 |
| E289M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 5 | 11.20 | - |

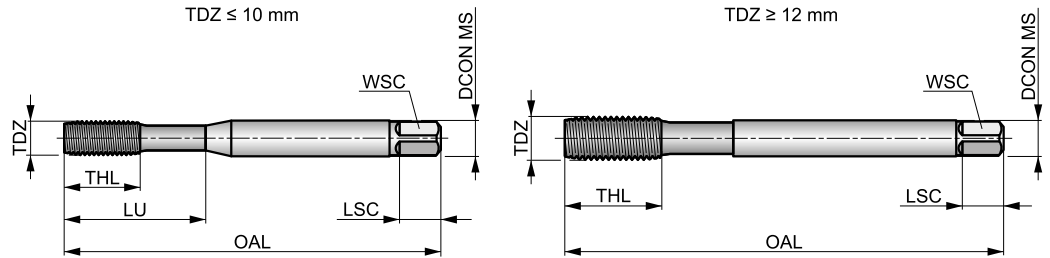


E293



HSS-E Thread Forming TiN Coated Tap, Metric, DIN Standard

High performance fluteless tap with full-bottoming lead to produce an almost full thread in blind holes. Provides a strong, clean, chip-free and accurate thread with excellent tolerance. Highly versatile for steel, stainless steel and non-ferrous metal. TiN coated for higher cutting speeds, improve performance and tool life.



| | | |
|--|----------|-------|
| | DIN 2174 | 6HX |
| | 3xD | HSS-E |
| | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 45 | P1.2 ■ 51 | P1.3 ■ 51 | P2.1 ■ 51 | P2.2 ■ 45 | P3.1 ■ 29 | P3.2 ■ 24 | P3.3 ▣ 18 | P4.1 ■ 18 | P4.2 ▣ 13 | M1.1 ■ 25 | M1.2 ■ 21 | M2.1 ■ 22 | M2.2 ■ 18 |
| M3.1 ■ 17 | M3.2 ■ 15 | M3.3 ▣ 12 | M4.1 ▣ 8 | N1.1 ■ 55 | N1.2 ■ 41 | N1.3 ■ 28 | N2.1 ■ 62 | N2.2 ■ 55 | N2.3 ■ 40 | N3.1 ▣ 36 | N3.3 ▣ 12 | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|-------|-----|---------|------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E293M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 4 | 2.80 | 18.00 |
| E293M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 5 | 3.70 | 21.00 |
| E293M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 5 | 4.60 | 25.00 |
| E293M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 5 | 5.50 | 30.00 |
| E293M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 5 | 7.40 | 35.00 |
| E293M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 5 | 9.30 | 39.00 |
| E293M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 5 | 11.20 | - |
| E293M16 | 16 | 2.00 | 110.0 | 25 | 12.00 | 9.00 | 12 | 6 | 15.00 | - |



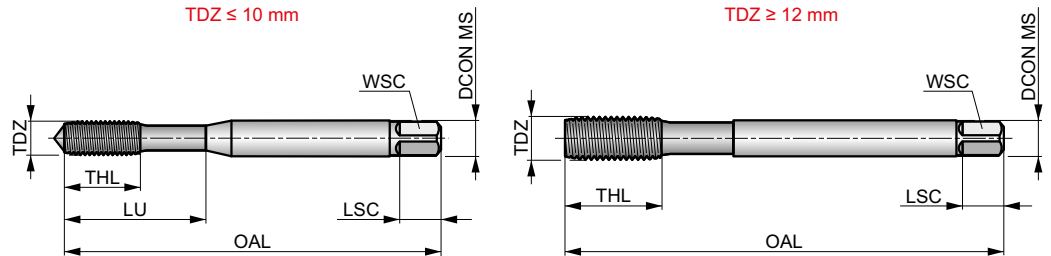
E295



HSS-E Thread Forming TiN Coated Tap, Metric, DIN Standard

High performance fluteless tap to produce high quality threads within 6G tolerance for a fit with large allowance. Provides a strong, clean, chip-free and accurate thread with excellent tolerance. Highly versatile for steel, stainless steel and non-ferrous metal. TiN coated for higher cutting speeds and extend tool life.

| | | |
|---------|----------|-------|
| | DIN 2174 | 6GX |
| | 3xD | HSS-E |
| C 2-3.5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 45 | P1.2 ■ 51 | P1.3 ■ 51 | P2.1 ■ 51 | P2.2 ■ 45 | P3.1 ■ 29 | P3.2 ■ 24 | P3.3 ▧ 18 | P4.1 ■ 18 | P4.2 ▧ 13 | M1.1 ■ 25 | M1.2 ■ 21 | M2.1 ■ 22 | M2.2 ■ 18 |
| M3.1 ■ 17 | M3.2 ■ 15 | M3.3 ▧ 12 | M4.1 ▧ 8 | N1.1 ■ 55 | N1.2 ■ 41 | N1.3 ■ 28 | N2.1 ■ 62 | N2.2 ■ 55 | N2.3 ■ 40 | N3.1 ▧ 36 | N3.3 ▧ 12 | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------|-----|------|-------|------|---------|------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E295M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 4 | 2.80 | 18.00 |
| E295M3.5 | 3.5 | 0.60 | 56.0 | 11 | 4.00 | 3.00 | 6 | 4 | 3.20 | 20.00 |
| E295M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 5 | 3.70 | 21.00 |
| E295M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 5 | 4.60 | 25.00 |
| E295M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 5 | 5.50 | 30.00 |
| E295M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 5 | 7.40 | 35.00 |
| E295M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 5 | 9.30 | 39.00 |
| E295M12 | 12 | 1.75 | 110.0 | 23 | 9.00 | 7.00 | 10 | 5 | 11.20 | - |



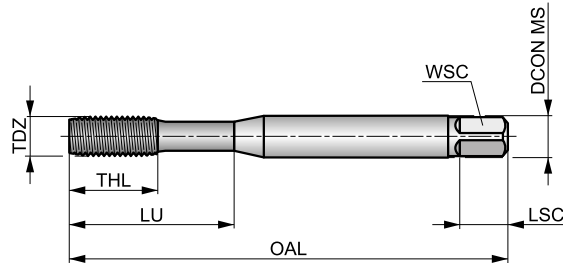
E296



HSS-E Thread Forming TiN Coated Tap, Metric, DIN Standard

High performance fluteless tap with full-bottoming lead to produce an almost full blind hole thread within 6G tolerance. Provides a strong, clean, chip-free and accurate thread. Highly versatile for steel, stainless steel and non-ferrous metal. TiN coated for higher cutting speeds, improve performance and tool life.

| | | |
|---------|----------|-------|
| M | DIN 2174 | 6GX |
| 3xD | | HSS-E |
| E 1.5-2 | | |
| TiN | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 45 | P1.2 ■ 51 | P1.3 ■ 51 | P2.1 ■ 51 | P2.2 ■ 45 | P3.1 ■ 29 | P3.2 ■ 24 | P3.3 ▣ 18 | P4.1 ■ 18 | P4.2 ▣ 13 | M1.1 ■ 25 | M1.2 ■ 21 | M2.1 ■ 22 | M2.2 ■ 18 |
| M3.1 ■ 17 | M3.2 ■ 15 | M3.3 ▣ 12 | M4.1 ▣ 8 | N1.1 ■ 55 | N1.2 ■ 41 | N1.3 ■ 28 | N2.1 ■ 62 | N2.2 ■ 55 | N2.3 ■ 40 | N3.1 ▣ 36 | N3.3 ▣ 12 | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|------|------|-------|------|---------|------|------|-----|------|-------|
| | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E296M3 | 3 | 0.50 | 56.0 | 9 | 3.50 | 2.70 | 6 | 4 | 2.80 | 18.00 |
| E296M4 | 4 | 0.70 | 63.0 | 12 | 4.50 | 3.40 | 6 | 5 | 3.70 | 21.00 |
| E296M5 | 5 | 0.80 | 70.0 | 13 | 6.00 | 4.90 | 8 | 5 | 4.60 | 25.00 |
| E296M6 | 6 | 1.00 | 80.0 | 15 | 6.00 | 4.90 | 8 | 5 | 5.50 | 30.00 |
| E296M8 | 8 | 1.25 | 90.0 | 18 | 8.00 | 6.20 | 9 | 5 | 7.40 | 35.00 |
| E296M10 | 10 | 1.50 | 100.0 | 20 | 10.00 | 8.00 | 11 | 5 | 9.30 | 39.00 |

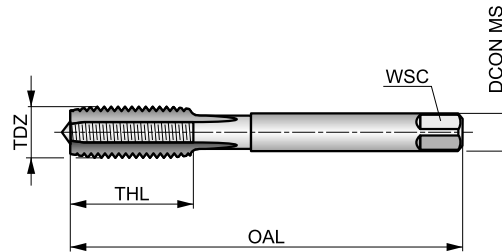


E105



HSS Straight Flute Serial Hand Tap, Metric-Fine, DIN Standard

Ideal for hand tapping tough materials. The straight flute design makes it ideal for both through and blind holes. Available as a single finishing tap or as a set of two serial taps, which should be used one after the other to create the full thread.



| | | |
|--------|----------|-----|
| MF | DIN 2181 | 6H |
| 1.5xD | | HSS |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability.

| | | | | | | | | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| K3.1 | K3.2 | K4.1 | K4.2 | K5.1 | K5.2 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 | N2.3 | N3.1 | N3.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N3.3 | N4.2 | N4.3 | | | | | | | | | | | |
| ■ | ■ | ■ | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | NOF | PHD |
|-----------------|-----|------|------|------|---------|------|-----|------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E105M2.5X.35N03 | 2.5 | 0.35 | 40.0 | 9 | 2.80 | 2.10 | 3 | 2.15 |
| E105M2.5X.35N09 | 2.5 | 0.35 | 40.0 | 9 | 2.80 | 2.10 | 3 | 2.15 |
| E105M3X.35N03 | 3 | 0.35 | 40.0 | 9 | 3.50 | 2.70 | 3 | 2.65 |
| E105M3X.35N09 | 3 | 0.35 | 40.0 | 9 | 3.50 | 2.70 | 3 | 2.65 |
| E105M3.5X.35N03 | 3.5 | 0.35 | 45.0 | 10 | 4.00 | 3.00 | 3 | 3.20 |
| E105M3.5X.35N09 | 3.5 | 0.35 | 45.0 | 10 | 4.00 | 3.00 | 3 | 3.20 |
| E105M4X.5N03 | 4 | 0.50 | 45.0 | 12 | 4.50 | 3.40 | 3 | 3.50 |
| E105M4X.5N09 | 4 | 0.50 | 45.0 | 12 | 4.50 | 3.40 | 3 | 3.50 |
| E105M5X.5N03 | 5 | 0.50 | 50.0 | 14 | 6.00 | 4.90 | 3 | 4.50 |
| E105M5X.5N09 | 5 | 0.50 | 50.0 | 14 | 6.00 | 4.90 | 3 | 4.50 |
| E105M5.5X.5N09 | 5.5 | 0.50 | 56.0 | 16 | 6.00 | 4.90 | 3 | 5.00 |
| E105M6X.75N03 | 6 | 0.75 | 56.0 | 16 | 6.00 | 4.90 | 3 | 5.30 |
| E105M6X.75N09 | 6 | 0.75 | 56.0 | 16 | 6.00 | 4.90 | 3 | 5.30 |
| E105M7X.75N03 | 7 | 0.75 | 56.0 | 16 | 6.00 | 4.90 | 3 | 6.30 |
| E105M7X.75N09 | 7 | 0.75 | 56.0 | 16 | 6.00 | 4.90 | 3 | 6.30 |
| E105M8X.75N03 | 8 | 0.75 | 56.0 | 16 | 6.00 | 4.90 | 3 | 7.30 |
| E105M8X.75N09 | 8 | 0.75 | 56.0 | 16 | 6.00 | 4.90 | 3 | 7.30 |
| E105M8X1.0N03 | 8 | 1.00 | 63.0 | 19 | 6.00 | 4.90 | 3 | 7.00 |
| E105M8X1.0N09 | 8 | 1.00 | 63.0 | 19 | 6.00 | 4.90 | 3 | 7.00 |
| E105M9X.75N03 | 9 | 0.75 | 63.0 | 19 | 7.00 | 5.50 | 3 | 8.30 |
| E105M9X.75N09 | 9 | 0.75 | 63.0 | 19 | 7.00 | 5.50 | 3 | 8.30 |
| E105M9X1.0N03 | 9 | 1.00 | 63.0 | 19 | 7.00 | 5.50 | 3 | 8.00 |
| E105M9X1.0N09 | 9 | 1.00 | 63.0 | 19 | 7.00 | 5.50 | 3 | 8.00 |
| E105M10X.75N03 | 10 | 0.75 | 63.0 | 16 | 7.00 | 5.50 | 3 | 9.30 |
| E105M10X.75N09 | 10 | 0.75 | 63.0 | 16 | 7.00 | 5.50 | 3 | 9.30 |
| E105M10X1.0N03 | 10 | 1.00 | 63.0 | 16 | 7.00 | 5.50 | 3 | 9.00 |
| E105M10X1.0N09 | 10 | 1.00 | 63.0 | 16 | 7.00 | 5.50 | 3 | 9.00 |
| E105M10X1.25N03 | 10 | 1.25 | 70.0 | 22 | 7.00 | 5.50 | 3 | 8.80 |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | NOF | PHD |
|-----------------|-----|------|------|------|---------|-------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E105M10X1.25N09 | 10 | 1.25 | 70.0 | 22 | 7.00 | 5.50 | 3 | 8.80 |
| E105M11X.75N03 | 11 | 0.75 | 63.0 | 15 | 8.00 | 6.20 | 3 | 10.30 |
| E105M11X.75N09 | 11 | 0.75 | 63.0 | 15 | 8.00 | 6.20 | 3 | 10.30 |
| E105M11X1.0N03 | 11 | 1.00 | 63.0 | 15 | 8.00 | 6.20 | 3 | 10.00 |
| E105M11X1.0N09 | 11 | 1.00 | 63.0 | 15 | 8.00 | 6.20 | 3 | 10.00 |
| E105M12X1.0N03 | 12 | 1.00 | 70.0 | 16 | 9.00 | 7.00 | 3 | 11.00 |
| E105M12X1.0N09 | 12 | 1.00 | 70.0 | 16 | 9.00 | 7.00 | 3 | 11.00 |
| E105M12X1.25N03 | 12 | 1.25 | 70.0 | 16 | 9.00 | 7.00 | 3 | 10.80 |
| E105M12X1.25N09 | 12 | 1.25 | 70.0 | 16 | 9.00 | 7.00 | 3 | 10.80 |
| E105M12X1.5N03 | 12 | 1.50 | 70.0 | 16 | 9.00 | 7.00 | 3 | 10.50 |
| E105M12X1.5N09 | 12 | 1.50 | 70.0 | 16 | 9.00 | 7.00 | 3 | 10.50 |
| E105M14X1.0N03 | 14 | 1.00 | 70.0 | 16 | 11.00 | 9.00 | 4 | 13.00 |
| E105M14X1.0N09 | 14 | 1.00 | 70.0 | 16 | 11.00 | 9.00 | 4 | 13.00 |
| E105M14X1.25N03 | 14 | 1.25 | 70.0 | 16 | 11.00 | 9.00 | 4 | 12.80 |
| E105M14X1.25N09 | 14 | 1.25 | 70.0 | 16 | 11.00 | 9.00 | 4 | 12.80 |
| E105M14X1.5N03 | 14 | 1.50 | 70.0 | 16 | 11.00 | 9.00 | 4 | 12.50 |
| E105M14X1.5N09 | 14 | 1.50 | 70.0 | 16 | 11.00 | 9.00 | 4 | 12.50 |
| E105M15X1.0N03 | 15 | 1.00 | 70.0 | 16 | 12.00 | 9.00 | 4 | 14.00 |
| E105M15X1.0N09 | 15 | 1.00 | 70.0 | 16 | 12.00 | 9.00 | 4 | 14.00 |
| E105M15X1.5N03 | 15 | 1.50 | 70.0 | 16 | 12.00 | 9.00 | 4 | 13.50 |
| E105M15X1.5N09 | 15 | 1.50 | 70.0 | 16 | 12.00 | 9.00 | 4 | 13.50 |
| E105M16X1.0N03 | 16 | 1.00 | 70.0 | 16 | 12.00 | 9.00 | 4 | 15.00 |
| E105M16X1.0N09 | 16 | 1.00 | 70.0 | 16 | 12.00 | 9.00 | 4 | 15.00 |
| E105M16X1.5N03 | 16 | 1.50 | 70.0 | 16 | 12.00 | 9.00 | 4 | 14.50 |
| E105M16X1.5N09 | 16 | 1.50 | 70.0 | 16 | 12.00 | 9.00 | 4 | 14.50 |
| E105M18X1.0N03 | 18 | 1.00 | 80.0 | 18 | 14.00 | 11.00 | 4 | 17.00 |
| E105M18X1.0N09 | 18 | 1.00 | 80.0 | 18 | 14.00 | 11.00 | 4 | 17.00 |
| E105M18X1.5N03 | 18 | 1.50 | 80.0 | 18 | 14.00 | 11.00 | 4 | 16.50 |
| E105M18X1.5N09 | 18 | 1.50 | 80.0 | 18 | 14.00 | 11.00 | 4 | 16.50 |
| E105M20X1.0N03 | 20 | 1.00 | 80.0 | 18 | 16.00 | 12.00 | 4 | 19.00 |
| E105M20X1.0N09 | 20 | 1.00 | 80.0 | 18 | 16.00 | 12.00 | 4 | 19.00 |
| E105M20X1.5N03 | 20 | 1.50 | 80.0 | 18 | 16.00 | 12.00 | 4 | 18.50 |
| E105M20X1.5N09 | 20 | 1.50 | 80.0 | 18 | 16.00 | 12.00 | 4 | 18.50 |
| E105M22X1.0N03 | 22 | 1.00 | 80.0 | 22 | 18.00 | 14.50 | 4 | 21.00 |
| E105M22X1.0N09 | 22 | 1.00 | 80.0 | 22 | 18.00 | 14.50 | 4 | 21.00 |
| E105M22X1.5N03 | 22 | 1.50 | 80.0 | 22 | 18.00 | 14.50 | 4 | 20.50 |
| E105M22X1.5N09 | 22 | 1.50 | 80.0 | 22 | 18.00 | 14.50 | 4 | 20.50 |
| E105M24X1.0N03 | 24 | 1.00 | 90.0 | 22 | 18.00 | 14.50 | 4 | 23.00 |
| E105M24X1.0N09 | 24 | 1.00 | 90.0 | 22 | 18.00 | 14.50 | 4 | 23.00 |
| E105M24X1.5N03 | 24 | 1.50 | 90.0 | 22 | 18.00 | 14.50 | 4 | 22.50 |
| E105M24X1.5N09 | 24 | 1.50 | 90.0 | 22 | 18.00 | 14.50 | 4 | 22.50 |
| E105M24X2.0N03 | 24 | 2.00 | 90.0 | 22 | 18.00 | 14.50 | 4 | 22.00 |
| E105M24X2.0N09 | 24 | 2.00 | 90.0 | 22 | 18.00 | 14.50 | 4 | 22.00 |
| E105M25X1.5N03 | 25 | 1.50 | 90.0 | 22 | 18.00 | 14.50 | 4 | 23.50 |
| E105M25X1.5N09 | 25 | 1.50 | 90.0 | 22 | 18.00 | 14.50 | 4 | 23.50 |
| E105M25X2.0N03 | 25 | 2.00 | 90.0 | 22 | 18.00 | 14.50 | 4 | 23.00 |
| E105M25X2.0N09 | 25 | 2.00 | 90.0 | 22 | 18.00 | 14.50 | 4 | 23.00 |
| E105M27X1.5N03 | 27 | 1.50 | 90.0 | 22 | 20.00 | 16.00 | 4 | 25.50 |
| E105M27X1.5N09 | 27 | 1.50 | 90.0 | 22 | 20.00 | 16.00 | 4 | 25.50 |
| E105M27X2.0N03 | 27 | 2.00 | 90.0 | 22 | 20.00 | 16.00 | 4 | 25.00 |
| E105M27X2.0N09 | 27 | 2.00 | 90.0 | 22 | 20.00 | 16.00 | 4 | 25.00 |
| E105M28X1.5N03 | 28 | 1.50 | 90.0 | 22 | 20.00 | 16.00 | 4 | 26.50 |
| E105M28X1.5N09 | 28 | 1.50 | 90.0 | 22 | 20.00 | 16.00 | 4 | 26.50 |
| E105M28X2.0N03 | 28 | 2.00 | 90.0 | 22 | 20.00 | 16.00 | 4 | 26.00 |
| E105M28X2.0N09 | 28 | 2.00 | 90.0 | 22 | 20.00 | 16.00 | 4 | 26.00 |
| E105M30X1.5N03 | 30 | 1.50 | 90.0 | 22 | 22.00 | 18.00 | 4 | 28.50 |
| E105M30X1.5N09 | 30 | 1.50 | 90.0 | 22 | 22.00 | 18.00 | 4 | 28.50 |
| E105M30X2.0N03 | 30 | 2.00 | 90.0 | 22 | 22.00 | 18.00 | 4 | 28.00 |
| E105M30X2.0N09 | 30 | 2.00 | 90.0 | 22 | 22.00 | 18.00 | 4 | 28.00 |
| E105M32X1.5N03 | 32 | 1.50 | 90.0 | 22 | 22.00 | 18.00 | 4 | 30.50 |
| E105M32X1.5N09 | 32 | 1.50 | 90.0 | 22 | 22.00 | 18.00 | 4 | 30.50 |
| E105M32X2.0N03 | 32 | 2.00 | 90.0 | 22 | 22.00 | 18.00 | 4 | 30.00 |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | NOF | PHD |
|----------------|-----|------|-------|------|---------|-------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E105M32X2.0N09 | 32 | 2.00 | 90.0 | 22 | 22.00 | 18.00 | 4 | 30.00 |
| E105M36X1.5N03 | 36 | 1.50 | 100.0 | 25 | 28.00 | 22.00 | 4 | 34.50 |
| E105M36X1.5N09 | 36 | 1.50 | 100.0 | 25 | 28.00 | 22.00 | 4 | 34.50 |
| E105M36X2.0N03 | 36 | 2.00 | 125.0 | 40 | 28.00 | 22.00 | 4 | 34.00 |
| E105M36X2.0N09 | 36 | 2.00 | 125.0 | 40 | 28.00 | 22.00 | 4 | 34.00 |
| E105M36X3.0N03 | 36 | 3.00 | 125.0 | 40 | 28.00 | 22.00 | 4 | 33.00 |
| E105M36X3.0N09 | 36 | 3.00 | 125.0 | 40 | 28.00 | 22.00 | 4 | 33.00 |
| E105M40X1.5N03 | 40 | 1.50 | 110.0 | 25 | 32.00 | 24.00 | 4 | 38.50 |
| E105M40X1.5N09 | 40 | 1.50 | 110.0 | 25 | 32.00 | 24.00 | 4 | 38.50 |
| E105M40X2.0N03 | 40 | 2.00 | 125.0 | 40 | 32.00 | 24.00 | 4 | 38.00 |
| E105M40X2.0N09 | 40 | 2.00 | 125.0 | 40 | 32.00 | 24.00 | 4 | 38.00 |
| E105M40X3.0N03 | 40 | 3.00 | 125.0 | 40 | 32.00 | 24.00 | 4 | 37.00 |
| E105M40X3.0N09 | 40 | 3.00 | 125.0 | 40 | 32.00 | 24.00 | 4 | 37.00 |
| E105M42X1.5N03 | 42 | 1.50 | 110.0 | 25 | 32.00 | 24.00 | 4 | 40.50 |
| E105M42X1.5N09 | 42 | 1.50 | 110.0 | 25 | 32.00 | 24.00 | 4 | 40.50 |
| E105M42X2.0N03 | 42 | 2.00 | 125.0 | 40 | 32.00 | 24.00 | 4 | 40.00 |
| E105M42X2.0N09 | 42 | 2.00 | 125.0 | 40 | 32.00 | 24.00 | 4 | 40.00 |
| E105M42X3.0N03 | 42 | 3.00 | 125.0 | 40 | 32.00 | 24.00 | 4 | 39.00 |
| E105M42X3.0N09 | 42 | 3.00 | 125.0 | 40 | 32.00 | 24.00 | 4 | 39.00 |
| E105M45X1.5N03 | 45 | 1.50 | 110.0 | 25 | 36.00 | 29.00 | 6 | 43.50 |
| E105M45X1.5N09 | 45 | 1.50 | 110.0 | 25 | 36.00 | 29.00 | 6 | 43.50 |
| E105M45X2.0N03 | 45 | 2.00 | 125.0 | 40 | 36.00 | 29.00 | 6 | 43.00 |
| E105M45X2.0N09 | 45 | 2.00 | 125.0 | 40 | 36.00 | 29.00 | 6 | 43.00 |
| E105M45X3.0N03 | 45 | 3.00 | 125.0 | 40 | 36.00 | 29.00 | 6 | 42.00 |
| E105M45X3.0N09 | 45 | 3.00 | 125.0 | 40 | 36.00 | 29.00 | 6 | 42.00 |
| E105M48X1.5N03 | 48 | 1.50 | 140.0 | 40 | 36.00 | 29.00 | 6 | 46.50 |
| E105M48X1.5N09 | 48 | 1.50 | 140.0 | 40 | 36.00 | 29.00 | 6 | 46.50 |
| E105M48X2.0N03 | 48 | 2.00 | 140.0 | 40 | 36.00 | 29.00 | 6 | 46.00 |
| E105M48X2.0N09 | 48 | 2.00 | 140.0 | 40 | 36.00 | 29.00 | 6 | 46.00 |
| E105M48X3.0N03 | 48 | 3.00 | 140.0 | 40 | 36.00 | 29.00 | 6 | 45.00 |
| E105M48X3.0N09 | 48 | 3.00 | 140.0 | 40 | 36.00 | 29.00 | 6 | 45.00 |
| E105M50X1.5N03 | 50 | 1.50 | 140.0 | 40 | 36.00 | 29.00 | 6 | 48.50 |
| E105M50X1.5N09 | 50 | 1.50 | 140.0 | 40 | 36.00 | 29.00 | 6 | 48.50 |
| E105M50X2.0N03 | 50 | 2.00 | 140.0 | 40 | 36.00 | 29.00 | 6 | 48.00 |
| E105M50X2.0N09 | 50 | 2.00 | 140.0 | 40 | 36.00 | 29.00 | 6 | 48.00 |
| E105M50X3.0N03 | 50 | 3.00 | 140.0 | 40 | 36.00 | 29.00 | 6 | 47.00 |
| E105M50X3.0N09 | 50 | 3.00 | 140.0 | 40 | 36.00 | 29.00 | 6 | 47.00 |

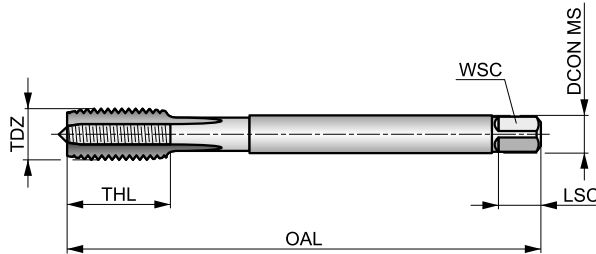


E268

DORMER

HSS-E-PM Straight Flute Machine Tap, Metric-Fine, DIN Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reduced shank increases the reach of the tap.



| | | |
|-----------------|-------------------|---------------------|
| MF | DIN 374 | 6H |
| | 1.5xD | HSS-E PM |
| C 2-3 | | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 13 | K3.2 ▣ 10 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|--------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E268M4X.5 | 4 | 0.50 | 63.0 | 10 | 2.80 | 2.10 | 5 | 3 | 3.50 |
| E268M5X.5 | 5 | 0.50 | 70.0 | 13 | 3.50 | 2.70 | 6 | 3 | 4.50 |
| E268M6X.75 | 6 | 0.75 | 80.0 | 15 | 4.50 | 3.40 | 6 | 3 | 5.30 |
| E268M7X.75 | 7 | 0.75 | 80.0 | 15 | 5.50 | 4.30 | 7 | 3 | 6.30 |
| E268M8X.75 | 8 | 0.75 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 7.30 |
| E268M8X1.0 | 8 | 1.00 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| E268M9X1.0 | 9 | 1.00 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 8.00 |
| E268M10X.75 | 10 | 0.75 | 90.0 | 20 | 7.00 | 5.50 | 8 | 3 | 9.30 |
| E268M10X1.0 | 10 | 1.00 | 90.0 | 20 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| E268M10X1.25 | 10 | 1.25 | 100.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| E268M11X1.0 | 11 | 1.00 | 90.0 | 20 | 8.00 | 6.20 | 9 | 3 | 10.00 |
| E268M12X1.0 | 12 | 1.00 | 100.0 | 21 | 9.00 | 7.00 | 10 | 4 | 11.00 |
| E268M12X1.25 | 12 | 1.25 | 100.0 | 21 | 9.00 | 7.00 | 10 | 4 | 10.80 |
| E268M12X1.5 | 12 | 1.50 | 100.0 | 21 | 9.00 | 7.00 | 10 | 4 | 10.50 |
| E268M14X1.0 | 14 | 1.00 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 13.00 |
| E268M14X1.25 | 14 | 1.25 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 12.80 |
| E268M14X1.5 | 14 | 1.50 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 12.50 |
| E268M15X1.5 | 15 | 1.50 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 13.50 |
| E268M16X1.0 | 16 | 1.00 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 15.00 |
| E268M16X1.5 | 16 | 1.50 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 14.50 |
| E268M18X1.0 | 18 | 1.00 | 110.0 | 24 | 14.00 | 11.00 | 14 | 4 | 17.00 |
| E268M18X1.5 | 18 | 1.50 | 110.0 | 24 | 14.00 | 11.00 | 14 | 4 | 16.50 |
| E268M20X1.0 | 20 | 1.00 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| E268M20X1.5 | 20 | 1.50 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 18.50 |
| E268M22X1.0 | 22 | 1.00 | 125.0 | 25 | 18.00 | 14.50 | 17 | 4 | 21.00 |
| E268M22X1.5 | 22 | 1.50 | 125.0 | 25 | 18.00 | 14.50 | 17 | 4 | 20.50 |
| E268M24X1.0 | 24 | 1.00 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 23.00 |
| E268M24X1.5 | 24 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 22.50 |
| E268M24X2.0 | 24 | 2.00 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 22.00 |
| E268M25X1.5 | 25 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 23.50 |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|---------------------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E268M25X2.0 | 25 | 2.00 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 23.00 |
| E268M26X1.5 | 26 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 24.50 |
| E268M26X2.0 | 26 | 2.00 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 24.00 |
| E268M27X1.5 | 27 | 1.50 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 25.50 |
| E268M27X2.0 | 27 | 2.00 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 25.00 |
| E268M28X1.5 | 28 | 1.50 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 26.50 |
| E268M28X2.0 | 28 | 2.00 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 26.00 |
| E268M30X1.5 | 30 | 1.50 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 28.50 |
| E268M30X2.0 | 30 | 2.00 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 28.00 |
| E268M32X1.5 | 32 | 1.50 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 30.50 |
| E268M32X2.0 | 32 | 2.00 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 30.00 |
| E268M33X1.5 | 33 | 1.50 | 160.0 | 30 | 25.00 | 20.00 | 23 | 4 | 31.50 |
| E268M34X1.5 | 34 | 1.50 | 170.0 | 30 | 28.00 | 22.00 | 25 | 4 | 32.50 |
| E268M35X1.5 | 35 | 1.50 | 170.0 | 30 | 28.00 | 22.00 | 25 | 4 | 33.50 |
| E268M36X1.5 | 36 | 1.50 | 170.0 | 30 | 28.00 | 22.00 | 25 | 4 | 34.50 |
| E268M36X2.0 | 36 | 2.00 | 170.0 | 30 | 28.00 | 22.00 | 25 | 4 | 34.00 |
| E268M36X3.0 | 36 | 3.00 | 200.0 | 55 | 28.00 | 22.00 | 25 | 4 | 33.00 |
| E268M40X1.5 ¹⁾ | 40 | 1.50 | 170.0 | 30 | 32.00 | 24.00 | 27 | 4 | 38.50 |
| E268M40X2.0 ¹⁾ | 40 | 2.00 | 170.0 | 30 | 32.00 | 24.00 | 27 | 4 | 38.00 |
| E268M40X3.0 ¹⁾ | 40 | 3.00 | 200.0 | 60 | 32.00 | 24.00 | 27 | 4 | 37.00 |
| E268M42X1.5 ¹⁾ | 42 | 1.50 | 170.0 | 30 | 32.00 | 24.00 | 27 | 4 | 40.50 |
| E268M42X2.0 ¹⁾ | 42 | 2.00 | 170.0 | 30 | 32.00 | 24.00 | 27 | 4 | 40.00 |
| E268M42X3.0 ¹⁾ | 42 | 3.00 | 200.0 | 60 | 32.00 | 24.00 | 27 | 4 | 39.00 |
| E268M45X1.5 ¹⁾ | 45 | 1.50 | 180.0 | 32 | 36.00 | 29.00 | 32 | 6 | 43.50 |
| E268M45X2.0 ¹⁾ | 45 | 2.00 | 180.0 | 32 | 36.00 | 29.00 | 32 | 6 | 43.00 |
| E268M45X3.0 ¹⁾ | 45 | 3.00 | 200.0 | 42 | 36.00 | 29.00 | 32 | 6 | 42.00 |
| E268M48X1.5 ¹⁾ | 48 | 1.50 | 190.0 | 32 | 36.00 | 29.00 | 32 | 6 | 46.50 |
| E268M48X2.0 ¹⁾ | 48 | 2.00 | 190.0 | 32 | 36.00 | 29.00 | 32 | 6 | 46.00 |
| E268M48X3.0 ¹⁾ | 48 | 3.00 | 225.0 | 50 | 36.00 | 29.00 | 32 | 6 | 45.00 |
| E268M50X1.5 ¹⁾ | 50 | 1.50 | 190.0 | 32 | 36.00 | 29.00 | 32 | 6 | 48.50 |
| E268M50X2.0 ¹⁾ | 50 | 2.00 | 190.0 | 30 | 36.00 | 29.00 | 32 | 6 | 48.00 |
| E268M50X3.0 ¹⁾ | 50 | 3.00 | 225.0 | 50 | 36.00 | 29.00 | 32 | 6 | 47.00 |

¹⁾ HSS-E.

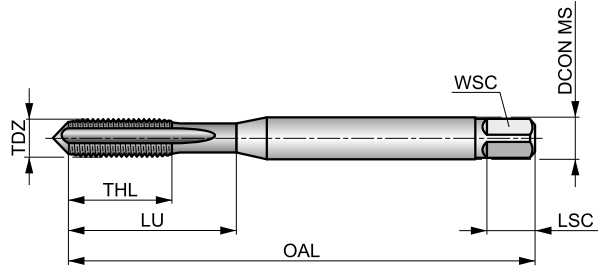


E242



HSS-E-PM Straight Flute Machine Tap, Metric Fine, DIN Left-Handed

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reinforced shank increases strength against torsional twist.



| | | |
|-----------------|-------------------|---------------------|
| MF | DIN 371 | 6H |
| | 1.5xD | HSS-E PM |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 13 | K3.2 ▣ 10 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|--------------------|-----|------|-------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E242M8X1.0 | 8 | 1.00 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 7.00 | 35.00 |
| E242M10X1.0 | 10 | 1.00 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 9.00 | 39.00 |

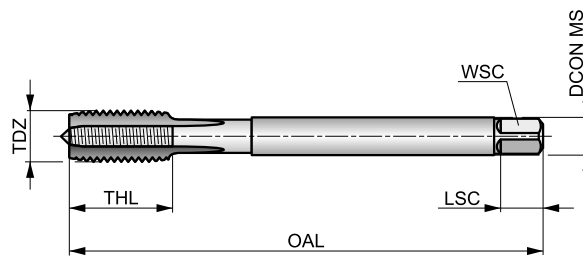


E290



HSS-E-PM Straight Flute Machine Tap Metric Fine, DIN Left-Handed

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reduced shank increases the reach of the tap.



| | | |
|-----------------|-------------------|---------------------|
| MF | DIN 374 | 6H |
| | 1.5xD | HSS-E PM |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 13 | K3.2 ▣ 10 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

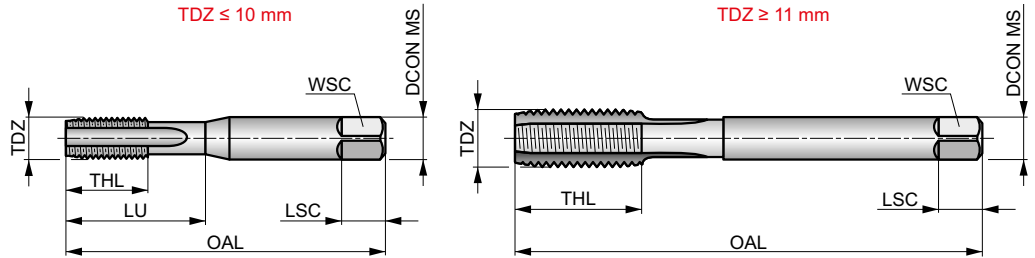
| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|--------------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E290M12X1.0 | 12 | 1.00 | 100.0 | 21 | 9.00 | 7.00 | 10 | 4 | 11.00 |
| E290M12X1.5 | 12 | 1.50 | 100.0 | 21 | 9.00 | 7.00 | 10 | 4 | 10.50 |
| E290M14X1.0 | 14 | 1.00 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 13.00 |
| E290M14X1.5 | 14 | 1.50 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 12.50 |
| E290M16X1.0 | 16 | 1.00 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 15.00 |
| E290M16X1.5 | 16 | 1.50 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 14.50 |
| E290M18X1.5 | 18 | 1.50 | 110.0 | 24 | 14.00 | 11.00 | 14 | 4 | 16.50 |
| E290M20X1.5 | 20 | 1.50 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 18.50 |
| E290M22X1.5 | 22 | 1.50 | 125.0 | 25 | 18.00 | 14.50 | 17 | 4 | 20.50 |
| E290M24X1.5 | 24 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 22.50 |



E513

HSS Straight Flute Hand Tap, Metric Fine, ISO Standard

A versatile tool, suitable for hand and machine tapping, with a straight flute design for both through and blind holes. Available with taper lead NO1 for short through holes, plug lead NO2 for deeper through holes or bottoming lead NO3 for blind holes. Also, as a set NO7 with a plug lead and bottoming lead tap.



| | | |
|--|---------|--------|
| | ISO 529 | 6H |
| | 1.5xD | HSS |
| | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 | K2.1 ■12 | K2.2 ■10 |
| K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------------|-----|------|------|------|---------|------|-----|-----|------|-------|
| | | | | | | | | | | |
| E513M3X.35N01 | 3 | 0.35 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 12.50 |
| E513M3X.35N02 | 3 | 0.35 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 12.50 |
| E513M3X.35N03 | 3 | 0.35 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 12.50 |
| E513M3.5X.35N03 | 3.5 | 0.35 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 3.20 | 12.50 |
| E513M4X.5N01 | 4 | 0.50 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.50 | 14.00 |
| E513M4X.5N02 | 4 | 0.50 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.50 | 14.00 |
| E513M4X.5N03 | 4 | 0.50 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.50 | 14.00 |
| E513M4X.5N07 | 4 | 0.50 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.50 | 14.00 |
| E513M5X.5N01 | 5 | 0.50 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.50 | 22.00 |
| E513M5X.5N02 | 5 | 0.50 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.50 | 22.00 |
| E513M5X.5N03 | 5 | 0.50 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.50 | 22.00 |
| E513M5X.5N07 | 5 | 0.50 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.50 | 22.00 |
| E513M5X.75N01 | 5 | 0.75 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.30 | 22.00 |
| E513M5X.75N02 | 5 | 0.75 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.30 | 22.00 |
| E513M5X.75N03 | 5 | 0.75 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.30 | 22.00 |
| E513M6X.5N01 | 6 | 0.50 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.50 | 26.00 |
| E513M6X.5N02 | 6 | 0.50 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.50 | 26.00 |
| E513M6X.5N03 | 6 | 0.50 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.50 | 26.00 |
| E513M6X.75N01 | 6 | 0.75 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.30 | 26.00 |
| E513M6X.75N02 | 6 | 0.75 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.30 | 26.00 |
| E513M6X.75N03 | 6 | 0.75 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.30 | 26.00 |
| E513M6X.75N07 | 6 | 0.75 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.30 | 26.00 |
| E513M7X.75N01 | 7 | 0.75 | 66.0 | 13 | 7.10 | 5.60 | 8 | 3 | 6.30 | 26.00 |
| E513M7X.75N02 | 7 | 0.75 | 66.0 | 13 | 7.10 | 5.60 | 8 | 3 | 6.30 | 26.00 |
| E513M7X.75N03 | 7 | 0.75 | 66.0 | 13 | 7.10 | 5.60 | 8 | 3 | 6.30 | 26.00 |
| E513M8X.5N01 | 8 | 0.50 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.50 | 29.00 |
| E513M8X.5N02 | 8 | 0.50 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.50 | 29.00 |
| E513M8X.5N03 | 8 | 0.50 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.50 | 29.00 |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------------|-----|------|------|------|---------|------|------|------|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| E513M8X.75N01 | 8 | 0.75 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.30 | 29.00 |
| E513M8X.75N02 | 8 | 0.75 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.30 | 29.00 |
| E513M8X.75N03 | 8 | 0.75 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.30 | 29.00 |
| E513M8X.75N07 | 8 | 0.75 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.30 | 29.00 |
| E513M8X1.0N01 | 8 | 1.00 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.00 | 29.00 |
| E513M8X1.0N02 | 8 | 1.00 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.00 | 29.00 |
| E513M8X1.0N03 | 8 | 1.00 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.00 | 29.00 |
| E513M8X1.0N07 | 8 | 1.00 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.00 | 29.00 |
| E513M9X.75N03 | 9 | 0.75 | 72.0 | 16 | 9.00 | 7.10 | 10 | 3 | 8.30 | 29.00 |
| E513M9X1.0N01 | 9 | 1.00 | 72.0 | 16 | 9.00 | 7.10 | 10 | 3 | 8.00 | 29.00 |
| E513M9X1.0N02 | 9 | 1.00 | 72.0 | 16 | 9.00 | 7.10 | 10 | 3 | 8.00 | 29.00 |
| E513M9X1.0N03 | 9 | 1.00 | 72.0 | 16 | 9.00 | 7.10 | 10 | 3 | 8.00 | 29.00 |
| E513M10X.5N03 | 10 | 0.50 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 9.50 | 34.00 |
| E513M10X.75N01 | 10 | 0.75 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 9.30 | 34.00 |
| E513M10X.75N02 | 10 | 0.75 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 9.30 | 34.00 |
| E513M10X.75N03 | 10 | 0.75 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 9.30 | 34.00 |
| E513M10X1.0N01 | 10 | 1.00 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 9.00 | 34.00 |
| E513M10X1.0N02 | 10 | 1.00 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 9.00 | 34.00 |
| E513M10X1.0N03 | 10 | 1.00 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 9.00 | 34.00 |
| E513M10X1.0N06 | 10 | 1.00 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 9.00 | 34.00 |
| E513M10X1.0N07 | 10 | 1.00 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 9.00 | 34.00 |
| E513M10X1.25N01 | 10 | 1.25 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.80 | 34.00 |
| E513M10X1.25N02 | 10 | 1.25 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.80 | 34.00 |
| E513M10X1.25N03 | 10 | 1.25 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.80 | 34.00 |
| E513M10X1.25N06 | 10 | 1.25 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.80 | 34.00 |
| E513M10X1.25N07 | 10 | 1.25 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.80 | 34.00 |
| E513M11X.75N01 | 11 | 0.75 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 10.30 | – |
| E513M11X.75N02 | 11 | 0.75 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 10.30 | – |
| E513M11X.75N03 | 11 | 0.75 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 10.30 | – |
| E513M11X1.0N01 | 11 | 1.00 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 10.00 | – |
| E513M11X1.0N02 | 11 | 1.00 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 10.00 | – |
| E513M11X1.0N03 | 11 | 1.00 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 10.00 | – |
| E513M11X1.25N03 | 11 | 1.25 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.80 | – |
| E513M12X.75N03 | 12 | 0.75 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.30 | – |
| E513M12X1.0N01 | 12 | 1.00 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.00 | – |
| E513M12X1.0N02 | 12 | 1.00 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.00 | – |
| E513M12X1.0N03 | 12 | 1.00 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.00 | – |
| E513M12X1.0N07 | 12 | 1.00 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.00 | – |
| E513M12X1.25N01 | 12 | 1.25 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | – |
| E513M12X1.25N02 | 12 | 1.25 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | – |
| E513M12X1.25N03 | 12 | 1.25 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | – |
| E513M12X1.25N06 | 12 | 1.25 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | – |
| E513M12X1.25N07 | 12 | 1.25 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | – |
| E513M12X1.5N01 | 12 | 1.50 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.50 | – |
| E513M12X1.5N02 | 12 | 1.50 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.50 | – |
| E513M12X1.5N03 | 12 | 1.50 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.50 | – |
| E513M12X1.5N06 | 12 | 1.50 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.50 | – |
| E513M12X1.5N07 | 12 | 1.50 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.50 | – |
| E513M13X1.5N03 | 13 | 1.50 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.50 | – |
| E513M14X1.0N01 | 14 | 1.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 13.00 | – |
| E513M14X1.0N02 | 14 | 1.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 13.00 | – |
| E513M14X1.0N03 | 14 | 1.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 13.00 | – |
| E513M14X1.0N07 | 14 | 1.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 13.00 | – |
| E513M14X1.25N01 | 14 | 1.25 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.80 | – |
| E513M14X1.25N02 | 14 | 1.25 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.80 | – |
| E513M14X1.25N03 | 14 | 1.25 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.80 | – |
| E513M14X1.25N06 | 14 | 1.25 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.80 | – |
| E513M14X1.5N01 | 14 | 1.50 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.50 | – |
| E513M14X1.5N02 | 14 | 1.50 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.50 | – |
| E513M14X1.5N03 | 14 | 1.50 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.50 | – |
| E513M14X1.5N06 | 14 | 1.50 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.50 | – |
| E513M14X1.5N07 | 14 | 1.50 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.50 | – |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------------|-----|------|-------|------|---------|-------|------|------|-------|------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| E513M15X1.5N02 | 15 | 1.50 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 13.50 | — |
| E513M15X1.5N03 | 15 | 1.50 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 13.50 | — |
| E513M16X1.0N01 | 16 | 1.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 15.00 | — |
| E513M16X1.0N02 | 16 | 1.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 15.00 | — |
| E513M16X1.0N03 | 16 | 1.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 15.00 | — |
| E513M16X1.0N07 | 16 | 1.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 15.00 | — |
| E513M16X1.25N03 | 16 | 1.25 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.80 | — |
| E513M16X1.5N01 | 16 | 1.50 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.50 | — |
| E513M16X1.5N02 | 16 | 1.50 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.50 | — |
| E513M16X1.5N03 | 16 | 1.50 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.50 | — |
| E513M16X1.5N06 | 16 | 1.50 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.50 | — |
| E513M16X1.5N07 | 16 | 1.50 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.50 | — |
| E513M18X1.0N01 | 18 | 1.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.00 | — |
| E513M18X1.0N02 | 18 | 1.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.00 | — |
| E513M18X1.0N03 | 18 | 1.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.00 | — |
| E513M18X1.0N07 | 18 | 1.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.00 | — |
| E513M18X1.5N01 | 18 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | — |
| E513M18X1.5N02 | 18 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | — |
| E513M18X1.5N03 | 18 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | — |
| E513M18X1.5N06 | 18 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | — |
| E513M18X1.5N07 | 18 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | — |
| E513M18X2.0N01 | 18 | 2.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.00 | — |
| E513M18X2.0N02 | 18 | 2.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.00 | — |
| E513M18X2.0N03 | 18 | 2.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.00 | — |
| E513M18X2.0N07 | 18 | 2.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.00 | — |
| E513M20X1.0N01 | 20 | 1.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 19.00 | — |
| E513M20X1.0N02 | 20 | 1.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 19.00 | — |
| E513M20X1.0N03 | 20 | 1.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 19.00 | — |
| E513M20X1.0N07 | 20 | 1.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 19.00 | — |
| E513M20X1.5N01 | 20 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.50 | — |
| E513M20X1.5N02 | 20 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.50 | — |
| E513M20X1.5N03 | 20 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.50 | — |
| E513M20X1.5N06 | 20 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.50 | — |
| E513M20X1.5N07 | 20 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.50 | — |
| E513M20X2.0N01 | 20 | 2.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.00 | — |
| E513M20X2.0N02 | 20 | 2.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.00 | — |
| E513M20X2.0N03 | 20 | 2.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.00 | — |
| E513M20X2.0N07 | 20 | 2.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.00 | — |
| E513M22X1.0N02 | 22 | 1.00 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 21.00 | — |
| E513M22X1.0N03 | 22 | 1.00 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 21.00 | — |
| E513M22X1.0N07 | 22 | 1.00 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 21.00 | — |
| E513M22X1.5N01 | 22 | 1.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.50 | — |
| E513M22X1.5N02 | 22 | 1.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.50 | — |
| E513M22X1.5N03 | 22 | 1.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.50 | — |
| E513M22X1.5N07 | 22 | 1.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.50 | — |
| E513M22X2.0N01 | 22 | 2.00 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.00 | — |
| E513M22X2.0N02 | 22 | 2.00 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.00 | — |
| E513M22X2.0N03 | 22 | 2.00 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.00 | — |
| E513M22X2.0N07 | 22 | 2.00 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.00 | — |
| E513M24X1.0N02 | 24 | 1.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.00 | — |
| E513M24X1.0N03 | 24 | 1.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.00 | — |
| E513M24X1.5N01 | 24 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.50 | — |
| E513M24X1.5N02 | 24 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.50 | — |
| E513M24X1.5N03 | 24 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.50 | — |
| E513M24X1.5N07 | 24 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.50 | — |
| E513M24X2.0N01 | 24 | 2.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.00 | — |
| E513M24X2.0N02 | 24 | 2.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.00 | — |
| E513M24X2.0N03 | 24 | 2.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.00 | — |
| E513M24X2.0N07 | 24 | 2.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.00 | — |
| E513M25X1.5N01 | 25 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.50 | — |
| E513M25X1.5N02 | 25 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.50 | — |
| E513M25X1.5N03 | 25 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.50 | — |



| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|-------|------|---------|-------|------|------|-------|------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| E513M25X1.5N06 | 25 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.50 | – |
| E513M25X1.5N07 | 25 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.50 | – |
| E513M26X1.5N02 | 26 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 24.50 | – |
| E513M26X1.5N03 | 26 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 24.50 | – |
| E513M27X1.5N02 | 27 | 1.50 | 135.0 | 35 | 20.00 | 16.00 | 20 | 4 | 25.50 | – |
| E513M27X1.5N03 | 27 | 1.50 | 135.0 | 35 | 20.00 | 16.00 | 20 | 4 | 25.50 | – |
| E513M27X2.0N03 | 27 | 2.00 | 135.0 | 35 | 20.00 | 16.00 | 20 | 4 | 25.00 | – |
| E513M28X1.5N02 | 28 | 1.50 | 138.0 | 35 | 20.00 | 16.00 | 20 | 4 | 26.50 | – |
| E513M28X1.5N03 | 28 | 1.50 | 138.0 | 35 | 20.00 | 16.00 | 20 | 4 | 26.50 | – |
| E513M30X1.5N02 | 30 | 1.50 | 138.0 | 41 | 20.00 | 16.00 | 20 | 4 | 28.50 | – |
| E513M30X1.5N03 | 30 | 1.50 | 138.0 | 41 | 20.00 | 16.00 | 20 | 4 | 28.50 | – |
| E513M30X2.0N02 | 30 | 2.00 | 138.0 | 41 | 20.00 | 16.00 | 20 | 4 | 28.00 | – |
| E513M30X2.0N03 | 30 | 2.00 | 138.0 | 41 | 20.00 | 16.00 | 20 | 4 | 28.00 | – |
| E513M32X1.5N01 | 32 | 1.50 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 30.50 | – |
| E513M32X1.5N02 | 32 | 1.50 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 30.50 | – |
| E513M32X1.5N03 | 32 | 1.50 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 30.50 | – |
| E513M33X2.0N02 | 33 | 2.00 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 31.00 | – |
| E513M33X2.0N03 | 33 | 2.00 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 31.00 | – |
| E513M35X1.5N02 | 35 | 1.50 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 33.50 | – |
| E513M35X1.5N03 | 35 | 1.50 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 33.50 | – |
| E513M36X1.5N03 | 36 | 1.50 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 34.50 | – |
| E513M36X2.0N02 | 36 | 2.00 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 34.00 | – |
| E513M36X2.0N03 | 36 | 2.00 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 34.00 | – |
| E513M36X3.0N02 | 36 | 3.00 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 33.00 | – |
| E513M36X3.0N03 | 36 | 3.00 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 33.00 | – |
| E513M39X1.5N02 | 39 | 3.00 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 36.00 | – |
| E513M39X3.0N03 | 39 | 3.00 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 36.00 | – |
| E513M40X1.5N02 | 40 | 1.50 | 170.0 | 53 | 28.00 | 22.40 | 26 | 6 | 38.50 | – |
| E513M40X1.5N03 | 40 | 1.50 | 170.0 | 53 | 28.00 | 22.40 | 26 | 6 | 38.50 | – |
| E513M42X1.5N02 | 42 | 1.50 | 170.0 | 53 | 28.00 | 22.40 | 26 | 6 | 40.50 | – |
| E513M42X1.5N03 | 42 | 1.50 | 170.0 | 53 | 28.00 | 22.40 | 26 | 6 | 40.50 | – |
| E513M42X3.0N03 | 42 | 3.00 | 170.0 | 53 | 28.00 | 22.40 | 26 | 6 | 39.00 | – |
| E513M45X1.5N02 | 45 | 1.50 | 187.0 | 54 | 31.50 | 25.00 | 28 | 6 | 43.50 | – |
| E513M45X1.5N03 | 45 | 1.50 | 187.0 | 54 | 31.50 | 25.00 | 28 | 6 | 43.50 | – |
| E513M48X1.5N03 | 48 | 1.50 | 187.0 | 60 | 31.50 | 25.00 | 28 | 6 | 46.50 | – |
| E513M48X2.0N03 | 48 | 2.00 | 187.0 | 60 | 31.50 | 25.00 | 28 | 6 | 46.00 | – |
| E513M48X3.0N03 | 48 | 3.00 | 187.0 | 60 | 31.50 | 25.00 | 28 | 6 | 45.00 | – |
| E513M50X1.5N02 | 50 | 1.50 | 187.0 | 60 | 31.50 | 25.00 | 28 | 6 | 48.50 | – |
| E513M50X1.5N03 | 50 | 1.50 | 187.0 | 60 | 31.50 | 25.00 | 28 | 6 | 48.50 | – |

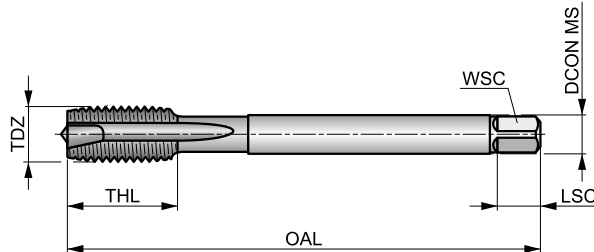


EP10



HSS-E-PM Spiral Point Machine Tap, Metric Fine, DIN Standard

Machine tap with spiral point suited for through holes only. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reduced shank increases the reach of the tap.



| | | |
|---------|----------|----|
| MF | DIN 374 | 6H |
| 2.5xD | HSS-E PM | |
| B 3.5-5 | R | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 22 | P1.2 ■ 24 | P1.3 ■ 25 | P2.1 ■ 18 | P2.2 ■ 16 | P2.3 ■ 14 | P3.1 ■ 13 | P3.2 ■ 10 | P4.1 ■ 8 | N1.1 ■ 14 | N1.2 ■ 10 | N1.3 ■ 7 | N2.1 ■ 28 | N2.2 ■ 25 |
| N2.3 ■ 18 | N3.1 ■ 44 | N3.2 ■ 27 | N3.3 ■ 13 | N4.1 ■ 22 | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|--------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| EP10M4X.5 | 4 | 0.50 | 63.0 | 12 | 2.80 | 2.10 | 5 | 3 | 3.50 |
| EP10M5X.5 | 5 | 0.50 | 70.0 | 13 | 3.50 | 2.70 | 6 | 3 | 4.50 |
| EP10M6X.75 | 6 | 0.75 | 80.0 | 15 | 4.50 | 3.40 | 6 | 3 | 5.30 |
| EP10M8X.75 | 8 | 0.75 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 7.30 |
| EP10M8X1.0 | 8 | 1.00 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| EP10M10X.75 | 10 | 0.75 | 90.0 | 18 | 7.00 | 5.50 | 8 | 3 | 9.30 |
| EP10M10X1.0 | 10 | 1.00 | 90.0 | 18 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| EP10M10X1.25 | 10 | 1.25 | 100.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| EP10M12X1.0 | 12 | 1.00 | 100.0 | 21 | 9.00 | 7.00 | 10 | 3 | 11.00 |
| EP10M12X1.25 | 12 | 1.25 | 100.0 | 21 | 9.00 | 7.00 | 10 | 3 | 10.80 |
| EP10M12X1.5 | 12 | 1.50 | 100.0 | 21 | 9.00 | 7.00 | 10 | 3 | 10.50 |
| EP10M14X1.0 | 14 | 1.00 | 100.0 | 21 | 11.00 | 9.00 | 12 | 3 | 13.00 |
| EP10M14X1.25 | 14 | 1.25 | 100.0 | 21 | 11.00 | 9.00 | 12 | 3 | 13.00 |
| EP10M14X1.5 | 14 | 1.50 | 100.0 | 21 | 11.00 | 9.00 | 12 | 3 | 12.50 |
| EP10M16X1.0 | 16 | 1.00 | 100.0 | 21 | 12.00 | 9.00 | 12 | 3 | 15.00 |
| EP10M16X1.5 | 16 | 1.50 | 100.0 | 21 | 12.00 | 9.00 | 12 | 3 | 14.50 |
| EP10M18X1.0 | 18 | 1.00 | 110.0 | 24 | 14.00 | 11.00 | 14 | 4 | 17.00 |
| EP10M18X1.5 | 18 | 1.50 | 110.0 | 24 | 14.00 | 11.00 | 14 | 4 | 16.50 |
| EP10M20X1.0 | 20 | 1.00 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| EP10M20X1.5 | 20 | 1.50 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 18.50 |
| EP10M22X1.5 | 22 | 1.50 | 125.0 | 25 | 18.00 | 14.50 | 17 | 4 | 20.50 |
| EP10M24X1.5 | 24 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 22.50 |
| EP10M24X2.0 | 24 | 2.00 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 22.00 |
| EP10M25X1.5 | 25 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 23.50 |
| EP10M26X1.5 | 26 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 24.50 |
| EP10M27X1.5 | 27 | 1.50 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 25.50 |
| EP10M27X2.0 | 27 | 2.00 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 25.00 |
| EP10M28X1.5 | 28 | 1.50 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 26.50 |
| EP10M30X1.5 | 30 | 1.50 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 28.50 |
| EP10M30X2.0 | 30 | 2.00 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 28.00 |

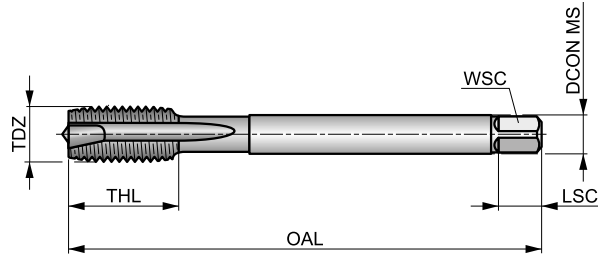


EP10TIN



HSS-E-PM Spiral Point Machine Tap, Metric Fine, TiN Coating, DIN Standard

High performance machine tap with spiral point for through holes only. Suited for a broad range of workpiece materials. TiN coating allows higher cutting speeds, improves performance and extends tool life. The reduced shank increases the reach of the tap.



| | | |
|---------|---------|----------|
| | DIN 374 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 34 | P1.2 ■ 38 | P1.3 ■ 40 | P2.1 ■ 29 | P2.2 ■ 24 | P2.3 ■ 20 | P3.1 ■ 19 | P3.2 ■ 14 | P3.3 ▣ 12 | P4.1 ■ 10 | P4.2 ▣ 9 | M1.1 ■ 11 | M1.2 ■ 9 | M2.1 ■ 10 |
| M2.2 ■ 8 | M3.1 ■ 8 | M3.2 ■ 7 | M3.3 ▣ 6 | M4.1 ▣ 5 | K1.1 ▣ 21 | K1.2 ▣ 16 | K1.3 ▣ 12 | K2.1 ▣ 30 | K2.2 ▣ 24 | K3.1 ▣ 26 | K3.2 ▣ 20 | K4.1 ▣ 24 | K4.2 ▣ 18 |
| K5.1 ▣ 28 | K5.2 ▣ 20 | N1.3 ■ 12 | N2.1 ■ 37 | N2.2 ■ 34 | N2.3 ■ 24 | N3.1 ■ 60 | N3.2 ▣ 36 | N4.1 ▣ 26 | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|-----------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| EP10TINM8X1.0 | 8 | 1.00 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| EP10TINM10X1.0 | 10 | 1.00 | 90.0 | 18 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| EP10TINM10X1.25 | 10 | 1.25 | 100.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| EP10TINM12X1.0 | 12 | 1.00 | 100.0 | 21 | 9.00 | 7.00 | 10 | 3 | 11.00 |
| EP10TINM12X1.25 | 12 | 1.25 | 100.0 | 21 | 9.00 | 7.00 | 10 | 3 | 10.80 |
| EP10TINM12X1.5 | 12 | 1.50 | 100.0 | 21 | 9.00 | 7.00 | 10 | 3 | 10.50 |
| EP10TINM14X1.5 | 14 | 1.50 | 100.0 | 21 | 11.00 | 9.00 | 12 | 3 | 12.50 |
| EP10TINM16X1.5 | 16 | 1.50 | 100.0 | 21 | 12.00 | 9.00 | 12 | 3 | 14.50 |
| EP10TINM18X1.5 | 18 | 1.50 | 110.0 | 24 | 14.00 | 11.00 | 14 | 4 | 16.50 |
| EP10TINM20X1.5 | 20 | 1.50 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 18.50 |

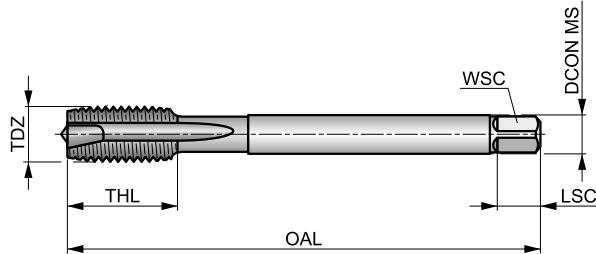


EP11



HSS-E-PM Spiral Point Machine Tap, Metric Fine, DIN Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding. The reduced shank increases the reach of the tap.



| | | |
|---------|----------|----|
| MF | DIN 374 | 6H |
| 2.5xD | HSS-E PM | |
| B 3.5-5 | R | |
| ST | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ▣22 | P2.2 ▣16 | P2.3 ▣14 | P3.2 ▣10 | P3.3 ▣9 | P4.1 ▣8 | P4.2 ▣6 | M1.1 ▣10 | M1.2 ▣8 | M2.1 ▣9 | M2.2 ▣7 | M3.1 ▣7 | M3.2 ▣6 | M3.3 ▣5 |
| M4.1 ▣4 | K1.1 ▣13 | K1.2 ▣10 | K1.3 ▣7 | K2.1 ▣16 | K2.2 ▣13 | K3.1 ▣14 | K3.2 ▣10 | K4.1 ▣13 | K4.2 ▣9 | K5.1 ▣15 | K5.2 ▣11 | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|--------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| EP11M4X.5 | 4 | 0.50 | 63.0 | 12 | 2.80 | 2.10 | 5 | 3 | 3.50 |
| EP11M5X.5 | 5 | 0.50 | 70.0 | 13 | 3.50 | 2.70 | 6 | 3 | 4.50 |
| EP11M6X.75 | 6 | 0.75 | 80.0 | 15 | 4.50 | 3.40 | 6 | 3 | 5.30 |
| EP11M8X.75 | 8 | 0.75 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 7.30 |
| EP11M8X1.0 | 8 | 1.00 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| EP11M10X.75 | 10 | 0.75 | 90.0 | 18 | 7.00 | 5.50 | 8 | 3 | 9.30 |
| EP11M10X1.0 | 10 | 1.00 | 90.0 | 18 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| EP11M10X1.25 | 10 | 1.25 | 100.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| EP11M12X1.0 | 12 | 1.00 | 100.0 | 21 | 9.00 | 7.00 | 10 | 3 | 11.00 |
| EP11M12X1.25 | 12 | 1.25 | 100.0 | 21 | 9.00 | 7.00 | 10 | 3 | 10.80 |
| EP11M12X1.5 | 12 | 1.50 | 100.0 | 21 | 9.00 | 7.00 | 10 | 3 | 10.50 |
| EP11M14X1.0 | 14 | 1.00 | 100.0 | 21 | 11.00 | 9.00 | 12 | 3 | 13.00 |
| EP11M14X1.25 | 14 | 1.25 | 100.0 | 21 | 11.00 | 9.00 | 12 | 3 | 13.00 |
| EP11M14X1.5 | 14 | 1.50 | 100.0 | 21 | 11.00 | 9.00 | 12 | 3 | 12.50 |
| EP11M16X1.0 | 16 | 1.00 | 100.0 | 21 | 12.00 | 9.00 | 12 | 3 | 15.00 |
| EP11M16X1.5 | 16 | 1.50 | 100.0 | 21 | 12.00 | 9.00 | 12 | 3 | 14.50 |
| EP11M18X1.0 | 18 | 1.00 | 110.0 | 24 | 14.00 | 11.00 | 14 | 4 | 17.00 |
| EP11M18X1.5 | 18 | 1.50 | 110.0 | 24 | 14.00 | 11.00 | 14 | 4 | 16.50 |
| EP11M20X1.0 | 20 | 1.00 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| EP11M20X1.5 | 20 | 1.50 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 18.50 |
| EP11M22X1.5 | 22 | 1.50 | 125.0 | 25 | 18.00 | 14.50 | 17 | 4 | 20.50 |
| EP11M24X1.5 | 24 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 22.50 |
| EP11M24X2.0 | 24 | 2.00 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 22.00 |
| EP11M25X1.5 | 25 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 23.50 |
| EP11M26X1.5 | 26 | 1.50 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 24.50 |
| EP11M27X1.5 | 27 | 1.50 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 25.50 |
| EP11M27X2.0 | 27 | 2.00 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 25.00 |
| EP11M28X1.5 | 28 | 1.50 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 26.50 |
| EP11M30X1.5 | 30 | 1.50 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 28.50 |
| EP11M30X2.0 | 30 | 2.00 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 28.00 |



E011

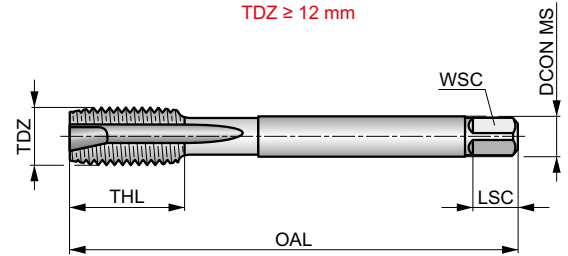
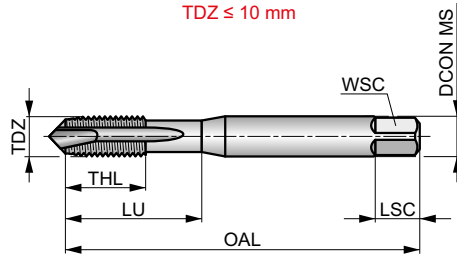
DORMER

HSS-E-PM Spiral Point Machine Tap, Metric Fine, ISO Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|---------|---------|----------|
| | ISO 529 | 6H |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ▧22 | P2.2 ▧16 | P2.3 ▧14 | P3.2 ▧10 | P3.3 ▧9 | P4.1 ▧8 | P4.2 ▧16 | M1.1 ▧10 | M1.2 ▧8 | M2.1 ▧9 | M2.2 ▧7 | M3.1 ▧7 | M3.2 ▧6 | M3.3 ▧5 |
| M4.1 ▧4 | K1.1 ▧13 | K1.2 ▧10 | K1.3 ▧7 | K2.1 ▧16 | K2.2 ▧13 | K3.1 ▧14 | K3.2 ▧10 | K4.1 ▧13 | K4.2 ▧9 | K5.1 ▧15 | K5.2 ▧11 | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|--------------|-----|------|-------|------|---------|-------|------|-----|-------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E011M4X.5 | 4 | 0.50 | 53.0 | 17 | 4.00 | 3.15 | 6 | 3 | 3.50 | 17.00 |
| E011M5X.5 | 5 | 0.50 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.50 | 22.00 |
| E011M6X.5 | 6 | 0.50 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.50 | 26.00 |
| E011M6X.75 | 6 | 0.75 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.30 | 26.00 |
| E011M8X.75 | 8 | 0.75 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.30 | 29.00 |
| E011M8X1.0 | 8 | 1.00 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 7.00 | 29.00 |
| E011M10X1.0 | 10 | 1.00 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 9.00 | 34.00 |
| E011M10X1.25 | 10 | 1.25 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.80 | 34.00 |
| E011M12X1.0 | 12 | 1.00 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.00 | — |
| E011M12X1.25 | 12 | 1.25 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | — |
| E011M12X1.5 | 12 | 1.50 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.50 | — |
| E011M14X1.0 | 14 | 1.00 | 95.0 | 24 | 11.20 | 9.00 | 12 | 3 | 13.00 | — |
| E011M14X1.25 | 14 | 1.25 | 95.0 | 24 | 11.20 | 9.00 | 12 | 3 | 12.80 | — |
| E011M14X1.5 | 14 | 1.50 | 95.0 | 24 | 11.20 | 9.00 | 12 | 3 | 12.50 | — |
| E011M16X1.0 | 16 | 1.00 | 102.0 | 24 | 12.50 | 10.00 | 13 | 3 | 15.00 | — |
| E011M16X1.5 | 16 | 1.50 | 102.0 | 24 | 12.50 | 10.00 | 13 | 3 | 14.50 | — |
| E011M18X1.0 | 18 | 1.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.00 | — |
| E011M18X1.5 | 18 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | — |
| E011M20X1.0 | 20 | 1.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 19.00 | — |
| E011M20X1.5 | 20 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.50 | — |
| E011M20X2.0 | 20 | 2.00 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.00 | — |
| E011M22X1.5 | 22 | 1.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.50 | — |
| E011M24X1.5 | 24 | 1.50 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.50 | — |
| E011M24X2.0 | 24 | 2.00 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.00 | — |

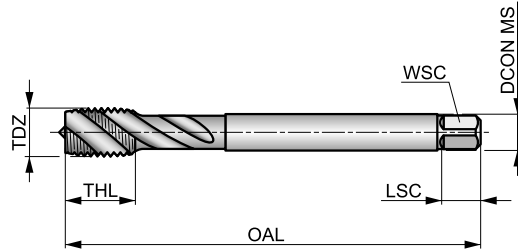


EX10



HSS-E-PM Spiral Flute Machine Tap, Metric Fine, DIN Standard

Machine tap with spiral flute suited for blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reduced shank increases the reach of the tap.



| | | |
|-----------------|-------------------|-------------------------|
| MF | DIN 374 | 6H |
| | 2.5xD | HSS-E PM |
| C 2-3 | | λ 45° |
| R | Bright | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 21 | P1.2 ■ 23 | P1.3 ■ 24 | P2.1 ■ 17 | P2.2 ■ 15 | P2.3 ■ 13 | P3.1 ■ 12 | P3.2 ■ 9 | P4.1 ■ 7 | N1.1 ■ 13 | N1.2 ■ 9 | N1.3 ■ 6 | N2.1 ■ 27 | N2.2 ■ 24 |
| N2.3 ■ 17 | | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|--------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| EX10M4X.50 | 4 | 0.50 | 63.0 | 7 | 2.80 | 2.10 | 5 | 3 | 3.50 |
| EX10M5X.50 | 5 | 0.50 | 70.0 | 8 | 3.50 | 2.70 | 6 | 3 | 4.50 |
| EX10M6X.75 | 6 | 0.75 | 80.0 | 10 | 4.50 | 3.40 | 6 | 3 | 5.30 |
| EX10M8X.75 | 8 | 0.75 | 80.0 | 13 | 6.00 | 4.90 | 8 | 3 | 7.30 |
| EX10M8X1.0 | 8 | 1.00 | 90.0 | 13 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| EX10M10X.75 | 10 | 0.75 | 90.0 | 13 | 7.00 | 5.50 | 8 | 3 | 9.30 |
| EX10M10X1.0 | 10 | 1.00 | 90.0 | 13 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| EX10M10X1.25 | 10 | 1.25 | 100.0 | 15 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| EX10M12X1.0 | 12 | 1.00 | 100.0 | 15 | 9.00 | 7.00 | 10 | 3 | 11.00 |
| EX10M12X1.25 | 12 | 1.25 | 100.0 | 15 | 9.00 | 7.00 | 10 | 3 | 10.80 |
| EX10M12X1.5 | 12 | 1.50 | 100.0 | 15 | 9.00 | 7.00 | 10 | 3 | 10.50 |
| EX10M14X1.0 | 14 | 1.00 | 100.0 | 15 | 11.00 | 9.00 | 12 | 3 | 13.00 |
| EX10M14X1.25 | 14 | 1.25 | 100.0 | 15 | 11.00 | 9.00 | 12 | 3 | 12.80 |
| EX10M14X1.5 | 14 | 1.50 | 100.0 | 15 | 11.00 | 9.00 | 12 | 3 | 12.50 |
| EX10M16X1.0 | 16 | 1.00 | 100.0 | 15 | 12.00 | 9.00 | 12 | 4 | 15.00 |
| EX10M16X1.5 | 16 | 1.50 | 100.0 | 15 | 12.00 | 9.00 | 12 | 4 | 14.50 |
| EX10M18X1.0 | 18 | 1.00 | 110.0 | 17 | 14.00 | 11.00 | 14 | 4 | 17.00 |
| EX10M18X1.5 | 18 | 1.50 | 110.0 | 17 | 14.00 | 11.00 | 14 | 4 | 16.50 |
| EX10M20X1.0 | 20 | 1.00 | 125.0 | 17 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| EX10M20X1.5 | 20 | 1.50 | 125.0 | 17 | 16.00 | 12.00 | 15 | 4 | 18.50 |
| EX10M22X1.5 | 22 | 1.50 | 125.0 | 17 | 18.00 | 14.50 | 17 | 4 | 20.50 |
| EX10M24X1.5 | 24 | 1.50 | 140.0 | 20 | 18.00 | 14.50 | 17 | 4 | 22.50 |
| EX10M24X2.0 | 24 | 2.00 | 140.0 | 20 | 18.00 | 14.50 | 17 | 4 | 22.00 |
| EX10M25X1.5 | 25 | 1.50 | 140.0 | 20 | 18.00 | 14.50 | 17 | 4 | 23.50 |
| EX10M26X1.5 | 26 | 1.50 | 140.0 | 20 | 18.00 | 14.50 | 17 | 4 | 24.50 |
| EX10M27X1.5 | 27 | 1.50 | 140.0 | 20 | 20.00 | 16.00 | 19 | 4 | 25.50 |
| EX10M27X2.0 | 27 | 2.00 | 140.0 | 20 | 20.00 | 16.00 | 19 | 4 | 25.00 |
| EX10M28X1.5 | 28 | 1.50 | 140.0 | 20 | 20.00 | 16.00 | 19 | 4 | 26.50 |
| EX10M30X1.5 | 30 | 1.50 | 150.0 | 20 | 22.00 | 18.00 | 21 | 4 | 28.50 |
| EX10M30X2.0 | 30 | 2.00 | 150.0 | 20 | 22.00 | 18.00 | 21 | 4 | 28.00 |

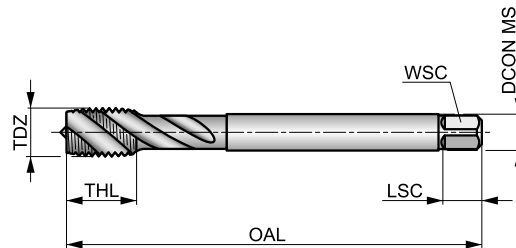
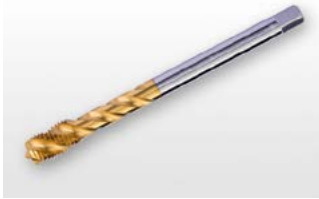


EX10TIN



HSS-E-PM Spiral Flute Machine Tap, Metric Fine, TiN Coating, DIN Standard

High performance machine tap with spiral flute for blind holes. Suited for a broad range of workpiece materials. TiN coated to allow higher cutting speeds, improve performance and extend tool life. The reduced shank increases the reach of the tap.



| | | |
|-----------------|-------------------|-------------------------|
| MF | DIN 374 | 6H |
| | 2.5xD | HSS-E PM |
| C 2-3 | | λ 45° |
| R | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|
| P1.1 ■ 32 | P1.2 ■ 36 | P1.3 ■ 37 | P2.1 ■ 27 | P2.2 ■ 23 | P2.3 ■ 19 | P3.1 ■ 18 | P3.2 ■ 13 | P3.3 ■ 11 | P4.1 ■ 10 | P4.2 ■ 8 | M1.1 ■ 10 | M1.2 ■ 8 | M2.1 ■ 9 |
| M2.2 ■ 7 | M3.1 ■ 7 | M3.2 ■ 6 | M3.3 ■ 5 | M4.1 ■ 4 | N2.1 ■ 35 | N2.2 ■ 32 | N2.3 ■ 23 | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|-----------------|------|------|-------|------|---------|-------|------|-----|-------|
| | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| EX10TINM8X1.0 | 8 | 1.00 | 90.0 | 13 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| EX10TINM10X1.0 | 10 | 1.00 | 90.0 | 13 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| EX10TINM10X1.25 | 10 | 1.25 | 100.0 | 15 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| EX10TINM12X1.0 | 12 | 1.00 | 100.0 | 15 | 9.00 | 7.00 | 10 | 3 | 11.00 |
| EX10TINM12X1.25 | 12 | 1.25 | 100.0 | 15 | 9.00 | 7.00 | 10 | 3 | 10.80 |
| EX10TINM12X1.5 | 12 | 1.50 | 100.0 | 15 | 9.00 | 7.00 | 10 | 3 | 10.50 |
| EX10TINM14X1.5 | 14 | 1.50 | 100.0 | 15 | 11.00 | 9.00 | 12 | 3 | 12.50 |
| EX10TINM16X1.5 | 16 | 1.50 | 100.0 | 15 | 12.00 | 9.00 | 12 | 4 | 14.50 |
| EX10TINM18X1.5 | 18 | 1.50 | 110.0 | 17 | 14.00 | 11.00 | 14 | 4 | 16.50 |
| EX10TINM20X1.5 | 20 | 1.50 | 125.0 | 17 | 16.00 | 12.00 | 15 | 4 | 18.50 |

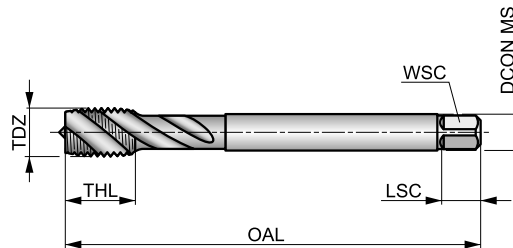


EX11



HSS-E-PM Spiral Flute Machine Tap, Metric Fine, DIN Standard

Machine tap with spiral flute suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding. The reduced shank increases the reach of the tap.



| | | |
|-----------|---------|----------|
| MF | DIN 374 | 6H |
| | 2.5×D | HSS-E PM |
| C 2-3 | | λ 45° |
| R | ST | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 □21 | P2.2 □15 | P2.3 ■13 | P3.2 ■9 | P3.3 □8 | P4.1 ■7 | P4.2 □5 | M1.1 □8 | M1.2 □6 | M2.1 □7 | M2.2 □5 | M3.1 □5 | M3.2 □4 | M3.3 □3 |
| M4.1 □3 | | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|--------------|-----|------|-------|------|---------|-------|------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| EX11M4X.50 | 4 | 0.50 | 63.0 | 7 | 2.80 | 2.10 | 5 | 3 | 3.50 |
| EX11M5X.50 | 5 | 0.50 | 70.0 | 8 | 3.50 | 2.70 | 6 | 3 | 4.50 |
| EX11M6X.75 | 6 | 0.75 | 80.0 | 10 | 4.50 | 3.40 | 6 | 3 | 5.30 |
| EX11M8X.75 | 8 | 0.75 | 80.0 | 13 | 6.00 | 4.90 | 8 | 3 | 7.30 |
| EX11M8X1.0 | 8 | 1.00 | 90.0 | 13 | 6.00 | 4.90 | 8 | 3 | 7.00 |
| EX11M10X.75 | 10 | 0.75 | 90.0 | 13 | 7.00 | 5.50 | 8 | 3 | 9.30 |
| EX11M10X1.0 | 10 | 1.00 | 90.0 | 13 | 7.00 | 5.50 | 8 | 3 | 9.00 |
| EX11M10X1.25 | 10 | 1.25 | 100.0 | 15 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| EX11M12X1.0 | 12 | 1.00 | 100.0 | 15 | 9.00 | 7.00 | 10 | 3 | 11.00 |
| EX11M12X1.25 | 12 | 1.25 | 100.0 | 15 | 9.00 | 7.00 | 10 | 3 | 10.80 |
| EX11M12X1.5 | 12 | 1.50 | 100.0 | 15 | 9.00 | 7.00 | 10 | 3 | 10.50 |
| EX11M14X1.0 | 14 | 1.00 | 100.0 | 15 | 11.00 | 9.00 | 12 | 3 | 13.00 |
| EX11M14X1.25 | 14 | 1.25 | 100.0 | 15 | 11.00 | 9.00 | 12 | 3 | 12.80 |
| EX11M14X1.5 | 14 | 1.50 | 100.0 | 15 | 11.00 | 9.00 | 12 | 3 | 12.50 |
| EX11M16X1.0 | 16 | 1.00 | 100.0 | 15 | 12.00 | 9.00 | 12 | 4 | 15.00 |
| EX11M16X1.5 | 16 | 1.50 | 100.0 | 15 | 12.00 | 9.00 | 12 | 4 | 14.50 |
| EX11M18X1.0 | 18 | 1.00 | 110.0 | 17 | 14.00 | 11.00 | 14 | 4 | 17.00 |
| EX11M18X1.5 | 18 | 1.50 | 110.0 | 17 | 14.00 | 11.00 | 14 | 4 | 16.50 |
| EX11M20X1.0 | 20 | 1.00 | 125.0 | 17 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| EX11M20X1.5 | 20 | 1.50 | 125.0 | 17 | 16.00 | 12.00 | 15 | 4 | 18.50 |
| EX11M22X1.5 | 22 | 1.50 | 125.0 | 17 | 18.00 | 14.50 | 17 | 4 | 20.50 |
| EX11M24X1.5 | 24 | 1.50 | 140.0 | 20 | 18.00 | 14.50 | 17 | 4 | 22.50 |
| EX11M24X2.0 | 24 | 2.00 | 140.0 | 20 | 18.00 | 14.50 | 17 | 4 | 22.00 |
| EX11M25X1.5 | 25 | 1.50 | 140.0 | 20 | 18.00 | 14.50 | 17 | 4 | 23.50 |
| EX11M26X1.5 | 26 | 1.50 | 140.0 | 20 | 18.00 | 14.50 | 17 | 4 | 24.50 |
| EX11M27X1.5 | 27 | 1.50 | 140.0 | 20 | 20.00 | 16.00 | 19 | 4 | 25.50 |
| EX11M27X2.0 | 27 | 2.00 | 140.0 | 20 | 20.00 | 16.00 | 19 | 4 | 25.00 |
| EX11M28X1.5 | 28 | 1.50 | 140.0 | 20 | 20.00 | 16.00 | 19 | 4 | 26.50 |
| EX11M30X1.5 | 30 | 1.50 | 150.0 | 20 | 22.00 | 18.00 | 21 | 4 | 28.50 |
| EX11M30X2.0 | 30 | 2.00 | 150.0 | 20 | 22.00 | 18.00 | 21 | 4 | 28.00 |



E013

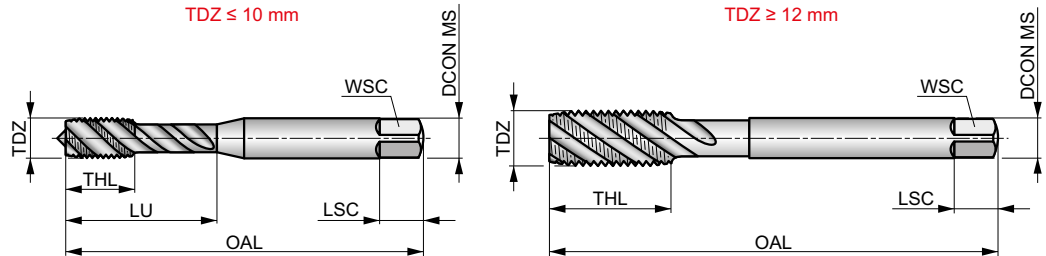


HSS-E-PM Spiral Flute Machine Tap, Metric Fine, ISO Standard

Machine tap with spiral flute suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|--|---------|---------------|
| | ISO 529 | 6H |
| | 2.5xD | HSS-E PM |
| | | λ 45° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 ▣21 | P2.2 ▣15 | P2.3 ▣13 | P3.2 ▣9 | P3.3 ▣8 | P4.1 ▣7 | P4.2 ▣5 | M1.1 ▣8 | M1.2 ▣6 | M2.1 ▣7 | M2.2 ▣5 | M3.1 ▣5 | M3.2 ▣4 | M3.3 ▣3 |
| M4.1 ▣3 | | | | | | | | | | | | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|--------------|-----|------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E013M4X.5 | 4 | 0.50 | 53.0 | 7 | 4.00 | 3.15 | 6 | 3 | 3.50 | 19.00 |
| E013M5X.5 | 5 | 0.50 | 58.0 | 8 | 5.00 | 4.00 | 7 | 3 | 4.50 | 22.00 |
| E013M6X.5 | 6 | 0.50 | 66.0 | 10 | 6.30 | 5.00 | 8 | 3 | 5.50 | 27.00 |
| E013M6X.75 | 6 | 0.75 | 66.0 | 10 | 6.30 | 5.00 | 8 | 3 | 5.30 | 27.00 |
| E013M8X.75 | 8 | 0.75 | 72.0 | 12 | 8.00 | 6.30 | 9 | 3 | 7.30 | 31.00 |
| E013M8X1.0 | 8 | 1.00 | 72.0 | 12 | 8.00 | 6.30 | 9 | 3 | 7.00 | 31.00 |
| E013M10X1.0 | 10 | 1.00 | 80.0 | 15 | 10.00 | 8.00 | 11 | 3 | 9.00 | 35.00 |
| E013M10X1.25 | 10 | 1.25 | 80.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.80 | 35.00 |
| E013M12X1.0 | 12 | 1.00 | 89.0 | 16 | 9.00 | 7.10 | 10 | 3 | 11.00 | — |
| E013M12X1.25 | 12 | 1.25 | 89.0 | 16 | 9.00 | 7.10 | 10 | 3 | 10.80 | — |
| E013M12X1.5 | 12 | 1.50 | 89.0 | 16 | 9.00 | 7.10 | 10 | 3 | 10.50 | — |
| E013M14X1.5 | 14 | 1.50 | 95.0 | 18 | 11.20 | 9.00 | 12 | 3 | 12.50 | — |
| E013M16X1.0 | 16 | 1.00 | 102.0 | 18 | 12.50 | 10.00 | 13 | 4 | 15.00 | — |
| E013M16X1.5 | 16 | 1.50 | 102.0 | 18 | 12.50 | 10.00 | 13 | 4 | 14.50 | — |
| E013M18X1.5 | 18 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | — |
| E013M20X1.5 | 20 | 1.50 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 18.50 | — |
| E013M22X1.5 | 22 | 1.50 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.50 | — |



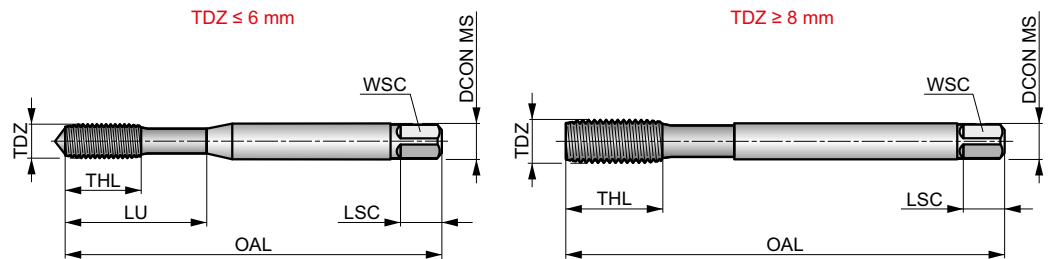
E288



HSS-E Fluteless Machine Tap, Metric Fine with TiN Coating, DIN Standard

High performance fluteless tap to produce high quality thread in blind and through holes. Provides a strong, clean, chip-free and accurate thread with excellent tolerance. Highly versatile for steel, stainless steel and non-ferrous metal. TiN coated for higher cutting speeds, improve performance and tool life.

| | | |
|---------|----------|-------|
| | DIN 2174 | 6HX |
| | 3xD | HSS-E |
| C 2-3.5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 45 | P1.2 ■ 51 | P1.3 ■ 51 | P2.1 ■ 51 | P2.2 ■ 45 | P3.1 ■ 29 | P3.2 ■ 24 | P3.3 ▣ 18 | P4.1 ■ 18 | P4.2 ▣ 13 | M1.1 ■ 25 | M1.2 ■ 21 | M2.1 ■ 22 | M2.2 ■ 18 |
| M3.1 ■ 17 | M3.2 ■ 15 | M3.3 ▣ 12 | M4.1 ▣ 8 | N1.1 ■ 55 | N1.2 ■ 41 | N1.3 ■ 28 | N2.1 ■ 62 | N2.2 ■ 55 | N2.3 ■ 40 | N3.1 ▣ 36 | N3.3 ▣ 12 | | |

| Product | TDZ | TP | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|--------------|-----|------|-------|-----|---------|------|-----|-----|-------|-------|
| | | | | | | | | | | |
| E288M5X.5 | 5 | 0.50 | 70.0 | 13 | 6.00 | 4.90 | 8 | 5 | 4.80 | 25.00 |
| E288M6X.75 | 6 | 0.75 | 80.0 | 15 | 6.00 | 4.90 | 8 | 5 | 5.70 | 30.00 |
| E288M8X1.0 | 8 | 1.00 | 90.0 | 18 | 6.00 | 4.90 | 8 | 5 | 7.50 | – |
| E288M10X1.0 | 10 | 1.00 | 90.0 | 20 | 7.00 | 5.50 | 8 | 5 | 9.50 | – |
| E288M10X1.25 | 10 | 1.25 | 100.0 | 20 | 7.00 | 5.50 | 8 | 5 | 9.40 | – |
| E288M12X1.5 | 12 | 1.50 | 100.0 | 21 | 9.00 | 7.00 | 10 | 5 | 11.30 | – |

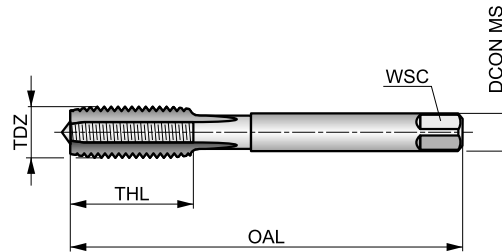


E108



HSS Straight Flute Serial Hand Tap, UNC, DIN Standard

Ideal for hand tapping tough materials. The straight flute design makes it ideal for both through and blind holes. Available as a single finishing tap or as a set of three serial taps, which should be used one after the other to create the full thread.



| | | |
|--------|---------|-----|
| | DIN 352 | 2B |
| | 1.5xD | HSS |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability.

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| K3.1 | K3.2 | K4.1 | K4.2 | K5.1 | K5.2 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 | N2.3 | N3.1 | N3.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N3.3 | N4.2 | N4.3 | | | | | | | | | | | |
| ■ | ■ | ■ | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD |
|--------------|------|-----|--------|-------|------|---------|-------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E1085-40N03 | 5 | 40 | 3.180 | 45.0 | 13 | 4.00 | 3.00 | 3 | 2.65 |
| E1085-40N08 | 5 | 40 | 3.180 | 45.0 | 13 | 4.00 | 3.00 | 3 | 2.65 |
| E1086-32N03 | 6 | 32 | 3.510 | 45.0 | 10 | 4.00 | 3.00 | 3 | 2.85 |
| E1086-32N08 | 6 | 32 | 3.510 | 45.0 | 10 | 4.00 | 3.00 | 3 | 2.85 |
| E1088-32N03 | 8 | 32 | 4.170 | 50.0 | 14 | 6.00 | 4.90 | 3 | 3.50 |
| E1088-32N08 | 8 | 32 | 4.170 | 50.0 | 14 | 6.00 | 4.90 | 3 | 3.50 |
| E10810-24N03 | 10 | 24 | 4.830 | 50.0 | 14 | 6.00 | 4.90 | 3 | 3.90 |
| E10810-24N08 | 10 | 24 | 4.830 | 50.0 | 14 | 6.00 | 4.90 | 3 | 3.90 |
| E10812-24N03 | 12 | 24 | 5.490 | 56.0 | 16 | 6.00 | 4.90 | 3 | 4.50 |
| E10812-24N08 | 12 | 24 | 5.490 | 56.0 | 16 | 6.00 | 4.90 | 3 | 4.50 |
| E1081/4N03 | 1/4 | 20 | 6.350 | 56.0 | 17 | 6.00 | 4.90 | 3 | 5.10 |
| E1081/4N08 | 1/4 | 20 | 6.350 | 56.0 | 17 | 6.00 | 4.90 | 3 | 5.10 |
| E1085/16N03 | 5/16 | 18 | 7.940 | 63.0 | 19 | 6.00 | 4.90 | 3 | 6.60 |
| E1085/16N08 | 5/16 | 18 | 7.940 | 63.0 | 19 | 6.00 | 4.90 | 3 | 6.60 |
| E1083/8N03 | 3/8 | 16 | 9.530 | 70.0 | 22 | 7.00 | 5.50 | 3 | 8.00 |
| E1083/8N08 | 3/8 | 16 | 9.530 | 70.0 | 22 | 7.00 | 5.50 | 3 | 8.00 |
| E1087/16N03 | 7/16 | 14 | 11.110 | 75.0 | 30 | 8.00 | 6.20 | 3 | 9.40 |
| E1087/16N08 | 7/16 | 14 | 11.110 | 75.0 | 30 | 8.00 | 6.20 | 3 | 9.40 |
| E1081/2N03 | 1/2 | 13 | 12.700 | 75.0 | 27 | 9.00 | 7.00 | 3 | 10.80 |
| E1081/2N08 | 1/2 | 13 | 12.700 | 75.0 | 27 | 9.00 | 7.00 | 3 | 10.80 |
| E1089/16N03 | 9/16 | 12 | 14.290 | 80.0 | 30 | 11.00 | 9.00 | 4 | 12.20 |
| E1089/16N08 | 9/16 | 12 | 14.290 | 80.0 | 30 | 11.00 | 9.00 | 4 | 12.20 |
| E1085/8N03 | 5/8 | 11 | 15.880 | 80.0 | 32 | 12.00 | 9.00 | 4 | 13.50 |
| E1085/8N08 | 5/8 | 11 | 15.880 | 80.0 | 32 | 12.00 | 9.00 | 4 | 13.50 |
| E1083/4N03 | 3/4 | 10 | 19.050 | 95.0 | 34 | 14.00 | 11.00 | 4 | 16.50 |
| E1083/4N08 | 3/4 | 10 | 19.050 | 95.0 | 34 | 14.00 | 11.00 | 4 | 16.50 |
| E1087/8N03 | 7/8 | 9 | 22.230 | 110.0 | 38 | 18.00 | 14.50 | 4 | 19.50 |
| E1087/8N08 | 7/8 | 9 | 22.230 | 110.0 | 38 | 18.00 | 14.50 | 4 | 19.50 |
| E1081N08 | 1" | 8 | 25.400 | 110.0 | 38 | 20.00 | 16.00 | 4 | 22.25 |

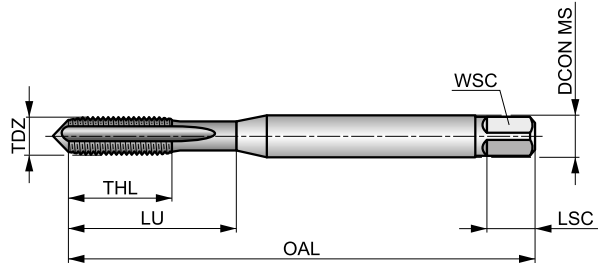


E225



HSS-E-PM Straight Flute Machine Tap, UNC, DIN Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reinforced shank increases strength against torsional twist.



| | | |
|--------|---------|----------|
| | DIN 371 | 2B |
| | 1.5xD | HSS-E PM |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 13 | K3.2 ▣ 10 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|-----|-----|-------|------|------|---------|------|-----|-----|------|-------|
| | | | [mm] | [mm] | [mm] | | | | | | |
| E2254-40 | 4 | 40 | 2.845 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.35 | 18.00 |
| E2255-40 | 5 | 40 | 3.175 | 56.0 | 10 | 3.50 | 2.70 | 6 | 3 | 2.65 | 18.00 |
| E2256-32 | 6 | 32 | 3.505 | 56.0 | 11 | 4.00 | 3.00 | 6 | 3 | 2.85 | 20.00 |
| E2258-32 | 8 | 32 | 4.166 | 63.0 | 12 | 4.50 | 3.40 | 8 | 3 | 3.50 | 21.00 |
| E22510-24 | 10 | 24 | 4.826 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 3.90 | 25.00 |
| E22512-24 | 12 | 24 | 5.486 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 4.50 | 30.00 |
| E2251/4 | 1/4 | 20 | 6.350 | 80.0 | 16 | 7.00 | 5.50 | 8 | 3 | 5.10 | 30.00 |

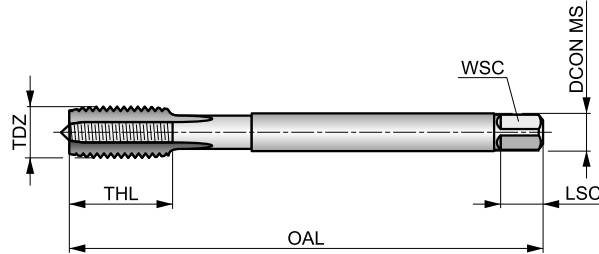


E275



HSS-E-PM Straight Flute Machine Tap, UNC, DIN Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reduced shank increases the reach of the tap.



| | | |
|-----------------|-------------------|-------------|
| UNC | DIN 376 | 2B |
| | 1.5xD | HSS-E PM |
| C 2-3 | | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 13 | K3.2 ▣ 10 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

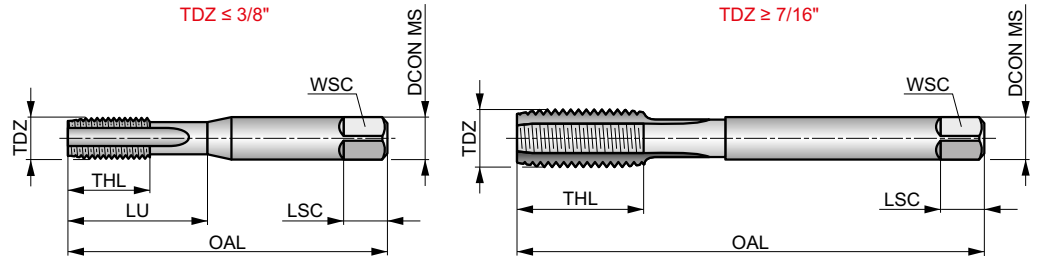
| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|------------------|-------|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E2755/16 | 5/16 | 18 | 7.940 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 6.60 |
| E2753/8 | 3/8 | 16 | 9.530 | 100.0 | 24 | 7.00 | 5.50 | 8 | 3 | 8.00 |
| E2757/16 | 7/16 | 14 | 11.110 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 9.40 |
| E2751/2 | 1/2 | 13 | 12.700 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.80 |
| E2759/16 | 9/16 | 12 | 14.290 | 110.0 | 25 | 11.00 | 9.00 | 12 | 3 | 12.20 |
| E2755/8 | 5/8 | 11 | 15.880 | 110.0 | 25 | 12.00 | 9.00 | 12 | 4 | 13.50 |
| E2753/4 | 3/4 | 10 | 19.050 | 140.0 | 34 | 14.00 | 11.00 | 14 | 4 | 16.50 |
| E2757/8 | 7/8 | 9 | 22.230 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 |
| E2751 | 1" | 8 | 25.400 | 160.0 | 38 | 20.00 | 16.00 | 19 | 4 | 22.25 |
| E2751.1/8 | 1.1/8 | 7 | 28.580 | 180.0 | 45 | 22.00 | 18.00 | 21 | 4 | 25.00 |
| E2751.1/4 | 1.1/4 | 7 | 31.750 | 180.0 | 50 | 25.00 | 20.00 | 23 | 4 | 28.00 |
| E2751.1/2 | 1.1/2 | 6 | 38.100 | 200.0 | 60 | 32.00 | 24.00 | 27 | 4 | 34.00 |



E515

HSS Straight Flute Hand Tap, UNC, ISO Standard

A versatile tool, suitable for hand and machine tapping. With a straight flute design for both through and blind holes. Available as a set of three NO6 or as separate taps with taper lead NO1 for short through holes, plug lead NO2 for deeper through holes or bottoming lead NO3 for blind holes.



| | | |
|--|---------|--------|
| | ISO 529 | 2B |
| | 1.5xD | HSS |
| | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 | K2.1 ■12 | K2.2 ■10 |
| K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

Products from this series are also available in set with dies. Please see L120.

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-------------|-----|-----|-------|------|------|---------|------|-----|-----|------|-------|
| | | | | [mm] | [mm] | | | | | | [mm] |
| E5151-64N01 | 1 | 64 | 1.854 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.55 | 8.00 |
| E5151-64N02 | 1 | 64 | 1.854 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.55 | 8.00 |
| E5151-64N03 | 1 | 64 | 1.854 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.55 | 8.00 |
| E5151-64N06 | 1 | 64 | 1.854 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.55 | 8.00 |
| E5152-56N01 | 2 | 56 | 2.184 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.85 | 9.50 |
| E5152-56N02 | 2 | 56 | 2.184 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.85 | 9.50 |
| E5152-56N03 | 2 | 56 | 2.184 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.85 | 9.50 |
| E5152-56N06 | 2 | 56 | 2.184 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.85 | 9.50 |
| E5153-48N01 | 3 | 48 | 2.515 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.10 | 9.50 |
| E5153-48N02 | 3 | 48 | 2.515 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.10 | 9.50 |
| E5153-48N03 | 3 | 48 | 2.515 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.10 | 9.50 |
| E5153-48N06 | 3 | 48 | 2.515 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 2.10 | 9.50 |
| E5154-40N01 | 4 | 40 | 2.845 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.35 | 12.50 |
| E5154-40N02 | 4 | 40 | 2.845 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.35 | 12.50 |
| E5154-40N03 | 4 | 40 | 2.845 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.35 | 12.50 |
| E5154-40N06 | 4 | 40 | 2.845 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.35 | 12.50 |
| E5155-40N01 | 5 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 12.50 |
| E5155-40N02 | 5 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 12.50 |
| E5155-40N03 | 5 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 12.50 |
| E5155-40N06 | 5 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 12.50 |
| E5156-32N01 | 6 | 32 | 3.505 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.85 | 14.00 |
| E5156-32N02 | 6 | 32 | 3.505 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.85 | 14.00 |
| E5156-32N03 | 6 | 32 | 3.505 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.85 | 14.00 |
| E5156-32N06 | 6 | 32 | 3.505 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.85 | 14.00 |
| E5158-32N01 | 8 | 32 | 4.166 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |
| E5158-32N02 | 8 | 32 | 4.166 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |
| E5158-32N03 | 8 | 32 | 4.166 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |



| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|--------------|-------|-----|--------|-------|------|---------|-------|------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | |
| E5158-32N06 | 8 | 32 | 4.166 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |
| E51510-24N01 | 10 | 24 | 4.826 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 3.90 | 20.00 |
| E51510-24N02 | 10 | 24 | 4.826 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 3.90 | 20.00 |
| E51510-24N03 | 10 | 24 | 4.826 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 3.90 | 20.00 |
| E51510-24N06 | 10 | 24 | 4.826 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 3.90 | 20.00 |
| E51512-24N01 | 12 | 24 | 5.486 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.50 | 21.00 |
| E51512-24N02 | 12 | 24 | 5.486 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.50 | 21.00 |
| E51512-24N03 | 12 | 24 | 5.486 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.50 | 21.00 |
| E51512-24N06 | 12 | 24 | 5.486 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.50 | 21.00 |
| E5151/4N01 | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.10 | 26.00 |
| E5151/4N02 | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.10 | 26.00 |
| E5151/4N03 | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.10 | 26.00 |
| E5151/4N06 | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.10 | 26.00 |
| E5155/16N01 | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.60 | 29.00 |
| E5155/16N02 | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.60 | 29.00 |
| E5155/16N03 | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.60 | 29.00 |
| E5155/16N06 | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.60 | 29.00 |
| E5153/8N01 | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.00 | 32.00 |
| E5153/8N02 | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.00 | 32.00 |
| E5153/8N03 | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.00 | 32.00 |
| E5153/8N06 | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.00 | 32.00 |
| E5157/16N01 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.40 | - |
| E5157/16N02 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.40 | - |
| E5157/16N03 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.40 | - |
| E5157/16N06 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.40 | - |
| E5151/2N01 | 1/2 | 13 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | - |
| E5151/2N02 | 1/2 | 13 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | - |
| E5151/2N03 | 1/2 | 13 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | - |
| E5151/2N06 | 1/2 | 13 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | - |
| E5159/16N01 | 9/16 | 12 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.20 | - |
| E5159/16N02 | 9/16 | 12 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.20 | - |
| E5159/16N03 | 9/16 | 12 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.20 | - |
| E5159/16N06 | 9/16 | 12 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.20 | - |
| E5155/8N01 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 13.50 | - |
| E5155/8N02 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 13.50 | - |
| E5155/8N03 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 13.50 | - |
| E5155/8N06 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 13.50 | - |
| E5153/4N01 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | - |
| E5153/4N02 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | - |
| E5153/4N03 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | - |
| E5153/4N06 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | - |
| E5157/8N01 | 7/8 | 9 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | - |
| E5157/8N02 | 7/8 | 9 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | - |
| E5157/8N03 | 7/8 | 9 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | - |
| E5157/8N06 | 7/8 | 9 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | - |
| E5151N03 | 1" | 8 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.25 | - |
| E5151N01 | 1" | 8 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.25 | - |
| E5151N02 | 1" | 8 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.25 | - |
| E5151N06 | 1" | 8 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.25 | - |
| E5151.1/8N01 | 1.1/8 | 7 | 28.575 | 138.0 | 35 | 20.00 | 16.00 | 20 | 4 | 25.00 | - |
| E5151.1/8N02 | 1.1/8 | 7 | 28.575 | 138.0 | 35 | 20.00 | 16.00 | 20 | 4 | 25.00 | - |
| E5151.1/8N03 | 1.1/8 | 7 | 28.575 | 138.0 | 35 | 20.00 | 16.00 | 20 | 4 | 25.00 | - |
| E5151.1/4N01 | 1.1/4 | 7 | 31.750 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 28.00 | - |
| E5151.1/4N02 | 1.1/4 | 7 | 31.750 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 28.00 | - |
| E5151.1/4N03 | 1.1/4 | 7 | 31.750 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 28.00 | - |
| E5151.3/8N01 | 1.3/8 | 6 | 34.925 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 30.75 | - |
| E5151.3/8N02 | 1.3/8 | 6 | 34.925 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 30.75 | - |
| E5151.3/8N03 | 1.3/8 | 6 | 34.925 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 30.75 | - |
| E5151.1/2N01 | 1.1/2 | 6 | 38.100 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 34.00 | - |
| E5151.1/2N02 | 1.1/2 | 6 | 38.100 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 34.00 | - |
| E5151.1/2N03 | 1.1/2 | 6 | 38.100 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 34.00 | - |
| E5151.3/4N01 | 1.3/4 | 5 | 44.450 | 187.0 | 54 | 31.50 | 25.00 | 28 | 6 | 39.50 | - |
| E5151.3/4N02 | 1.3/4 | 5 | 44.450 | 187.0 | 54 | 31.50 | 25.00 | 28 | 6 | 39.50 | - |
| E5151.3/4N03 | 1.3/4 | 5 | 44.450 | 187.0 | 54 | 31.50 | 25.00 | 28 | 6 | 39.50 | - |
| E5152N03 | 2" | 4.5 | 50.800 | 200.0 | 60 | 35.50 | 28.00 | 31 | 6 | 45.00 | - |
| E5152N01 | 2" | 4.5 | 50.800 | 200.0 | 60 | 35.50 | 28.00 | 31 | 6 | 45.00 | - |
| E5152N02 | 2" | 4.5 | 50.800 | 200.0 | 60 | 35.50 | 28.00 | 31 | 6 | 45.00 | - |

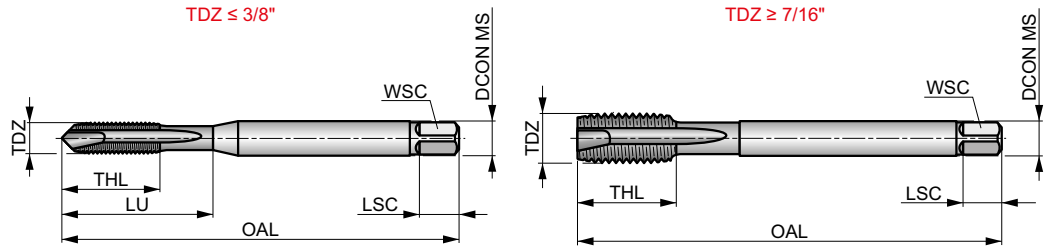


EP20



HSS-E-PM Spiral Point Machine Tap, UNC, DIN Standard

Machine tap with spiral point suited for through holes only. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges.



| | | |
|--|------------|----------|
| | DIN 2184-1 | 2B |
| | 2.5xD | HSS-E PM |
| | B 3.5-5 | |
| | Bright | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 22 | P1.2 ■ 24 | P1.3 ■ 25 | P2.1 ■ 18 | P2.2 ■ 16 | P2.3 ■ 14 | P3.1 ■ 13 | P3.2 ■ 10 | P4.1 ■ 8 | N1.1 ■ 14 | N1.2 ■ 10 | N1.3 ■ 7 | N2.1 ■ 28 | N2.2 ■ 25 |
| N2.3 ■ 18 | N3.1 ■ 44 | N3.2 ■ 27 | N3.3 ■ 13 | N4.1 ■ 22 | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|------|---------|-------|-----|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | | | | | | [mm] |
| EP204-40 | 4 | 40 | 2.845 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.35 | 18.00 |
| EP205-40 | 5 | 40 | 3.175 | 56.0 | 10 | 3.50 | 2.70 | 6 | 3 | 2.65 | 18.00 |
| EP206-32 | 6 | 32 | 3.505 | 56.0 | 11 | 4.00 | 3.00 | 6 | 3 | 2.85 | 20.00 |
| EP208-32 | 8 | 32 | 4.166 | 63.0 | 12 | 4.50 | 3.40 | 8 | 3 | 3.50 | 21.00 |
| EP2010-24 | 10 | 24 | 4.826 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 3.90 | 25.00 |
| EP2012-24 | 12 | 24 | 5.486 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 4.50 | 30.00 |
| EP201/4 | 1/4 | 20 | 6.350 | 80.0 | 15 | 7.00 | 5.50 | 8 | 3 | 5.10 | 30.00 |
| EP205/16 | 5/16 | 18 | 7.938 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.60 | 35.00 |
| EP203/8 | 3/8 | 16 | 9.525 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.00 | 39.00 |
| EP207/16 | 7/16 | 14 | 11.112 | 100.0 | 20 | 8.00 | 6.20 | 9 | 3 | 9.40 | — |
| EP201/2 | 1/2 | 13 | 12.700 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.80 | — |
| EP205/8 | 5/8 | 11 | 15.875 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 13.50 | — |
| EP203/4 | 3/4 | 10 | 19.050 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 16.50 | — |
| EP207/8 | 7/8 | 9 | 22.225 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 | — |
| EP201 | 1" | 8 | 25.400 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 22.25 | — |



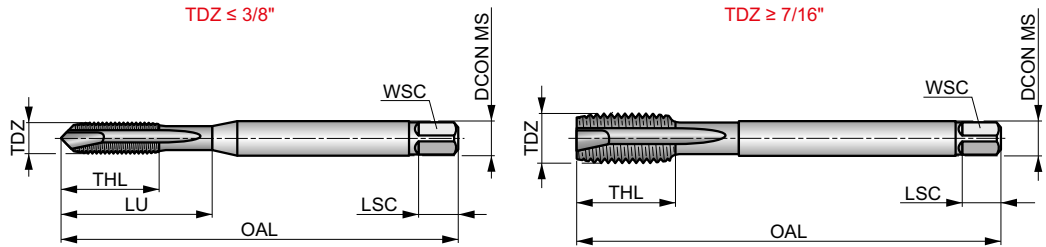
EP21



HSS-E-PM Spiral Point Machine Tap, UNC, DIN Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.

| | | |
|---------|------------|----------|
| | DIN 2184-1 | 2B |
| | 2.5×D | HSS-E PM |
| B 3.5-5 | | |
| ST | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ▣22 | P2.2 ▣16 | P2.3 ▣14 | P3.2 ▣10 | P3.3 ▣9 | P4.1 ▣8 | P4.2 ▣16 | M1.1 ▣10 | M1.2 ▣8 | M2.1 ▣9 | M2.2 ▣7 | M3.1 ▣7 | M3.2 ▣6 | M3.3 ▣5 |
| M4.1 ▣4 | K1.1 ▣13 | K1.2 ▣10 | K1.3 ▣7 | K2.1 ▣16 | K2.2 ▣13 | K3.1 ▣14 | K3.2 ▣10 | K4.1 ▣13 | K4.2 ▣9 | K5.1 ▣15 | K5.2 ▣11 | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | | |
| EP214-40 | 4 | 40 | 2.845 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.35 | 18.00 |
| EP215-40 | 5 | 40 | 3.175 | 56.0 | 10 | 3.50 | 2.70 | 6 | 3 | 2.65 | 18.00 |
| EP216-32 | 6 | 32 | 3.505 | 56.0 | 11 | 4.00 | 3.00 | 6 | 3 | 2.85 | 20.00 |
| EP218-32 | 8 | 32 | 4.166 | 63.0 | 12 | 4.50 | 3.40 | 8 | 3 | 3.50 | 21.00 |
| EP2110-24 | 10 | 24 | 4.826 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 3.90 | 25.00 |
| EP2112-24 | 12 | 24 | 5.486 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 4.50 | 30.00 |
| EP211/4 | 1/4 | 20 | 6.350 | 80.0 | 15 | 7.00 | 5.50 | 8 | 3 | 5.10 | 30.00 |
| EP215/16 | 5/16 | 18 | 7.938 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.60 | 35.00 |
| EP213/8 | 3/8 | 16 | 9.525 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.00 | 39.00 |
| EP217/16 | 7/16 | 14 | 11.112 | 100.0 | 20 | 8.00 | 6.20 | 9 | 3 | 9.40 | — |
| EP211/2 | 1/2 | 13 | 12.700 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 10.80 | — |
| EP215/8 | 5/8 | 11 | 15.875 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 13.50 | — |
| EP213/4 | 3/4 | 10 | 19.050 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 16.50 | — |
| EP217/8 | 7/8 | 9 | 22.225 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 19.50 | — |
| EP211 | 1" | 8 | 25.400 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 22.25 | — |



E021

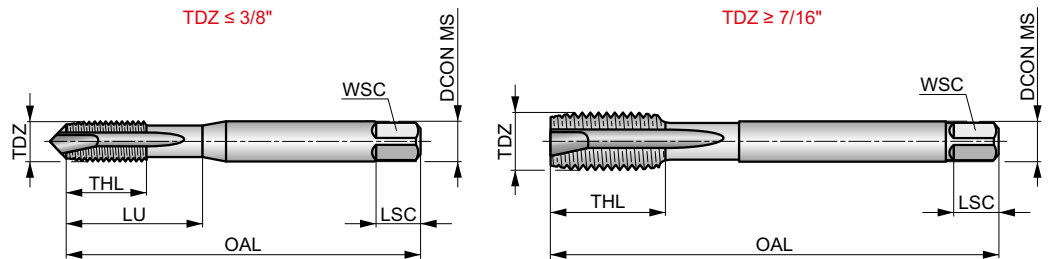


HSS-E-PM Spiral Point Machine Tap, UNC, ISO Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|------------|------------|-------------|
| | ISO 529 | 2B |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ▣22 | P2.2 ▣16 | P2.3 ▣14 | P3.2 ▣10 | P3.3 ▣9 | P4.1 ▣8 | P4.2 ▣6 | M1.1 ▣10 | M1.2 ▣8 | M2.1 ▣9 | M2.2 ▣7 | M3.1 ▣7 | M3.2 ▣6 | M3.3 ▣5 |
| M4.1 ▣4 | K1.1 ▣13 | K1.2 ▣10 | K1.3 ▣7 | K2.1 ▣16 | K2.2 ▣13 | K3.1 ▣14 | K3.2 ▣10 | K4.1 ▣13 | K4.2 ▣9 | K5.1 ▣15 | K5.2 ▣11 | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|------|---------|-------|------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E0212-56 | 2 | 56 | 2.184 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 2 | 1.85 | 9.50 |
| E0214-40 | 4 | 40 | 2.845 | 48.0 | 14 | 3.15 | 2.50 | 5 | 3 | 2.35 | 14.00 |
| E0215-40 | 5 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 12.50 |
| E0216-32 | 6 | 32 | 3.505 | 50.0 | 16 | 3.55 | 2.80 | 5 | 3 | 2.85 | 16.00 |
| E0218-32 | 8 | 32 | 4.166 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |
| E02110-24 | 10 | 24 | 4.826 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 3.90 | 20.00 |
| E02112-24 | 12 | 24 | 5.486 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.50 | 21.00 |
| E0211/4 | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.10 | 26.00 |
| E0215/16 | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.60 | 29.00 |
| E0213/8 | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.00 | 32.00 |
| E0217/16 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.40 | — |
| E0211/2 | 1/2 | 13 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.80 | — |
| E0215/8 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 3 | 13.50 | — |
| E0213/4 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | — |
| E0217/8 | 7/8 | 9 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | — |
| E0211 | 1" | 8 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.25 | — |



EX20

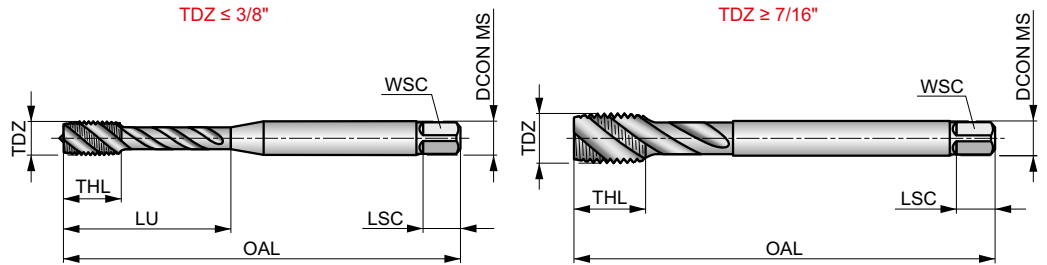


HSS-E-PM Spiral Flute Machine Tap, UNC, DIN Standard

Machine tap with spiral flute suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|--|------------|---------------|
| | DIN 2184-1 | 2B |
| | 2.5xD | HSS-E PM |
| | | λ 45° |
| | Bright | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 21 | P1.2 ■ 23 | P1.3 ■ 24 | P2.1 ■ 17 | P2.2 ■ 15 | P2.3 ■ 13 | P3.1 ■ 12 | P3.2 ■ 9 | P4.1 ■ 7 | N1.1 ■ 13 | N1.2 ■ 9 | N1.3 ■ 6 | N2.1 ■ 27 | N2.2 ■ 24 |
| N2.3 ■ 17 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | | |
| EX204-40 | 4 | 40 | 2.845 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.35 | 18.00 |
| EX205-40 | 5 | 40 | 3.175 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.65 | 18.00 |
| EX206-32 | 6 | 32 | 3.505 | 56.0 | 7 | 4.00 | 3.00 | 6 | 3 | 2.85 | 20.00 |
| EX208-32 | 8 | 32 | 4.166 | 63.0 | 7 | 4.50 | 3.40 | 8 | 3 | 3.50 | 21.00 |
| EX2010-24 | 10 | 24 | 4.826 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 3.90 | 25.00 |
| EX2012-24 | 12 | 24 | 5.486 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 4.50 | 30.00 |
| EX201/4 | 1/4 | 20 | 6.350 | 80.0 | 10 | 7.00 | 5.50 | 8 | 3 | 5.10 | 30.00 |
| EX205/16 | 5/16 | 18 | 7.938 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.60 | 35.00 |
| EX203/8 | 3/8 | 16 | 9.525 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.00 | 39.00 |
| EX207/16 | 7/16 | 14 | 11.112 | 100.0 | 15 | 8.00 | 6.20 | 9 | 3 | 9.40 | - |
| EX201/2 | 1/2 | 13 | 12.700 | 110.0 | 18 | 9.00 | 7.00 | 10 | 3 | 10.80 | - |
| EX205/8 | 5/8 | 11 | 15.875 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 13.50 | - |
| EX203/4 | 3/4 | 10 | 19.050 | 125.0 | 25 | 14.00 | 11.00 | 14 | 4 | 16.50 | - |
| EX207/8 | 7/8 | 9 | 22.225 | 140.0 | 25 | 18.00 | 14.50 | 17 | 4 | 19.50 | - |
| EX201 | 1" | 8 | 25.400 | 160.0 | 30 | 18.00 | 14.50 | 17 | 4 | 22.25 | - |



EX21

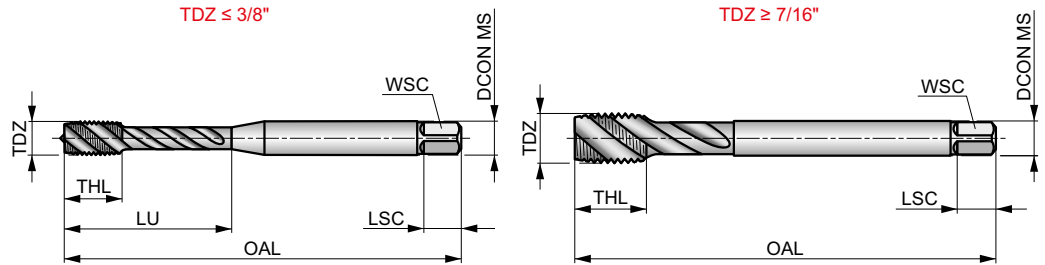


HSS-E-PM Spiral Flute Machine Tap, UNC, DIN Standard

Machine tap to produce normal fit threads within 2B tolerance. The spiral flute is suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|-------|------------|----------|
| | DIN 2184-1 | 2B |
| | 2.5×D | HSS-E PM |
| C 2-3 | | λ 45° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 ▣21 | P2.2 ▣15 | P2.3 ▣13 | P3.2 ▣9 | P3.3 ▣8 | P4.1 ▣7 | P4.2 ▣5 | M1.1 ▣8 | M1.2 ▣6 | M2.1 ▣7 | M2.2 ▣5 | M3.1 ▣5 | M3.2 ▣4 | M3.3 ▣3 |
| M4.1 ▣3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | | |
| EX214-40 | 4 | 40 | 2.845 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.35 | 18.00 |
| EX215-40 | 5 | 40 | 3.175 | 56.0 | 6 | 3.50 | 2.70 | 6 | 3 | 2.65 | 18.00 |
| EX216-32 | 6 | 32 | 3.505 | 56.0 | 7 | 4.00 | 3.00 | 6 | 3 | 2.85 | 20.00 |
| EX218-32 | 8 | 32 | 4.166 | 63.0 | 7 | 4.50 | 3.40 | 8 | 3 | 3.50 | 21.00 |
| EX2110-24 | 10 | 24 | 4.826 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 3.90 | 25.00 |
| EX2112-24 | 12 | 24 | 5.486 | 80.0 | 10 | 6.00 | 4.90 | 8 | 3 | 4.50 | 30.00 |
| EX211/4 | 1/4 | 20 | 6.350 | 80.0 | 10 | 7.00 | 5.50 | 8 | 3 | 5.10 | 30.00 |
| EX215/16 | 5/16 | 18 | 7.938 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.60 | 35.00 |
| EX213/8 | 3/8 | 16 | 9.525 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.00 | 39.00 |
| EX217/16 | 7/16 | 14 | 11.112 | 100.0 | 15 | 8.00 | 6.20 | 9 | 3 | 9.40 | — |
| EX211/2 | 1/2 | 13 | 12.700 | 110.0 | 18 | 9.00 | 7.00 | 10 | 3 | 10.80 | — |
| EX215/8 | 5/8 | 11 | 15.875 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 13.50 | — |
| EX213/4 | 3/4 | 10 | 19.050 | 125.0 | 25 | 14.00 | 11.00 | 14 | 4 | 16.50 | — |
| EX217/8 | 7/8 | 9 | 22.225 | 140.0 | 25 | 18.00 | 14.50 | 17 | 4 | 19.50 | — |
| EX211 | 1" | 8 | 25.400 | 160.0 | 30 | 18.00 | 14.50 | 17 | 4 | 22.25 | — |



E023

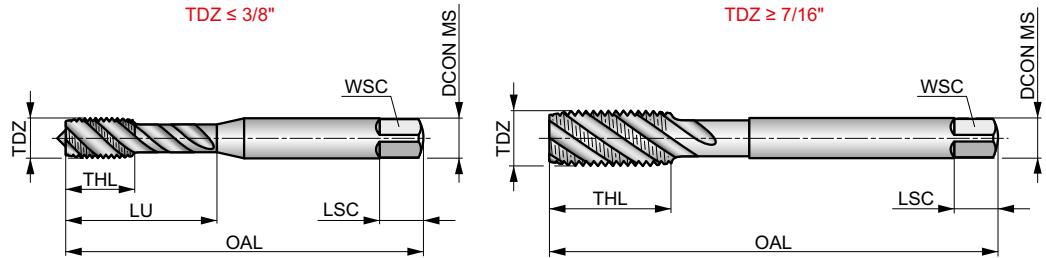


HSS-E-PM Spiral Flute Machine Tap, UNC, ISO Standard

Machine tap with spiral flute suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|--|--|--|
| | | |
| | | |
| | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 ■21 | P2.2 ■15 | P2.3 ■13 | P3.2 ■9 | P3.3 ■8 | P4.1 ■7 | P4.2 ■5 | M1.1 ■8 | M1.2 ■6 | M2.1 ■7 | M2.2 ■5 | M3.1 ■5 | M3.2 ■4 | M3.3 ■3 |
| M4.1 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | | |
| E0232-56 | 2 | 56 | 2.184 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 2 | 1.85 | 9.50 |
| E0234-40 | 4 | 40 | 2.845 | 48.0 | 6 | 3.15 | 2.50 | 5 | 3 | 2.35 | 14.00 |
| E0235-40 | 5 | 40 | 3.175 | 48.0 | 6 | 3.15 | 2.50 | 5 | 3 | 2.65 | 12.50 |
| E0236-32 | 6 | 32 | 3.505 | 50.0 | 6 | 3.55 | 2.80 | 5 | 3 | 2.85 | 16.00 |
| E0238-32 | 8 | 32 | 4.166 | 53.0 | 7 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |
| E02310-24 | 10 | 24 | 4.826 | 58.0 | 8 | 5.00 | 4.00 | 7 | 3 | 3.90 | 20.00 |
| E02312-24 | 12 | 24 | 5.486 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.50 | 21.00 |
| E0231/4 | 1/4 | 20 | 6.350 | 66.0 | 10 | 6.30 | 5.00 | 8 | 3 | 5.10 | 28.00 |
| E0235/16 | 5/16 | 18 | 7.938 | 72.0 | 12 | 8.00 | 6.30 | 9 | 3 | 6.60 | 31.00 |
| E0233/8 | 3/8 | 16 | 9.525 | 80.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.00 | 34.00 |
| E0237/16 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.40 | — |
| E0231/2 | 1/2 | 13 | 12.700 | 89.0 | 19 | 9.00 | 7.10 | 10 | 3 | 10.80 | — |
| E0235/8 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 13.50 | — |
| E0233/4 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | — |
| E0237/8 | 7/8 | 9 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 19.50 | — |
| E0231 | 1" | 8 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 22.25 | — |

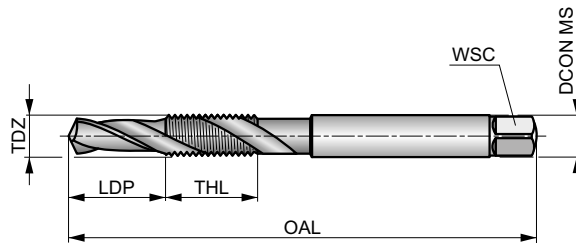


E651



HSS Drill-Tap Combination Tool with 30° Spiral Flute, UNC, DIN Standard

Combination of a core-hole drill and tap to produce a thread in one pass. This significantly reduces the time needed to produce the thread on site with the use of a hand-held power tool. There is no need for a tap wrench or tool change. Steam tempered surface acts to retain the lubricant and provide smoother cutting.



| | | |
|-----------------|--------------|-----------------|
| | | 2B |
| | 1.5xD | HSS |
| C 2-3 | | λ 30° |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| Product | TDZ | TPI | TD | OAL | THL | LDP | DCON MS | WSC | NOF | Workpiece material group suitability and starting values for cutting speed (m/min) | | | | | | | | | | | | |
|------------------|------|-----|--------|-------|-----|-------|---------|-------|-----|--|------|------|------|------|------|------|------|------|------|------|------|--|
| | | | | | | | | | | P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P3.1 | P3.2 | N1.2 | N1.3 | N3.1 | N3.2 | N4.1 | |
| | | | | | | | | | | ■ 18 | ■ 20 | ■ 22 | ■ 20 | ▣ 18 | ▣ 15 | ▣ 12 | ▣ 14 | ▣ 9 | ▣ 20 | ▣ 15 | ▣ 25 | |
| E6516-32 | 6 | 32 | 2.850 | 56.9 | 12 | 6.00 | 3.50 | 2.90 | 2 | | | | | | | | | | | | | |
| E6518-32 | 8 | 32 | 3.500 | 64.0 | 12 | 8.00 | 4.50 | 3.55 | 2 | | | | | | | | | | | | | |
| E65110-24 | 10 | 24 | 3.900 | 72.0 | 15 | 10.00 | 5.00 | 4.00 | 2 | | | | | | | | | | | | | |
| E65112-24 | 12 | 24 | 4.500 | 77.0 | 15 | 11.00 | 5.60 | 4.50 | 2 | | | | | | | | | | | | | |
| E6511/4 | 1/4 | 20 | 5.100 | 83.0 | 17 | 13.00 | 6.30 | 5.00 | 2 | | | | | | | | | | | | | |
| E6515/16 | 5/16 | 18 | 6.600 | 94.0 | 21 | 16.00 | 8.00 | 6.30 | 2 | | | | | | | | | | | | | |
| E6513/8 | 3/8 | 16 | 8.000 | 107.0 | 23 | 19.00 | 10.00 | 8.00 | 2 | | | | | | | | | | | | | |
| E6517/16 | 7/16 | 14 | 9.400 | 107.0 | 25 | 22.00 | 8.00 | 6.30 | 2 | | | | | | | | | | | | | |
| E6511/2 | 1/2 | 13 | 10.800 | 114.0 | 29 | 25.00 | 9.00 | 7.10 | 2 | | | | | | | | | | | | | |
| E6519/16 | 9/16 | 12 | 12.200 | 124.0 | 29 | 28.00 | 11.20 | 9.00 | 2 | | | | | | | | | | | | | |
| E6515/8 | 5/8 | 11 | 13.500 | 134.0 | 31 | 32.50 | 12.50 | 10.00 | 2 | | | | | | | | | | | | | |



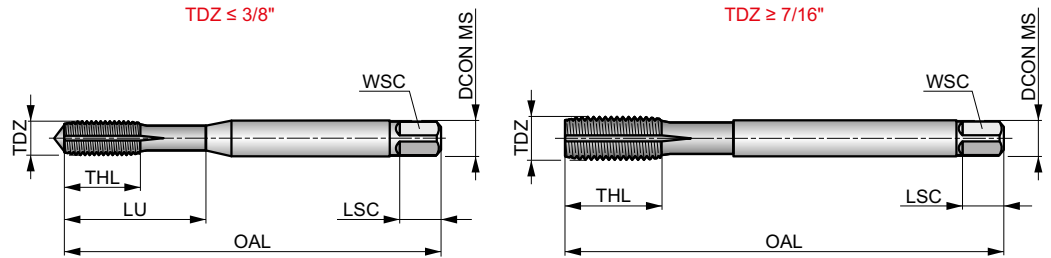
E287



HSS-E Thread Forming TiN Coated Tap, Oil-Grooves, UNC, DIN Standard

High performance fluteless tap for blind and through holes. Provide strong, clean, chip-free and accurate threads with excellent tolerance. Highly versatile for steel, stainless steel and non-ferrous metal. TiN coated for higher cutting speeds, performance and tool life. With oil-grooves for better lubrication in deep holes.

| | | |
|---------|------------|-------|
| | DIN 2184-1 | 2BX |
| | 3.5xD | HSS-E |
| C 2-3.5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 45 | P1.2 ■ 51 | P1.3 ■ 51 | P2.1 ■ 51 | P2.2 ■ 45 | P2.3 ▣ 40 | P3.1 ■ 29 | P3.2 ■ 24 | P3.3 ■ 20 | P4.1 ■ 18 | P4.2 ■ 15 | M1.1 ■ 25 | M1.2 ■ 21 | M2.1 ■ 22 |
| M2.2 ■ 18 | M2.3 ▣ 12 | M3.1 ■ 17 | M3.2 ■ 15 | M3.3 ■ 14 | M4.1 ■ 10 | N1.1 ■ 55 | N1.2 ■ 41 | N1.3 ■ 28 | N2.1 ■ 62 | N2.2 ■ 55 | N2.3 ■ 40 | N3.1 ▣ 40 | N3.3 ▣ 12 |

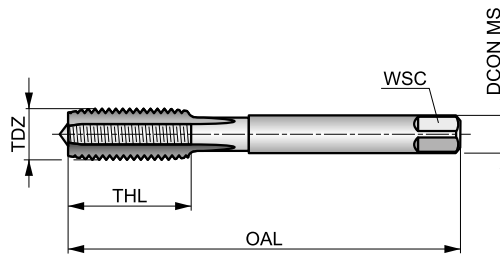
| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------------|------|-----|--------|-------|------|---------|------|------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E2874-40 | 4 | 40 | 2.845 | 56.0 | 9 | 3.50 | 2.70 | 6 | 4 | 2.60 | 18.00 |
| E2876-32 | 6 | 32 | 3.505 | 56.0 | 11 | 4.00 | 3.00 | 6 | 4 | 3.20 | 20.00 |
| E2878-32 | 8 | 32 | 4.166 | 63.0 | 12 | 4.50 | 3.40 | 6 | 5 | 3.80 | 21.00 |
| E28710-24 | 10 | 24 | 4.826 | 70.0 | 13 | 6.00 | 4.90 | 8 | 5 | 4.40 | 25.00 |
| E2871/4 | 1/4 | 20 | 6.350 | 80.0 | 15 | 7.00 | 5.50 | 8 | 5 | 5.80 | 30.00 |
| E2875/16 | 5/16 | 18 | 7.938 | 90.0 | 18 | 8.00 | 6.20 | 9 | 5 | 7.30 | 35.00 |
| E2873/8 | 3/8 | 16 | 9.525 | 100.0 | 20 | 10.00 | 8.00 | 11 | 5 | 8.80 | 39.00 |
| E2877/16 | 7/16 | 14 | 11.112 | 100.0 | 20 | 8.00 | 6.20 | 9 | 5 | 10.30 | – |
| E2871/2 | 1/2 | 13 | 12.700 | 110.0 | 23 | 9.00 | 7.00 | 10 | 5 | 11.90 | – |



E111

HSS Straight Flute Serial Hand Tap, UNF, DIN Standard

Ideal for hand tapping tough materials. The straight flute design makes it suited for both through and blind holes. Available as a single finishing tap or as a set of two serial taps, which should be used one after the other to create the full thread.



| | | |
|--------|----------|-----|
| | DIN 2181 | 2B |
| | 1.5xD | HSS |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability.

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| K3.1 | K3.2 | K4.1 | K4.2 | K5.1 | K5.2 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 | N2.3 | N3.1 | N3.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N3.3 | N4.2 | N4.3 | | | | | | | | | | | |
| ■ | ■ | ■ | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD |
|--------------|------|-----|--------|------|------|---------|-------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E1115-44N03 | 5 | 44 | 3.180 | 45.0 | 13 | 4.00 | 3.00 | 3 | 2.70 |
| E1115-44N09 | 5 | 44 | 3.180 | 45.0 | 13 | 4.00 | 3.00 | 3 | 2.70 |
| E1116-40N03 | 6 | 40 | 3.510 | 45.0 | 10 | 4.00 | 3.00 | 3 | 2.95 |
| E1116-40N09 | 6 | 40 | 3.510 | 45.0 | 10 | 4.00 | 3.00 | 3 | 2.95 |
| E1118-36N03 | 8 | 36 | 4.170 | 50.0 | 14 | 6.00 | 4.90 | 3 | 3.50 |
| E1118-36N09 | 8 | 36 | 4.170 | 50.0 | 14 | 6.00 | 4.90 | 3 | 3.50 |
| E11110-32N03 | 10 | 32 | 4.820 | 50.0 | 14 | 6.00 | 4.90 | 3 | 4.10 |
| E11110-32N09 | 10 | 32 | 4.820 | 50.0 | 14 | 6.00 | 4.90 | 3 | 4.10 |
| E1111/4N03 | 1/4 | 28 | 6.350 | 56.0 | 17 | 6.00 | 4.90 | 3 | 5.50 |
| E1111/4N09 | 1/4 | 28 | 6.350 | 56.0 | 17 | 6.00 | 4.90 | 3 | 5.50 |
| E1115/16N03 | 5/16 | 24 | 7.940 | 63.0 | 19 | 6.00 | 4.90 | 3 | 6.90 |
| E1115/16N09 | 5/16 | 24 | 7.940 | 63.0 | 19 | 6.00 | 4.90 | 3 | 6.90 |
| E1113/8N03 | 3/8 | 24 | 9.530 | 63.0 | 16 | 7.00 | 5.50 | 3 | 8.50 |
| E1113/8N09 | 3/8 | 24 | 9.530 | 63.0 | 16 | 7.00 | 5.50 | 3 | 8.50 |
| E1117/16N03 | 7/16 | 20 | 11.110 | 63.0 | 15 | 8.00 | 6.20 | 3 | 9.90 |
| E1117/16N09 | 7/16 | 20 | 11.110 | 63.0 | 15 | 8.00 | 6.20 | 3 | 9.90 |
| E1111/2N03 | 1/2 | 20 | 12.700 | 70.0 | 22 | 9.00 | 7.00 | 3 | 11.50 |
| E1111/2N09 | 1/2 | 20 | 12.700 | 70.0 | 22 | 9.00 | 7.00 | 3 | 11.50 |
| E1119/16N03 | 9/16 | 18 | 14.290 | 70.0 | 16 | 11.00 | 9.00 | 4 | 12.90 |
| E1119/16N09 | 9/16 | 18 | 14.290 | 70.0 | 16 | 11.00 | 9.00 | 4 | 12.90 |
| E1115/8N03 | 5/8 | 18 | 15.880 | 70.0 | 16 | 12.00 | 9.00 | 4 | 14.50 |
| E1115/8N09 | 5/8 | 18 | 15.880 | 70.0 | 16 | 12.00 | 9.00 | 4 | 14.50 |
| E1113/4N03 | 3/4 | 16 | 19.050 | 80.0 | 22 | 14.00 | 11.00 | 4 | 17.50 |
| E1113/4N09 | 3/4 | 16 | 19.050 | 80.0 | 22 | 14.00 | 11.00 | 4 | 17.50 |
| E1117/8N03 | 7/8 | 14 | 22.230 | 90.0 | 22 | 18.00 | 14.50 | 4 | 20.40 |
| E1117/8N09 | 7/8 | 14 | 22.230 | 90.0 | 22 | 18.00 | 14.50 | 4 | 20.40 |
| E1111N03 | 1" | 12 | 25.400 | 90.0 | 22 | 20.00 | 16.00 | 4 | 23.25 |
| E1111N09 | 1" | 12 | 25.400 | 90.0 | 22 | 20.00 | 16.00 | 4 | 23.25 |

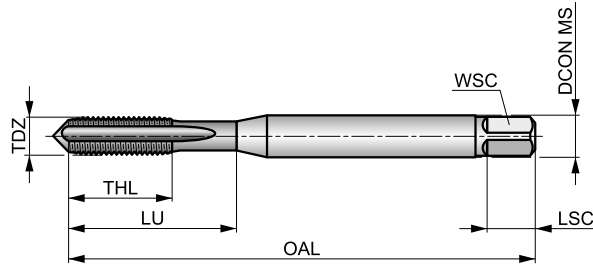


E229



HSS-E-PM Straight Flute Machine Tap, UNF, DIN Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reinforced shank increases strength against torsional twist.



| | | |
|--------|---------|----------|
| | DIN 371 | 2B |
| | 1.5xD | HSS-E PM |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 13 | K3.2 ▣ 10 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

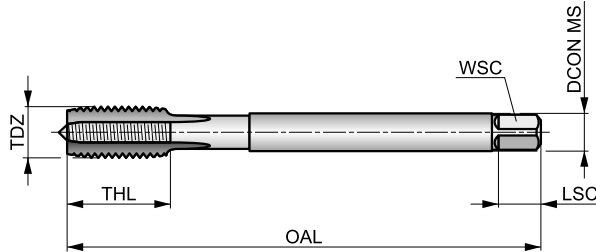
| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|-----|-----|-------|------|------|---------|------|------|-----|------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E2292-64 | 2 | 64 | 2.184 | 45.0 | 7 | 2.80 | 2.10 | 5 | 3 | 1.90 | 12.00 |
| E2293-56 | 3 | 56 | 2.515 | 50.0 | 8 | 2.80 | 2.10 | 5 | 3 | 2.15 | 12.50 |
| E2294-48 | 4 | 48 | 2.845 | 56.0 | 9 | 3.50 | 2.70 | 6 | 3 | 2.40 | 18.00 |
| E2295-44 | 5 | 44 | 3.175 | 56.0 | 10 | 3.50 | 2.70 | 6 | 3 | 2.70 | 18.00 |
| E2296-40 | 6 | 40 | 3.505 | 56.0 | 11 | 4.00 | 3.00 | 6 | 3 | 2.95 | 20.00 |
| E2298-36 | 8 | 36 | 4.166 | 63.0 | 12 | 4.50 | 3.40 | 6 | 3 | 3.50 | 21.00 |
| E22910-32 | 10 | 32 | 4.826 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.10 | 25.00 |
| E22912-28 | 12 | 28 | 5.486 | 80.0 | 15 | 6.00 | 4.90 | 8 | 3 | 4.70 | 30.00 |
| E2291/4 | 1/4 | 28 | 6.350 | 80.0 | 15 | 7.00 | 5.50 | 8 | 3 | 5.50 | 30.00 |



E278

HSS-E-PM Straight Flute Machine Tap, UNF, DIN Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges. The reduced shank increases the reach of the tap.



| | | |
|--------|---------|----------|
| | DIN 374 | 2B |
| | 1.5xD | HSS-E PM |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 13 | K3.2 ▣ 10 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|-------------------------|-------|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E2785/16 | 5/16 | 24 | 7.940 | 90.0 | 18 | 6.00 | 4.90 | 8 | 3 | 6.90 |
| E2783/8 | 3/8 | 24 | 9.530 | 100.0 | 24 | 7.00 | 5.50 | 8 | 3 | 8.50 |
| E2787/16 | 7/16 | 20 | 11.110 | 100.0 | 22 | 9.00 | 7.00 | 10 | 3 | 9.90 |
| E2781/2 | 1/2 | 20 | 12.700 | 100.0 | 21 | 9.00 | 7.00 | 10 | 3 | 11.50 |
| E2789/16 | 9/16 | 18 | 14.290 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 12.90 |
| E2785/8 | 5/8 | 18 | 15.880 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 14.50 |
| E2783/4 | 3/4 | 16 | 19.050 | 125.0 | 25 | 14.00 | 11.00 | 14 | 4 | 17.50 |
| E2787/8 | 7/8 | 14 | 22.230 | 140.0 | 28 | 18.00 | 14.50 | 17 | 4 | 20.40 |
| E2781 | 1" | 12 | 25.400 | 140.0 | 26 | 18.00 | 14.50 | 17 | 4 | 23.25 |
| E2781.1/8 | 1.1/8 | 12 | 28.580 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 26.50 |
| E2781.1/4 | 1.1/4 | 12 | 31.750 | 150.0 | 28 | 25.00 | 20.00 | 23 | 4 | 29.50 |
| E2781.3/8 | 1.3/8 | 12 | 34.930 | 170.0 | 30 | 28.00 | 22.00 | 25 | 4 | 32.75 |
| E2781.1/2 ¹⁾ | 1.1/2 | 12 | 38.100 | 170.0 | 30 | 32.00 | 24.00 | 27 | 4 | 36.00 |

¹⁾ HSS-E.

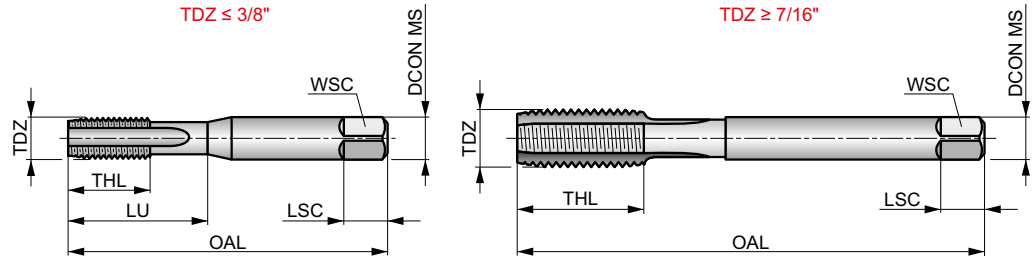


E524



HSS Straight Flute Hand Tap, UNF, ISO Standard

A versatile tool, suitable for hand and machine tapping. With a straight flute design for both through and blind holes. Available as a set of three NO6 or as separate taps with taper lead NO1 for short through holes, plug lead NO2 for deeper through holes or bottoming lead NO3 for blind holes.



| | | |
|--|---------|--------|
| | ISO 529 | 2B |
| | 1.5xD | HSS |
| | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 | K2.1 ■12 | K2.2 ■10 |
| K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

Products from this series are also available in set with dies. Please see L120.

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|--------------|-----|-----|-------|------|------|---------|------|------|-----|------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E5240-80N01 | 0 | 80 | 1.524 | 41.0 | 7 | 2.50 | 2.00 | 4 | 2 | 1.25 | 7.00 |
| E5240-80N02 | 0 | 80 | 1.524 | 41.0 | 7 | 2.50 | 2.00 | 4 | 2 | 1.25 | 7.00 |
| E5240-80N03 | 0 | 80 | 1.524 | 41.0 | 7 | 2.50 | 2.00 | 4 | 2 | 1.25 | 7.00 |
| E5241-72N01 | 1 | 72 | 1.854 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.55 | 8.00 |
| E5241-72N02 | 1 | 72 | 1.854 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.55 | 8.00 |
| E5241-72N03 | 1 | 72 | 1.854 | 41.0 | 8 | 2.50 | 2.00 | 4 | 2 | 1.55 | 8.00 |
| E5242-64N01 | 2 | 64 | 2.184 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.90 | 9.50 |
| E5242-64N02 | 2 | 64 | 2.184 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.90 | 9.50 |
| E5242-64N03 | 2 | 64 | 2.184 | 44.5 | 9.5 | 2.80 | 2.24 | 5 | 3 | 1.90 | 9.50 |
| E5244-48N01 | 4 | 48 | 2.845 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.40 | 12.50 |
| E5244-48N02 | 4 | 48 | 2.845 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.40 | 12.50 |
| E5244-48N03 | 4 | 48 | 2.845 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.40 | 12.50 |
| E5245-44N01 | 5 | 44 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.70 | 12.50 |
| E5245-44N02 | 5 | 44 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.70 | 12.50 |
| E5245-44N03 | 5 | 44 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 5 | 3 | 2.70 | 12.50 |
| E5246-40N01 | 6 | 40 | 3.505 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.95 | 14.00 |
| E5246-40N02 | 6 | 40 | 3.505 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.95 | 14.00 |
| E5246-40N03 | 6 | 40 | 3.505 | 50.0 | 14 | 3.55 | 2.80 | 5 | 3 | 2.95 | 14.00 |
| E5248-36N01 | 8 | 36 | 4.166 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |
| E5248-36N02 | 8 | 36 | 4.166 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |
| E5248-36N03 | 8 | 36 | 4.166 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |
| E52410-32N01 | 10 | 32 | 4.826 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.10 | 20.00 |
| E52410-32N02 | 10 | 32 | 4.826 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.10 | 20.00 |
| E52410-32N03 | 10 | 32 | 4.826 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.10 | 20.00 |
| E52410-32N06 | 10 | 32 | 4.826 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.10 | 20.00 |
| E52412-28N01 | 12 | 28 | 5.486 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.70 | 21.00 |
| E52412-28N02 | 12 | 28 | 5.486 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.70 | 21.00 |



| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|--------------|-------|-----|--------|-------|------|---------|-------|------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E52412-28N03 | 12 | 28 | 5.486 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.70 | 21.00 |
| E52412-28N06 | 12 | 28 | 5.486 | 62.0 | 12 | 5.60 | 4.50 | 7 | 3 | 4.70 | 21.00 |
| E5241/4N01 | 1/4 | 28 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.50 | 26.00 |
| E5241/4N02 | 1/4 | 28 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.50 | 26.00 |
| E5241/4N03 | 1/4 | 28 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.50 | 26.00 |
| E5241/4N06 | 1/4 | 28 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.50 | 26.00 |
| E5245/16N01 | 5/16 | 24 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.90 | 29.00 |
| E5245/16N02 | 5/16 | 24 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.90 | 29.00 |
| E5245/16N03 | 5/16 | 24 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.90 | 29.00 |
| E5245/16N06 | 5/16 | 24 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.90 | 29.00 |
| E5243/8N01 | 3/8 | 24 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 32.00 |
| E5243/8N02 | 3/8 | 24 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 32.00 |
| E5243/8N03 | 3/8 | 24 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 32.00 |
| E5243/8N06 | 3/8 | 24 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 32.00 |
| E5247/16N01 | 7/16 | 20 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.90 | - |
| E5247/16N02 | 7/16 | 20 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.90 | - |
| E5247/16N03 | 7/16 | 20 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.90 | - |
| E5247/16N06 | 7/16 | 20 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.90 | - |
| E5241/2N01 | 1/2 | 20 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.50 | - |
| E5241/2N02 | 1/2 | 20 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.50 | - |
| E5241/2N03 | 1/2 | 20 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.50 | - |
| E5241/2N06 | 1/2 | 20 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.50 | - |
| E5249/16N01 | 9/16 | 18 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.90 | - |
| E5249/16N02 | 9/16 | 18 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.90 | - |
| E5249/16N03 | 9/16 | 18 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.90 | - |
| E5249/16N06 | 9/16 | 18 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.90 | - |
| E5245/8N01 | 5/8 | 18 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.50 | - |
| E5245/8N02 | 5/8 | 18 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.50 | - |
| E5245/8N03 | 5/8 | 18 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.50 | - |
| E5245/8N06 | 5/8 | 18 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.50 | - |
| E5243/4N01 | 3/4 | 16 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | - |
| E5243/4N02 | 3/4 | 16 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | - |
| E5243/4N03 | 3/4 | 16 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | - |
| E5243/4N06 | 3/4 | 16 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | - |
| E5247/8N01 | 7/8 | 14 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.40 | - |
| E5247/8N02 | 7/8 | 14 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.40 | - |
| E5247/8N03 | 7/8 | 14 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.40 | - |
| E5247/8N06 | 7/8 | 14 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.40 | - |
| E5241N01 | 1" | 12 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.25 | - |
| E5241N02 | 1" | 12 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.25 | - |
| E5241N03 | 1" | 12 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.25 | - |
| E5241N06 | 1" | 12 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.25 | - |
| E5241.1/8N01 | 1.1/8 | 12 | 28.575 | 138.0 | 35 | 20.00 | 16.00 | 20 | 4 | 26.50 | - |
| E5241.1/8N02 | 1.1/8 | 12 | 28.575 | 138.0 | 35 | 20.00 | 16.00 | 20 | 4 | 26.50 | - |
| E5241.1/8N03 | 1.1/8 | 12 | 28.575 | 138.0 | 35 | 20.00 | 16.00 | 20 | 4 | 26.50 | - |
| E5241.1/4N01 | 1.1/4 | 12 | 31.750 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 29.50 | - |
| E5241.1/4N02 | 1.1/4 | 12 | 31.750 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 29.50 | - |
| E5241.1/4N03 | 1.1/4 | 12 | 31.750 | 151.0 | 41 | 22.40 | 18.00 | 22 | 4 | 29.50 | - |
| E5241.3/8N01 | 1.3/8 | 12 | 34.925 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 32.75 | - |
| E5241.3/8N02 | 1.3/8 | 12 | 34.925 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 32.75 | - |
| E5241.3/8N03 | 1.3/8 | 12 | 34.925 | 162.0 | 47 | 25.00 | 20.00 | 24 | 4 | 32.75 | - |
| E5241.1/2N01 | 1.1/2 | 12 | 38.100 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 36.00 | - |
| E5241.1/2N02 | 1.1/2 | 12 | 38.100 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 36.00 | - |
| E5241.1/2N03 | 1.1/2 | 12 | 38.100 | 170.0 | 47 | 28.00 | 22.40 | 26 | 4 | 36.00 | - |



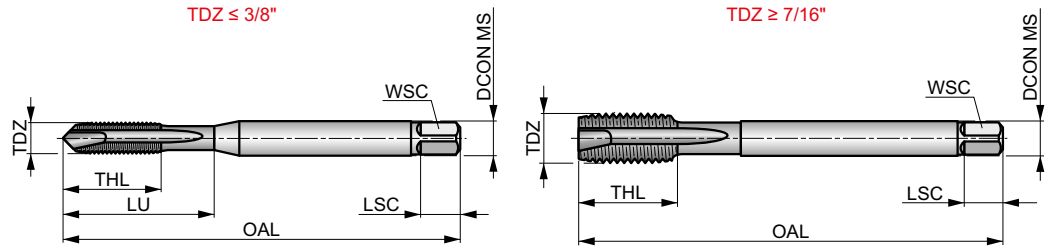
EP30



HSS-E-PM Spiral Point Machine Tap, UNF, DIN Standard

Machine tap with spiral point suited for through holes only. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges.

| | | |
|--|------------|----------|
| | DIN 2184-1 | 2B |
| | 2.5xD | HSS-E PM |
| | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 22 | P1.2 ■ 24 | P1.3 ■ 25 | P2.1 ■ 18 | P2.2 ■ 16 | P2.3 ■ 14 | P3.1 ■ 13 | P3.2 ■ 10 | P4.1 ■ 8 | N1.1 ■ 14 | N1.2 ■ 10 | N1.3 ■ 7 | N2.1 ■ 28 | N2.2 ■ 25 |
| N2.3 ■ 18 | N3.1 ■ 44 | N3.2 ■ 27 | N3.3 ■ 13 | N4.1 ■ 22 | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | | |
| EP308-36 | 8 | 36 | 4.166 | 63.0 | 12 | 4.50 | 3.40 | 8 | 3 | 3.50 | 21.00 |
| EP3010-32 | 10 | 32 | 4.826 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.10 | 25.00 |
| EP301/4 | 1/4 | 28 | 6.350 | 80.0 | 15 | 7.00 | 5.50 | 8 | 3 | 5.50 | 30.00 |
| EP305/16 | 5/16 | 24 | 7.938 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.90 | 35.00 |
| EP303/8 | 3/8 | 24 | 9.525 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EP307/16 | 7/16 | 20 | 11.112 | 100.0 | 20 | 8.00 | 6.20 | 9 | 3 | 9.90 | - |
| EP301/2 | 1/2 | 20 | 12.700 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 11.50 | - |
| EP305/8 | 5/8 | 18 | 15.875 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.50 | - |
| EP303/4 | 3/4 | 16 | 19.050 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 17.50 | - |
| EP307/8 | 7/8 | 14 | 22.225 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 20.40 | - |
| EP301 | 1" | 12 | 25.400 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 23.25 | - |



EP31

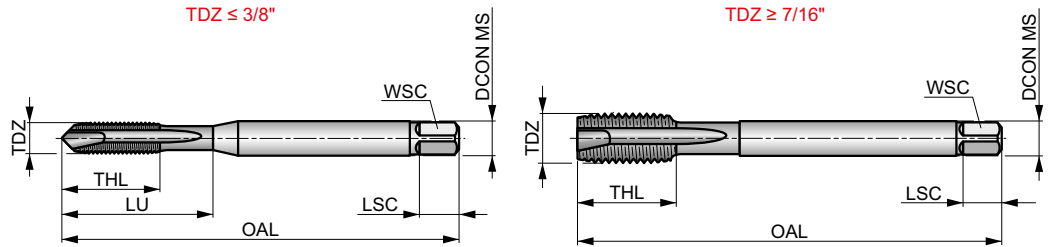


HSS-E-PM Spiral Point Machine Tap, UNF, DIN Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|--|---------------|-------------|
| | DIN 2184-1 | 2B |
| | 2.5xD | HSS-E PM |
| | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ▣22 | P2.2 ▣16 | P2.3 ▣14 | P3.2 ▣10 | P3.3 ▣9 | P4.1 ▣8 | P4.2 ▣6 | M1.1 ▣10 | M1.2 ▣8 | M2.1 ▣9 | M2.2 ▣7 | M3.1 ▣7 | M3.2 ▣6 | M3.3 ▣5 |
| M4.1 ▣4 | K1.1 ▣13 | K1.2 ▣10 | K1.3 ▣7 | K2.1 ▣16 | K2.2 ▣13 | K3.1 ▣14 | K3.2 ▣10 | K4.1 ▣13 | K4.2 ▣9 | K5.1 ▣15 | K5.2 ▣11 | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|------|---------|-------|-----|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | | | | | | [mm] |
| EP318-36 | 8 | 36 | 4.166 | 63.0 | 12 | 4.50 | 3.40 | 8 | 3 | 3.50 | 21.00 |
| EP3110-32 | 10 | 32 | 4.826 | 70.0 | 13 | 6.00 | 4.90 | 8 | 3 | 4.10 | 25.00 |
| EP311/4 | 1/4 | 28 | 6.350 | 80.0 | 15 | 7.00 | 5.50 | 8 | 3 | 5.50 | 30.00 |
| EP315/16 | 5/16 | 24 | 7.938 | 90.0 | 18 | 8.00 | 6.20 | 9 | 3 | 6.90 | 35.00 |
| EP313/8 | 3/8 | 24 | 9.525 | 100.0 | 20 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EP317/16 | 7/16 | 20 | 11.112 | 100.0 | 20 | 8.00 | 6.20 | 9 | 3 | 9.90 | – |
| EP311/2 | 1/2 | 20 | 12.700 | 110.0 | 23 | 9.00 | 7.00 | 10 | 3 | 11.50 | – |
| EP315/8 | 5/8 | 18 | 15.875 | 110.0 | 25 | 12.00 | 9.00 | 12 | 3 | 14.50 | – |
| EP313/4 | 3/4 | 16 | 19.050 | 125.0 | 30 | 14.00 | 11.00 | 14 | 4 | 17.50 | – |
| EP317/8 | 7/8 | 14 | 22.225 | 140.0 | 34 | 18.00 | 14.50 | 17 | 4 | 20.40 | – |
| EP311 | 1" | 12 | 25.400 | 160.0 | 38 | 18.00 | 14.50 | 17 | 4 | 23.25 | – |



E031

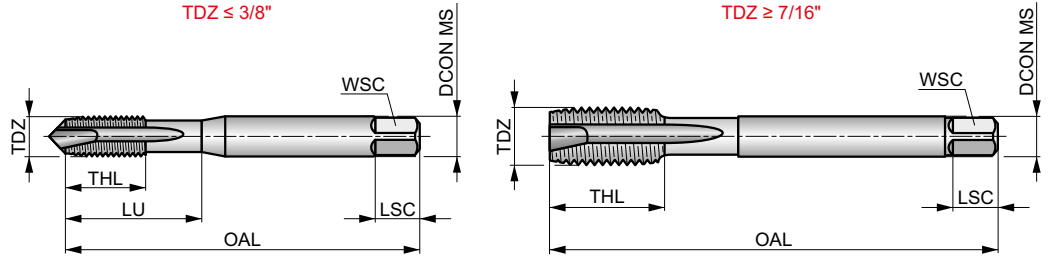
DORMER

HSS-E-PM Spiral Point Machine Tap, UNF, ISO Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|--|--|--|
| | | |
| | | |
| | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ▣22 | P2.2 ▣16 | P2.3 ▣14 | P3.2 ▣10 | P3.3 ▣9 | P4.1 ▣8 | P4.2 ▣16 | M1.1 ▣10 | M1.2 ▣8 | M2.1 ▣9 | M2.2 ▣7 | M3.1 ▣7 | M3.2 ▣6 | M3.3 ▣5 |
| M4.1 ▣4 | K1.1 ▣13 | K1.2 ▣10 | K1.3 ▣7 | K2.1 ▣16 | K2.2 ▣13 | K3.1 ▣14 | K3.2 ▣10 | K4.1 ▣13 | K4.2 ▣9 | K5.1 ▣15 | K5.2 ▣11 | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|------------------|------|-----|--------|-------|------|---------|-------|------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E0318-36 | 8 | 36 | 4.166 | 53.0 | 9.5 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |
| E03110-32 | 10 | 32 | 4.826 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.10 | 20.00 |
| E0311/4 | 1/4 | 28 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.50 | 26.00 |
| E0315/16 | 5/16 | 24 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.90 | 29.00 |
| E0313/8 | 3/8 | 24 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.50 | 32.00 |
| E0317/16 | 7/16 | 20 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.90 | – |
| E0311/2 | 1/2 | 20 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.50 | – |
| E0319/16 | 9/16 | 18 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 12 | 3 | 12.90 | – |
| E0315/8 | 5/8 | 18 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 3 | 14.50 | – |
| E0313/4 | 3/4 | 16 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E0317/8 | 7/8 | 14 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.40 | – |
| E0311 | 1" | 12 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.25 | – |



EX30

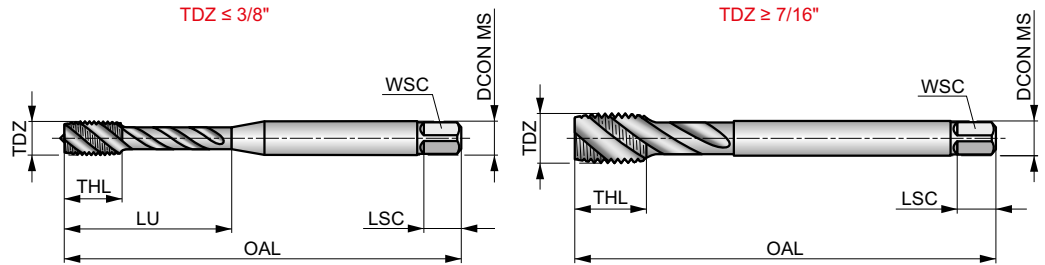


HSS-E-PM Spiral Flute Machine Tap, UNF, DIN Standard

Machine tap with spiral flute suited for blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges.



| | | |
|----------|---------------|-------------|
| | DIN 2184-1 | 2B |
| | 2.5×D | HSS-E PM |
| C 2-3 | | λ 45° |
| | Bright | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 21 | P1.2 ■ 23 | P1.3 ■ 24 | P2.1 ■ 17 | P2.2 ■ 15 | P2.3 ■ 13 | P3.1 ■ 12 | P3.2 ■ 9 | P4.1 ■ 7 | N1.1 ■ 13 | N1.2 ■ 9 | N1.3 ■ 6 | N2.1 ■ 27 | N2.2 ■ 24 |
| N2.3 ■ 17 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|------|---------|-------|-----|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | | | | | | |
| EX308-36 | 8 | 36 | 4.166 | 63.0 | 7 | 4.50 | 3.40 | 8 | 3 | 3.50 | 21.00 |
| EX3010-32 | 10 | 32 | 4.826 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.10 | 25.00 |
| EX301/4 | 1/4 | 28 | 6.350 | 80.0 | 10 | 7.00 | 5.50 | 8 | 3 | 5.50 | 30.00 |
| EX305/16 | 5/16 | 24 | 7.938 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.90 | 35.00 |
| EX303/8 | 3/8 | 24 | 9.525 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EX307/16 | 7/16 | 20 | 11.112 | 100.0 | 15 | 8.00 | 6.20 | 9 | 3 | 9.90 | — |
| EX301/2 | 1/2 | 20 | 12.700 | 110.0 | 18 | 9.00 | 7.00 | 10 | 3 | 11.50 | — |
| EX305/8 | 5/8 | 18 | 15.875 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.50 | — |
| EX303/4 | 3/4 | 16 | 19.050 | 125.0 | 25 | 14.00 | 11.00 | 14 | 4 | 17.50 | — |
| EX307/8 | 7/8 | 14 | 22.225 | 140.0 | 25 | 18.00 | 14.50 | 17 | 4 | 20.40 | — |
| EX301 | 1" | 12 | 25.400 | 160.0 | 30 | 18.00 | 14.50 | 17 | 4 | 23.25 | — |



EX31

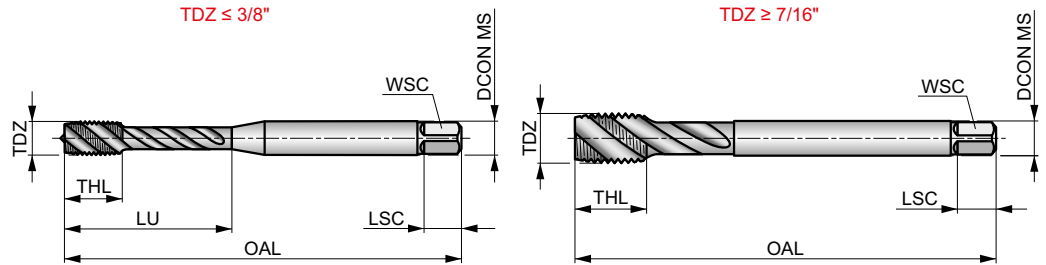


HSS-E-PM Spiral Flute Machine Tap, UNF, DIN Standard

Machine tap with spiral flute suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|--|------------|---------------|
| | DIN 2184-1 | 2B |
| | 2.5xD | HSS-E PM |
| | | λ 45° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 ■21 | P2.2 ■15 | P2.3 ■13 | P3.2 ■9 | P3.3 ■8 | P4.1 ■7 | P4.2 ■5 | M1.1 ■8 | M1.2 ■6 | M2.1 ■7 | M2.2 ■5 | M3.1 ■5 | M3.2 ■4 | M3.3 ■3 |
| M4.1 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | | |
| EX318-36 | 8 | 36 | 4.166 | 63.0 | 7 | 4.50 | 3.40 | 8 | 3 | 3.50 | 21.00 |
| EX3110-32 | 10 | 32 | 4.826 | 70.0 | 8 | 6.00 | 4.90 | 8 | 3 | 4.10 | 25.00 |
| EX311/4 | 1/4 | 28 | 6.350 | 80.0 | 10 | 7.00 | 5.50 | 8 | 3 | 5.50 | 30.00 |
| EX315/16 | 5/16 | 24 | 7.938 | 90.0 | 12 | 8.00 | 6.20 | 9 | 3 | 6.90 | 35.00 |
| EX313/8 | 3/8 | 24 | 9.525 | 100.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 39.00 |
| EX317/16 | 7/16 | 20 | 11.112 | 100.0 | 15 | 8.00 | 6.20 | 9 | 3 | 9.90 | - |
| EX311/2 | 1/2 | 20 | 12.700 | 110.0 | 18 | 9.00 | 7.00 | 10 | 3 | 11.50 | - |
| EX315/8 | 5/8 | 18 | 15.875 | 110.0 | 20 | 12.00 | 9.00 | 12 | 4 | 14.50 | - |
| EX313/4 | 3/4 | 16 | 19.050 | 125.0 | 25 | 14.00 | 11.00 | 14 | 4 | 17.50 | - |
| EX317/8 | 7/8 | 14 | 22.225 | 140.0 | 25 | 18.00 | 14.50 | 17 | 4 | 20.40 | - |
| EX311 | 1" | 12 | 25.400 | 160.0 | 30 | 18.00 | 14.50 | 17 | 4 | 23.25 | - |



E033

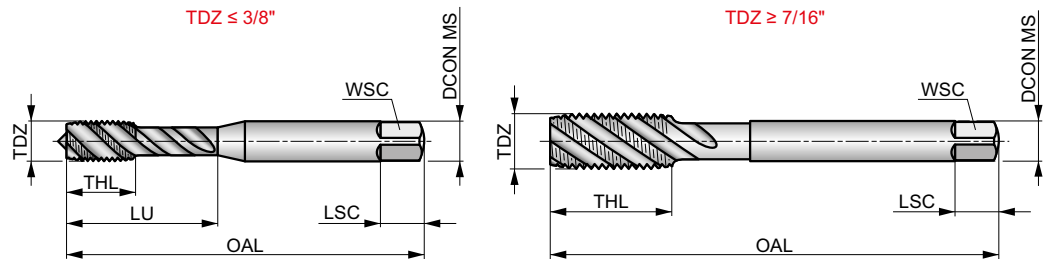


HSS-E-PM Spiral Flute Machine Tap, UNF, ISO Standard

Machine tap with spiral flute suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|--|---------|---------------|
| | ISO 529 | 2B |
| | 2.5xD | HSS-E PM |
| | | λ 45° |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 ▣21 | P2.2 ▣15 | P2.3 ▣13 | P3.2 ▣9 | P3.3 ▣8 | P4.1 ▣7 | P4.2 ▣5 | M1.1 ▣8 | M1.2 ▣6 | M2.1 ▣7 | M2.2 ▣5 | M3.1 ▣5 | M3.2 ▣4 | M3.3 ▣3 |
| M4.1 ▣3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|------|---------|-------|-----|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | | | | | | |
| E0338-36 | 8 | 36 | 4.166 | 53.0 | 7 | 4.50 | 3.55 | 6 | 3 | 3.50 | 17.00 |
| E03310-32 | 10 | 32 | 4.826 | 58.0 | 8 | 5.00 | 4.00 | 7 | 3 | 4.10 | 20.00 |
| E0331/4 | 1/4 | 28 | 6.350 | 66.0 | 10 | 6.30 | 5.00 | 8 | 3 | 5.50 | 28.00 |
| E0335/16 | 5/16 | 24 | 7.938 | 72.0 | 12 | 8.00 | 6.30 | 9 | 3 | 6.90 | 31.00 |
| E0333/8 | 3/8 | 24 | 9.525 | 80.0 | 15 | 10.00 | 8.00 | 11 | 3 | 8.50 | 34.00 |
| E0337/16 | 7/16 | 20 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 9 | 3 | 9.90 | – |
| E0331/2 | 1/2 | 20 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 11.50 | – |
| E0339/16 | 9/16 | 18 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 12 | 3 | 12.90 | – |
| E0335/8 | 5/8 | 18 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 13 | 4 | 14.50 | – |
| E0333/4 | 3/4 | 16 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 17.50 | – |
| E0337/8 | 7/8 | 14 | 22.225 | 118.0 | 29 | 16.00 | 12.50 | 16 | 4 | 20.40 | – |
| E0331 | 1" | 12 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 18 | 4 | 23.25 | – |

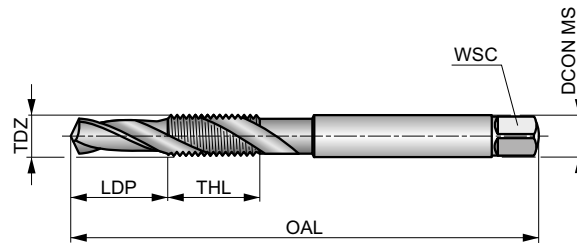


E654



HSS Drill-Tap Combination Tool with 30° Spiral Flute, UNF, DIN Standard

Combination of a core-hole drill and tap to produce a thread in one pass. This significantly reduces the time needed to produce the thread on site with the use of a hand-held power tool. There is no need for a tap wrench or tool change. Steam tempered surface acts to retain the lubricant and provide smoother cutting.



| | | |
|----------|-------|----------|
| | | Medium |
| | 1.5×D | HSS |
| C 2-3 | | λ 30° |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 18 | P1.2 ■ 20 | P1.3 ■ 22 | P2.1 ■ 20 | P2.2 ■ 18 | P3.1 ■ 15 | P3.2 ■ 12 | N1.2 ■ 14 | N1.3 ■ 9 | N3.1 ■ 20 | N3.2 ■ 15 | N4.1 ■ 25 |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|

| Product | TDZ | TPI | TD | OAL | THL | LDP | DCON MS | WSC | NOF |
|-----------|------|-----|--------|-------|------|-------|---------|-------|-----|
| | | | [mm] | [mm] | [mm] | [mm] | | | |
| E6548-36 | 8 | 36 | 3.500 | 64.0 | 13 | 8.00 | 4.50 | 3.55 | 2 |
| E65410-32 | 10 | 32 | 4.100 | 72.0 | 16 | 10.00 | 5.00 | 4.00 | 2 |
| E65412-28 | 12 | 28 | 4.700 | 77.0 | 17 | 11.00 | 5.60 | 4.50 | 2 |
| E6541/4 | 1/4 | 28 | 5.500 | 83.0 | 19 | 13.00 | 6.30 | 5.00 | 2 |
| E6545/16 | 5/16 | 24 | 6.900 | 94.0 | 22 | 16.00 | 8.00 | 6.30 | 2 |
| E6543/8 | 3/8 | 24 | 8.500 | 104.0 | 24 | 19.00 | 10.00 | 8.00 | 2 |
| E6547/16 | 7/16 | 20 | 9.900 | 107.0 | 25 | 22.00 | 8.00 | 6.30 | 2 |
| E6541/2 | 1/2 | 20 | 11.500 | 114.0 | 29 | 25.00 | 9.00 | 7.10 | 2 |
| E6545/8 | 5/8 | 18 | 14.500 | 134.0 | 32 | 32.00 | 12.50 | 10.00 | 2 |



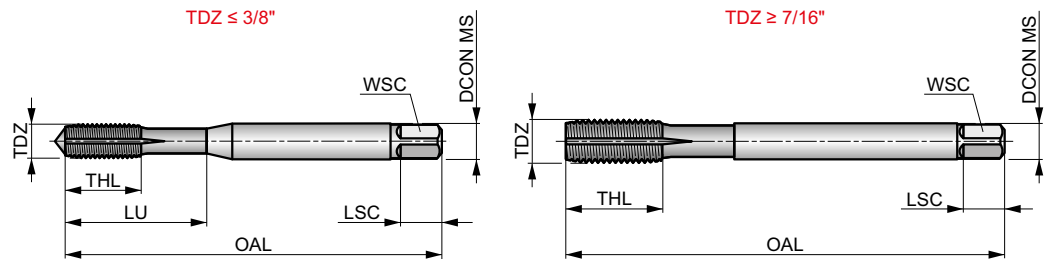
E286

HSS-E Thread Forming TiN Coated Tap, Oil-Grooves, UNF, DIN Standard

High performance fluteless tap for blind and through holes. Provide strong, clean, chip-free and accurate threads with excellent tolerance. Highly versatile for steel, stainless steel and non-ferrous metal. TiN coated for higher cutting speeds and extend tool life. With oil-grooves for better lubrication in deep holes.



| | | |
|------------|---------------|-------|
| | DIN 2184-1 | 2BX |
| | 3.5xD | HSS-E |
| C 2-3.5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 45 | P1.2 ■ 51 | P1.3 ■ 51 | P2.1 ▣ 51 | P2.2 ■ 45 | P2.3 ▣ 40 | P3.1 ■ 29 | P3.2 ■ 24 | P3.3 ■ 20 | P4.1 ■ 18 | P4.2 ■ 15 | M1.1 ■ 25 | M1.2 ■ 21 | M2.1 ■ 22 |
| M2.2 ■ 18 | M2.3 ▣ 15 | M3.1 ■ 17 | M3.2 ■ 15 | M3.3 ■ 14 | M4.1 ■ 10 | N1.1 ■ 55 | N1.2 ■ 41 | N1.3 ■ 28 | N2.1 ■ 62 | N2.2 ■ 55 | N2.3 ■ 40 | N3.1 ▣ 40 | N3.3 ▣ 12 |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------|------|-----|--------|-------|------|---------|------|-----|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | | | | | | [mm] |
| E2864-48 | 4 | 48 | 2.845 | 56.0 | 9 | 3.50 | 2.70 | 6 | 4 | 2.60 | 18.00 |
| E2866-40 | 6 | 40 | 3.505 | 56.0 | 11 | 4.00 | 3.00 | 6 | 4 | 3.20 | 20.00 |
| E2868-36 | 8 | 36 | 4.166 | 63.0 | 12 | 4.50 | 3.40 | 6 | 5 | 3.90 | 21.00 |
| E28610-32 | 10 | 32 | 4.826 | 70.0 | 13 | 6.00 | 4.90 | 8 | 5 | 4.50 | 25.00 |
| E2861/4 | 1/4 | 28 | 6.350 | 80.0 | 15 | 7.00 | 5.50 | 8 | 5 | 6.00 | 30.00 |
| E2865/16 | 5/16 | 24 | 7.938 | 90.0 | 18 | 8.00 | 6.20 | 9 | 5 | 7.50 | 35.00 |
| E2863/8 | 3/8 | 24 | 9.525 | 100.0 | 20 | 10.00 | 8.00 | 11 | 5 | 9.10 | 39.00 |
| E2867/16 | 7/16 | 20 | 11.112 | 100.0 | 20 | 8.00 | 6.20 | 9 | 5 | 10.60 | - |
| E2861/2 | 1/2 | 20 | 12.700 | 100.0 | 21 | 9.00 | 7.00 | 10 | 5 | 12.10 | - |



E570

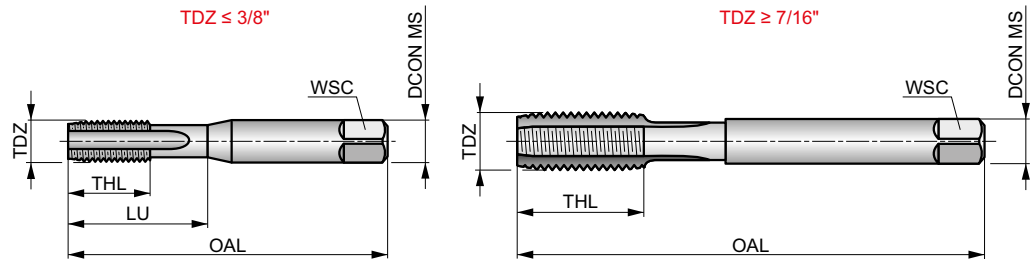


HSS Straight Flute Hand Tap, UN, ISO Standard

A versatile tool, suitable for machine and also hand tapping. With a straight flute design and bottoming lead for blind and through holes.



| | | |
|--------|---------|-----|
| | ISO 529 | 2B |
| | 1.5xD | HSS |
| | | |
| Bright | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 | K2.1 ■12 | K2.2 ■10 |
| K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD | LU |
|------------------|--------|-----|--------|-------|------|---------|-------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E5701/4X32N03 | 1/4 | 32 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.60 | 26.00 |
| E5701/4X36N03 | 1/4 | 36 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.70 | 26.00 |
| E5701/4X40N03 | 1/4 | 40 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.70 | 26.00 |
| E5705/16X32N03 | 5/16 | 32 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 3 | 7.20 | 29.00 |
| E5703/8X32N03 | 3/8 | 32 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 3 | 8.80 | 32.00 |
| E5707/16X24N03 | 7/16 | 24 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 3 | 10.00 | — |
| E5707/16X28N03 | 7/16 | 28 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 3 | 10.20 | — |
| E5701/2X28N03 | 1/2 | 28 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 3 | 11.80 | — |
| E5709/16X24N03 | 9/16 | 24 | 14.288 | 95.0 | 24 | 11.20 | 9.00 | 4 | 13.25 | — |
| E5705/8X24N03 | 5/8 | 24 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 4 | 14.80 | — |
| E5703/4X20N03 | 3/4 | 20 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 4 | 17.80 | — |
| E5707/8X20N03 | 7/8 | 20 | 22.225 | 118.0 | 30 | 16.00 | 12.50 | 4 | 21.00 | — |
| E5701X14N03 | 1" | 14 | 25.400 | 130.0 | 36 | 18.00 | 14.00 | 4 | 23.50 | — |
| E5701.1/16X12N03 | 1.1/16 | 12 | 26.988 | 127.0 | 37 | 20.00 | 16.00 | 4 | 24.75 | — |
| E5701.1/8X8N03 | 1.1/8 | 8 | 28.575 | 138.0 | 35 | 20.00 | 16.00 | 4 | 25.50 | — |
| E5701.3/16X12N03 | 1.3/16 | 12 | 30.163 | 137.0 | 37 | 22.40 | 18.00 | 4 | 28.00 | — |
| E5701.1/4X8N03 | 1.1/4 | 8 | 31.750 | 151.0 | 41 | 22.40 | 18.00 | 4 | 28.50 | — |
| E5701.5/16X12N03 | 1.5/16 | 12 | 33.338 | 137.0 | 37 | 22.40 | 18.00 | 4 | 31.25 | — |

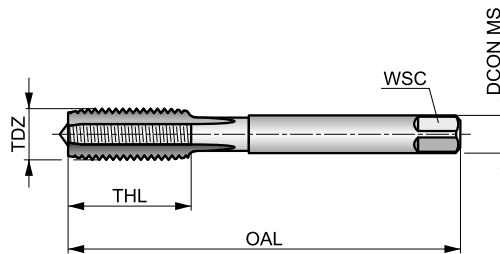


E115



HSS Straight Flute Serial Hand Tap, BSW, DIN352 Standard

Ideal for hand tapping tough materials. The straight flute design makes it ideal for both through and blind holes. Available as a single finishing tap or as a set of three serial taps, which should be used one after the other to create the full thread.



| | | |
|--------|---------|--------|
| | DIN 351 | Medium |
| | 1.5xD | HSS |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability.

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| K3.1 | K3.2 | K4.1 | K4.2 | K5.1 | K5.2 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 | N2.3 | N3.1 | N3.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N3.3 | N4.2 | N4.3 | | | | | | | | | | | |
| ■ | ■ | ■ | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD |
|-------------|------|-----|--------|-------|------|---------|-------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E1151/8N03 | 1/8 | 40 | 3.175 | 40.0 | 10 | 3.50 | 2.70 | 3 | 2.55 |
| E1151/8N08 | 1/8 | 40 | 3.175 | 40.0 | 10 | 3.50 | 2.70 | 3 | 2.55 |
| E1155/32N03 | 5/32 | 32 | 3.969 | 45.0 | 12 | 4.50 | 3.40 | 3 | 3.20 |
| E1155/32N08 | 5/32 | 32 | 3.969 | 45.0 | 12 | 4.50 | 3.40 | 3 | 3.20 |
| E1153/16N03 | 3/16 | 24 | 4.763 | 50.0 | 16 | 5.50 | 4.30 | 3 | 3.70 |
| E1153/16N08 | 3/16 | 24 | 4.763 | 50.0 | 16 | 5.50 | 4.30 | 3 | 3.70 |
| E1151/4N03 | 1/4 | 20 | 6.350 | 56.0 | 17 | 6.00 | 4.90 | 3 | 5.10 |
| E1151/4N08 | 1/4 | 20 | 6.350 | 56.0 | 17 | 6.00 | 4.90 | 3 | 5.10 |
| E1155/16N03 | 5/16 | 18 | 7.938 | 63.0 | 25 | 6.00 | 4.90 | 3 | 6.50 |
| E1155/16N08 | 5/16 | 18 | 7.938 | 63.0 | 25 | 6.00 | 4.90 | 3 | 6.50 |
| E1153/8N03 | 3/8 | 16 | 9.525 | 70.0 | 22 | 7.00 | 5.50 | 3 | 7.90 |
| E1153/8N08 | 3/8 | 16 | 9.525 | 70.0 | 22 | 7.00 | 5.50 | 3 | 7.90 |
| E1157/16N03 | 7/16 | 14 | 11.113 | 75.0 | 30 | 8.00 | 6.20 | 3 | 9.20 |
| E1157/16N08 | 7/16 | 14 | 11.113 | 75.0 | 30 | 8.00 | 6.20 | 3 | 9.20 |
| E1151/2N03 | 1/2 | 12 | 12.700 | 80.0 | 30 | 9.00 | 7.00 | 3 | 10.50 |
| E1151/2N08 | 1/2 | 12 | 12.700 | 80.0 | 30 | 9.00 | 7.00 | 3 | 10.50 |
| E1159/16N03 | 9/16 | 12 | 14.288 | 80.0 | 30 | 11.00 | 9.00 | 4 | 12.00 |
| E1159/16N08 | 9/16 | 12 | 14.288 | 80.0 | 30 | 11.00 | 9.00 | 4 | 12.00 |
| E1155/8N03 | 5/8 | 11 | 15.875 | 90.0 | 36 | 12.00 | 9.00 | 4 | 13.50 |
| E1155/8N08 | 5/8 | 11 | 15.875 | 90.0 | 36 | 12.00 | 9.00 | 4 | 13.50 |
| E1153/4N03 | 3/4 | 10 | 19.050 | 105.0 | 40 | 14.00 | 11.00 | 4 | 16.50 |
| E1153/4N08 | 3/4 | 10 | 19.050 | 105.0 | 40 | 14.00 | 11.00 | 4 | 16.50 |
| E1157/8N03 | 7/8 | 9 | 22.225 | 110.0 | 45 | 18.00 | 14.50 | 4 | 19.25 |
| E1157/8N08 | 7/8 | 9 | 22.225 | 110.0 | 45 | 18.00 | 14.50 | 4 | 19.25 |
| E1151N03 | 1" | 8 | 25.400 | 110.0 | 50 | 20.00 | 16.00 | 4 | 22.00 |
| E1151N08 | 1" | 8 | 25.400 | 110.0 | 50 | 20.00 | 16.00 | 4 | 22.00 |

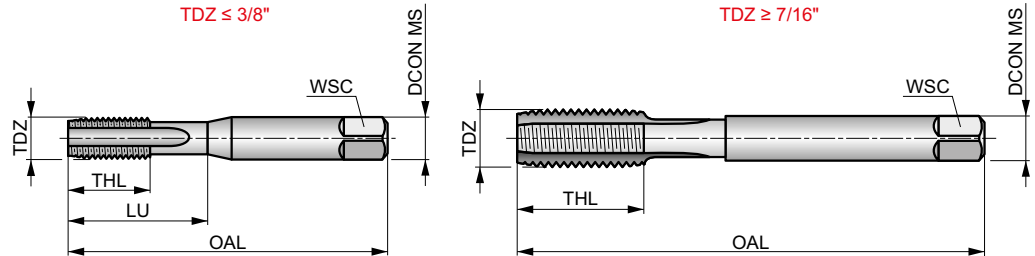


E531



HSS Straight Flute Hand Tap, BSW, ISO Standard

A versatile tool, suitable for hand and machine tapping, with a straight flute design for both through and blind holes. Available as a set of three N06 or as separate taps with taper lead N01 for short through holes, plug lead N02 for deeper through holes or bottoming lead N03 for blind holes.



| | | |
|--|---------|--------|
| | ISO 529 | Medium |
| | 1.5xD | HSS |
| | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 | K2.1 ■12 | K2.2 ■10 |
| K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD | LU |
|-------------|------|-----|--------|------|------|---------|------|-----|------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E5311/8N01 | 1/8 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 3 | 2.55 | 12.50 |
| E5311/8N02 | 1/8 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 3 | 2.55 | 12.50 |
| E5311/8N03 | 1/8 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 3 | 2.55 | 12.50 |
| E5311/8N06 | 1/8 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 3 | 2.55 | 12.50 |
| E5315/32N01 | 5/32 | 32 | 3.969 | 53.0 | 14 | 4.00 | 3.15 | 3 | 3.20 | 14.00 |
| E5315/32N02 | 5/32 | 32 | 3.969 | 53.0 | 14 | 4.00 | 3.15 | 3 | 3.20 | 14.00 |
| E5315/32N03 | 5/32 | 32 | 3.969 | 53.0 | 14 | 4.00 | 3.15 | 3 | 3.20 | 14.00 |
| E5315/32N06 | 5/32 | 32 | 3.969 | 53.0 | 14 | 4.00 | 3.15 | 3 | 3.20 | 14.00 |
| E5313/16N01 | 3/16 | 24 | 4.763 | 58.0 | 11 | 5.00 | 4.00 | 3 | 3.70 | 20.00 |
| E5313/16N02 | 3/16 | 24 | 4.763 | 58.0 | 11 | 5.00 | 4.00 | 3 | 3.70 | 20.00 |
| E5313/16N03 | 3/16 | 24 | 4.763 | 58.0 | 11 | 5.00 | 4.00 | 3 | 3.70 | 20.00 |
| E5313/16N06 | 3/16 | 24 | 4.763 | 58.0 | 11 | 5.00 | 4.00 | 3 | 3.70 | 20.00 |
| E5311/4N01 | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.10 | 26.00 |
| E5311/4N02 | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.10 | 26.00 |
| E5311/4N03 | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.10 | 26.00 |
| E5311/4N06 | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.10 | 26.00 |
| E5315/16N01 | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 3 | 6.50 | 29.00 |
| E5315/16N02 | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 3 | 6.50 | 29.00 |
| E5315/16N03 | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 3 | 6.50 | 29.00 |
| E5315/16N06 | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 3 | 6.50 | 29.00 |
| E5313/8N01 | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 3 | 7.90 | 32.00 |
| E5313/8N02 | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 3 | 7.90 | 32.00 |
| E5313/8N03 | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 3 | 7.90 | 32.00 |
| E5313/8N06 | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 3 | 7.90 | 32.00 |
| E5317/16N01 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 3 | 9.20 | - |
| E5317/16N02 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 3 | 9.20 | - |
| E5317/16N03 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 3 | 9.20 | - |
| E5317/16N06 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 3 | 9.20 | - |



| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD | LU |
|------------|-----|-----|--------|-------|------|---------|-------|------|-------|------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| E5311/2N01 | 1/2 | 12 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 3 | 10.50 | — |
| E5311/2N02 | 1/2 | 12 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 3 | 10.50 | — |
| E5311/2N03 | 1/2 | 12 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 3 | 10.50 | — |
| E5311/2N06 | 1/2 | 12 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 3 | 10.50 | — |
| E5315/8N01 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 4 | 13.50 | — |
| E5315/8N02 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 4 | 13.50 | — |
| E5315/8N03 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 4 | 13.50 | — |
| E5315/8N06 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 4 | 13.50 | — |
| E5313/4N01 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 4 | 16.50 | — |
| E5313/4N02 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 4 | 16.50 | — |
| E5313/4N03 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 4 | 16.50 | — |
| E5313/4N06 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 4 | 16.50 | — |
| E5311N01 | 1" | 8 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 4 | 22.00 | — |
| E5311N02 | 1" | 8 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 4 | 22.00 | — |
| E5311N03 | 1" | 8 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 4 | 22.00 | — |
| E5311N06 | 1" | 8 | 25.400 | 130.0 | 35 | 18.00 | 14.00 | 4 | 22.00 | — |



E534

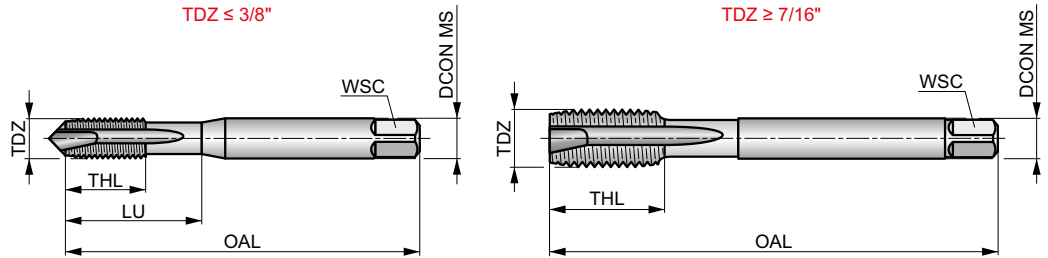


HSS Spiral Point Machine Tap, BSW, ISO Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|--|--|--------|
| | | Medium |
| | | |
| | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|---------------------|--------------------|--------------------|--------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 14 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ■ 7 | P3.1 ■ 8 | P3.2 ■ 6 | P4.1 ■ 5 | P4.2 ■ 4 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ■ 5 |
| M3.1 ■ 5 | M3.2 ■ 4 | M3.3 ■ 3 | M4.1 ■ 2 | K1.1 ■ 9 | K1.2 ■ 6 | K1.3 ■ 4 | K2.1 ■ 12 | K2.2 ■ 9 | K3.1 ■ 10 | K3.2 ■ 6 | K4.1 ■ 9 | K4.2 ■ 5 | K5.1 ■ 11 |
| K5.2 ■ 7 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD | LU |
|----------|------|-----|--------|-------|------|---------|-------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | | | | | |
| E5341/8 | 1/8 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 3 | 2.55 | 12.50 |
| E5345/32 | 5/32 | 32 | 3.969 | 53.0 | 14 | 4.00 | 3.15 | 3 | 3.20 | 14.00 |
| E5343/16 | 3/16 | 24 | 4.763 | 58.0 | 11 | 5.00 | 4.00 | 3 | 3.70 | 20.00 |
| E5341/4 | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.10 | 26.00 |
| E5345/16 | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 3 | 6.50 | 29.00 |
| E5343/8 | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 3 | 7.90 | 32.00 |
| E5347/16 | 7/16 | 14 | 11.112 | 85.0 | 19 | 8.00 | 6.30 | 3 | 9.20 | – |
| E5341/2 | 1/2 | 12 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 3 | 10.50 | – |
| E5345/8 | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 3 | 13.50 | – |
| E5343/4 | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 4 | 16.50 | – |



E533

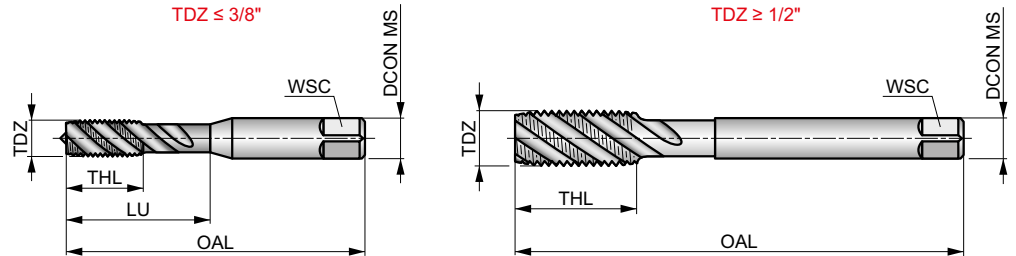


HSS Spiral Flute Machine Tap, BSW, ISO Standard

Machine tap with spiral flute suited for blind holes. Available with bright finish to produce more accurate and cleaner threads, preventing the workpiece material from sticking to the cutting edges or BLUE finish with steam tempered surface, which acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|-------|-----------|---------------|
| | ISO 529 | Medium |
| | 2xD | HSS |
| C 2-3 | | λ 40° |
| | Bright ST | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P3.3 | P4.1 | P4.2 | M1.1 | M1.2 | M2.1 |
| ■ 10 | ■ 11 | ■ 13 | ■ 8 | ■ 7 | ■ 6 | ■ 7 | ■ 5 | ■ 4 | ■ 4 | ■ 3 | ■ 6 | ■ 5 | ■ 4 |
| M2.2 | M2.3 | M3.1 | M3.2 | M3.3 | M4.1 | N1.3 | N2.1 | N2.2 | N2.3 | | | | |
| ■ 5 | ■ 5 | ■ 5 | ■ 4 | ■ 3 | ■ 2 | ■ 5 | ■ 12 | ■ 10 | ■ 8 | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD | LU |
|------------------------|------|-----|--------|-------|------|---------|-------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E5331/8 ¹⁾ | 1/8 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 3 | 2.55 | 12.50 |
| E5331/8BLUE | 1/8 | 40 | 3.175 | 48.0 | 12.5 | 3.15 | 2.50 | 3 | 2.55 | 12.50 |
| E5333/16 ¹⁾ | 3/16 | 24 | 4.763 | 58.0 | 11 | 5.00 | 4.00 | 3 | 3.70 | 20.00 |
| E5333/16BLUE | 3/16 | 24 | 4.763 | 58.0 | 11 | 5.00 | 4.00 | 3 | 3.70 | 20.00 |
| E5331/4 ¹⁾ | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.10 | 26.00 |
| E5331/4BLUE | 1/4 | 20 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.10 | 26.00 |
| E5335/16 ¹⁾ | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 3 | 6.50 | 31.00 |
| E5335/16BLUE | 5/16 | 18 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 3 | 6.50 | 31.00 |
| E5333/8 ¹⁾ | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 3 | 7.90 | 34.00 |
| E5333/8BLUE | 3/8 | 16 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 3 | 7.90 | 34.00 |
| E5331/2 ¹⁾ | 1/2 | 12 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 3 | 10.50 | — |
| E5331/2BLUE | 1/2 | 12 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 3 | 10.50 | — |
| E5335/8 ¹⁾ | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 3 | 13.50 | — |
| E5335/8BLUE | 5/8 | 11 | 15.875 | 102.0 | 24 | 12.50 | 10.00 | 3 | 13.50 | — |
| E5333/4 ¹⁾ | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 3 | 16.50 | — |
| E5333/4BLUE | 3/4 | 10 | 19.050 | 112.0 | 29 | 14.00 | 11.20 | 3 | 16.50 | — |

¹⁾ Bright Finish.

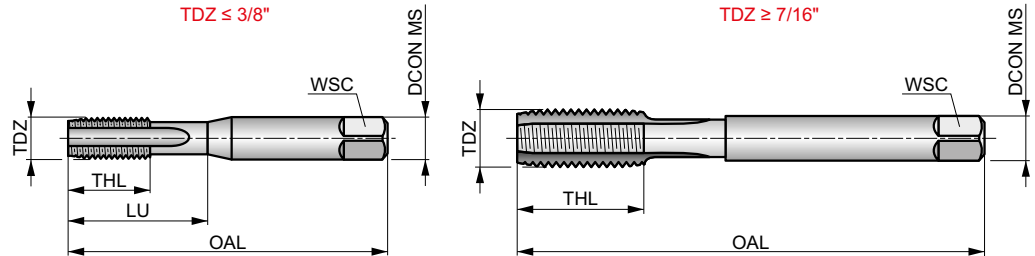


E536



HSS Straight Flute Hand Tap, BSF, ISO Standard

A versatile tool, suitable for hand and machine tapping, with a straight flute design for both through and blind holes. Available as a set of three N06 or as separate taps with taper lead N01 for short through holes, plug lead N02 for deeper through holes or bottoming lead N03 for blind holes.



| | | |
|--|---------|--------|
| | ISO 529 | Medium |
| | 1.5xD | HSS |
| | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 | K2.1 ■12 | K2.2 ■10 |
| K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD | LU |
|-------------|------|-----|--------|-------|------|---------|-------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | | | |
| E5363/16N01 | 3/16 | 32 | 4.760 | 58.0 | 12 | 5.00 | 4.00 | 3 | 4.00 | 20.00 |
| E5363/16N02 | 3/16 | 32 | 4.760 | 58.0 | 12 | 5.00 | 4.00 | 3 | 4.00 | 20.00 |
| E5363/16N03 | 3/16 | 32 | 4.760 | 58.0 | 12 | 5.00 | 4.00 | 3 | 4.00 | 20.00 |
| E5363/16N06 | 3/16 | 32 | 4.760 | 58.0 | 12 | 5.00 | 4.00 | 3 | 4.00 | 20.00 |
| E5361/4N01 | 1/4 | 26 | 6.350 | 66.0 | 14 | 6.30 | 5.00 | 3 | 5.30 | 26.00 |
| E5361/4N02 | 1/4 | 26 | 6.350 | 66.0 | 14 | 6.30 | 5.00 | 3 | 5.30 | 26.00 |
| E5361/4N03 | 1/4 | 26 | 6.350 | 66.0 | 14 | 6.30 | 5.00 | 3 | 5.30 | 26.00 |
| E5361/4N06 | 1/4 | 26 | 6.350 | 66.0 | 14 | 6.30 | 5.00 | 3 | 5.30 | 26.00 |
| E5365/16N01 | 5/16 | 22 | 7.940 | 72.0 | 18 | 8.00 | 6.30 | 3 | 6.80 | 29.00 |
| E5365/16N02 | 5/16 | 22 | 7.940 | 72.0 | 18 | 8.00 | 6.30 | 3 | 6.80 | 29.00 |
| E5365/16N03 | 5/16 | 22 | 7.940 | 72.0 | 18 | 8.00 | 6.30 | 3 | 6.80 | 29.00 |
| E5365/16N06 | 5/16 | 22 | 7.940 | 72.0 | 18 | 8.00 | 6.30 | 3 | 6.80 | 29.00 |
| E5363/8N01 | 3/8 | 20 | 9.530 | 80.0 | 20 | 10.00 | 8.00 | 3 | 8.30 | 32.00 |
| E5363/8N02 | 3/8 | 20 | 9.530 | 80.0 | 20 | 10.00 | 8.00 | 3 | 8.30 | 32.00 |
| E5363/8N03 | 3/8 | 20 | 9.530 | 80.0 | 20 | 10.00 | 8.00 | 3 | 8.30 | 32.00 |
| E5363/8N06 | 3/8 | 20 | 9.530 | 80.0 | 20 | 10.00 | 8.00 | 3 | 8.30 | 32.00 |
| E5367/16N01 | 7/16 | 18 | 11.110 | 85.0 | 20 | 8.00 | 6.30 | 3 | 9.70 | - |
| E5367/16N02 | 7/16 | 18 | 11.110 | 85.0 | 20 | 8.00 | 6.30 | 3 | 9.70 | - |
| E5367/16N03 | 7/16 | 18 | 11.110 | 85.0 | 20 | 8.00 | 6.30 | 3 | 9.70 | - |
| E5361/2N01 | 1/2 | 16 | 12.700 | 89.0 | 23 | 9.00 | 7.10 | 3 | 11.00 | - |
| E5361/2N02 | 1/2 | 16 | 12.700 | 89.0 | 23 | 9.00 | 7.10 | 3 | 11.00 | - |
| E5361/2N03 | 1/2 | 16 | 12.700 | 89.0 | 23 | 9.00 | 7.10 | 3 | 11.00 | - |
| E5361/2N06 | 1/2 | 16 | 12.700 | 89.0 | 23 | 9.00 | 7.10 | 3 | 11.00 | - |
| E5369/16N01 | 9/16 | 16 | 14.280 | 95.0 | 25 | 11.20 | 9.00 | 4 | 12.70 | - |
| E5369/16N02 | 9/16 | 16 | 14.280 | 95.0 | 25 | 11.20 | 9.00 | 4 | 12.70 | - |
| E5369/16N03 | 9/16 | 16 | 14.280 | 95.0 | 25 | 11.20 | 9.00 | 4 | 12.70 | - |
| E5365/8N01 | 5/8 | 14 | 15.880 | 102.0 | 25 | 12.50 | 10.00 | 4 | 14.00 | - |
| E5365/8N02 | 5/8 | 14 | 15.880 | 102.0 | 25 | 12.50 | 10.00 | 4 | 14.00 | - |



| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD | LU |
|-------------------|-----|-----|--------|-------|------|---------|-------|------|-------|------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| E5365/8N03 | 5/8 | 14 | 15.880 | 102.0 | 25 | 12.50 | 10.00 | 4 | 14.00 | — |
| E5363/4N01 | 3/4 | 12 | 19.050 | 112.0 | 30 | 14.00 | 11.20 | 4 | 17.00 | — |
| E5363/4N02 | 3/4 | 12 | 19.050 | 112.0 | 30 | 14.00 | 11.20 | 4 | 17.00 | — |
| E5363/4N03 | 3/4 | 12 | 19.050 | 112.0 | 30 | 14.00 | 11.20 | 4 | 17.00 | — |
| E5367/8N01 | 7/8 | 11 | 22.230 | 118.0 | 30 | 16.00 | 12.50 | 4 | 19.75 | — |
| E5367/8N02 | 7/8 | 11 | 22.230 | 118.0 | 30 | 16.00 | 12.50 | 4 | 19.75 | — |
| E5367/8N03 | 7/8 | 11 | 22.230 | 118.0 | 30 | 16.00 | 12.50 | 4 | 19.75 | — |
| E5367/8N06 | 7/8 | 11 | 22.230 | 118.0 | 30 | 16.00 | 12.50 | 4 | 19.75 | — |
| E5361N01 | 1" | 10 | 25.400 | 130.0 | 36 | 18.00 | 14.00 | 4 | 22.75 | — |
| E5361N02 | 1" | 10 | 25.400 | 130.0 | 36 | 18.00 | 14.00 | 4 | 22.75 | — |
| E5361N03 | 1" | 10 | 25.400 | 130.0 | 36 | 18.00 | 14.00 | 4 | 22.75 | — |



E539

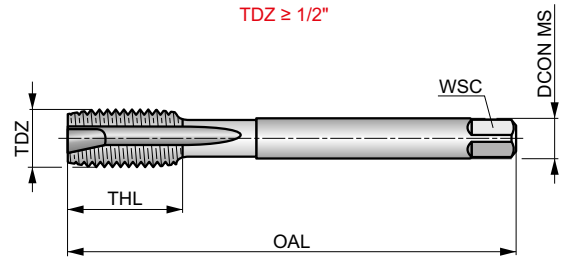
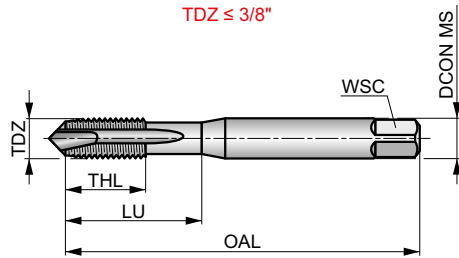
DORMER

HSS Spiral Point Machine Tap, BSF, ISO Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|-------------------|-------------------|--------|
| | ISO 529 | Medium |
| | 2.5xD | HSS |
| B 3.5-5 | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|-------------------|--------------------|
| P1.1 ■11 | P1.2 ■12 | P1.3 ■14 | P2.1 ■9 | P2.2 ■8 | P2.3 ■7 | P3.1 ■8 | P3.2 ■6 | P4.1 ■5 | P4.2 ■4 | M1.1 ■7 | M1.2 ■6 | M2.1 ■6 | M2.2 ■5 |
| M3.1 ■5 | M3.2 ■4 | M3.3 ■3 | M4.1 ■2 | K1.1 ■9 | K1.2 ■6 | K1.3 ■4 | K2.1 ■12 | K2.2 ■9 | K3.1 ■10 | K3.2 ■6 | K4.1 ■9 | K4.2 ■5 | K5.1 ■11 |
| K5.2 ■7 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD | LU |
|-----------------|------|-----|--------|------|------|---------|------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E5391/4 | 1/4 | 26 | 6.350 | 66.0 | 14 | 6.30 | 5.00 | 3 | 5.30 | 26.00 |
| E5395/16 | 5/16 | 22 | 7.940 | 72.0 | 18 | 8.00 | 6.30 | 3 | 6.80 | 29.00 |
| E5393/8 | 3/8 | 20 | 9.530 | 80.0 | 20 | 10.00 | 8.00 | 3 | 8.30 | 32.00 |
| E5391/2 | 1/2 | 16 | 12.700 | 89.0 | 23 | 9.00 | 7.10 | 3 | 11.00 | - |



E538

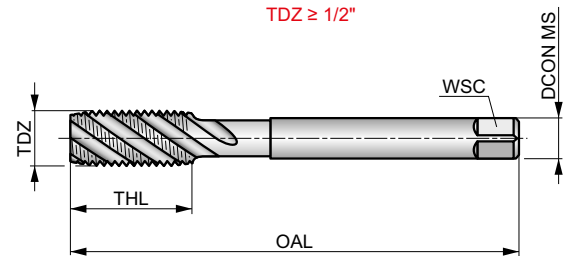
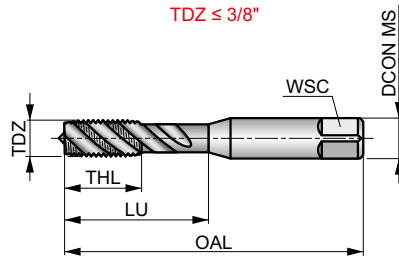


HSS Spiral Flute Machine Tap, BSF, ISO Standard

Machine tap with spiral flute suited for blind holes. Available with bright finish to produce more accurate and cleaner threads, preventing the workpiece material from sticking to the cutting edges or BLUE finish with steam tempered surface, which acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|-------|-----------|---------------|
| | ISO 529 | Medium |
| | 2xD | HSS |
| C 2-3 | | λ 40° |
| | Bright ST | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P3.3 | P4.1 | P4.2 | M1.1 | M1.2 | M2.1 |
| ■ 10 | ■ 11 | ■ 13 | ■ 8 | ■ 7 | ■ 6 | ■ 7 | ■ 5 | ■ 4 | ■ 4 | ■ 3 | ■ 6 | ■ 5 | ■ 4 |
| M2.2 | M2.3 | M3.1 | M3.2 | M3.3 | M4.1 | N1.3 | N2.1 | N2.2 | N2.3 | | | | |
| ■ 5 | ■ 5 | ■ 5 | ■ 4 | ■ 3 | ■ 2 | ■ 5 | ■ 12 | ■ 10 | ■ 8 | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD | LU |
|------------------------|------|-----|--------|------|------|---------|------|-----|-------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E5381/4 ¹⁾ | 1/4 | 26 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.30 | 26.00 |
| E5381/4BLUE | 1/4 | 26 | 6.350 | 66.0 | 13 | 6.30 | 5.00 | 3 | 5.30 | 26.00 |
| E5385/16 ¹⁾ | 5/16 | 22 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 3 | 6.80 | 31.00 |
| E5385/16BLUE | 5/16 | 22 | 7.938 | 72.0 | 16 | 8.00 | 6.30 | 3 | 6.80 | 31.00 |
| E5383/8 ¹⁾ | 3/8 | 20 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 3 | 8.30 | 34.00 |
| E5383/8BLUE | 3/8 | 20 | 9.525 | 80.0 | 18 | 10.00 | 8.00 | 3 | 8.30 | 34.00 |
| E5381/2 ¹⁾ | 1/2 | 16 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 3 | 11.00 | – |
| E5381/2BLUE | 1/2 | 16 | 12.700 | 89.0 | 22 | 9.00 | 7.10 | 3 | 11.00 | – |

¹⁾ Bright Finish.

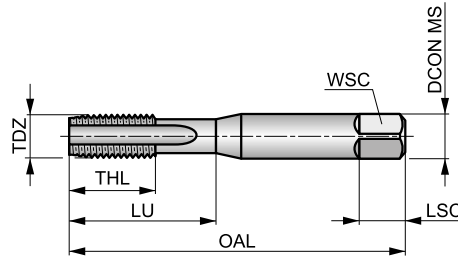


E542



HSS Straight Flute Hand Tap, BA, ISO Standard

A versatile tool, suitable for hand and machine tapping, with a straight flute design for both through and blind holes. Available as a set of three N06 or as separate taps with taper lead N01 for short through holes, plug lead N02 for deeper through holes or bottoming lead N03 for blind holes.



| | | |
|--|---------|--------|
| | ISO 529 | Normal |
| | 1.5xD | HSS |
| | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 | K2.1 ■12 | K2.2 ■10 |
| K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TP | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-------------|------|------|-------|------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E542BA10N01 | BA10 | 0.35 | 1.700 | 41.0 | 7 | 2.50 | 2.00 | 4 | 2 | 1.30 | 7.00 |
| E542BA10N02 | BA10 | 0.35 | 1.700 | 41.0 | 7 | 2.50 | 2.00 | 4 | 2 | 1.30 | 7.00 |
| E542BA10N03 | BA10 | 0.35 | 1.700 | 41.0 | 7 | 2.50 | 2.00 | 4 | 2 | 1.30 | 7.00 |
| E542BA10N06 | BA10 | 0.35 | 1.700 | 41.0 | 7 | 2.50 | 2.00 | 4 | 2 | 1.30 | 7.00 |
| E542BA8N01 | BA 8 | 0.43 | 2.200 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 3 | 1.80 | 9.50 |
| E542BA8N02 | BA 8 | 0.43 | 2.200 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 3 | 1.80 | 9.50 |
| E542BA8N03 | BA 8 | 0.43 | 2.200 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 3 | 1.80 | 9.50 |
| E542BA8N06 | BA 8 | 0.43 | 2.200 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 3 | 1.80 | 9.50 |
| E542BA6N01 | BA 6 | 0.53 | 2.800 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 3 | 2.30 | 9.50 |
| E542BA6N02 | BA 6 | 0.53 | 2.800 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 3 | 2.30 | 9.50 |
| E542BA6N03 | BA 6 | 0.53 | 2.800 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 3 | 2.30 | 9.50 |
| E542BA6N06 | BA 6 | 0.53 | 2.800 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 3 | 2.30 | 9.50 |
| E542BA5N01 | BA 5 | 0.59 | 3.200 | 48.0 | 14.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 14.50 |
| E542BA5N02 | BA 5 | 0.59 | 3.200 | 48.0 | 14.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 14.50 |
| E542BA5N03 | BA 5 | 0.59 | 3.200 | 48.0 | 14.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 14.50 |
| E542BA5N06 | BA 5 | 0.59 | 3.200 | 48.0 | 14.5 | 3.15 | 2.50 | 5 | 3 | 2.65 | 14.50 |
| E542BA4N01 | BA 4 | 0.66 | 3.600 | 50.0 | 16.5 | 3.55 | 2.80 | 5 | 3 | 3.00 | 16.50 |
| E542BA4N02 | BA 4 | 0.66 | 3.600 | 50.0 | 16.5 | 3.55 | 2.80 | 5 | 3 | 3.00 | 16.50 |
| E542BA4N03 | BA 4 | 0.66 | 3.600 | 50.0 | 16.5 | 3.55 | 2.80 | 5 | 3 | 3.00 | 16.50 |
| E542BA4N06 | BA 4 | 0.66 | 3.600 | 50.0 | 16.5 | 3.55 | 2.80 | 5 | 3 | 3.00 | 16.50 |
| E542BA3N01 | BA 3 | 0.73 | 4.100 | 53.0 | 10 | 4.50 | 3.50 | 6 | 3 | 3.40 | 17.00 |
| E542BA3N02 | BA 3 | 0.73 | 4.100 | 53.0 | 10 | 4.50 | 3.50 | 6 | 3 | 3.40 | 17.00 |
| E542BA3N03 | BA 3 | 0.73 | 4.100 | 53.0 | 10 | 4.50 | 3.50 | 6 | 3 | 3.40 | 17.00 |
| E542BA3N06 | BA 3 | 0.73 | 4.100 | 53.0 | 10 | 4.50 | 3.50 | 6 | 3 | 3.40 | 17.00 |
| E542BA2N01 | BA 2 | 0.81 | 4.700 | 58.0 | 12 | 5.00 | 4.00 | 7 | 3 | 4.00 | 20.00 |
| E542BA2N02 | BA 2 | 0.81 | 4.700 | 58.0 | 12 | 5.00 | 4.00 | 7 | 3 | 4.00 | 20.00 |
| E542BA2N03 | BA 2 | 0.81 | 4.700 | 58.0 | 12 | 5.00 | 4.00 | 7 | 3 | 4.00 | 20.00 |
| E542BA2N06 | BA 2 | 0.81 | 4.700 | 58.0 | 12 | 5.00 | 4.00 | 7 | 3 | 4.00 | 20.00 |



| Product | TDZ | TP | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-------------------|------|------|-------|------|------|---------|------|------|------|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| E542BA0N01 | BA 0 | 1.00 | 6.000 | 66.0 | 14 | 6.30 | 5.00 | 8 | 3 | 5.10 | 26.00 |
| E542BA0N02 | BA 0 | 1.00 | 6.000 | 66.0 | 14 | 6.30 | 5.00 | 8 | 3 | 5.10 | 26.00 |
| E542BA0N03 | BA 0 | 1.00 | 6.000 | 66.0 | 14 | 6.30 | 5.00 | 8 | 3 | 5.10 | 26.00 |
| E542BA0N06 | BA 0 | 1.00 | 6.000 | 66.0 | 14 | 6.30 | 5.00 | 8 | 3 | 5.10 | 26.00 |

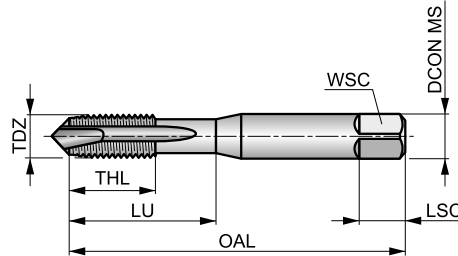


E545



HSS Spiral Point Machine Tap, BA, ISO Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|---------|---------|--------|
| BA | ISO 529 | Normal |
| 2.5xD | HSS | |
| B 3.5-5 | R | |
| ST | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|-------------------|--------------------|
| P1.1 ▣11 | P1.2 ▣12 | P1.3 ▣14 | P2.1 ▣9 | P2.2 ▣8 | P2.3 ▣7 | P3.1 ▣8 | P3.2 ▣6 | P4.1 ▣5 | P4.2 ▣4 | M1.1 ▣7 | M1.2 ▣6 | M2.1 ▣4 | M2.2 ▣5 |
| M3.1 ▣5 | M3.2 ▣4 | M3.3 ▣3 | M4.1 ▣2 | K1.1 ▣9 | K1.2 ▣6 | K1.3 ▣4 | K2.1 ▣12 | K2.2 ▣9 | K3.1 ▣10 | K3.2 ▣6 | K4.1 ▣9 | K4.2 ▣5 | K5.1 ▣11 |
| K5.2 ▣7 | | | | | | | | | | | | | |

| Product | TDZ | TP | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------|------|------|-------|------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E545BA10 | BA10 | 0.35 | 1.700 | 41.0 | 7 | 2.50 | 2.00 | 4 | 2 | 1.30 | 7.00 |
| E545BA8 | BA 8 | 0.43 | 2.200 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 3 | 1.80 | 9.50 |
| E545BA6 | BA 6 | 0.53 | 2.800 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 3 | 2.30 | 9.50 |
| E545BA4 | BA 4 | 0.66 | 3.600 | 50.0 | 16.5 | 3.55 | 2.80 | 5 | 3 | 3.00 | 16.50 |
| E545BA2 | BA 2 | 0.81 | 4.700 | 58.0 | 12 | 5.00 | 4.00 | 7 | 3 | 4.00 | 20.00 |

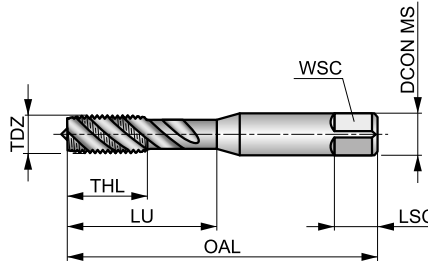


E544



HSS Spiral Flute Machine Tap, BA, ISO Standard

Machine tap with spiral flute suited for blind holes. Available with bright finish to produce more accurate and cleaner threads, preventing the workpiece material from sticking to the cutting edges or BLUE finish with steam tempered surface, which acts to retain cutting fluid and prevent chip to tool welding.



| | | |
|-----------------|-------------------|-------------------------|
| BA | ISO 529 | Normal |
| | 2xD | HSS |
| C 2-3 | | λ 40° |
| R | | Bright ST |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■ 10 | P1.2 ■ 11 | P1.3 ■ 13 | P2.1 ■ 8 | P2.2 ■ 7 | P2.3 ■ 6 | P3.1 ■ 7 | P3.2 ■ 5 | P3.3 ■ 4 | P4.1 ■ 4 | P4.2 ■ 3 | M1.1 ■ 6 | M1.2 ■ 5 | M2.1 ■ 4 |
| M2.2 ■ 5 | M2.3 ■ 5 | M3.1 ■ 5 | M3.2 ■ 4 | M3.3 ■ 3 | M4.1 ■ 2 | N1.3 ■ 5 | N2.1 ■ 12 | N2.2 ■ 10 | N2.3 ■ 8 | | | | |

| Product | TDZ | TP | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|-----------------------------|------|------|-------|------|------|---------|------|------|-----|------|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| E544BA8¹⁾ | BA 8 | 0.43 | 2.200 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 2 | 1.80 | 9.50 |
| E544BA8BLUE | BA 8 | 0.43 | 2.200 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 2 | 1.80 | 9.50 |
| E544BA6¹⁾ | BA 6 | 0.53 | 2.800 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 2 | 2.30 | 9.50 |
| E544BA6BLUE | BA 6 | 0.53 | 2.800 | 44.5 | 9.5 | 2.80 | 2.20 | 5 | 2 | 2.30 | 9.50 |
| E544BA4¹⁾ | BA 4 | 0.66 | 3.600 | 50.0 | 16.5 | 3.55 | 2.80 | 5 | 3 | 3.00 | 16.50 |
| E544BA4BLUE | BA 4 | 0.66 | 3.600 | 50.0 | 16.5 | 3.55 | 2.80 | 5 | 3 | 3.00 | 16.50 |
| E544BA2¹⁾ | BA 2 | 0.81 | 4.700 | 58.0 | 12 | 5.00 | 4.00 | 7 | 3 | 4.00 | 20.00 |
| E544BA2BLUE | BA 2 | 0.81 | 4.700 | 58.0 | 12 | 5.00 | 4.00 | 7 | 3 | 4.00 | 20.00 |

¹⁾ Bright Finish.

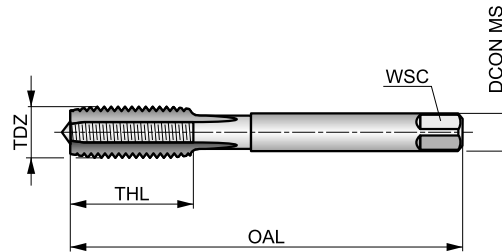


E119

DORMER

HSS Straight Flute Serial Hand Tap, G(BSP), DIN Standard

Ideal for hand tapping tough materials. The straight flute design makes it ideal for both through and blind holes. Available as a single finishing tap or as a set of two serial taps, which should be used one after the other to create the full thread.



| | | |
|-----------------|----------|----------|
| G | DIN 5157 | Normal |
| | 1.5xD | HSS |
| C 2-3 | | R |
| Bright | | |

Workpiece material group suitability.

| | | | | | | | | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| K3.1 | K3.2 | K4.1 | K4.2 | K5.1 | K5.2 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 | N2.3 | N3.1 | N3.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N3.3 | N4.2 | N4.3 | | | | | | | | | | | |
| ■ | ■ | ■ | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD |
|--------------|-------|-----|--------|-------|------|---------|-------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E1191/8N03 | 1/8 | 28 | 9.730 | 63.0 | 15 | 7.00 | 5.50 | 3 | 8.80 |
| E1191/8N09 | 1/8 | 28 | 9.730 | 63.0 | 15 | 7.00 | 5.50 | 3 | 8.80 |
| E1191/4N03 | 1/4 | 19 | 13.160 | 70.0 | 16 | 11.00 | 9.00 | 4 | 11.80 |
| E1191/4N09 | 1/4 | 19 | 13.160 | 70.0 | 16 | 11.00 | 9.00 | 4 | 11.80 |
| E1193/8N03 | 3/8 | 19 | 16.660 | 70.0 | 16 | 12.00 | 9.00 | 4 | 15.25 |
| E1193/8N09 | 3/8 | 19 | 16.660 | 70.0 | 16 | 12.00 | 9.00 | 4 | 15.25 |
| E1191/2N03 | 1/2 | 14 | 20.960 | 80.0 | 18 | 16.00 | 12.00 | 4 | 19.00 |
| E1191/2N09 | 1/2 | 14 | 20.960 | 80.0 | 18 | 16.00 | 12.00 | 4 | 19.00 |
| E1195/8N03 | 5/8 | 14 | 22.910 | 80.0 | 22 | 18.00 | 14.50 | 4 | 21.00 |
| E1195/8N09 | 5/8 | 14 | 22.910 | 80.0 | 22 | 18.00 | 14.50 | 4 | 21.00 |
| E1193/4N03 | 3/4 | 14 | 26.440 | 90.0 | 22 | 20.00 | 16.00 | 4 | 24.50 |
| E1193/4N09 | 3/4 | 14 | 26.440 | 90.0 | 22 | 20.00 | 16.00 | 4 | 24.50 |
| E1197/8N03 | 7/8 | 14 | 30.200 | 90.0 | 22 | 22.00 | 18.00 | 6 | 28.25 |
| E1197/8N09 | 7/8 | 14 | 30.200 | 90.0 | 22 | 22.00 | 18.00 | 6 | 28.25 |
| E1191N03 | 1" | 11 | 33.250 | 100.0 | 25 | 25.00 | 20.00 | 6 | 30.75 |
| E1191N09 | 1" | 11 | 33.250 | 100.0 | 25 | 25.00 | 20.00 | 6 | 30.75 |
| E1191.1/8N03 | 1.1/8 | 11 | 37.900 | 125.0 | 40 | 28.00 | 22.00 | 6 | 35.00 |
| E1191.1/8N09 | 1.1/8 | 11 | 37.900 | 125.0 | 40 | 28.00 | 22.00 | 6 | 35.00 |
| E1191.1/4N03 | 1.1/4 | 11 | 41.910 | 125.0 | 40 | 32.00 | 24.00 | 6 | 39.50 |
| E1191.1/4N09 | 1.1/4 | 11 | 41.910 | 125.0 | 40 | 32.00 | 24.00 | 6 | 39.50 |
| E1191.1/2N03 | 1.1/2 | 11 | 47.800 | 140.0 | 40 | 36.00 | 29.00 | 6 | 45.00 |
| E1191.1/2N09 | 1.1/2 | 11 | 47.800 | 140.0 | 40 | 36.00 | 29.00 | 6 | 45.00 |
| E1191.3/4N03 | 1.3/4 | 11 | 53.750 | 140.0 | 40 | 40.00 | 32.00 | 6 | 51.00 |
| E1191.3/4N09 | 1.3/4 | 11 | 53.750 | 140.0 | 40 | 40.00 | 32.00 | 6 | 51.00 |
| E1192N03 | 2" | 11 | 59.610 | 160.0 | 40 | 45.00 | 35.00 | 6 | 57.00 |
| E1192N09 | 2" | 11 | 59.610 | 160.0 | 40 | 45.00 | 35.00 | 6 | 57.00 |
| E1192.1/4N03 | 2.1/4 | 11 | 65.710 | 160.0 | 40 | 50.00 | 39.00 | 6 | 63.00 |
| E1192.1/4N09 | 2.1/4 | 11 | 65.710 | 160.0 | 40 | 50.00 | 39.00 | 6 | 63.00 |



| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | NOF | PHD |
|---------------------|-------|-----|--------|-------|------|---------|-------|------|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | |
| E1192.1/2N03 | 2.1/2 | 11 | 75.180 | 160.0 | 40 | 50.00 | 39.00 | 6 | 72.50 |
| E1192.1/2N09 | 2.1/2 | 11 | 75.180 | 160.0 | 40 | 50.00 | 39.00 | 6 | 72.50 |
| E1192.3/4N03 | 2.3/4 | 11 | 81.530 | 160.0 | 40 | 50.00 | 39.00 | 8 | 79.00 |
| E1192.3/4N09 | 2.3/4 | 11 | 81.530 | 160.0 | 40 | 50.00 | 39.00 | 8 | 79.00 |
| E1193N03 | 3" | 11 | 87.880 | 160.0 | 40 | 50.00 | 39.00 | 8 | 85.50 |
| E1193N09 | 3" | 11 | 87.880 | 160.0 | 40 | 50.00 | 39.00 | 8 | 85.50 |

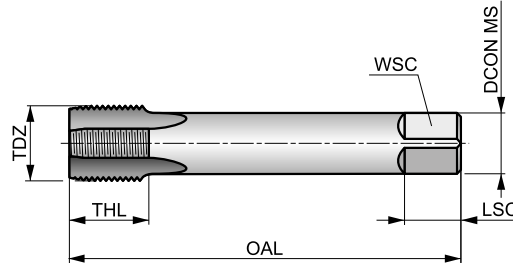


E282



HSS-E-PM Straight Flute Machine Tap G(BSP), DIN Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads, preventing the workpiece material from sticking to the cutting edges. The reduced shank increases the reach of the tap.



| | | |
|-----------------|--------------------|-------------|
| G | DIN 5156 | Normal |
| | 1.5xD | HSS-E PM |
| C 2-3 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 11 | P1.2 ■ 12 | P1.3 ■ 12 | P2.1 ■ 9 | P2.2 ■ 8 | P2.3 ▣ 7 | P3.1 ■ 7 | P3.2 ▣ 6 | P4.1 ▣ 4 | K1.1 ▣ 13 | K1.2 ▣ 10 | K1.3 ▣ 8 | K2.1 ▣ 14 | K2.2 ▣ 11 |
| K3.1 ▣ 13 | K3.2 ▣ 10 | K4.1 ▣ 12 | K4.2 ▣ 9 | K5.1 ▣ 12 | K5.2 ▣ 10 | N1.3 ▣ 12 | N2.1 ▣ 15 | N2.2 ▣ 14 | N2.3 ▣ 11 | N3.1 ▣ 21 | N3.2 ■ 14 | N4.2 ▣ 8 | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|-------------------------------|-------|-----|--------|-------|------|---------|-------|-----|-----|-------|
| | | | [mm] | [mm] | [mm] | | | | | |
| E2821/8 | 1/8 | 28 | 9.730 | 90.0 | 20 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| E2821/4 | 1/4 | 19 | 13.160 | 100.0 | 21 | 11.00 | 9.00 | 12 | 4 | 11.80 |
| E2823/8 | 3/8 | 19 | 16.660 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 15.25 |
| E2821/2 | 1/2 | 14 | 20.960 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| E2823/4 | 3/4 | 14 | 26.440 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 24.50 |
| E2821 | 1" | 11 | 33.250 | 160.0 | 30 | 25.00 | 20.00 | 23 | 4 | 30.75 |
| E2821.1/4¹⁾ | 1.1/4 | 11 | 41.910 | 170.0 | 30 | 32.00 | 24.00 | 27 | 4 | 39.50 |
| E2821.1/2¹⁾ | 1.1/2 | 11 | 47.800 | 190.0 | 32 | 36.00 | 29.00 | 32 | 6 | 45.00 |

¹⁾ HSS-E.

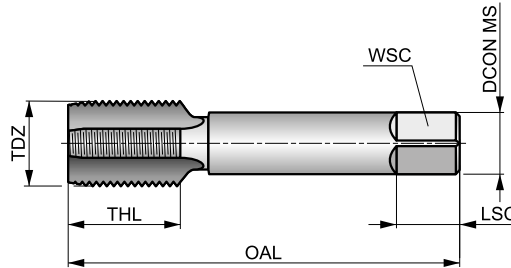


E547



HSS Straight Flute Hand Tap G(BSP), ISO Standard

A versatile tool, suitable for hand and machine tapping, with a straight flute design for both through and blind holes. Available with taper lead NO1 for short through holes, plug lead NO2 for deeper through holes or bottoming lead NO3 for blind holes. Also, as set NO7 with a plug lead and bottoming lead tap.



| | | |
|--|----------|--------|
| | ISO 2284 | Normal |
| | 1.5xD | HSS |
| | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 | K2.1 ■12 | K2.2 ■10 |
| K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|------------|-----|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E5471/8N01 | 1/8 | 28 | 9.728 | 59.0 | 15 | 8.00 | 8.00 | 9 | 4 | 8.80 |
| E5471/8N02 | 1/8 | 28 | 9.728 | 59.0 | 15 | 8.00 | 6.30 | 9 | 4 | 8.80 |
| E5471/8N03 | 1/8 | 28 | 9.728 | 59.0 | 15 | 8.00 | 6.30 | 9 | 4 | 8.80 |
| E5471/8N07 | 1/8 | 28 | 9.728 | 59.0 | 15 | 8.00 | 6.30 | 9 | 4 | 8.80 |
| E5471/4N01 | 1/4 | 19 | 13.157 | 67.0 | 19 | 10.00 | 8.00 | 11 | 4 | 11.80 |
| E5471/4N02 | 1/4 | 19 | 13.157 | 67.0 | 19 | 10.00 | 8.00 | 11 | 4 | 11.80 |
| E5471/4N03 | 1/4 | 19 | 13.157 | 67.0 | 19 | 10.00 | 8.00 | 11 | 4 | 11.80 |
| E5471/4N07 | 1/4 | 19 | 13.157 | 67.0 | 19 | 10.00 | 8.00 | 11 | 4 | 11.80 |
| E5473/8N01 | 3/8 | 19 | 16.662 | 75.0 | 21 | 12.50 | 10.00 | 13 | 4 | 15.25 |
| E5473/8N02 | 3/8 | 19 | 16.662 | 75.0 | 21 | 12.50 | 10.00 | 13 | 4 | 15.25 |
| E5473/8N03 | 3/8 | 19 | 16.662 | 75.0 | 21 | 12.50 | 10.00 | 13 | 4 | 15.25 |
| E5473/8N07 | 3/8 | 19 | 16.662 | 75.0 | 21 | 12.50 | 10.00 | 13 | 4 | 15.25 |
| E5471/2N01 | 1/2 | 14 | 20.955 | 87.0 | 26 | 16.00 | 12.50 | 16 | 4 | 19.00 |
| E5471/2N02 | 1/2 | 14 | 20.955 | 87.0 | 26 | 16.00 | 12.50 | 16 | 4 | 19.00 |
| E5471/2N03 | 1/2 | 14 | 20.955 | 87.0 | 26 | 16.00 | 12.50 | 16 | 4 | 19.00 |
| E5471/2N07 | 1/2 | 14 | 20.955 | 87.0 | 26 | 16.00 | 12.50 | 16 | 4 | 19.00 |
| E5475/8N01 | 5/8 | 14 | 22.911 | 91.0 | 26 | 18.00 | 14.00 | 18 | 4 | 21.00 |
| E5475/8N02 | 5/8 | 14 | 22.911 | 91.0 | 26 | 18.00 | 14.00 | 18 | 4 | 21.00 |
| E5475/8N03 | 5/8 | 14 | 22.911 | 91.0 | 26 | 18.00 | 14.00 | 18 | 4 | 21.00 |
| E5475/8N07 | 5/8 | 14 | 22.911 | 91.0 | 26 | 18.00 | 14.00 | 18 | 4 | 21.00 |
| E5473/4N01 | 3/4 | 14 | 26.441 | 96.0 | 28 | 20.00 | 16.00 | 20 | 4 | 24.50 |
| E5473/4N02 | 3/4 | 14 | 26.441 | 96.0 | 28 | 20.00 | 16.00 | 20 | 4 | 24.50 |
| E5473/4N03 | 3/4 | 14 | 26.441 | 96.0 | 28 | 20.00 | 16.00 | 20 | 4 | 24.50 |
| E5473/4N07 | 3/4 | 14 | 26.441 | 96.0 | 28 | 20.00 | 16.00 | 20 | 4 | 24.50 |
| E5477/8N01 | 7/8 | 14 | 30.201 | 102.0 | 29 | 22.40 | 18.00 | 22 | 4 | 28.25 |
| E5477/8N02 | 7/8 | 14 | 30.201 | 102.0 | 29 | 22.40 | 18.00 | 22 | 4 | 28.25 |
| E5477/8N03 | 7/8 | 14 | 30.201 | 102.0 | 29 | 22.40 | 18.00 | 22 | 4 | 28.25 |
| E5471N01 | 1" | 11 | 33.249 | 109.0 | 33 | 25.00 | 20.00 | 24 | 4 | 30.75 |



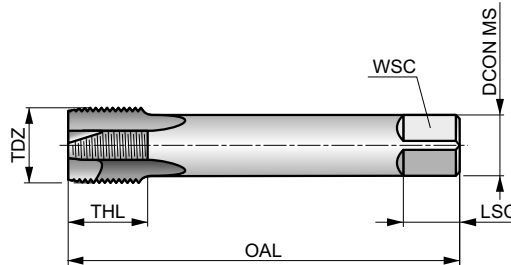
| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|---------------------|-------|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E5471N02 | 1" | 11 | 33.249 | 109.0 | 33 | 25.00 | 20.00 | 24 | 4 | 30.75 |
| E5471N03 | 1" | 11 | 33.249 | 109.0 | 33 | 25.00 | 20.00 | 24 | 4 | 30.75 |
| E5471.1/4N01 | 1.1/4 | 11 | 41.910 | 119.0 | 36 | 31.50 | 25.00 | 28 | 6 | 39.50 |
| E5471.1/4N02 | 1.1/4 | 11 | 41.910 | 119.0 | 36 | 31.50 | 25.00 | 28 | 6 | 39.50 |
| E5471.1/4N03 | 1.1/4 | 11 | 41.910 | 119.0 | 36 | 31.50 | 25.00 | 28 | 6 | 39.50 |
| E5471.1/2N01 | 1.1/2 | 11 | 47.803 | 125.0 | 37 | 35.50 | 28.00 | 31 | 6 | 45.00 |
| E5471.1/2N02 | 1.1/2 | 11 | 47.803 | 125.0 | 37 | 35.50 | 28.00 | 31 | 6 | 45.00 |
| E5471.1/2N03 | 1.1/2 | 11 | 47.803 | 125.0 | 37 | 35.50 | 28.00 | 31 | 6 | 45.00 |
| E5472N01 | 2" | 11 | 59.614 | 140.0 | 41 | 40.00 | 31.50 | 34 | 6 | 57.00 |
| E5472N02 | 2" | 11 | 59.614 | 140.0 | 41 | 40.00 | 31.50 | 34 | 6 | 57.00 |
| E5472N03 | 2" | 11 | 59.614 | 140.0 | 41 | 40.00 | 31.50 | 34 | 6 | 57.00 |



EP40

HSS-E-PM Spiral Point Machine Tap G(BSP), DIN Standard

Machine tap with spiral point suited for through holes only. Bright finish to produce more accurate and cleaner threads, preventing the workpiece material from sticking to the cutting edges. The reduced shank increases the reach of the tap.



| | | |
|-------------------|--------------------|-------------|
| G | DIN 5156 | Normal |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 22 | P1.2 ■ 24 | P1.3 ■ 25 | P2.1 ■ 18 | P2.2 ■ 16 | P2.3 ▣ 14 | P3.1 ■ 13 | P3.2 ▣ 10 | P4.1 ▣ 8 | N1.1 ■ 14 | N1.2 ■ 10 | N1.3 ■ 7 | N2.1 ■ 28 | N2.2 ■ 25 |
| N2.3 ■ 18 | N3.1 ■ 44 | N3.2 ▣ 27 | N3.3 ■ 13 | N4.1 ▣ 22 | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|---------|-----|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| EP401/8 | 1/8 | 28 | 9.728 | 90.0 | 18 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| EP401/4 | 1/4 | 19 | 13.157 | 100.0 | 21 | 11.00 | 9.00 | 12 | 3 | 11.80 |
| EP403/8 | 3/8 | 19 | 16.662 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 15.25 |
| EP401/2 | 1/2 | 14 | 20.955 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| EP405/8 | 5/8 | 14 | 22.911 | 125.0 | 24 | 18.00 | 14.50 | 17 | 4 | 21.00 |
| EP403/4 | 3/4 | 14 | 26.441 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 24.50 |
| EP407/8 | 7/8 | 14 | 30.201 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 28.25 |
| EP401 | 1" | 11 | 33.249 | 160.0 | 30 | 25.00 | 20.00 | 23 | 4 | 30.75 |

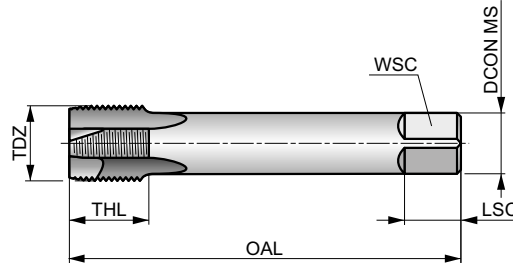


EP41



HSS-E-PM Spiral Point Machine Tap, G(BSP), DIN Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding. The reduced shank increases the reach of the tap.



| | | |
|---------|----------|----------|
| | DIN 5156 | Normal |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | |
| ST | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ▣22 | P2.2 ▣16 | P2.3 ▣14 | P3.2 ▣10 | P3.3 ▣9 | P4.1 ▣8 | P4.2 ▣16 | M1.1 ▣10 | M1.2 ▣8 | M2.1 ▣9 | M2.2 ▣7 | M3.1 ▣7 | M3.2 ▣6 | M3.3 ▣5 |
| M4.1 ▣4 | K1.1 ▣13 | K1.2 ▣10 | K1.3 ▣7 | K2.1 ▣16 | K2.2 ▣13 | K3.1 ▣14 | K3.2 ▣10 | K4.1 ▣13 | K4.2 ▣9 | K5.1 ▣15 | K5.2 ▣11 | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|---------|-----|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| EP411/8 | 1/8 | 28 | 9.728 | 90.0 | 18 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| EP411/4 | 1/4 | 19 | 13.157 | 100.0 | 21 | 11.00 | 9.00 | 12 | 3 | 11.80 |
| EP413/8 | 3/8 | 19 | 16.662 | 100.0 | 21 | 12.00 | 9.00 | 12 | 4 | 15.25 |
| EP411/2 | 1/2 | 14 | 20.955 | 125.0 | 24 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| EP415/8 | 5/8 | 14 | 22.911 | 125.0 | 24 | 18.00 | 14.50 | 17 | 4 | 21.00 |
| EP413/4 | 3/4 | 14 | 26.441 | 140.0 | 28 | 20.00 | 16.00 | 19 | 4 | 24.50 |
| EP417/8 | 7/8 | 14 | 30.201 | 150.0 | 28 | 22.00 | 18.00 | 21 | 4 | 28.25 |
| EP411 | 1" | 11 | 33.249 | 160.0 | 30 | 25.00 | 20.00 | 23 | 4 | 30.75 |

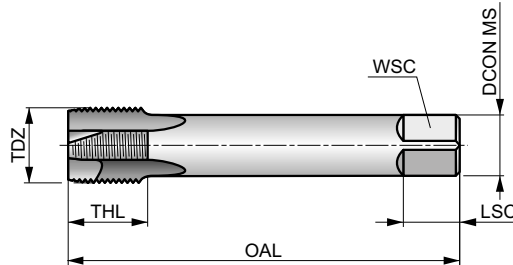


E041



HSS-E-PM Spiral Point Machine Tap, G(BSP), ISO Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding. The reduced shank increases the reach of the tap.



| | | |
|-------------------|----------------------|-----------------|
| G | ISO DORMER | Normal |
| | 2.5xD | HSS-E PM |
| B 3.5-5 | | R |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 □22 | P2.2 □16 | P2.3 ■14 | P3.2 ■10 | P3.3 □9 | P4.1 ■8 | P4.2 □6 | M1.1 □10 | M1.2 □8 | M2.1 □9 | M2.2 □7 | M3.1 □7 | M3.2 □6 | M3.3 □5 |
| M4.1 □4 | K1.1 □13 | K1.2 □10 | K1.3 □7 | K2.1 □16 | K2.2 □13 | K3.1 □14 | K3.2 □10 | K4.1 □13 | K4.2 □9 | K5.1 □15 | K5.2 □11 | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|----------------|-----|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E0411/8 | 1/8 | 28 | 9.728 | 90.0 | 15 | 8.00 | 6.30 | 9 | 3 | 8.80 |
| E0411/4 | 1/4 | 19 | 13.157 | 100.0 | 19 | 10.00 | 8.00 | 11 | 3 | 11.80 |
| E0413/8 | 3/8 | 19 | 16.662 | 100.0 | 21 | 12.50 | 10.00 | 13 | 3 | 15.25 |
| E0411/2 | 1/2 | 14 | 20.955 | 125.0 | 26 | 16.00 | 12.50 | 16 | 4 | 19.00 |
| E0413/4 | 3/4 | 14 | 26.441 | 140.0 | 28 | 20.00 | 16.00 | 20 | 4 | 24.50 |

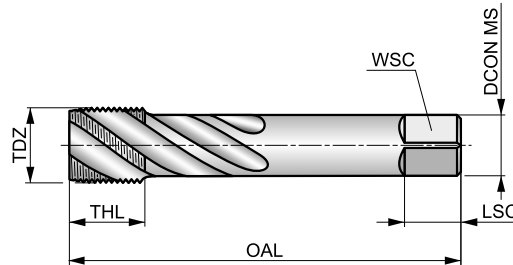


EX40



HSS-E-PM Spiral Flute Machine Tap, UNC, DIN Standard

Machine tap with spiral flute suited for blind holes. Bright finish to produce more accurate and cleaner threads preventing the workpiece material from sticking to the cutting edges.



| | | |
|-----------------|------------------|--------|
| G | DIN 5156 | Normal |
| 2.5xD | HSS-E PM | |
| C 2-3 | λ 45° | |
| R | Bright | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 21 | P1.2 ■ 23 | P1.3 ■ 24 | P2.1 ■ 17 | P2.2 ■ 15 | P2.3 ■ 13 | P3.1 ■ 12 | P3.2 ■ 9 | P4.1 ■ 7 | N1.1 ■ 13 | N1.2 ■ 9 | N1.3 ■ 6 | N2.1 ■ 27 | N2.2 ■ 24 |
| N2.3 ■ 17 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|-------------------------|-------|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| EX401/8 | 1/8 | 28 | 9.728 | 90.0 | 13 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| EX401/4 | 1/4 | 19 | 13.157 | 100.0 | 15 | 11.00 | 9.00 | 12 | 3 | 11.80 |
| EX403/8 | 3/8 | 19 | 16.662 | 100.0 | 15 | 12.00 | 9.00 | 12 | 4 | 15.25 |
| EX401/2 | 1/2 | 14 | 20.955 | 125.0 | 18 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| EX405/8 | 5/8 | 14 | 22.911 | 125.0 | 18 | 18.00 | 14.50 | 17 | 4 | 21.00 |
| EX403/4 | 3/4 | 14 | 26.441 | 140.0 | 20 | 20.00 | 16.00 | 19 | 4 | 24.50 |
| EX407/8 | 7/8 | 14 | 30.201 | 150.0 | 20 | 22.00 | 18.00 | 21 | 4 | 28.25 |
| EX401 | 1" | 11 | 33.249 | 160.0 | 22 | 25.00 | 20.00 | 23 | 4 | 30.75 |
| EX401.1/8 | 1.1/8 | 11 | 37.897 | 170.0 | 22 | 28.00 | 22.00 | 25 | 4 | 35.00 |
| EX401.1/4 ¹⁾ | 1.1/4 | 11 | 41.910 | 170.0 | 22 | 32.00 | 24.00 | 27 | 4 | 39.50 |
| EX401.1/2 ¹⁾ | 1.1/2 | 11 | 47.803 | 190.0 | 23 | 36.00 | 29.00 | 32 | 4 | 45.00 |

¹⁾ HSS-E.

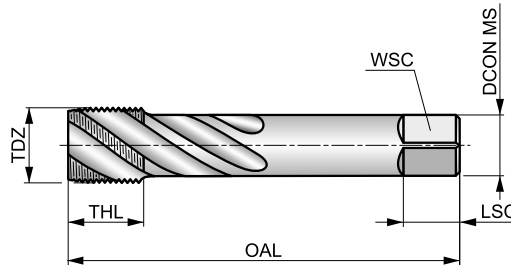


EX41



HSS-E-PM Spiral Flute Machine Tap, G(BSP), DIN Standard

Machine tap with spiral flute suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding. The reduced shank increases the reach of the tap.



| | | |
|-----------------|--------------------|-------------------------|
| G | DIN 5156 | Normal |
| | 2.5xD | HSS-E PM |
| C 2-3 | | λ 45° |
| R | | ST |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 ▣21 | P2.2 ▣15 | P2.3 ▣13 | P3.2 ▣9 | P3.3 ▣8 | P4.1 ▣7 | P4.2 ▣5 | M1.1 ▣8 | M1.2 ▣6 | M2.1 ▣7 | M2.2 ▣5 | M3.1 ▣5 | M3.2 ▣4 | M3.3 ▣3 |
| M4.1 ▣3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|-------------------------|-------|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| EX411/8 | 1/8 | 28 | 9.728 | 90.0 | 13 | 7.00 | 5.50 | 8 | 3 | 8.80 |
| EX411/4 | 1/4 | 19 | 13.157 | 100.0 | 15 | 11.00 | 9.00 | 12 | 3 | 11.80 |
| EX413/8 | 3/8 | 19 | 16.662 | 100.0 | 15 | 12.00 | 9.00 | 12 | 4 | 15.25 |
| EX411/2 | 1/2 | 14 | 20.955 | 125.0 | 18 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| EX415/8 | 5/8 | 14 | 22.911 | 125.0 | 18 | 18.00 | 14.50 | 17 | 4 | 21.00 |
| EX413/4 | 3/4 | 14 | 26.441 | 140.0 | 20 | 20.00 | 16.00 | 19 | 4 | 24.50 |
| EX417/8 | 7/8 | 14 | 30.201 | 150.0 | 20 | 22.00 | 18.00 | 21 | 4 | 28.25 |
| EX411 | 1" | 11 | 33.249 | 160.0 | 22 | 25.00 | 20.00 | 23 | 4 | 30.75 |
| EX411.1/8 | 1.1/8 | 11 | 37.897 | 170.0 | 22 | 28.00 | 22.00 | 25 | 4 | 35.00 |
| EX411.1/4 ¹⁾ | 1.1/4 | 11 | 41.910 | 170.0 | 22 | 32.00 | 24.00 | 27 | 4 | 39.50 |
| EX411.1/2 ¹⁾ | 1.1/2 | 11 | 47.803 | 190.0 | 23 | 36.00 | 29.00 | 32 | 4 | 45.00 |

¹⁾ HSS-E

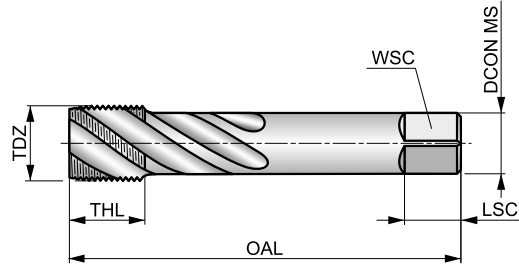


E043

DORMER

HSS-E-PM Spiral Flute Machine tap, G(BSP), ISO Standard

Machine tap with spiral flute suited for blind holes. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding. The reduced shank increases the reach of the tap.



| | | |
|----------|---------------|------------------|
| | ISO DORMER | Normal |
| | 2.5xD | HSS-E PM |
| C 2-3 | | λ 45° |
| R | ST | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 ▣21 | P2.2 ▣15 | P2.3 ▣13 | P3.2 ▣9 | P3.3 ▣8 | P4.1 ▣7 | P4.2 ▣5 | M1.1 ▣8 | M1.2 ▣6 | M2.1 ▣7 | M2.2 ▣5 | M3.1 ▣5 | M3.2 ▣4 | M3.3 ▣3 |
| M4.1 ▣3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|----------------|-----|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E0431/8 | 1/8 | 28 | 9.728 | 90.0 | 15 | 8.00 | 6.30 | 9 | 3 | 8.80 |
| E0431/4 | 1/4 | 19 | 13.157 | 100.0 | 19 | 10.00 | 8.00 | 11 | 3 | 11.80 |
| E0433/8 | 3/8 | 19 | 16.662 | 100.0 | 21 | 12.50 | 10.00 | 13 | 4 | 15.25 |
| E0431/2 | 1/2 | 14 | 20.955 | 125.0 | 26 | 16.00 | 12.50 | 16 | 4 | 19.00 |
| E0433/4 | 3/4 | 14 | 26.441 | 140.0 | 28 | 20.00 | 16.00 | 20 | 4 | 24.50 |



E620

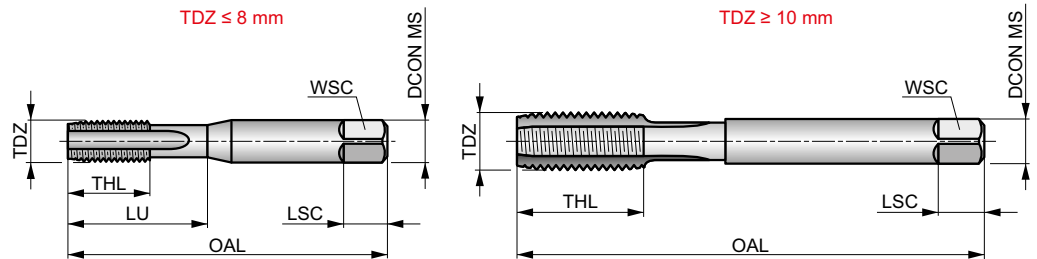


HSS Straight Flute Machine Tap, Metric for Helicoil Insert, ISO Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads for Screw-Thread-Inserts. These STIs are inserted into the threaded hole, produced with this tap, to reinforce the original thread or repair damaged ones.



| | | |
|-----------------|--------------|------------|
| | | 6H |
| | 1.5xD | HSS |
| C 2-3 | | |
| Bright | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 | K2.1 ■12 | K2.2 ■10 |
| K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TP | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|----------------|-----|------|--------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | [mm] | [mm] | | | | | | | | |
| E620M3 | 3 | 0.50 | 3.650 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.20 | 14.00 |
| E620M4 | 4 | 0.70 | 4.910 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 20.00 |
| E620M5 | 5 | 0.80 | 6.040 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.20 | 26.00 |
| E620M6 | 6 | 1.00 | 7.300 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.30 | 29.00 |
| E620M8 | 8 | 1.25 | 9.620 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.40 | 32.00 |
| E620M10 | 10 | 1.50 | 11.950 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.50 | – |
| E620M12 | 12 | 1.75 | 14.270 | 95.0 | 24 | 11.20 | 9.00 | 12 | 4 | 12.50 | – |
| E620M14 | 14 | 2.00 | 16.600 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 14.50 | – |
| E620M16 | 16 | 2.00 | 18.600 | 112.0 | 29 | 14.00 | 11.20 | 14 | 4 | 16.50 | – |



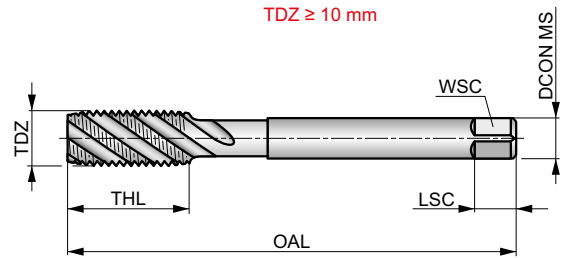
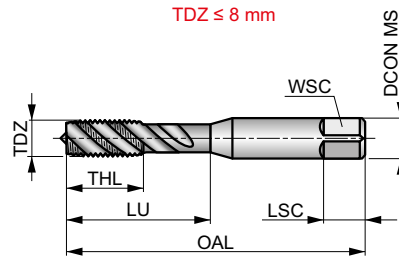
E621



HSS Spiral Flute Machine Tap, Metric for Helicoil Insert, ISO Standard

Machine tap with spiral flute suited for blind holes. Bright finish to produce more accurate and cleaner threads for Screw-Thread-Inserts. These STIs are inserted into the threaded hole, produced with this tap, to reinforce the original thread or repair damaged ones.

| | | |
|--|--|--|
| | | |
| | | |
| | | |
| | | |



Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|--------------------|
| P1.1 ■ 10 | P1.2 ■ 11 | P1.3 ■ 13 | P2.1 ■ 8 | P2.2 ■ 7 | P2.3 ▣ 6 | P3.1 ■ 7 | P3.2 ▣ 5 | P4.1 ▣ 4 | N1.3 ▣ 5 | N2.1 ▣ 12 | N2.2 ▣ 10 | N2.3 ▣ 8 |
|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|--------------------|

| Product | TDZ | TP | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD | LU |
|---------|-----|------|--------|-------|-----|---------|-------|-----|-----|-------|-------|
| | | | | | | | | | | | |
| E621M3 | 3 | 0.50 | 3.650 | 53.0 | 14 | 4.00 | 3.15 | 6 | 3 | 3.20 | 14.00 |
| E621M4 | 4 | 0.70 | 4.910 | 58.0 | 11 | 5.00 | 4.00 | 7 | 3 | 4.20 | 20.00 |
| E621M5 | 5 | 0.80 | 6.040 | 66.0 | 13 | 6.30 | 5.00 | 8 | 3 | 5.20 | 26.00 |
| E621M6 | 6 | 1.00 | 7.300 | 72.0 | 16 | 8.00 | 6.30 | 9 | 3 | 6.30 | 31.00 |
| E621M8 | 8 | 1.25 | 9.620 | 80.0 | 18 | 10.00 | 8.00 | 11 | 3 | 8.40 | 34.00 |
| E621M10 | 10 | 1.50 | 11.950 | 89.0 | 22 | 9.00 | 7.10 | 10 | 3 | 10.50 | — |
| E621M12 | 12 | 1.75 | 14.270 | 95.0 | 24 | 11.20 | 9.00 | 12 | 3 | 12.50 | — |
| E621M14 | 14 | 2.00 | 16.600 | 112.0 | 29 | 14.00 | 11.20 | 14 | 3 | 14.50 | — |
| E621M16 | 16 | 2.00 | 18.600 | 112.0 | 29 | 14.00 | 11.20 | 14 | 3 | 16.50 | — |

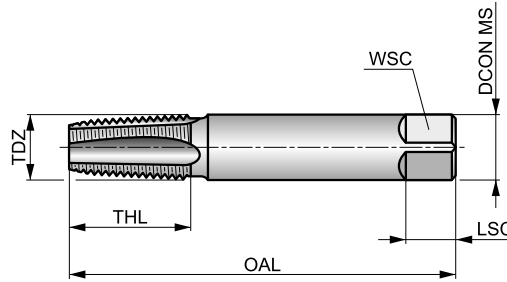


E550



HSS Straight Flute Serial Hand Tap, Rc(BSPT), ISO Standard

Ideal for hand tapping tough materials. The straight flute design makes it ideal for both through and blind holes. Available as a single finishing tap or as a set of two serial taps, which should be used one after the other to create the full thread.



| | | |
|--------|--------------------|--------|
| | ISO 2284 | Normal |
| | 1.5xD | HSS |
| | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|-------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ▣4 | P3.1 ■4 | P3.2 ▣4 | P4.1 ▣3 | M1.1 ▣5 | M1.2 ▣4 | M2.1 ▣5 | M2.2 ▣4 | M3.1 ▣5 |
| M3.2 ▣4 | M3.3 ▣3 | M4.1 ▣3 | K1.1 ▣6 | K1.2 ▣4 | K1.3 ▣3 | K2.1 ▣7 | K2.2 ▣6 | K3.1 ▣7 | K3.2 ▣5 | K4.1 ▣6 | K4.2 ▣5 | K5.1 ▣7 | K5.2 ▣5 |
| N1.3 ▣8 | N2.1 ▣11 | N2.2 ▣10 | N2.3 ▣7 | N3.1 ■17 | N3.2 ■10 | N3.3 ▣5 | N4.2 ▣5 | N4.3 ▣3 | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|------------|-------|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E5501/8 | 1/8 | 28 | 9.728 | 59.0 | 15 | 8.00 | 6.30 | 9 | 3 | 8.40 |
| E5501/8N07 | 1/8 | 28 | 9.728 | 59.0 | 15 | 8.00 | 6.30 | 9 | 3 | 8.40 |
| E5501/4 | 1/4 | 19 | 13.157 | 67.0 | 19 | 10.00 | 8.00 | 11 | 3 | 11.20 |
| E5501/4N07 | 1/4 | 19 | 13.157 | 67.0 | 19 | 10.00 | 8.00 | 11 | 3 | 11.20 |
| E5503/8 | 3/8 | 19 | 16.662 | 75.0 | 21 | 12.50 | 10.00 | 13 | 3 | 14.75 |
| E5503/8N07 | 3/8 | 19 | 16.662 | 75.0 | 21 | 12.50 | 10.00 | 13 | 3 | 14.75 |
| E5501/2 | 1/2 | 14 | 20.955 | 87.0 | 26 | 16.00 | 12.50 | 16 | 5 | 18.25 |
| E5501/2N07 | 1/2 | 14 | 20.955 | 87.0 | 26 | 16.00 | 12.50 | 16 | 5 | 18.25 |
| E5503/4 | 3/4 | 14 | 26.441 | 96.0 | 28 | 20.00 | 16.00 | 20 | 5 | 23.75 |
| E5503/4N07 | 3/4 | 14 | 26.441 | 96.0 | 28 | 20.00 | 16.00 | 20 | 5 | 23.75 |
| E5501 | 1" | 11 | 33.249 | 109.0 | 33 | 25.00 | 20.00 | 24 | 5 | 30.00 |
| E5501.1/4 | 1.1/4 | 11 | 41.910 | 119.0 | 36 | 31.50 | 25.00 | 28 | 5 | 38.50 |
| E5501.1/2 | 1.1/2 | 11 | 47.803 | 125.0 | 37 | 35.50 | 28.00 | 31 | 7 | 44.50 |
| E5502 | 2" | 11 | 59.614 | 140.0 | 41 | 40.00 | 31.50 | 34 | 7 | 56.00 |

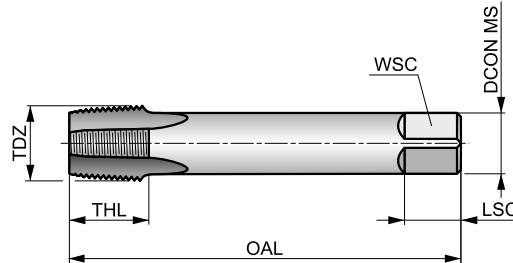


E714



HSS-E-PM Straight Flute Machine Tap, NPT, ANSI Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads, preventing the workpiece material from sticking to the cutting edges.



| | | |
|--|--|----------|
| | | Normal |
| | | HSS-E PM |
| | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| P1.1 ■ 8 | P1.2 ■ 9 | P1.3 ■ 9 | P2.1 ■ 7 | P2.2 ■ 6 | P2.3 ▣ 5 | P3.1 ■ 4 | P3.2 ▣ 4 | P3.3 ▣ 3 | P4.1 ■ 3 | P4.2 ▣ 2 | K1.1 ▣ 6 | K1.2 ▣ 4 | K1.3 ▣ 3 |
| K2.1 ▣ 7 | K2.2 ▣ 6 | K3.1 ▣ 7 | K3.2 ▣ 5 | K4.1 ▣ 6 | K4.2 ▣ 5 | K5.1 ▣ 7 | K5.2 ▣ 5 | N1.3 ▣ 9 | N2.1 ▣ 12 | N2.2 ▣ 11 | N2.3 ▣ 8 | N3.1 ■ 18 | N3.2 ■ 11 |

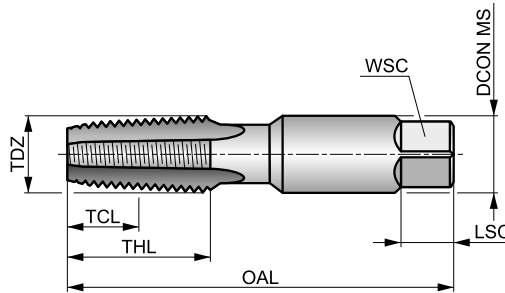
| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|---------|-----|------|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E7141/8 | 1/8 | 27 | 10.230 | 90.0 | 14 | 11.00 | 9.00 | 12 | 3 | 8.50 |
| E7141/4 | 1/4 | 18 | 13.600 | 100.0 | 20 | 14.00 | 11.00 | 14 | 3 | 11.00 |
| E7143/8 | 3/8 | 18 | 17.040 | 110.0 | 20 | 16.00 | 12.00 | 15 | 4 | 14.50 |
| E7141/2 | 1/2 | 14 | 21.200 | 125.0 | 26 | 18.00 | 14.50 | 17 | 4 | 18.00 |
| E7143/4 | 3/4 | 14 | 26.540 | 140.0 | 26 | 22.00 | 18.00 | 21 | 5 | 23.00 |
| E7141 | 1" | 11.5 | 33.200 | 150.0 | 31 | 28.00 | 22.00 | 25 | 5 | 29.00 |



E710

HSS Straight Flute Serial Hand Tap, NPT, ANSI Standard

Ideal for hand tapping tough materials. The straight flute design makes it ideal for both through and blind holes. Available as a single finishing tap or as a set of two serial taps, which should be used one after the other to create the full thread.



| | | |
|--|----------------------|--------|
| | ANSI B94.9 | Normal |
| | 1.5xD | HSS |
| | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■6 | K1.2 ■4 | K1.3 ■3 | K2.1 ■7 | K2.2 ■6 |
| K3.1 ■7 | K3.2 ■5 | K4.1 ■6 | K4.2 ■5 | K5.1 ■7 | K5.2 ■5 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | TCL | DCON MS | WSC | LSC | NOF | PHD |
|--------------------|-------|------|--------|-------|------|-------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E7101/16N03 | 1/16 | 27 | 7.940 | 65.0 | 17 | 11.70 | 8.10 | 6.00 | 8 | 4 | 6.30 |
| E7101/8 | 1/8 | 27 | 10.290 | 70.0 | 19 | 11.90 | 11.10 | 8.30 | 10 | 4 | 8.50 |
| E7101/8N07 | 1/8 | 27 | 10.290 | 70.0 | 19 | 11.90 | 11.10 | 8.30 | 10 | 4 | 8.50 |
| E7101/4 | 1/4 | 18 | 13.720 | 75.0 | 27 | 17.60 | 14.30 | 10.70 | 11 | 4 | 11.00 |
| E7101/4N07 | 1/4 | 18 | 13.720 | 75.0 | 27 | 17.60 | 14.30 | 10.70 | 11 | 4 | 11.00 |
| E7103/8 | 3/8 | 18 | 17.150 | 80.0 | 27 | 19.50 | 17.80 | 13.50 | 13 | 4 | 14.50 |
| E7103/8N07 | 3/8 | 18 | 17.150 | 80.0 | 27 | 19.50 | 17.80 | 13.50 | 13 | 4 | 14.50 |
| E7101/2 | 1/2 | 14 | 21.340 | 100.0 | 35 | 22.70 | 17.50 | 13.10 | 16 | 4 | 18.00 |
| E7101/2N07 | 1/2 | 14 | 21.340 | 100.0 | 35 | 22.70 | 17.50 | 13.10 | 16 | 4 | 18.00 |
| E7103/4 | 3/4 | 14 | 26.670 | 105.0 | 35 | 24.40 | 23.00 | 17.20 | 17 | 5 | 23.00 |
| E7103/4N07 | 3/4 | 14 | 26.670 | 105.0 | 35 | 24.40 | 23.00 | 17.20 | 17 | 5 | 23.00 |
| E7101 | 1" | 11.5 | 33.400 | 115.0 | 43 | 29.40 | 28.60 | 21.40 | 21 | 5 | 29.00 |
| E7101.1/4 | 1.1/4 | 11.5 | 42.160 | 125.0 | 43 | 27.70 | 33.30 | 25.00 | 24 | 5 | 38.00 |
| E7101.1/2 | 1.1/2 | 11.5 | 48.260 | 135.0 | 43 | 28.90 | 38.10 | 28.60 | 25 | 7 | 44.00 |
| E7102 | 2" | 11.5 | 60.330 | 145.0 | 43 | 26.60 | 47.60 | 35.70 | 29 | 7 | 56.00 |

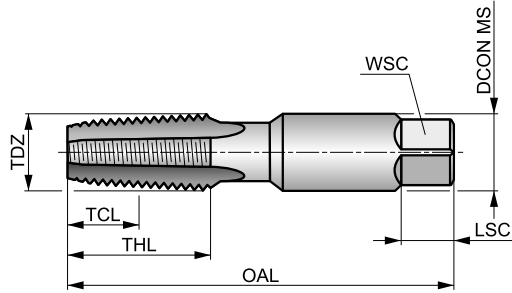


E721



HSS Straight Flute Hand Tap with TiN Coating, NPT, ANSI Standard

A versatile tool, suitable for machine and also hand tapping. With a straight flute design and bottoming lead for blind and through holes. TiN coated to improve performance and extend tool life.



| | | |
|--|------------|--------|
| | ANSI B94.9 | Normal |
| | 1.5xD | HSS |
| | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ▣12 | P1.2 ▣13 | P1.3 ■13 | P2.1 ▣12 | P2.2 ■11 | P2.3 ▣9 | P3.1 ▣7 | P3.2 ■6 | P3.3 ▣4 | P4.1 ■5 | P4.2 ▣3 | K1.1 ■12 | K1.2 ■9 | K1.3 ■7 |
| K2.1 ■12 | K2.2 ■10 | K3.1 ■11 | K3.2 ■8 | K4.1 ■10 | K4.2 ■8 | K5.1 ■11 | K5.2 ■9 | N1.3 ▣10 | N2.1 ▣17 | N2.2 ▣15 | N2.3 ■11 | N3.1 ■19 | N3.2 ■11 |
| N3.3 ▣6 | N4.2 ▣7 | N4.3 ▣5 | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | TCL | DCON MS | WSC | LSC | NOF | PHD |
|---------|-----|------|--------|-------|------|-------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E7211/8 | 1/8 | 27 | 10.290 | 70.0 | 19 | 11.90 | 11.10 | 8.30 | 10 | 4 | 8.50 |
| E7211/4 | 1/4 | 18 | 13.720 | 75.0 | 27 | 17.60 | 14.30 | 10.70 | 11 | 4 | 11.00 |
| E7213/8 | 3/8 | 18 | 17.150 | 80.0 | 27 | 19.50 | 17.80 | 13.50 | 13 | 4 | 14.50 |
| E7211/2 | 1/2 | 14 | 21.340 | 100.0 | 35 | 22.70 | 17.50 | 13.10 | 16 | 4 | 18.00 |
| E7213/4 | 3/4 | 14 | 26.670 | 105.0 | 35 | 24.40 | 23.00 | 17.20 | 17 | 5 | 23.00 |
| E7211 | 1" | 11.5 | 33.400 | 115.0 | 43 | 29.40 | 28.60 | 21.40 | 21 | 5 | 29.00 |

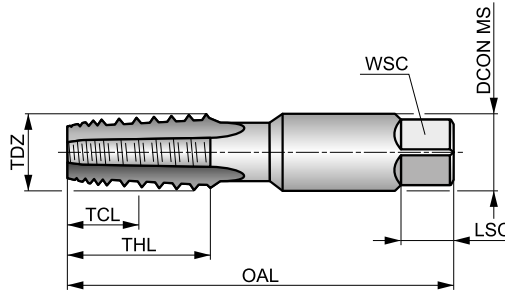


E711



HSS Straight Flute Interrupted Thread Hand Tap, NPT, ANSI Standard

A versatile tool, suitable for machine and also hand tapping. Interrupted threads lessen the damaging effects of chip wedging on both forward and reverse rotation and reduce friction, permit better lubrication and allow more space for the passage of chips. The reduced shank increases the reach of the tap.



| | | |
|--------|----------------------|--------|
| | ANSI B94.9 | Normal |
| | 1.5xD | HSS |
| | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ▣7 | P1.2 ▣7 | P1.3 ▣8 | P2.1 ▣6 | P2.2 ▣5 | P2.3 ▣4 | P3.1 ▣4 | P3.2 ▣4 | P4.1 ▣3 | K1.1 ▣6 | K1.2 ▣4 | K1.3 ▣3 | K2.1 ▣7 | K2.2 ▣6 |
| K3.1 ▣7 | K3.2 ▣5 | K4.1 ▣6 | K4.2 ▣5 | K5.1 ▣7 | K5.2 ▣5 | N1.3 ▣8 | N2.1 ▣11 | N2.2 ▣10 | N2.3 ▣7 | N3.1 ▣17 | N3.2 ▣10 | N3.3 ▣5 | N4.2 ▣5 |
| N4.3 ▣3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | TCL | DCON MS | WSC | LSC | NOF | PHD |
|------------------|-------|------|--------|-------|------|-------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E7111/8 | 1/8 | 27 | 10.290 | 70.0 | 19 | 11.90 | 11.10 | 8.30 | 10 | 5 | 8.50 |
| E7111/4 | 1/4 | 18 | 13.720 | 75.0 | 27 | 17.60 | 14.30 | 10.70 | 11 | 5 | 11.00 |
| E7113/8 | 3/8 | 18 | 17.150 | 80.0 | 27 | 19.50 | 17.80 | 13.50 | 13 | 5 | 14.50 |
| E7111/2 | 1/2 | 14 | 21.330 | 100.0 | 35 | 22.70 | 17.50 | 13.10 | 16 | 5 | 18.00 |
| E7113/4 | 3/4 | 14 | 26.670 | 105.0 | 35 | 24.40 | 23.00 | 17.20 | 17 | 5 | 23.00 |
| E7111 | 1" | 11.5 | 33.400 | 115.0 | 43 | 29.40 | 28.60 | 21.40 | 21 | 5 | 29.00 |
| E7111.1/2 | 1.1/2 | 11.5 | 48.260 | 135.0 | 43 | 28.90 | 38.10 | 28.60 | 25 | 7 | 44.00 |

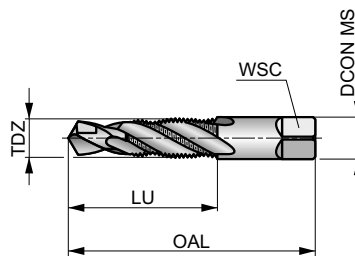


E653



HSS Drill-Tap Combination Tool with 27° Spiral Flute, NPT, ANSI Standard

Combination of a core-hole drill and tap to produce a thread in one pass. This significantly reduces the time needed to produce the thread on site with the use of a hand-held power tool. There is no need for a tap wrench or tool change. Steam tempered surface acts to retain the lubricant and provide smoother cutting.



| | | |
|--|----------|--------|
| | ANSI | Normal |
| | 1.5×D | HSS |
| | λ 27° | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| Product | TDZ | TPI | TD | OAL | LU | DCON MS | WSC | NOF | | | |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| | | | [inch] | [inch] | [inch] | [inch] | [inch] | | | | |
| P1.1 ■ 18 | P1.2 ■ 20 | P1.3 ■ 22 | P2.1 ■ 20 | P2.2 ■ 18 | P3.1 ■ 15 | P3.2 ■ 12 | N1.2 ■ 14 | N1.3 ■ 9 | N3.1 ■ 20 | N3.2 ■ 15 | N4.1 ■ 25 |
| E6531/8 | 1/8 | 27 | 0.3346 | 2.7/8 | 3/4 | 0.4370 | 0.3280 | 2 | | | |
| E6531/4 | 1/4 | 18 | 0.4331 | 3.5/16 | 1.1/16 | 0.5620 | 0.4210 | 2 | | | |
| E6533/8 | 3/8 | 18 | 0.5709 | 3.1/2 | 1.1/16 | 0.7000 | 0.5310 | 2 | | | |
| E6531/2 | 1/2 | 14 | 0.7087 | 4.3/8 | 1.3/8 | 0.6870 | 0.5150 | 2 | | | |
| E6533/4 | 3/4 | 14 | 0.9055 | 4.9/16 | 1.3/8 | 0.9060 | 0.6790 | 2 | | | |
| E6531 | 1" | 11.5 | 1.1417 | 5.3/8 | 1.3/4 | 1.1250 | 0.8430 | 2 | | | |

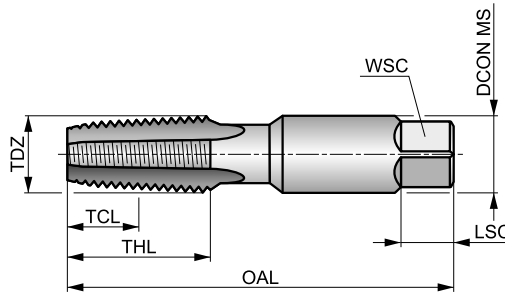


E712



HSS Straight Flute Hand Tap, NPTF, ANSI Standard

A versatile tool, suitable for machine and also hand tapping. With a straight flute design and bottoming lead for blind and through holes. Bright finish to produce more accurate and cleaner threads, preventing the workpiece material from sticking to the cutting edges.



| | | |
|--------|----------------------|--------|
| | ANSI B94.9 | Normal |
| | 1.5xD | HSS |
| | | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ■4 | P3.1 ■4 | P3.2 ■4 | P4.1 ■3 | K1.1 ■6 | K1.2 ■4 | K1.3 ■3 | K2.1 ■7 | K2.2 ■6 |
| K3.1 ■7 | K3.2 ■5 | K4.1 ■6 | K4.2 ■5 | K5.1 ■7 | K5.2 ■5 | N1.3 ■8 | N2.1 ■11 | N2.2 ■10 | N2.3 ■7 | N3.1 ■17 | N3.2 ■10 | N3.3 ■5 | N4.2 ■5 |
| N4.3 ■3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | TCL | DCON MS | WSC | LSC | NOF | PHD |
|------------------|-------|------|--------|-------|------|-------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E7121/16 | 1/16 | 27 | 7.940 | 65.0 | 17 | 11.70 | 8.10 | 6.00 | 8 | 4 | 6.20 |
| E7121/8 | 1/8 | 27 | 10.290 | 70.0 | 19 | 11.90 | 11.10 | 8.30 | 10 | 4 | 8.40 |
| E7121/4 | 1/4 | 18 | 13.720 | 75.0 | 27 | 17.60 | 14.30 | 10.70 | 11 | 4 | 10.90 |
| E7123/8 | 3/8 | 18 | 17.150 | 80.0 | 27 | 19.50 | 17.80 | 13.50 | 13 | 4 | 14.25 |
| E7121/2 | 1/2 | 14 | 21.340 | 100.0 | 35 | 22.70 | 17.50 | 13.10 | 16 | 4 | 17.75 |
| E7123/4 | 3/4 | 14 | 26.670 | 105.0 | 35 | 24.40 | 23.00 | 17.20 | 17 | 5 | 23.00 |
| E7121 | 1" | 11.5 | 33.400 | 115.0 | 43 | 29.40 | 28.60 | 21.40 | 21 | 5 | 29.00 |
| E7121.1/4 | 1.1/4 | 11.5 | 42.160 | 125.0 | 43 | 27.70 | 33.40 | 24.90 | 23 | 5 | 37.75 |

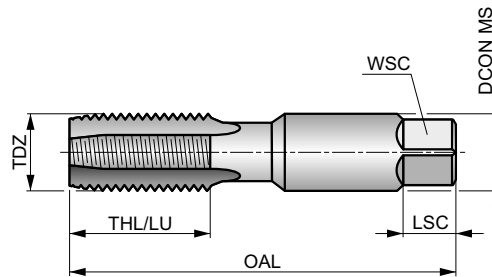


E709



HSS Straight Flute Machine Tap, NPSF, ANSI Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads, preventing the workpiece material from sticking to the cutting edges.



| | | |
|--|----------------------|--------|
| | ANSI B94.9 | Normal |
| | 1.5xD | HSS |
| | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|--------------------|
| P1.1 ■ 7 | P1.2 ■ 7 | P1.3 ■ 8 | P2.1 ■ 6 | P2.2 ■ 5 | P2.3 ▣ 4 | P3.1 ■ 4 | P3.2 ▣ 4 | P4.1 ▣ 3 | K1.1 ▣ 6 | K1.2 ▣ 4 | K1.3 ▣ 3 | K2.1 ▣ 7 | K2.2 ▣ 6 |
| K3.1 ▣ 7 | K3.2 ▣ 5 | K4.1 ▣ 6 | K4.2 ▣ 5 | K5.1 ▣ 7 | K5.2 ▣ 5 | N1.3 ▣ 8 | N2.1 ▣ 11 | N2.2 ▣ 10 | N2.3 ▣ 7 | N3.1 ■ 17 | N3.2 ■ 10 | N3.3 ▣ 5 | N4.2 ▣ 5 |
| N4.3 ▣ 3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | LU | DCON MS | WSC | LSC | NOF | PHD |
|----------------|-----|-----|--------|-------|------|-------|---------|-------|-----|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | | | | | |
| E7091/8 | 1/8 | 27 | 10.290 | 70.0 | 19 | 19.00 | 11.10 | 8.30 | 10 | 4 | 8.70 |
| E7091/4 | 1/4 | 18 | 13.720 | 75.0 | 27 | 27.00 | 14.30 | 10.70 | 11 | 4 | 11.30 |
| E7093/8 | 3/8 | 18 | 17.150 | 80.0 | 27 | 27.00 | 17.80 | 13.50 | 13 | 4 | 14.75 |
| E7091/2 | 1/2 | 14 | 21.340 | 100.0 | 35 | – | 17.50 | 13.10 | 16 | 4 | 18.25 |
| E7093/4 | 3/4 | 14 | 26.670 | 105.0 | 35 | – | 23.00 | 17.20 | 17 | 5 | 23.50 |

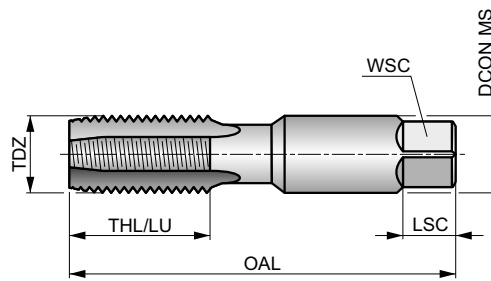


E720



HSS Straight Flute Machine Tap with TiN Coating, NPSF, ANSI Standard

General purpose straight flute machine tap for through and blind holes. TiN coated to improve performance and extend tool life.



| | | |
|--|----------------------|--------|
| | ANSI B94.9 | Normal |
| | 1.5xD | HSS |
| | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| P1.1 ▣8 | P1.2 ▣9 | P1.3 ▣9 | P2.1 ▣7 | P2.2 ▣6 | P2.3 ▣5 | P3.1 ▣4 | P3.2 ▣4 | P3.3 ▣3 | P4.1 ▣3 | P4.2 ▣2 | K1.1 ▣12 | K1.2 ▣9 | K1.3 ▣7 |
| K2.1 ▣12 | K2.2 ▣10 | K3.1 ▣11 | K3.2 ▣8 | K4.1 ▣10 | K4.2 ▣8 | K5.1 ▣11 | K5.2 ▣9 | N1.3 ▣10 | N2.1 ▣17 | N2.2 ▣15 | N2.3 ▣11 | N3.1 ▣19 | N3.2 ▣11 |
| N3.3 ▣6 | N4.2 ▣7 | N4.3 ▣5 | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | LU | DCON MS | WSC | LSC | NOF | PHD |
|-------------------|-----|-----|--------|-------|------|-------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| E7201/8N03 | 1/8 | 27 | 10.290 | 70.0 | 19 | 19.00 | 11.10 | 8.30 | 10 | 4 | 8.70 |
| E7201/4N03 | 1/4 | 18 | 13.720 | 75.0 | 27 | 27.00 | 14.30 | 10.70 | 11 | 4 | 11.30 |
| E7203/8N03 | 3/8 | 18 | 17.150 | 80.0 | 27 | 27.00 | 17.80 | 13.50 | 13 | 4 | 14.75 |
| E7201/2N03 | 1/2 | 14 | 21.340 | 100.0 | 35 | — | 17.50 | 13.10 | 13 | 4 | 18.25 |
| E7203/4N03 | 3/4 | 14 | 26.670 | 105.0 | 35 | — | 23.00 | 17.20 | 17 | 5 | 23.50 |

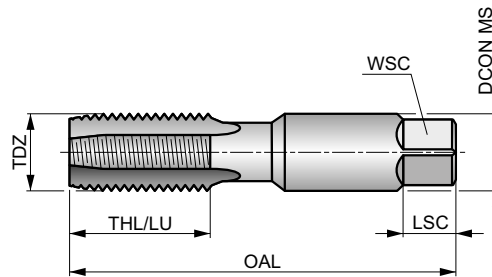


E708



HSS Straight Flute Machine Tap, NPSM, ANSI Standard

General purpose straight flute machine tap for through and blind holes. Bright finish to produce more accurate and cleaner threads, preventing the workpiece material from sticking to the cutting edges.



| | | |
|--|----------------------|--------|
| | ANSI B94.9 | Normal |
| | 1.5xD | HSS |
| | | |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|--------------------|
| P1.1 ■ 7 | P1.2 ■ 7 | P1.3 ■ 8 | P2.1 ■ 6 | P2.2 ■ 5 | P2.3 ▣ 4 | P3.1 ■ 4 | P3.2 ▣ 4 | P4.1 ▣ 3 | K1.1 ▣ 6 | K1.2 ▣ 4 | K1.3 ▣ 3 | K2.1 ▣ 7 | K2.2 ▣ 6 |
| K3.1 ▣ 7 | K3.2 ▣ 5 | K4.1 ▣ 6 | K4.2 ▣ 5 | K5.1 ▣ 7 | K5.2 ▣ 5 | N1.3 ▣ 8 | N2.1 ▣ 11 | N2.2 ▣ 10 | N2.3 ▣ 7 | N3.1 ■ 17 | N3.2 ■ 10 | N3.3 ▣ 5 | N4.2 ▣ 5 |
| N4.3 ▣ 3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | LU | DCON MS | WSC | LSC | NOF | PHD |
|----------------|-----|------|--------|-------|------|-------|---------|-------|-----|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | | | | | |
| E7081/8 | 1/8 | 27 | 10.290 | 70.0 | 19 | 19.00 | 11.10 | 8.30 | 10 | 4 | 9.10 |
| E7081/4 | 1/4 | 18 | 13.720 | 75.0 | 27 | 27.00 | 14.30 | 10.70 | 11 | 4 | 12.00 |
| E7083/8 | 3/8 | 18 | 17.150 | 80.0 | 27 | 27.00 | 17.80 | 13.50 | 13 | 4 | 15.50 |
| E7081/2 | 1/2 | 14 | 21.330 | 100.0 | 35 | – | 17.50 | 13.10 | 16 | 4 | 19.00 |
| E7083/4 | 3/4 | 14 | 26.670 | 105.0 | 35 | – | 23.00 | 17.20 | 17 | 5 | 24.50 |
| E7081 | 1" | 11.5 | 33.400 | 115.0 | 43 | – | 28.60 | 21.40 | 21 | 5 | 30.50 |

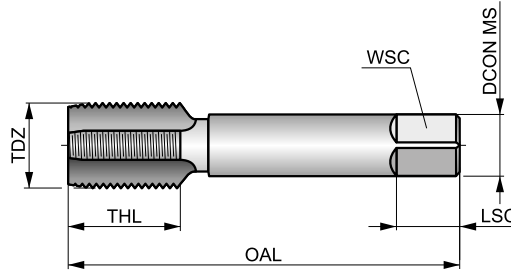


E243



HSS Straight Flute Hand Tap, PG Conduit Thread, DIN Standard

A versatile tool, suitable for hand and machine tapping, with a straight flute design for both through and blind holes. Available tap with plug lead NO2 for through holes or bottoming lead NO3 for blind holes.



| | | |
|--|-----------|--------|
| | DIN 40432 | Normal |
| | 1.5xD | HSS |
| | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
| P1.1 ■7 | P1.2 ■7 | P1.3 ■8 | P2.1 ■6 | P2.2 ■5 | P2.3 ▣4 | P3.1 ■4 | P3.2 ▣4 | P4.1 ▣3 | K1.1 ▣6 | K1.2 ▣4 | K1.3 ▣3 | K2.1 ▣7 | K2.2 ▣6 |
| K3.1 ▣7 | K3.2 ▣5 | K4.1 ▣6 | K4.2 ▣5 | K5.1 ▣7 | K5.2 ▣5 | N1.3 ▣8 | N2.1 ▣11 | N2.2 ▣10 | N2.3 ▣7 | N3.1 ■17 | N3.2 ■10 | N3.3 ▣5 | N4.2 ▣5 |
| N4.3 ▣3 | | | | | | | | | | | | | |

| Product | TDZ | TPI | TD | OAL | THL | DCON MS | WSC | LSC | NOF | PHD |
|---------------|------|-----|--------|-------|------|---------|-------|------|-----|-------|
| | | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | | |
| E243PG7N02 | 7 | 20 | 12.500 | 70.0 | 22 | 9.00 | 7.00 | 10 | 4 | 11.40 |
| E243PG7N03 | 7 | 20 | 12.500 | 70.0 | 22 | 9.00 | 7.00 | 10 | 4 | 11.40 |
| E243PG9N02 | 9 | 18 | 15.200 | 70.0 | 22 | 12.00 | 9.00 | 12 | 4 | 13.90 |
| E243PG9N03 | 9 | 18 | 15.200 | 70.0 | 22 | 12.00 | 9.00 | 12 | 4 | 13.90 |
| E243PG11N02 | 11 | 18 | 18.600 | 80.0 | 22 | 14.00 | 11.00 | 14 | 4 | 17.25 |
| E243PG11N03 | 11 | 18 | 18.600 | 80.0 | 22 | 14.00 | 11.00 | 14 | 4 | 17.25 |
| E243PG13.5N02 | 13.5 | 18 | 20.400 | 80.0 | 22 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| E243PG13.5N03 | 13.5 | 18 | 20.400 | 80.0 | 22 | 16.00 | 12.00 | 15 | 4 | 19.00 |
| E243PG16N02 | 16 | 18 | 22.500 | 80.0 | 22 | 18.00 | 14.50 | 17 | 4 | 21.25 |
| E243PG16N03 | 16 | 18 | 22.500 | 80.0 | 22 | 18.00 | 14.50 | 17 | 4 | 21.25 |
| E243PG21N02 | 21 | 16 | 28.300 | 90.0 | 22 | 22.00 | 18.00 | 21 | 4 | 27.00 |
| E243PG21N03 | 21 | 16 | 28.300 | 90.0 | 22 | 22.00 | 18.00 | 21 | 4 | 27.00 |
| E243PG29N02 | 29 | 16 | 37.000 | 100.0 | 25 | 28.00 | 22.00 | 25 | 6 | 35.50 |
| E243PG29N03 | 29 | 16 | 37.000 | 100.0 | 25 | 28.00 | 22.00 | 25 | 6 | 35.50 |
| E243PG36N02 | 36 | 16 | 47.000 | 140.0 | 32 | 36.00 | 29.00 | 32 | 6 | 45.50 |
| E243PG36N03 | 36 | 16 | 47.000 | 140.0 | 32 | 36.00 | 29.00 | 32 | 6 | 45.50 |



L119

DORMER



HSS Straight Flute Serial Hand Tap, Set of 21 Pieces, Metric, DIN Standard

Metal cassette containing seven sets of serial hand taps according to DIN standard. Ideal for hand tapping tough materials. The straight flute design makes it suitable for both through and blind holes. Each set of three serial taps should be used one after the other to create the full thread.

Nr. =Set number, A=Styles in Set, B=No. in Set, C=Tap diameters in Set

| Product | Nr. | A | B | C |
|---------|-------|------|----|---|
| L11917 | Nr.17 | E100 | 21 | E100M3N08, E100M4N08, E100M5N08, E100M6N08, E100M8N08, E100M10N08, E100M12N08 |

L126

DORMER



HSS Drill-Taps with 30° Spiral Flute, Set of 6 pieces, Metric, ISO Standard

Metal cassette containing six drill-taps to produce threads in one pass. This significantly reduces the time needed to produce the thread on site with the use of a hand-held power tool. There is no need for a tap wrench or tool change. Steam tempered surface acts to retain the lubricant and provide smoother cutting.

Nr. =Set number, A=Styles in Set, B=No. in Set, C=Tap diameters in Set

| Product | Nr. | A | B | C |
|---------|---------|------|---|--|
| L126650 | Nr. 650 | E650 | 6 | E650M4, E650M5, E650M6, E650M8, E650M10, E650M12 |



L113

DORMER



Set with Taps and A002 Drills

Shock-proof plastic box containing seven machine taps according to ISO standard with corresponding drills. Includes either spiral point taps for through holes only Nr.201 with bright finish or Nr.202 steam tempered. Spiral flute taps for blind holes Nr.203 with bright finish or Nr.204 steam tempered.

Nr.=Set number, A=Styles in Set, B=No. in Set, C=Tap diameters in Set, D=Drill diameters in Set.

| Product | Nr. | A | B | C | D |
|---------|--------|-------------|----|--|--|
| L113201 | Nr.201 | E000 + A002 | 14 | E000M3, E000M4, E000M5, E000M6, E000M8, E000M10, E000M12 | A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2 |
| L113202 | Nr.202 | E001 + A002 | 14 | E001M3, E001M4, E001M5, E001M6, E001M8, E001M10, E001M12 | A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2 |
| L113203 | Nr.203 | E002 + A002 | 14 | E002M3, E002M4, E002M5, E002M6, E002M8, E002M10, E002M12 | A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2 |
| L113204 | Nr.204 | E003 + A002 | 14 | E003M3, E003M4, E003M5, E003M6, E003M8, E003M10, E003M12 | A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2 |

L114

DORMER



Set of EP/EX or Shark Line Taps with A002 or A108 Drills

Plastic box with 7 machine taps and corresponding drills. Either with spiral point taps for through holes only Nr.301 with bright finish, Nr.303 Yellow Shark with hard-chrome coating or Nr.305 Blue Shark for stainless steel. Spiral flute taps for blind holes Nr.302 with bright finish, Nr.304 Yellow Shark or Nr.306 Blue Shark.

Nr.=Set number, A=Styles in Set, B=No. in Set, C=Tap diameters in Set, D=Drill diameters in Set.

| Product | Nr. | A | B | C | D |
|---------|--------|---------------|----|--|--|
| L114301 | Nr.301 | EP006H + A002 | 14 | EP00M3, EP00M4, EP00M5, EP00M6, EP00M8, EP00M10, EP00M12 | A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2 |
| L114302 | Nr.302 | EX006H + A002 | 14 | EX00M3, EX00M4, EX00M5, EX00M6, EX00M8, EX00M10, EX00M12 | A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2 |
| L114303 | Nr.303 | E297 + A002 | 14 | E297M3, E297M4, E297M5, E297M6, E297M8, E297M10, E297M12 | A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2 |
| L114304 | Nr.304 | E298 + A002 | 14 | E298M3, E298M4, E298M5, E298M6, E298M8, E298M10, E298M12 | A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2 |
| L114305 | Nr.305 | E238 + A108 | 14 | E238M3, E238M4, E238M5, E238M6, E238M8, E238M10, E238M12 | A1082.5, A1083.3, A1084.2, A1085.0, A1086.8, A1088.5, A10810.2 |
| L114306 | Nr.306 | E240 + A108 | 14 | E240M3, E240M4, E240M5, E240M6, E240M8, E240M10, E240M12 | A1082.5, A1083.3, A1084.2, A1085.0, A1086.8, A1088.5, A10810.2 |



L115

DORMER



Set of E500 Taps and A002 or A022 Drills

Shock-proof plastic box containing straight flute taps according to ISO standard with corresponding drills. Suitable for hand and machine tapping. Nr.101 with bottoming lead taps NO3 for blind holes and A002 jobber drills or Nr.100 with NO3 and NO2 plug lead taps for through holes and A022 stub drills.

Nr. =Set number, A=Styles in Set, B=No. in Set, C=Tap diameters in Set, D=Drill diameters in Set.

| Product | Nr. | A | B | C | D |
|---------|--------|-------------|----|--|--|
| L115100 | Nr.100 | E500 + A022 | 21 | E500M3N02, E500M3N03, E500M4N02, E500M4N03, E500M5N02, E500M5N03, E500M6N02, E500M6N03, E500M8N02, E500M8N03, E500M10N02, E500M10N03, E500M12N02, E500M12N03 | A0222.5, A0223.3, A0224.2, A0225.0, A0226.8, A0228.5, A02210.2 |
| L115101 | Nr.101 | E500 + A002 | 14 | E500M3N03, E500M4N03, E500M5N03, E500M6N03, E500M8N03, E500M10N03, E500M12N03 | A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2 |

L000

DORMER



DuoPack with E500 Tap and A002 Drill, Various Sizes

DuoPack containing a straight flute hand tap according to ISO standard with corresponding drill. Suitable for hand and machine tapping. Available with plug lead NO2 for through holes or bottoming lead NO3 for blind holes. The convenient packaging ensures the right drill size to make a perfect thread.

Nr. =Set number, A=Styles in Set, B=No. in Set, C=Tap diameters in Set, D=Drill diameters in Set.

| Product | Nr. | A | B | C | D |
|---------------------|-------|-------------|---|------------|----------|
| L000E500M3N02XA002 | Nr.1 | E500 + A002 | 2 | E500M3N02 | A0022.5 |
| L000E500M4N02XA002 | Nr.2 | E500 + A002 | 2 | E500M4N02 | A0023.3 |
| L000E500M5N02XA002 | Nr.3 | E500 + A002 | 2 | E500M5N02 | A0024.2 |
| L000E500M6N02XA002 | Nr.4 | E500 + A002 | 2 | E500M6N02 | A0025.0 |
| L000E500M8N02XA002 | Nr.5 | E500 + A002 | 2 | E500M8N02 | A0026.8 |
| L000E500M10N02XA002 | Nr.6 | E500 + A002 | 2 | E500M10N02 | A0028.5 |
| L000E500M12N02XA002 | Nr.7 | E500 + A002 | 2 | E500M12N02 | A00210.2 |
| L000E500M3N03XA002 | Nr.8 | E500 + A002 | 2 | E500M3N03 | A0022.5 |
| L000E500M4N03XA002 | Nr.9 | E500 + A002 | 2 | E500M4N03 | A0023.3 |
| L000E500M5N03XA002 | Nr.10 | E500 + A002 | 2 | E500M5N03 | A0024.2 |
| L000E500M6N03XA002 | Nr.11 | E500 + A002 | 2 | E500M6N03 | A0025.0 |
| L000E500M8N03XA002 | Nr.12 | E500 + A002 | 2 | E500M8N03 | A0026.8 |
| L000E500M10N03XA002 | Nr.13 | E500 + A002 | 2 | E500M10N03 | A0028.5 |
| L000E500M12N03XA002 | Nr.14 | E500 + A002 | 2 | E500M12N03 | A00210.2 |

**L001****DORMER****DuoPack with EP00 or EX00 Tap and A002 Drill, Various Sizes**

DuoPack containing a machine tap according to DIN standard with corresponding drill. Either with a spiral point tap EP00 for through holes only or spiral flute tap EX00 for blind holes. The convenient packaging ensures the right drill size to make a perfect thread.

Nr.=Set number, A=Styles in Set, B=No. in Set, C=Tap diameters in Set, D=Drill diameters in Set.

| Product | Nr. | A | B | C | D |
|-------------------------|-------|---------------|---|---------|----------|
| L001EP00M3XA002 | Nr.1 | EP006H + A002 | 2 | EP00M3 | A0022.5 |
| L001EP00M4XA002 | Nr.2 | EP006H + A002 | 2 | EP00M4 | A0023.3 |
| L001EP00M5XA002 | Nr.3 | EP006H + A002 | 2 | EP00M5 | A0024.2 |
| L001EP00M6XA002 | Nr.4 | EP006H + A002 | 2 | EP00M6 | A0025.0 |
| L001EP00M8XA002 | Nr.5 | EP006H + A002 | 2 | EP00M8 | A0026.8 |
| L001EP00M10XA002 | Nr.6 | EP006H + A002 | 2 | EP00M10 | A0028.5 |
| L001EP00M12XA002 | Nr.7 | EP006H + A002 | 2 | EP00M12 | A00210.2 |
| L001EX00M3XA002 | Nr.8 | EX006H + A002 | 2 | EX00M3 | A0022.5 |
| L001EX00M4XA002 | Nr.9 | EX006H + A002 | 2 | EX00M4 | A0023.3 |
| L001EX00M5XA002 | Nr.10 | EX006H + A002 | 2 | EX00M5 | A0024.2 |
| L001EX00M6XA002 | Nr.11 | EX006H + A002 | 2 | EX00M6 | A0025.0 |
| L001EX00M8XA002 | Nr.12 | EX006H + A002 | 2 | EX00M8 | A0026.8 |
| L001EX00M10XA002 | Nr.13 | EX006H + A002 | 2 | EX00M10 | A0028.5 |
| L001EX00M12XA002 | Nr.14 | EX006H + A002 | 2 | EX00M12 | A00210.2 |



L002

DORMER



DuoPack with E000 or E002 Tap and A002 Drill, Various Sizes

DuoPack containing a machine tap according to ISO standard with corresponding drill. Either with a spiral point tap E000 for through holes only or spiral flute tap E002 for blind holes. The convenient packaging ensures the right drill size to make a perfect thread.

Nr.=Set number, A=Styles in Set, B=No. in Set, C=Tap diameters in Set, D=Drill diameters in Set.

| Product | Nr. | A | B | C | D |
|------------------|-------|-------------|---|---------|----------|
| L002E000M3XA002 | Nr.1 | E000 + A002 | 2 | E000M3 | A0022.5 |
| L002E000M4XA002 | Nr.2 | E000 + A002 | 2 | E000M4 | A0023.3 |
| L002E000M5XA002 | Nr.3 | E000 + A002 | 2 | E000M5 | A0024.2 |
| L002E000M6XA002 | Nr.4 | E000 + A002 | 2 | E000M6 | A0025.0 |
| L002E000M8XA002 | Nr.5 | E000 + A002 | 2 | E000M8 | A0026.8 |
| L002E000M10XA002 | Nr.6 | E000 + A002 | 2 | E000M10 | A0028.5 |
| L002E000M12XA002 | Nr.7 | E000 + A002 | 2 | E000M12 | A00210.2 |
| L002E002M3XA002 | Nr.8 | E002 + A002 | 2 | E002M3 | A0022.5 |
| L002E002M4XA002 | Nr.9 | E002 + A002 | 2 | E002M4 | A0023.3 |
| L002E002M5XA002 | Nr.10 | E002 + A002 | 2 | E002M5 | A0024.2 |
| L002E002M6XA002 | Nr.11 | E002 + A002 | 2 | E002M6 | A0025.0 |
| L002E002M8XA002 | Nr.12 | E002 + A002 | 2 | E002M8 | A0026.8 |
| L002E002M10XA002 | Nr.13 | E002 + A002 | 2 | E002M10 | A0028.5 |
| L002E002M12XA002 | Nr.14 | E002 + A002 | 2 | E002M12 | A00210.2 |



L120



Set of Taps, Dies and Tap Wrenches, Various Sizes

Threading kit for either ISO-Metric, UNC or UNF thread. Containing sets of hand or serial hand taps, dies, tap wrenches and die stocks, all together in a smart metal case with carry handle and latch-lock fasteners.

Nr. =Set number, A=No. in Set, B=Styles in Set, C=Diameters in set.

| Product | Nr. | A | B | C |
|---------|--------|----|------|--|
| L12021 | 21 | 21 | E100 | E100M3N08, E100M4N08, E100M5N08, E100M6N08, E100M8N08, E100M10N08, E100M12N08 |
| | | | F100 | F100M3, F100M4, F100M5, F100M6, F100M8, F100M10, F100M12 |
| | | | L112 | L112N01.1/2, L112N03 |
| | | | L110 | L1102A, L1102B, L1103, L1104, L1105 |
| L12030 | 30 | 30 | E100 | E100M3N08, E100M4N08, E100M5N08, E100M6N08, E100M8N08, E100M10N08, E100M12N08, E100M14N08, E100M16N08, E100M18N08, E100M20N08 |
| | | | F100 | F100M3, F100M4, F100M5, F100M6, F100M8, F100M10, F100M12, F100M14, F100M16, F100M18, F100M20 |
| | | | L112 | L112N01.1/2, L112N04 |
| | | | L110 | L1102A, L1102B, L1103, L1104, L1105, L1106 |
| L1202M | HS-2M | 23 | E500 | E500M2N01, E500M2N03, E500M2.5N01, E500M2.5N03, E500M3N01, E500M3N03, E500M3.5N01, E500M3.5N03, E500M4N01, E500M4N03, E500M5N01, E500M5N03, E500M6N01, E500M6N03 |
| | | | F300 | F300M2X13/16, F300M2.5X13/16, F300M3X13/16, F300M3.5X13/16, F300M4X13/16, F300M5X13/16, F300M6X13/16 |
| | | | L112 | L112BT1 |
| | | | L110 | L11013/16 |
| L1204M | HS-4M | 32 | E500 | E500M5N01, E500M5N03, E500M6N01, E500M6N03, E500M7N01, E500M7N03, E500M8N01, E500M8N03, E500M9N01, E500M9N03, E500M10N01, E500M10N03, E500M11N01, E500M11N03, E500M12N01, E500M12N03 |
| | | | F300 | F300M5X13/16, F300M6X13/16, F300M7X13/16, F300M8X1.5/16, F300M9X1.5/16, F300M10X1.5/16, F300M11X1.5/16, F300M12X1.5/16, F300M5X13/16, F300M6X13/16, F300M7X13/16, F300M8X1.5/16, F300M9X1.5/16 |
| | | | L112 | L112BT2 |
| | | | L110 | L11013/16, L1101.5/16 |
| L1208M | HS-8M | 17 | E500 | E500M2N01, E500M2N03, E500M3N01, E500M3N03, E500M4N01, E500M4N03, E500M5N01, E500M5N03, E500M6N01, E500M6N03 |
| | | | F300 | F300M2X13/16, F300M3X13/16, F300M4X13/16, F300M5X13/16, F300M6X13/16 |
| | | | L112 | L112BT1 |
| | | | L110 | L11013/16 |
| L12010M | HS-10M | 27 | E500 | E500M3N01, E500M3N03, E500M4N01, E500M4N03, E500M5N01, E500M5N03, E500M6N01, E500M6N03, E500M7N01, E500M7N03, E500M8N01, E500M8N03, E500M9N01, E500M9N03, E500M10N01, E500M10N03 |
| | | | F300 | F300M3X13/16, F300M4X13/16, F300M5X13/16, F300M6X1, F300M7X1, F300M8X1, F300M9X1, F300M10X1 |
| | | | L112 | L112BT2 |
| | | | L110 | L11013/16, L1101INCH |
| L12012M | HS-12M | 35 | E500 | E500M2N01, E500M2N03, E500M3N01, E500M3N03, E500M4N01, E500M4N03, E500M5N01, E500M5N03, E500M6N01, E500M6N03, E500M7N01, E500M7N03, E500M8N01, E500M8N03, E500M9N01, E500M9N03, E500M10N01, E500M10N03, E500M12N01, E500M12N03 |
| | | | F300 | F300M2X13/16, F300M3X13/16, F300M4X13/16, F300M5X13/16, F300M6X13/16, F300M7X13/16, F300M8X1, F300M9X1, F300M10X1, F300M12X1.5/16 |
| | | | L112 | L112BT1, L112BT2 |
| | | | L110 | L11013/16, L1101INCH, L1101.5/16 |
| L12014M | HS-14M | 34 | E500 | E500M6N01, E500M6N03, E500M7N01, E500M7N03, E500M8N01, E500M8N03, E500M9N01, E500M9N03, E500M10N01, E500M10N03, E500M12N01, E500M12N03, E500M14N01, E500M14N03, E500M16N01, E500M16N03, E500M18N01, E500M18N03, E500M20N01, E500M20N03 |
| | | | F300 | F300M6X1, F300M7X1, F300M8X1, F300M9X1, F300M10X1, F300M12X1.5/16, F300M14X1.5/16, F300M16X1.1/2, F300M18X1.1/2, F300M20X1.1/2 |
| | | | L112 | L112N03 |
| | | | L110 | L1101INCH, L1101.5/16, L1101.1/2 |

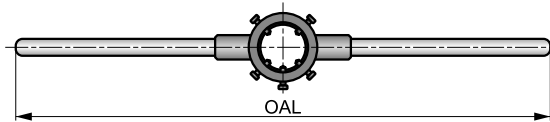


L110



Die Stock

The die stock is an accessory to make it easy to use dies by hand. The die is held securely in the metal ring, whilst the arms at either end are used to rotate the die around the outside of the metal cylinder to be threaded. The L110 series comes in an extensive range to hold all sizes of round dies.



Products from this series are also available in set with taps and dies. Please see L120.

| Product | Nr. | OAL | Die BD x Die OAL |
|------------|-----|--------|------------------|
| | | [mm] | |
| L1101 | 1" | 160.0 | 16 x 5 |
| L1102A | 2a | 200.0 | 20 x 5 |
| L1102B | 2b | 200.0 | 20 x 7 |
| L1103 | 3 | 224.0 | 25 x 9 |
| L1104 | 4" | 280.0 | 30 x 11 |
| L1105 | 5 | 315.0 | 38 x 14 |
| L1105F | 5f | 315.0 | 38 x 10 |
| L1106 | 6 | 450.0 | 45 x 18 |
| L1106F | 6f | 450.0 | 45 x 14 |
| L1107 | 7 | 560.0 | 55 x 22 |
| L1107F | 7f | 560.0 | 55 x 16 |
| L1108 | 8 | 630.0 | 65 x 25 |
| L1108F | 8f | 630.0 | 65 x 18 |
| L1109 | 9 | 800.0 | 75 x 30 |
| L1109F | 9f | 800.0 | 75 x 20 |
| L11010 | 10 | 900.0 | 90 x 36 |
| L11010F | 10f | 900.0 | 90 x 22 |
| L11013/16 | – | 200.0 | 13/16 x 1/4 |
| L1101INCH | – | 224.0 | 1 x 3/8 |
| L1101.5/16 | – | 270.0 | 1.5/16 x 7/16 |
| L1101.1/2 | – | 315.0 | 1.1/2 x 1/2 |
| L1102INCH | – | 560.0 | 2 x 5/8 |
| L1102.1/4 | – | 560.0 | 2.1/4 x 11/16 |
| L1103INCH | – | 900.0 | 3 x 7/8 |
| L1104INCH | – | 1000.0 | 4 x 1 |



L112

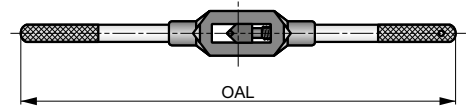
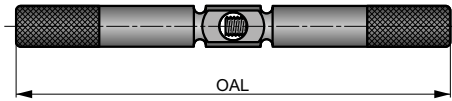


Tap Wrench

Adjustable, so one tap wrench can be used to hold several different tap sizes. The square end of the tap is inserted into the wrench which is then tightened to hold the tap securely. The two metal bars on either side of the wrench are used to rotate the tap in the hole of the workpiece to create the thread.

BT1-BT2

NO0-NO7



Products from this series are also available in set with taps and dies. Please see L120.

| Product | Nr. | OAL | WSCN | WSCX | WSCN | WSCX | Tap Range (M) | Tap Range (Inch) |
|-------------|-----------|--------|-------|-------|--------|--------|---------------|------------------|
| | | [mm] | [mm] | [mm] | [inch] | [inch] | | |
| L112BT1 | BT1 | 105.0 | 1.00 | 6.50 | 0.0394 | 0.2559 | M1 - M8 | No. 0 - 5/16 |
| L112BT2 | BT2 | 162.0 | 1.00 | 10.00 | 0.0394 | 0.3937 | M1 - M14 | No. 0 - 5/8 |
| L112N00 | No. 0 | 130.0 | 2.00 | 5.00 | 0.0787 | 0.1969 | M1 - M5 | No. 0 - 1/4 |
| L112N01.1/2 | No. 1.1/2 | 205.0 | 2.10 | 8.00 | 0.0827 | 0.3150 | M2.2 - M12 | No. 0 - 1/2 |
| L112N03 | No. 3 | 380.0 | 4.90 | 12.00 | 0.1929 | 0.4724 | M5 - M20 | 5/16 - 3/4 |
| L112N04 | No. 4 | 500.0 | 5.50 | 16.00 | 0.2165 | 0.6299 | M7 - M30 | 5/16 - 1" |
| L112N06 | No. 6 | 1000.0 | 11.00 | 24.00 | 0.4331 | 0.9449 | M18 - M42 | 3/4 - 1.1/2 |
| L112N07 | No. 7 | 1250.0 | 16.00 | 32.00 | 0.6299 | 1.2598 | M27 - M48 | 1.1/8 - 2" |




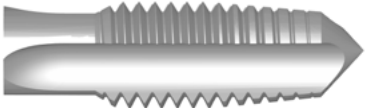

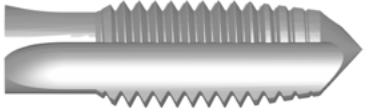

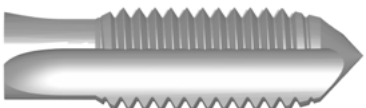
TAPS TECHNICAL INFORMATION





TAP NO1 - NO9 - TECHNICAL SECTION

Hand taps (ISO standard) with different chamfer lengths each producing a full thread profile.


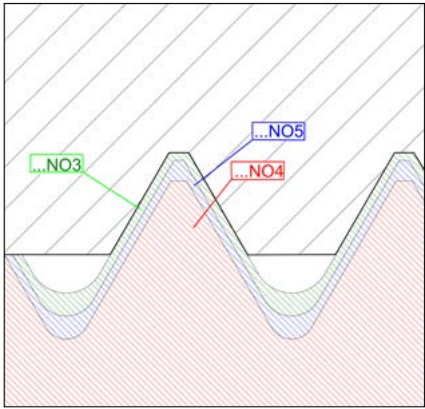


| | | | |
|--------------|---|-----------------|---|
| N01 = |  Taper lead | A 6-8 |  |
| N02 = |  Plug lead | B 4-6 |  |
| N03 = |  Bottoming lead | C 2-3 |  |

| | | |
|------------|--------------|-----------------|
| ISO | N06 = | N01 + N02 + N03 |
| | N07 = | N02 + N03 * |

| | | |
|-------------|--------------|--|
| ANSI | N06 = | N01 (taper) + N02 (plug) + N03 (bottoming) |
|-------------|--------------|--|

* **E550, E710** N07 = N03 (truncated) + N03

Serial taps (DIN standard) with each sequencing tap cutting a part of the profile, the N03 tap is needed to complete a full thread profile.

| | | | |
|--------------|---|-------------------|---|
| N04 = |  Starter tap | A 6-8 |  |
| N05 = |  Seconding tap | B 3.5-5 | |
| N03 = |  Finishing (bottoming lead) tap | C 2-3 | |

| | | |
|--------------------|--------------|-----------------|
| DIN ISO | N08 = | N03 + N04 + N05 |
| | N09 = | N03 + N05 |



THREAD MILLS





THREADING – GENERAL CONTENT

| | | |
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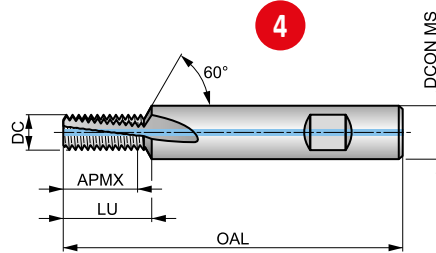


1 J205



2 Solid Carbide Thread Mill with Through Coolant and Countersink, Metric

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. With 60° countersink for chamfering. Alcrona Pro coated for the best machining result with through coolant for better chip evacuation.



5

| | | |
|----|-------------|-----------|
| M | DORMER | 2xD |
| HM | | λ 10° |
| R | Alcrona Pro | DIN 635HB |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P3.3 | P4.1 | P4.2 | P4.3 | M1.1 | M1.2 |
| ■ 172 | ■ 193 | ■ 200 | ■ 148 | ■ 130 | ■ 115 | ■ 133 | ■ 107 | ■ 90 | ■ 79 | ■ 67 | ■ 55 | ■ 62 | ■ 52 |
| M2.1 | M2.2 | M2.3 | M3.1 | M3.2 | M3.3 | M4.1 | M4.2 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 | K2.3 |
| ■ 55 | ■ 45 | ■ 38 | ■ 47 | ■ 40 | ■ 36 | ■ 30 | ■ 26 | ■ 130 | ■ 96 | ■ 72 | ■ 123 | ■ 100 | ■ 80 |
| K3.1 | K3.2 | K3.3 | K4.1 | K4.2 | K4.3 | K4.4 | K4.5 | K5.1 | K5.2 | K5.3 | N1.1 | N1.2 | N1.3 |
| ■ 109 | ■ 83 | ■ 67 | ■ 101 | ■ 76 | ■ 56 | ■ 48 | ■ 40 | ■ 114 | ■ 86 | ■ 66 | ■ 400 | ■ 300 | ■ 200 |
| N2.1 | N2.2 | N2.3 | N3.1 | N3.2 | N3.3 | N4.1 | N4.2 | N4.3 | S1.1 | S1.2 | S1.3 | S2.1 | S2.2 |
| ■ 262 | ■ 235 | ■ 170 | ■ 610 | ■ 360 | ■ 180 | ■ 290 | ■ 145 | ■ 65 | ■ 40 | ■ 40 | ■ 30 | ■ 33 | ■ 25 |
| S3.1 | S3.2 | S4.1 | S4.2 | H1.1 | | | | | | | | | |
| ■ 25 | ■ 21 | ■ 20 | ■ 16 | ■ 60 | | | | | | | | | |

Internal Thread.

7

| | TDZ | TP | DC | APMX | OAL | DCON MS | NOF | LU |
|--------------|-----|------|-------|-------|------|---------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| J2056.5X1.25 | M8 | 1.25 | 6.50 | 17.50 | 72.0 | 10.00 | 3 | 19.10 |
| J2058.2X1.50 | M10 | 1.50 | 8.20 | 21.00 | 83.0 | 12.00 | 3 | 22.80 |
| J2059.9X1.75 | M12 | 1.75 | 9.90 | 26.25 | 83.0 | 14.00 | 4 | 28.20 |
| J20511.6X2.0 | M14 | 2.00 | 11.60 | 30.00 | 92.0 | 16.00 | 4 | 32.20 |

| Pos. | Description |
|----------|-----------------------------|
| 1 | Designation of thread mills |
| 2 | Product description |
| 3 | Illustrative picture |
| 4 | Schematic drawing of tool |

| Pos. | Description |
|----------|--|
| 5 | Product features |
| 6 | Material group recommendations incl. speed and feed guidance |
| 7 | Product code |
| 8 | Product dimensions |



THREAD MILLS – ICONS OVERVIEW

General Icons

| | |
|--|--------------|
| | Primary use |
| | Possible use |

Thread Form (THFT)

| | |
|--|------------------------------------|
| | Thread Form, British Standard Pipe |
| | Thread Form, Metric Coarse |

| | |
|--|---|
| | Thread Form, Metric Fine |
| | Thread Form, American National Pipe Taper |

| | |
|--|-----------------------------|
| | Thread Form, Unified Coarse |
| | Thread Form, Unified Fine |

Basic Standard Group (BSG)

| | |
|--|------------------|
| | Dormer Standards |
|--|------------------|

Usable Length (ULDR)

| | |
|--|---|
| | 1.5xD Usable Tool Depth to Diameter Ratio |
|--|---|

| | |
|--|---|
| | 2xD Usable Tool Depth to Diameter Ratio |
|--|---|

Material Code (BMC)

| | |
|--|-------------------------------|
| | Hard Material (Solid Carbide) |
|--|-------------------------------|

Flute Geometry (FDC)

| | |
|--|-----------------------|
| | Spiral Flute Geometry |
|--|-----------------------|

Flute Helix Angle (FHA)

| | |
|--|-------------------------|
| | 10° Helix Angle (Flute) |
|--|-------------------------|

| | |
|--|-------------------------|
| | 27° Helix Angle (Flute) |
|--|-------------------------|

Hand (Cutting direction)

| | |
|--|-------------------------------|
| | Right Hand Rotation / Cutting |
|--|-------------------------------|

Coating

| | |
|--|---|
| | Aluminium Chromium Nitride (special optimized process) |
|--|---|

Shank

| | |
|--|-------------------------------|
| | DIN 6535 HA Cylindrical Shank |
|--|-------------------------------|

| | |
|--|--------------------------|
| | DIN 6535 HB Weldon Shank |
|--|--------------------------|

Coolant Exit Style (CXSC)

| | |
|--|-----------------------------------|
| | Through Tool Coolant - Axial Exit |
|--|-----------------------------------|



THREAD MILLS – TOOL MATERIALS AND SURFACE COATINGS NAVIGATOR

HM materials

Carbide Materials (or Hard Materials)



HM

A sintered powder metallurgy substrate, consisting of a metallic carbide composite with binder metal. The most central raw material is tungsten carbide (WC). Tungsten carbide contributes to the hardness of the material. Tantalum carbide (TaC), titanium carbide (TiC) and niobium carbide (NbC) complements WC and adjusts the properties to what is desired. These three materials are called cubic carbides. Cobalt (Co) acts as a binder and keeps the material together.

Carbide materials are often characterised by high compression strength, high hardness and therefore high wear resistance, but also by limited flexural strength and toughness. Carbide is used in taps, reamers, milling cutters, drills and thread milling cutters.

Surface Coatings

Alcrona coatings (Alcrona Pro)



The Alcrona (AlCrN) family of coatings are aluminium chromium nitride coatings mostly used for milling cutters. The two unique properties of these coatings are high hot hardness and high oxidation resistance. When used on tools for machining applications involving heavy mechanical and thermal stresses, these properties translate into superior wear resistance. Multiple levels or specific versions of these coatings are available and specific for various tools and applications.



| | | M | M | M | M | MF | MF | UNC | UNF | G | NPT | | | |
|----------------------------|----|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--|--|--|
| Thread form (THFT) | | | | | | | | | | | | | | |
| Basic standard group (BSG) | | | | | | | | | | | | | | |
| Usable length (ULDR) | | 2×D | 2×D | 2×D | 2×D | 1.5×D | 1.5×D | 2×D | 2×D | 1.5×D | | | | |
| Material code (BMC) | | HM | HM | HM | HM | HM | HM | HM | HM | HM | HM | | | |
| Flute Geometry (FDC) | | | | | | | | | | | | | | |
| Flute helix angle (FHA) | | λ 10° | λ 10° | λ 27° | λ 27° | λ 10° | λ 10° | λ 10° | λ 10° | λ 10° | λ 10° | | | |
| Hand (Cutting direction) | | | | | | | | | | | | | | |
| Coating | | | | | | | | | | | | | | |
| Shank | | | | | | | | | | | | | | |
| Coolant exit style (CXSC) | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Product Family Code | | J200 | J205 | J210 | J215 | J220 | J225 | J235 | J245 | J280 | J260 | | | |
| | | M4 - M16 | M8 - M16 | M6 - M16 | M6 - M16 | M6 - M24 | M10 - M18 | 1/4 - 3/4 | 1/4 - 3/4 | 1/8 - 3" | 1/8 - 2" | | | |
| | | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | | | |
| P | P1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | P2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | P3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | P4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| M | M1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | M2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | M3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | M4 | ▣ | ▣ | ■ | ■ | ▣ | ▣ | ■ | ■ | ■ | ■ | | | |
| K | K1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | K2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | K3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | K4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | K5 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| N | N1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | N2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | N3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | N4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | N5 | | | | | | | | | | | | | |
| S | S1 | ▣ | ■ | ▣ | ■ | ▣ | ■ | ■ | ■ | ■ | ■ | | | |
| | S2 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | | | |
| | S3 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | | | |
| | S4 | ▣ | ▣ | ▣ | ▣ | ▣ | ■ | ▣ | ▣ | ▣ | ▣ | | | |
| H | H1 | ▣ | ▣ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| | H2 | | | | | | | | | | | | | |
| | H3 | | | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ | | | |
| | H4 | | | | | | | | | | | | | |

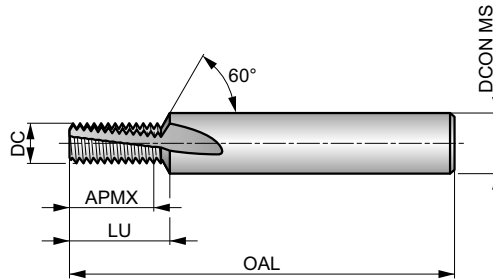


J200



Solid Carbide Thread Mill with Countersink, Metric

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. With 60° countersink for chamfering in a single machining cycle. Alcrona Pro coated for the best machining result in a wide range of materials.



| | | |
|----|-------------|------------------|
| | | 2xD |
| HM | | λ 10° |
| | Alcrona Pro | |

Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 234.

| | | | | | | | | | | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|
| P1.1 ■ 172 B | P1.2 ■ 193 B | P1.3 ■ 200 B | P2.1 ■ 148 B | P2.2 ■ 130 B | P2.3 ■ 115 B | P3.1 ■ 133 B | P3.2 ■ 107 B | P3.3 ■ 90 B | P4.1 ■ 79 B | P4.2 ■ 67 B | P4.3 ▣ 55 B | M1.1 ■ 62 B | M1.2 ■ 52 B |
| M2.1 ■ 55 B | M2.2 ■ 45 B | M2.3 ▣ 38 B | M3.1 ■ 47 A | M3.2 ■ 40 A | M3.3 ▣ 36 A | M4.1 ■ 30 A | M4.2 ▣ 26 A | K1.1 ■ 130 B | K1.2 ■ 96 B | K1.3 ■ 72 B | K2.1 ■ 123 B | K2.2 ■ 100 B | K2.3 ■ 80 B |
| K3.1 ■ 109 B | K3.2 ■ 83 B | K3.3 ■ 67 B | K4.1 ■ 101 A | K4.2 ■ 76 A | K4.3 ■ 56 A | K4.4 ■ 48 A | K4.5 ▣ 40 A | K5.1 ■ 114 B | K5.2 ■ 86 B | K5.3 ■ 66 B | N1.1 ■ 400 C | N1.2 ■ 300 C | N1.3 ■ 200 C |
| N2.1 ■ 262 C | N2.2 ■ 235 C | N2.3 ■ 170 C | N3.1 ■ 610 C | N3.2 ■ 360 C | N3.3 ■ 180 C | N4.1 ■ 290 C | N4.2 ■ 145 C | N4.3 ■ 65 C | S1.1 ■ 40 A | S1.2 ▣ 40 A | S1.3 ▣ 30 A | S2.1 ▣ 33 A | S2.2 ▣ 25 A |
| S3.1 ▣ 25 A | S3.2 ▣ 21 A | S4.1 ▣ 20 A | S4.2 ▣ 16 A | H1.1 ▣ 60 A | | | | | | | | | |

Internal Thread.

| Product | TDZ | TP | DC | APMX | OAL | DCON MS | NOF | LU |
|--------------|-----|------|-------|-------|------|---------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| J2003.2X.7 | M4 | 0.70 | 3.20 | 8.40 | 57.0 | 6.00 | 3 | 9.50 |
| J2004.1X.8 | M5 | 0.80 | 4.10 | 11.20 | 57.0 | 6.00 | 3 | 12.10 |
| J2004.8X1.0 | M6 | 1.00 | 4.80 | 13.00 | 63.0 | 8.00 | 3 | 14.40 |
| J2006.5X1.25 | M8 | 1.25 | 6.50 | 17.50 | 72.0 | 10.00 | 3 | 19.10 |
| J2008.2X1.5 | M10 | 1.50 | 8.20 | 21.00 | 83.0 | 12.00 | 3 | 22.80 |
| J2009.9X1.75 | M12 | 1.75 | 9.90 | 26.25 | 83.0 | 14.00 | 4 | 28.20 |
| J20011.6X2.0 | M14 | 2.00 | 11.60 | 30.00 | 92.0 | 16.00 | 4 | 32.20 |
| J20013.6X2.0 | M16 | 2.00 | 13.60 | 34.00 | 92.0 | 18.00 | 4 | 36.20 |

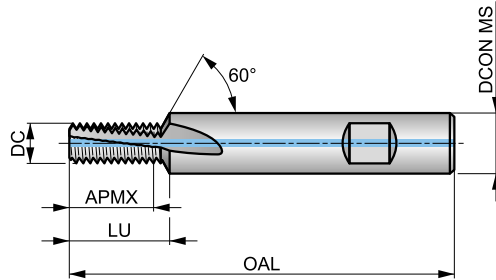


J205



Solid Carbide Thread Mill with Through Coolant and Countersink, Metric

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. With 60° countersink for chamfering. Alcrona Pro coated for the best machining result with through coolant for better chip evacuation.



| | | |
|--|--|--|
| | | |
| | | |
| | | |
| | | |

Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 234.

| | | | | | | | | | | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|
| P1.1 ■ 172 B | P1.2 ■ 193 B | P1.3 ■ 200 B | P2.1 ■ 148 B | P2.2 ■ 130 B | P2.3 ■ 115 B | P3.1 ■ 133 B | P3.2 ■ 107 B | P3.3 ■ 90 B | P4.1 ■ 79 B | P4.2 ■ 67 B | P4.3 ■ 55 B | M1.1 ■ 62 B | M1.2 ■ 52 B |
| M2.1 ■ 55 B | M2.2 ■ 45 B | M2.3 ■ 38 B | M3.1 ■ 47 A | M3.2 ■ 40 A | M3.3 ■ 36 A | M4.1 ■ 30 A | M4.2 ■ 26 A | K1.1 ■ 130 B | K1.2 ■ 96 B | K1.3 ■ 72 B | K2.1 ■ 123 B | K2.2 ■ 100 B | K2.3 ■ 80 B |
| K3.1 ■ 109 B | K3.2 ■ 83 B | K3.3 ■ 67 B | K4.1 ■ 101 A | K4.2 ■ 76 A | K4.3 ■ 56 A | K4.4 ■ 48 A | K4.5 ■ 40 A | K5.1 ■ 114 B | K5.2 ■ 86 B | K5.3 ■ 66 B | N1.1 ■ 400 C | N1.2 ■ 300 C | N1.3 ■ 200 C |
| N2.1 ■ 262 C | N2.2 ■ 235 C | N2.3 ■ 170 C | N3.1 ■ 610 C | N3.2 ■ 360 C | N3.3 ■ 180 C | N4.1 ■ 290 C | N4.2 ■ 145 C | N4.3 ■ 65 C | S1.1 ■ 40 A | S1.2 ■ 40 A | S1.3 ■ 30 A | S2.1 ■ 33 A | S2.2 ■ 25 A |
| S3.1 ■ 25 A | S3.2 ■ 21 A | S4.1 ■ 20 A | S4.2 ■ 16 A | H1.1 ■ 60 A | | | | | | | | | |

Internal Thread.

| Product | TDZ | TP | DC | APMX | OAL | DCON MS | NOF | LU |
|--------------|-----|------|-------|-------|------|---------|-----|-------|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | | [mm] |
| J2056.5X1.25 | M8 | 1.25 | 6.50 | 17.50 | 72.0 | 10.00 | 3 | 19.10 |
| J2058.2X1.50 | M10 | 1.50 | 8.20 | 21.00 | 83.0 | 12.00 | 3 | 22.80 |
| J2059.9X1.75 | M12 | 1.75 | 9.90 | 26.25 | 83.0 | 14.00 | 4 | 28.20 |
| J20511.6X2.0 | M14 | 2.00 | 11.60 | 30.00 | 92.0 | 16.00 | 4 | 32.20 |
| J20513.6X2.0 | M16 | 2.00 | 13.60 | 34.00 | 92.0 | 18.00 | 4 | 36.20 |

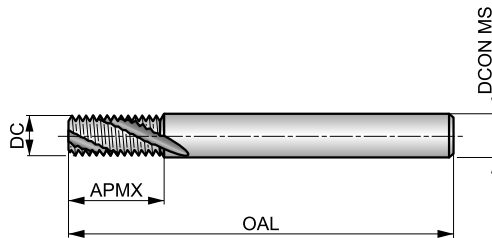


J210



Solid Carbide Thread Mill with High Helix, Metric

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. With Alcrona Pro coated for the best machining result in a wide range of materials and 27° helix for a smoother cutting action.



| | | |
|----|-------------|----------|
| | | 2xD |
| HM | | λ 27° |
| | Alcrona Pro | |

Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 234.

| | | | | | | | | | | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|
| P1.1 ■ 181 B | P1.2 ■ 203 B | P1.3 ■ 210 B | P2.1 ■ 156 B | P2.2 ■ 137 B | P2.3 ■ 121 B | P3.1 ■ 140 B | P3.2 ■ 112 B | P3.3 ■ 95 B | P4.1 ■ 83 B | P4.2 ■ 70 B | P4.3 ▣ 58 B | M1.1 ■ 65 B | M1.2 ■ 55 B |
| M2.1 ■ 58 B | M2.2 ■ 47 B | M2.3 ▣ 40 B | M3.1 ■ 50 A | M3.2 ■ 42 A | M3.3 ▣ 38 A | M4.1 ■ 32 A | M4.2 ▣ 27 A | K1.1 ■ 137 B | K1.2 ■ 101 B | K1.3 ■ 76 B | K2.1 ■ 129 B | K2.2 ■ 105 B | K2.3 ■ 84 B |
| K3.1 ■ 115 B | K3.2 ■ 87 B | K3.3 ■ 71 B | K4.1 ■ 106 A | K4.2 ■ 80 A | K4.3 ■ 59 A | K4.4 ■ 51 A | K4.5 ▣ 42 A | K5.1 ■ 120 B | K5.2 ■ 90 B | K5.3 ■ 70 B | N1.1 ■ 420 C | N1.2 ■ 315 C | N1.3 ■ 210 C |
| N2.1 ■ 275 C | N2.2 ■ 247 C | N2.3 ■ 179 C | N3.1 ■ 640 C | N3.2 ■ 378 C | N3.3 ■ 189 C | N4.1 ■ 305 C | N4.2 ■ 153 C | N4.3 ■ 69 C | S1.1 ■ 42 A | S1.2 ▣ 42 A | S1.3 ▣ 32 A | S2.1 ▣ 35 A | S2.2 ▣ 26 A |
| S3.1 ▣ 26 A | S3.2 ▣ 22 A | S4.1 ▣ 21 A | S4.2 ▣ 17 A | H1.1 ■ 63 A | H3.1 ▣ 45 A | | | | | | | | |

Internal Thread.

| Product | TDZ | TP | DC | APMX | OAL | DCON MS | NOF |
|--------------|-----|------|-------|-------|------|---------|-----|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | |
| J2104.5X1.0 | M6 | 1.00 | 4.50 | 13.00 | 57.0 | 6.00 | 3 |
| J2106.0X1.25 | M8 | 1.25 | 6.00 | 17.50 | 65.0 | 6.00 | 3 |
| J2107.5X1.5 | M10 | 1.50 | 7.50 | 21.00 | 72.0 | 8.00 | 3 |
| J2109.5X1.75 | M12 | 1.75 | 9.50 | 26.25 | 80.0 | 10.00 | 3 |
| J21010.0X2.0 | M14 | 2.00 | 10.00 | 30.00 | 83.0 | 10.00 | 4 |
| J21012.0X2.0 | M16 | 2.00 | 12.00 | 34.00 | 92.0 | 12.00 | 4 |



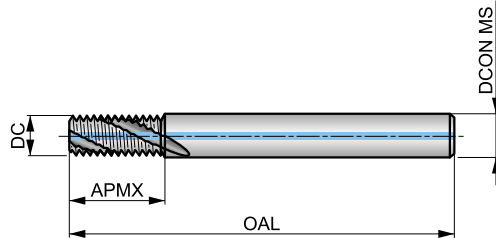
J215



Solid Carbide Thread Mill with High Helix and Through Coolant, Metric

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. Alcrona Pro coated for the best machining result with through coolant for better chip evacuation and 27° helix for a smoother cutting action.

| | | |
|--|--|--|
| | | |
| | | |
| | | |
| | | |



Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 234.

| | | | | | | | | | | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|
| P1.1 ■ 181 B | P1.2 ■ 203 B | P1.3 ■ 210 B | P2.1 ■ 156 B | P2.2 ■ 137 B | P2.3 ■ 121 B | P3.1 ■ 140 B | P3.2 ■ 112 B | P3.3 ■ 95 B | P4.1 ■ 83 B | P4.2 ■ 70 B | P4.3 ■ 58 B | M1.1 ■ 65 B | M1.2 ■ 55 B |
| M2.1 ■ 58 B | M2.2 ■ 47 B | M2.3 ■ 40 B | M3.1 ■ 50 A | M3.2 ■ 42 A | M3.3 ■ 38 A | M4.1 ■ 32 A | M4.2 □ 127 A | K1.1 ■ 137 B | K1.2 ■ 101 B | K1.3 ■ 76 B | K2.1 ■ 129 B | K2.2 ■ 105 B | K2.3 ■ 84 B |
| K3.1 ■ 115 B | K3.2 ■ 87 B | K3.3 ■ 71 B | K4.1 ■ 106 A | K4.2 ■ 80 A | K4.3 ■ 59 A | K4.4 ■ 51 A | K4.5 ■ 42 A | K5.1 ■ 120 B | K5.2 ■ 90 B | K5.3 ■ 70 B | N1.1 ■ 420 C | N1.2 ■ 315 C | N1.3 ■ 210 C |
| N2.1 ■ 275 C | N2.2 ■ 247 C | N2.3 ■ 179 C | N3.1 ■ 640 C | N3.2 ■ 378 C | N3.3 ■ 189 C | N4.1 ■ 305 C | N4.2 ■ 153 C | N4.3 ■ 69 C | S1.1 ■ 42 A | S1.2 ■ 42 A | S1.3 □ 32 A | S2.1 ■ 35 A | S2.2 □ 26 A |
| S3.1 ■ 26 A | S3.2 □ 22 A | S4.1 ■ 21 A | S4.2 □ 17 A | H1.1 ■ 63 A | H3.1 □ 45 A | | | | | | | | |

Internal Thread.

| Product | TDZ | TP | DC | APMX | OAL | DCON MS | NOF |
|--------------|-----|------|-------|-------|------|---------|-----|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | |
| J2154.5X1.0 | M6 | 1.00 | 4.50 | 13.00 | 57.0 | 6.00 | 3 |
| J2156.0X1.25 | M8 | 1.25 | 6.00 | 17.50 | 65.0 | 6.00 | 3 |
| J2157.5X1.5 | M10 | 1.50 | 7.50 | 21.00 | 72.0 | 8.00 | 3 |
| J2159.5X1.75 | M12 | 1.75 | 9.50 | 26.25 | 80.0 | 10.00 | 3 |
| J21510.0X2.0 | M14 | 2.00 | 10.00 | 30.00 | 83.0 | 10.00 | 4 |
| J21512.0X2.0 | M16 | 2.00 | 12.00 | 34.00 | 92.0 | 12.00 | 4 |

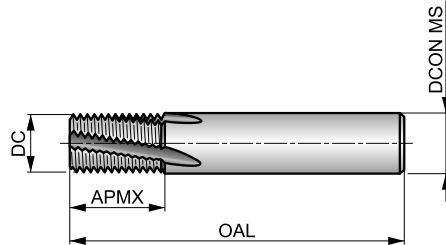


J220



Solid Carbide Thread Mill, Metric Fine

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. Alcrona Pro coated for the best machining result in a wide range of materials.



| | | |
|----|-------------|----------|
| | | 1.5×D |
| HM | | λ 10° |
| | Alcrona Pro | |

Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 234.

| | | | | | | | | | | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|
| P1.1 ■ 190 E | P1.2 ■ 212 E | P1.3 ■ 242 E | P2.1 ■ 163 E | P2.2 ■ 143 E | P2.3 ■ 127 E | P3.1 ■ 146 E | P3.2 ■ 118 E | P3.3 ■ 99 E | P4.1 ■ 87 E | P4.2 ■ 74 E | P4.3 ■ 61 E | M1.1 ■ 69 E | M1.2 ■ 58 E |
| M2.1 ■ 61 E | M2.2 ■ 50 E | M2.3 ▧ 42 E | M3.1 ■ 52 D | M3.2 ■ 44 D | M3.3 ▧ 40 D | M4.1 ■ 33 D | M4.2 ▧ 29 D | K1.1 ■ 143 E | K1.2 ■ 106 E | K1.3 ■ 80 E | K2.1 ■ 136 E | K2.2 ■ 110 E | K2.3 ■ 88 E |
| K3.1 ■ 120 E | K3.2 ■ 91 E | K3.3 ■ 74 E | K4.1 ■ 111 D | K4.2 ■ 84 D | K4.3 ■ 62 D | K4.4 ■ 53 D | K4.5 ▧ 44 D | K5.1 ■ 126 E | K5.2 ■ 95 E | K5.3 ■ 73 E | N1.1 ■ 440 F | N1.2 ■ 330 F | N1.3 ■ 220 F |
| N2.1 ■ 288 F | N2.2 ■ 259 F | N2.3 ■ 187 F | N3.1 ■ 671 F | N3.2 ■ 396 F | N3.3 ■ 198 F | N4.1 ■ 319 F | N4.2 ■ 160 F | N4.3 ■ 72 F | S1.1 ■ 44 D | S1.2 ▧ 44 D | S1.3 ▧ 33 D | S2.1 ▧ 36 D | S2.2 ▧ 28 D |
| S3.1 ▧ 28 D | S3.2 ▧ 23 D | S4.1 ▧ 22 D | S4.2 ▧ 18 D | H1.1 ■ 66 D | H3.1 ▧ 48 D | | | | | | | | |

Internal Thread.

| Product | TDZ | TP | DC | APMX | OAL | DCON MS | NOF |
|--------------|-----|------|-------|-------|-------|---------|-----|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | |
| J2204.8X.5 | M6 | 0.50 | 4.80 | 10.00 | 57.0 | 6.00 | 3 |
| J2206.0X.75 | M8 | 0.75 | 6.00 | 12.00 | 57.0 | 6.00 | 3 |
| J2206.0X1.0 | M8 | 1.00 | 6.00 | 12.00 | 57.0 | 6.00 | 3 |
| J2208.0X1.0 | M10 | 1.00 | 8.00 | 16.00 | 63.0 | 8.00 | 4 |
| J22010.0X1.0 | M12 | 1.00 | 10.00 | 20.00 | 72.0 | 10.00 | 4 |
| J22010.0X1.5 | M12 | 1.50 | 10.00 | 20.00 | 72.0 | 10.00 | 4 |
| J22012.0X1.0 | M14 | 1.00 | 12.00 | 22.00 | 83.0 | 12.00 | 4 |
| J22012.0X1.5 | M14 | 1.50 | 12.00 | 22.00 | 83.0 | 12.00 | 4 |
| J22014.0X1.0 | M16 | 1.00 | 14.00 | 26.00 | 83.0 | 14.00 | 5 |
| J22014.0X1.5 | M16 | 1.50 | 14.00 | 26.00 | 83.0 | 14.00 | 5 |
| J22016.0X2.0 | M20 | 2.00 | 16.00 | 30.00 | 92.0 | 16.00 | 5 |
| J22016.0X2.5 | M20 | 2.50 | 16.00 | 42.50 | 105.0 | 16.00 | 5 |
| J22019.0X3.0 | M24 | 3.00 | 19.00 | 50.00 | 125.0 | 20.00 | 5 |
| J22020.0X2.0 | M24 | 2.00 | 20.00 | 35.00 | 104.0 | 20.00 | 5 |

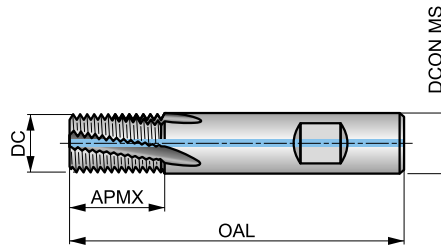


J225



Solid Carbide Thread Mill with Through Coolant, Metric Fine

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. With Alcrona Pro coated for the best machining result and through coolant for better chip evacuation.



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|----|-------------|------------------|
| | | 1.5×D |
| HM | | λ 10° |
| | Alcrona Pro | |
| | | |

Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 234.

| | | | | | | | | | | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|
| P1.1 ■ 190 E | P1.2 ■ 212 E | P1.3 ■ 242 E | P2.1 ■ 163 E | P2.2 ■ 143 E | P2.3 ■ 127 E | P3.1 ■ 146 E | P3.2 ■ 118 E | P3.3 ■ 99 E | P4.1 ■ 87 E | P4.2 ■ 74 E | P4.3 ■ 61 E | M1.1 ■ 69 E | M1.2 ■ 58 E |
| M2.1 ■ 61 E | M2.2 ■ 50 E | M2.3 ■ 42 E | M3.1 ■ 52 D | M3.2 ■ 44 D | M3.3 ■ 40 D | M4.1 ■ 33 D | M4.2 ▣ 129 D | K1.1 ■ 143 E | K1.2 ■ 106 E | K1.3 ■ 80 E | K2.1 ■ 136 E | K2.2 ■ 110 E | K2.3 ■ 88 E |
| K3.1 ■ 120 E | K3.2 ■ 91 E | K3.3 ■ 74 E | K4.1 ■ 111 D | K4.2 ■ 84 D | K4.3 ■ 62 D | K4.4 ■ 53 D | K4.5 ■ 44 D | K5.1 ■ 126 E | K5.2 ■ 95 E | K5.3 ■ 73 E | N1.1 ■ 440 F | N1.2 ■ 330 F | N1.3 ■ 220 F |
| N2.1 ■ 288 F | N2.2 ■ 259 F | N2.3 ■ 187 F | N3.1 ■ 671 F | N3.2 ■ 396 F | N3.3 ■ 198 F | N4.1 ■ 319 F | N4.2 ■ 160 F | N4.3 ■ 72 F | S1.1 ■ 44 D | S1.2 ■ 44 D | S1.3 ▣ 33 D | S2.1 ■ 36 D | S2.2 ▣ 28 D |
| S3.1 ■ 28 D | S3.2 ▣ 23 D | S4.1 ■ 22 D | S4.2 ▣ 18 D | H1.1 ■ 66 D | H3.1 ▣ 48 D | | | | | | | | |

Internal Thread.

| Product | TDZ | TP | DC | APMX | OAL | DCON MS | NOF |
|--------------|-----|------|-------|-------|------|---------|-----|
| | | [mm] | [mm] | [mm] | [mm] | [mm] | |
| J2258.0X1.0 | M10 | 1.00 | 8.00 | 16.00 | 63.0 | 8.00 | 4 |
| J22510.0X1.0 | M12 | 1.00 | 10.00 | 20.00 | 72.0 | 10.00 | 4 |
| J22510.0X1.5 | M12 | 1.50 | 10.00 | 20.00 | 72.0 | 10.00 | 4 |
| J22512.0X1.0 | M14 | 1.00 | 12.00 | 22.00 | 83.0 | 12.00 | 4 |
| J22512.0X1.5 | M14 | 1.50 | 12.00 | 22.00 | 83.0 | 12.00 | 4 |
| J22514.0X1.0 | M16 | 1.00 | 14.00 | 26.00 | 83.0 | 14.00 | 5 |
| J22514.0X1.5 | M16 | 1.50 | 14.00 | 26.00 | 83.0 | 14.00 | 5 |
| J22516.0X1.5 | M18 | 1.50 | 16.00 | 30.00 | 92.0 | 16.00 | 5 |

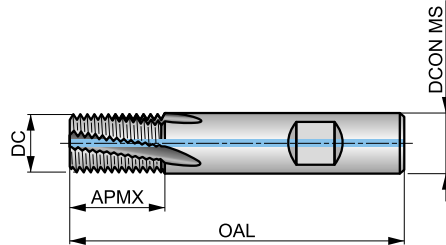


J235



Solid Carbide Thread Mill with Through Coolant, UNC

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. With Alcrona Pro coated for the best machining result and through coolant for better chip evacuation.



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Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 234.

| | | | | | | | | | | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|
| P1.1 ■ 181 H | P1.2 ■ 203 H | P1.3 ■ 210 H | P2.1 ■ 156 H | P2.2 ■ 137 H | P2.3 ■ 121 H | P3.1 ■ 140 H | P3.2 ■ 112 H | P3.3 ■ 95 H | P4.1 ■ 83 H | P4.2 ■ 70 H | P4.3 ■ 58 H | M1.1 ■ 65 H | M1.2 ■ 55 H |
| M2.1 ■ 58 H | M2.2 ■ 47 H | M2.3 ■ 40 H | M3.1 ■ 50 G | M3.2 ■ 42 G | M3.3 ■ 38 G | M4.1 ■ 32 G | M4.2 □ 27 G | K1.1 ■ 137 H | K1.2 ■ 101 H | K1.3 ■ 76 H | K2.1 ■ 129 H | K2.2 ■ 105 H | K2.3 ■ 84 H |
| K3.1 ■ 115 H | K3.2 ■ 87 H | K3.3 ■ 71 H | K4.1 ■ 106 G | K4.2 ■ 80 G | K4.3 ■ 59 G | K4.4 ■ 51 G | K4.5 ■ 42 G | K5.1 ■ 120 H | K5.2 ■ 90 H | K5.3 ■ 70 H | N1.1 ■ 420 I | N1.2 ■ 315 I | N1.3 ■ 210 I |
| N2.1 ■ 275 I | N2.2 ■ 247 I | N2.3 ■ 179 I | N3.1 ■ 640 I | N3.2 ■ 378 I | N3.3 ■ 189 I | N4.1 ■ 305 I | N4.2 ■ 153 I | N4.3 ■ 69 I | S1.1 ■ 42 G | S1.2 ■ 42 G | S1.3 □ 32 G | S2.1 ■ 35 G | S2.2 □ 26 G |
| S3.1 ■ 26 G | S3.2 □ 22 G | S4.1 ■ 21 G | S4.2 □ 17 G | H1.1 ■ 63 G | H3.1 □ 45 G | | | | | | | | |

Internal Thread.

| Product | TDZ | TPI | DC | APMX | OAL | DCON MS | NOF |
|-------------|------|-----|-------|-------|------|---------|-----|
| | | | [mm] | [mm] | [mm] | [mm] | |
| J2354.8-20 | 1/4 | 20 | 4.80 | 14.00 | 57.0 | 6.00 | 3 |
| J2355.5-18 | 5/16 | 18 | 5.50 | 14.00 | 57.0 | 6.00 | 3 |
| J2357.5-16 | 3/8 | 16 | 7.50 | 19.00 | 63.0 | 8.00 | 4 |
| J2358.0-14 | 7/16 | 14 | 8.00 | 19.00 | 63.0 | 8.00 | 4 |
| J23510.0-13 | 1/2 | 13 | 10.00 | 22.00 | 72.0 | 10.00 | 4 |
| J23510.0-12 | 9/16 | 12 | 10.00 | 22.00 | 72.0 | 10.00 | 4 |
| J23512.0-11 | 5/8 | 11 | 12.00 | 26.00 | 83.0 | 12.00 | 4 |
| J23514.0-10 | 3/4 | 10 | 14.00 | 32.00 | 83.0 | 14.00 | 5 |



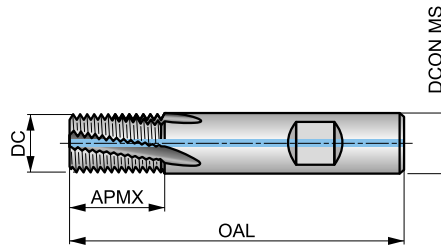
J245



Solid Carbide Thread Mill with Through Coolant, UNF

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. With Alcrona Pro coated for the best machining result and through coolant for better chip evacuation.

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Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 234.

| | | | | | | | | | | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|
| P1.1 ■ 181 K | P1.2 ■ 203 K | P1.3 ■ 210 K | P2.1 ■ 156 K | P2.2 ■ 137 K | P2.3 ■ 121 K | P3.1 ■ 140 K | P3.2 ■ 112 K | P3.3 ■ 95 K | P4.1 ■ 83 K | P4.2 ■ 70 K | P4.3 ■ 58 K | M1.1 ■ 65 K | M1.2 ■ 55 K |
| M2.1 ■ 58 K | M2.2 ■ 47 K | M2.3 ■ 40 K | M3.1 ■ 50 J | M3.2 ■ 42 J | M3.3 ■ 38 J | M4.1 ■ 32 J | M4.2 ▣ 27 J | K1.1 ■ 137 K | K1.2 ■ 101 K | K1.3 ■ 76 K | K2.1 ■ 129 K | K2.2 ■ 105 K | K2.3 ■ 84 K |
| K3.1 ■ 115 K | K3.2 ■ 87 K | K3.3 ■ 71 K | K4.1 ■ 106 J | K4.2 ■ 80 J | K4.3 ■ 59 J | K4.4 ■ 51 J | K4.5 ■ 42 J | K5.1 ■ 120 K | K5.2 ■ 90 K | K5.3 ■ 70 K | N1.1 ■ 420 L | N1.2 ■ 315 L | N1.3 ■ 210 L |
| N2.1 ■ 275 L | N2.2 ■ 247 L | N2.3 ■ 179 L | N3.1 ■ 640 L | N3.2 ■ 378 L | N3.3 ■ 189 L | N4.1 ■ 305 L | N4.2 ■ 153 L | N4.3 ■ 69 L | S1.1 ■ 42 J | S1.2 ■ 42 J | S1.3 ▣ 32 J | S2.1 ■ 35 J | S2.2 ▣ 26 J |
| S3.1 ■ 26 J | S3.2 ▣ 22 J | S4.1 ■ 21 J | S4.2 ▣ 17 J | H1.1 ■ 63 J | H3.1 ▣ 45 J | | | | | | | | |

Internal Thread.

| Product | TDZ | TPI | DC | APMX | OAL | DCON MS | NOF |
|-------------|-----------|-----|-------|-------|------|---------|-----|
| | | | [mm] | [mm] | [mm] | [mm] | |
| J2454.8-28 | 1/4 | 28 | 4.80 | 14.00 | 57.0 | 6.00 | 3 |
| J2456.0-24 | 5/16, 3/8 | 24 | 6.00 | 14.00 | 57.0 | 6.00 | 3 |
| J2458.0-20 | 7/16, 1/2 | 20 | 8.00 | 19.00 | 63.0 | 8.00 | 4 |
| J24510.0-18 | 9/16, 5/8 | 18 | 10.00 | 22.00 | 72.0 | 10.00 | 4 |
| J24514.0-16 | 3/4 | 16 | 14.00 | 32.00 | 83.0 | 14.00 | 5 |

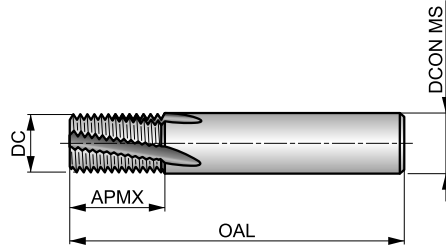


J280



Solid Carbide Thread Mill, G(BSP)

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. Alcrona Pro coated for the best machining result in a wide range of materials. Suited for producing internal and external threads.



| | | |
|----|-------------|------------|
| | | 1.5×D |
| HM | | λ 10° |
| | Alcrona Pro | DIN 6535HA |

Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 234.

| | | | | | | | | | | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|
| P1.1 ■ 190 N | P1.2 ■ 212 N | P1.3 ■ 242 N | P2.1 ■ 163 N | P2.2 ■ 143 N | P2.3 ■ 127 N | P3.1 ■ 146 N | P3.2 ■ 118 N | P3.3 ■ 99 N | P4.1 ■ 87 N | P4.2 ■ 74 N | P4.3 ■ 61 N | M1.1 ■ 69 N | M1.2 ■ 58 N |
| M2.1 ■ 61 N | M2.2 ■ 50 N | M2.3 ■ 42 N | M3.1 ■ 52 M | M3.2 ■ 44 M | M3.3 ■ 40 M | M4.1 ■ 33 M | M4.2 ▣ 29 M | K1.1 ■ 143 N | K1.2 ■ 106 N | K1.3 ■ 80 N | K2.1 ■ 136 N | K2.2 ■ 110 N | K2.3 ■ 88 N |
| K3.1 ■ 120 N | K3.2 ■ 91 N | K3.3 ■ 74 N | K4.1 ■ 111 M | K4.2 ■ 84 M | K4.3 ■ 62 M | K4.4 ■ 53 M | K4.5 ■ 44 M | K5.1 ■ 126 N | K5.2 ■ 95 N | K5.3 ■ 76 N | N1.1 ■ 440 0 | N1.2 ■ 330 0 | N1.3 ■ 220 0 |
| N2.1 ■ 288 0 | N2.2 ■ 259 0 | N2.3 ■ 187 0 | N3.1 ■ 671 0 | N3.2 ■ 396 0 | N3.3 ■ 198 0 | N4.1 ■ 319 0 | N4.2 ■ 160 0 | N4.3 ■ 72 0 | S1.1 ■ 44 M | S1.2 ■ 44 M | S1.3 ▣ 33 M | S2.1 ■ 36 M | S2.2 ▣ 28 M |
| S3.1 ■ 28 M | S3.2 ▣ 23 M | S4.1 ■ 22 M | S4.2 ▣ 18 M | H1.1 ■ 66 M | H3.1 ▣ 48 M | | | | | | | | |

Internal and External Thread.

| Product | TDZ | TPI | DC | APMX | OAL | DCON MS | NOF |
|-------------|---------------|-----|-------|-------|-------|---------|-----|
| | | | [mm] | [mm] | [mm] | [mm] | |
| J2806.0-28 | 1/8 | 28 | 6.00 | 15.00 | 57.0 | 6.00 | 3 |
| J28010.0-19 | 1/4 | 19 | 10.00 | 20.00 | 72.0 | 10.00 | 4 |
| J28014.0-19 | 3/8 | 19 | 14.00 | 26.00 | 83.0 | 14.00 | 5 |
| J28016.0-14 | 1/2, 5/8 | 14 | 16.00 | 30.00 | 92.0 | 16.00 | 5 |
| J28020.0-14 | 5/8, 3/4, 7/8 | 14 | 20.00 | 35.00 | 104.0 | 20.00 | 5 |
| J28025.0-11 | 1", 3" | 11 | 25.00 | 45.00 | 121.0 | 25.00 | 6 |

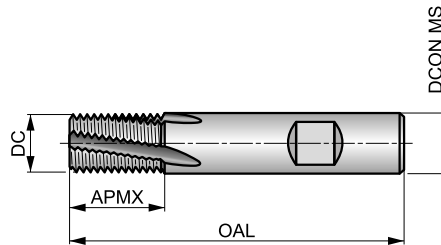


J260



Solid Carbide Thread Mill, NPT

Universal high performance tool to machine same or bigger diameters than the TDZ with the same pitch. Left or right-hand, through or blind holes almost down to the bottom. Alcrona Pro coated for the best machining result in a wide range of materials.



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| | | |
| | λ 10° | |
| | | |

Workpiece material group suitability, starting values for cutting speed (m/min) and Alpha Code. Tables with feed per tooth and correction factors can be found starting from page 234.

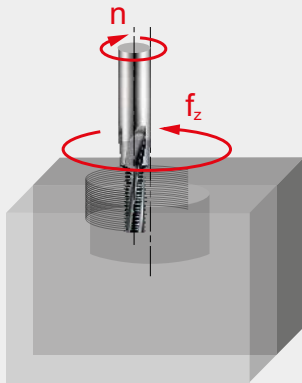
| | | | | | | | | | | | | | |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|
| P1.1 ■ 190 R | P1.2 ■ 212 R | P1.3 ■ 242 R | P2.1 ■ 163 R | P2.2 ■ 143 R | P2.3 ■ 127 R | P3.1 ■ 146 R | P3.2 ■ 118 R | P3.3 ■ 99 R | P4.1 ■ 87 R | P4.2 ■ 74 R | P4.3 ■ 61 R | M1.1 ■ 69 R | M1.2 ■ 58 R |
| M2.1 ■ 61 R | M2.2 ■ 50 R | M2.3 ■ 42 R | M3.1 ■ 52 Q | M3.2 ■ 44 Q | M3.3 ■ 40 Q | M4.1 ■ 33 Q | M4.2 ■ 29 Q | K1.1 ■ 143 R | K1.2 ■ 106 R | K1.3 ■ 80 R | K2.1 ■ 136 R | K2.2 ■ 110 R | K2.3 ■ 88 R |
| K3.1 ■ 120 R | K3.2 ■ 91 R | K3.3 ■ 74 R | K4.1 ■ 111 Q | K4.2 ■ 84 Q | K4.3 ■ 62 Q | K4.4 ■ 53 Q | K4.5 ■ 44 Q | K5.1 ■ 126 R | K5.2 ■ 95 R | K5.3 ■ 73 R | N1.1 ■ 440 S | N1.2 ■ 330 S | N1.3 ■ 220 S |
| N2.1 ■ 288 S | N2.2 ■ 259 S | N2.3 ■ 187 S | N3.1 ■ 671 S | N3.2 ■ 396 S | N3.3 ■ 198 S | N4.1 ■ 319 S | N4.2 ■ 160 S | N4.3 ■ 72 S | S1.1 ■ 44 Q | S1.2 ■ 44 Q | S1.3 ■ 33 Q | S2.1 ■ 36 Q | S2.2 ■ 28 Q |
| S3.1 ■ 28 Q | S3.2 ■ 23 Q | S4.1 ■ 22 Q | S4.2 ■ 18 Q | H1.1 ■ 66 Q | H3.1 ■ 48 Q | | | | | | | | |

Internal Thread.

| Product | TDZ | TPI | DC | APMX | OAL | DCON MS | NOF |
|---------------|----------|------|-------|-------|------|---------|-----|
| | | | [mm] | [mm] | [mm] | [mm] | |
| J2607.9-27 | 1/8 | 27 | 7.90 | 11.50 | 58.0 | 8.00 | 3 |
| J2609.9-18 | 1/4. 3/8 | 18 | 9.90 | 15.92 | 66.0 | 10.00 | 3 |
| J26015.9-14 | 1/2. 3/4 | 14 | 15.90 | 20.46 | 82.0 | 16.00 | 4 |
| J26019.9-11.5 | 1". 2" | 11.5 | 19.90 | 27.12 | 92.0 | 20.00 | 5 |



THREAD MILLS – FEED PER TOOTH TABLE



How to use this table to find the feed per tooth (f_z):

1. Find your Alpha Code on the product page (example: 181B, "B" is the Alpha Code).
2. Select the column matching your cutter diameter in the top row of the table with the Thread pitch P or TPI (in the rows with icons on the left).
3. Find your Alpha Code in the left column of the table.
4. The intersection (cell) of the Diameter + Pitch column and Alpha Code is the feed per tooth (f_z).







Correction of the feed per tooth for multiple passes:

5. In case the thread is being machined in **2 passes** the feed values mentioned in the table should be increased by **30 to 40%**.
6. In case the thread is being machined in **3 passes** the feed values mentioned in the table should be increased by **55 to 65%**.
7. In case the thread is being machined in **4 passes** the feed values mentioned in the table should be increased by **80 to 90%**.

(Example: J2003.2X.7 machining WMG M4.1 with feed rate A in 4-passes the $f_z = 0.017 \times 1.80 = 0.031$ mm/z).

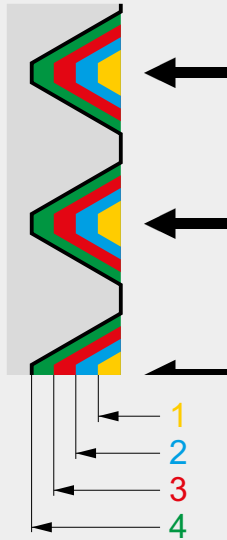
Feed per tooth per revolution (f_z in mm/rev).

The specified values are the recommended starting values for machining the full thread depth in one pass.

| | | ø DC [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|-----------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 3.20 | 4.10 | 4.50 | 4.80 | 5.50 | 6.00 | 6.50 | 7.50 | 7.90 | 8.00 | 8.20 | 9.50 | 9.90 | 10.00 | 11.60 | 12.00 | 13.60 | 14.00 | 16.00 | 19.00 | 20.00 | 25.00 | | | | | | |
| Feed rates |  | 0.70 | 0.80 | 1.00 | 1.00 | 1.25 | 1.25 | 1.50 | | | | 1.50 | 1.75 | 1.75 | 2.00 | 2.50 | 2.00 | 2.00 | | | | | | | | | | | |
| | A | 0.017 | 0.022 | 0.023 | 0.024 | – | 0.024 | – | 0.029 | 0.036 | – | – | 0.040 | 0.044 | 0.047 | 0.053 | – | 0.056 | 0.068 | – | 0.071 | – | – | – | – | | | | |
| | B | 0.022 | 0.029 | 0.031 | 0.032 | – | 0.032 | – | 0.038 | 0.048 | – | – | 0.053 | 0.059 | 0.063 | 0.070 | – | 0.075 | 0.090 | – | 0.095 | – | – | – | – | | | | |
| | C | 0.028 | 0.036 | 0.039 | 0.040 | – | 0.040 | – | 0.048 | 0.060 | – | – | 0.066 | 0.074 | 0.079 | 0.088 | – | 0.094 | 0.113 | – | 0.119 | – | – | – | – | | | | |
| |  | | | | 0.50 | 0.75 | 1.00 | | | | 1.00 | | | | 1.00 | 1.50 | 1.00 | 1.50 | 1.00 | 1.50 | 1.00 | 1.50 | 1.50 | 2.00 | 2.50 | 3.00 | 2.00 | | |
| | D | – | – | – | 0.044 | – | 0.041 | 0.036 | – | – | – | 0.057 | – | – | – | 0.075 | 0.067 | – | 0.079 | 0.071 | – | 0.083 | 0.071 | 0.092 | 0.081 | 0.073 | 0.067 | 0.096 | – |
| | E | – | – | – | 0.058 | – | 0.055 | 0.048 | – | – | – | 0.076 | – | – | – | 0.100 | 0.089 | – | 0.105 | 0.094 | – | 0.110 | 0.095 | 0.122 | 0.108 | 0.097 | 0.089 | 0.128 | – |
| | F | – | – | – | 0.073 | – | 0.069 | 0.060 | – | – | – | 0.095 | – | – | – | 0.125 | 0.111 | – | 0.131 | 0.118 | – | 0.138 | 0.119 | 0.153 | 0.135 | 0.121 | 0.111 | 0.160 | – |
| |  | | | | 20 | 18 | | | 16 | 14 | | | | | 13 | 12 | 11 | | 10 | | | | | | | | | | |
| | G | – | – | – | 0.019 | 0.023 | – | – | – | 0.030 | – | 0.034 | – | – | – | 0.053 | 0.051 | – | 0.055 | – | – | 0.066 | – | – | – | – | – | – | – |
| | H | – | – | – | 0.025 | 0.030 | – | – | – | 0.040 | – | 0.045 | – | – | – | 0.071 | 0.068 | – | 0.073 | – | – | 0.088 | – | – | – | – | – | – | – |
| | I | – | – | – | 0.031 | 0.038 | – | – | – | 0.050 | – | 0.056 | – | – | – | 0.089 | 0.085 | – | 0.091 | – | – | 0.110 | – | – | – | – | – | – | – |
| |  | | | | 28 | 24 | | | 20 | | | | | | 18 | | | | 16 | | | | | | | | | | |
| | J | – | – | – | 0.023 | – | 0.026 | – | – | – | – | 0.041 | – | – | – | 0.062 | – | – | – | – | – | 0.083 | – | – | – | – | – | – | – |
| | K | – | – | – | 0.030 | – | 0.035 | – | – | – | – | 0.054 | – | – | – | 0.083 | – | – | – | – | – | 0.110 | – | – | – | – | – | – | – |
| | L | – | – | – | 0.038 | – | 0.044 | – | – | – | – | 0.068 | – | – | – | 0.104 | – | – | – | – | – | 0.138 | – | – | – | – | – | – | – |
| |  | | | | | 28 | | | | | | | | | 19 | | | | 19 | 14 | | | | | | | 14 | 11 | |
| | M | – | – | – | – | – | 0.029 | – | – | – | – | – | – | – | – | 0.064 | – | – | – | – | – | 0.080 | – | 0.083 | – | – | – | 0.116 | 0.131 |
| | N | – | – | – | – | – | 0.038 | – | – | – | – | – | – | – | – | 0.085 | – | – | – | – | – | 0.106 | – | 0.111 | – | – | – | 0.155 | 0.175 |
| | O | – | – | – | – | – | 0.048 | – | – | – | – | – | – | – | – | 0.106 | – | – | – | – | – | 0.133 | – | 0.139 | – | – | – | 0.194 | 0.219 |
|  | | | | | | | | | | 27 | | | | 18 | | | | 14 | 11.5 | | | | | | | | | | |
| Q | – | – | – | – | – | – | – | – | – | 0.039 | – | – | – | 0.044 | – | – | – | – | – | – | 0.079 | 0.115 | – | – | – | – | – | – | |
| R | – | – | – | – | – | – | – | – | – | 0.052 | – | – | – | 0.059 | – | – | – | – | – | – | 0.105 | 0.153 | – | – | – | – | – | – | |
| S | – | – | – | – | – | – | – | – | – | 0.065 | – | – | – | 0.074 | – | – | – | – | – | – | 0.131 | 0.191 | – | – | – | – | – | – | |




THREAD MILLS – NUMBER OF PASSES TABLE




How to use the tables to find the depth increments per pass:

1. Select the table for your thread profile (example: "M12" is a metric thread).
2. Find the column matching your thread pitch in the top row of the table.
3. Find in that column below the recommended number of passes and for each pass the increment radial depth of cut. (example: for a pitch of 1.75 the recommended number of passes is 5 and radial depth of the 1st pass is 0.277 mm, the 2nd 0.228 mm etc.).
4. It is recommended to increase the number of passes for more difficult to machine materials.
5. For super-finishing result it is best practice to repeat the final pass.

Recommended number of passes and radial depth of cut per pass for female metric thread (60°).

|  | | Radial depth of cut per pass [mm] | | | | | | | | | | |
|--|---|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 0.50 | 0.70 | 0.75 | 0.80 | 1.00 | 1.25 | 1.50 | 1.75 | 2.00 | 2.50 | 3.00 |
| No. of passes | 1 | 0.158 | 0.221 | 0.168 | 0.224 | 0.224 | 0.228 | 0.237 | 0.277 | 0.283 | 0.323 | 0.387 |
| | 2 | 0.131 | 0.183 | 0.138 | 0.185 | 0.185 | 0.188 | 0.196 | 0.228 | 0.234 | 0.267 | 0.320 |
| | 3 | – | – | 0.127 | 0.135 | 0.168 | 0.173 | 0.179 | 0.209 | 0.214 | 0.244 | 0.293 |
| | 4 | – | – | – | – | – | 0.133 | 0.138 | 0.161 | 0.164 | 0.187 | 0.225 |
| | 5 | – | – | – | – | – | – | 0.116 | 0.135 | 0.138 | 0.158 | 0.189 |
| | 6 | – | – | – | – | – | – | – | – | 0.122 | 0.139 | 0.167 |
| | 7 | – | – | – | – | – | – | – | – | – | 0.125 | 0.151 |
| Acc. depth | | 0.289 | 0.404 | 0.433 | 0.544 | 0.577 | 0.722 | 0.866 | 1.010 | 1.155 | 1.443 | 1.732 |


Recommended number of passes and radial depth of cut per pass for female unified thread (60°).

|  | | Radial depth of cut per pass [mm] | | | | | | | | | |
|---|---|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 28 | 24 | 20 | 18 | 16 | 14 | 13 | 12 | 11 | 10 |
| No. of passes | 1 | 0.203 | 0.237 | 0.232 | 0.258 | 0.251 | 0.287 | 0.309 | 0.299 | 0.327 | 0.328 |
| | 2 | 0.167 | 0.195 | 0.191 | 0.213 | 0.207 | 0.237 | 0.255 | 0.247 | 0.270 | 0.271 |
| | 3 | 0.154 | 0.179 | 0.175 | 0.195 | 0.190 | 0.217 | 0.234 | 0.226 | 0.247 | 0.248 |
| | 4 | – | – | 0.135 | 0.149 | 0.146 | 0.166 | 0.179 | 0.174 | 0.189 | 0.190 |
| | 5 | – | – | – | – | 0.123 | 0.140 | 0.151 | 0.146 | 0.160 | 0.160 |
| | 6 | – | – | – | – | – | – | – | 0.130 | 0.140 | 0.141 |
| | 7 | – | – | – | – | – | – | – | – | – | 0.128 |
| Acc. Depth | | 0.524 | 0.611 | 0.733 | 0.815 | 0.917 | 1.047 | 1.128 | 1.222 | 1.333 | 1.466 |




THREAD MILLS – NUMBER OF PASSES TABLE

Recommended number of passes and radial depth of cut per pass for female BSP thread (55°).

|  1" | | Radial depth of cut per pass [mm] | | | |
|---|---|-----------------------------------|-------|-------|-------|
| | | 28 | 19 | 14 | 11 |
| No. of passes | 1 | 0.225 | 0.271 | 0.318 | 0.362 |
| | 2 | 0.186 | 0.224 | 0.263 | 0.299 |
| | 3 | 0.170 | 0.205 | 0.241 | 0.274 |
| | 4 | – | 0.156 | 0.185 | 0.210 |
| | 5 | – | – | 0.155 | 0.177 |
| | 6 | – | – | – | 0.157 |
| | 7 | – | – | – | – |
| Acc. Depth | | 0.581 | 0.856 | 1.162 | 1.479 |

Recommended number of passes and radial depth of cut per pass for female NPT thread (60°).

|  1" | | Radial depth of cut per pass [mm] | | | |
|---|---|-----------------------------------|-------|-------|-------|
| | | 27 | 18 | 14 | 11.5 |
| No. of passes | 1 | 0.283 | 0.348 | 0.390 | 0.423 |
| | 2 | 0.233 | 0.287 | 0.322 | 0.349 |
| | 3 | 0.214 | 0.263 | 0.295 | 0.320 |
| | 4 | – | 0.202 | 0.226 | 0.246 |
| | 5 | – | – | 0.190 | 0.207 |
| | 6 | – | – | – | 0.183 |
| | 7 | – | – | – | – |
| Acc. Depth | | 0.730 | 1.100 | 1.423 | 1.728 |

General hints on thread milling

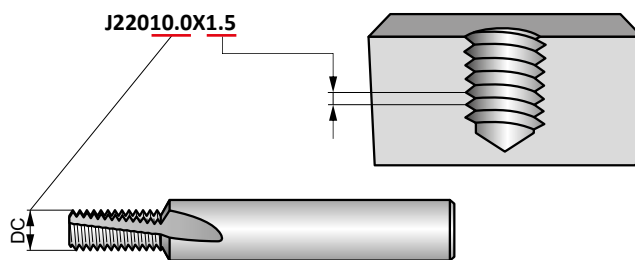
1. Thread milling is the process of generating a thread by the circular interpolation of a milling cutter with a specific thread geometry ground around it's periphery.
2. To be able to use a thread milling cutter it is necessary to have a CNC machine that can make circular paths.
3. Most modern CNC machines are equipped with machining cycles for thread milling.
4. Consult the manual or contact the machine supplier for information.

Features and benefits

1. Thread milling gives increased reliability and tool life.
2. Threadmills produce small chips resulting in problem free threading.
3. Tolerance adjustments can be made using exact co-ordinates.
4. You can generate a complete thread to the bottom of the hole.
5. Capable of machining a wide variety of materials.
6. The same cutter can produce different size threads provided the pitch is the same.
7. Both right and left hand threads can be created with the same tool.
8. Some thread mills can also machine the entry chamfer (J200 and J205).

Choosing your tool

Thread milling cutters have an item code based on the type, diameter (*d_t*) and pitch (*P*). The item code is the number to use when ordering your tool. Always consult the catalogue to ensure you have the correct thread dimensions.



This thread milling cutter can be used for threads ≥ M12×1.5 (M14×1.5, M18×1.5 etc.)

Programming with Rprg

- For easy adjustment of the thread tolerance always program with radius correction.
- The Rprg value is the start value for a new cutter and is printed on the cutter shank. This should be entered in the tool memory offset.
- Rprg is based on the theoretical zero-line of the thread meaning that when you program using Rprg the thread is never oversize, but normally tight.
- This means that with a small modification to the program co-ordinates you can create the thread to the required size.

Recommendations

- Always use the correct cutting data (refer to the cutting data chart in the Product section).
- Use the recommended drill size for the thread diameter, as for conventional taps.
- For easy adjustment of the thread tolerance always start with the Rprg value printed on the shank of the threadmill.
- Use a gauge to check the tolerance on the first thread to establish if the radius needs to be corrected. The radius can be corrected 2 or 3 times before the threadmill is worn out.
- When dry machining, compressed air is recommended to help with swarf removal.
- When threading more difficult materials, it is recommended to take multiple passes.

DIES





THREADING – GENERAL CONTENT

| | | |
|-----|-------------|-------------------------------|
| 6 | | WMG & ISO 13399 |
| 12 | TAPS | INSTRUCTIONS |
| 15 | | SOLID CARBIDE TAPS |
| 25 | | MATERIAL SPECIFIC SHARK TAPS |
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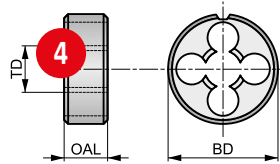


1 F201



HSS Gun Nosed Machine Die, Metric, Left Hand

Creates left handed, external screw threads with a metric thread form. The bright finish ensures workpiece material will not stick to the cutting edges of the tool so you get a cleaner, more accurate thread and the gun nosed geometry directs chips away from the cutting edges for improved performance.



| | | |
|---------|----------|----|
| M | ISO 2568 | 6G |
| 1.75 XP | HSS | L |
| | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P4.1 | M1.1 | M1.2 | M2.1 | M2.2 | K1.1 |
| 12 | 13 | 14 | 10 | 9 | 8 | 8 | 7 | 5 | 7 | 6 | 6 | 5 | 11 |
| K1.2 | K1.3 | K2.1 | K2.2 | K2.3 | K3.1 | K3.2 | K3.3 | K5.1 | K5.2 | K5.3 | N1.1 | N1.2 | N1.3 |
| 8 | 6 | 11 | 9 | 7 | 10 | 8 | 6 | 10 | 8 | 6 | 20 | 15 | 10 |
| N2.1 | N2.2 | N2.3 | N3.1 | N3.2 | N3.3 | N4.1 | N4.2 | N4.3 | | | | | |
| 10 | 9 | 6 | 11 | 6 | 3 | 11 | 4 | 4 | | | | | |

| Product | TD | TP | BD | OAL |
|---------|--------|------|-------|------|
| | [mm] | [mm] | [mm] | [mm] |
| F201M3 | 3.000 | 0.50 | 20.00 | 5.0 |
| F201M4 | 4.000 | 0.70 | 20.00 | 5.0 |
| F201M5 | 5.000 | 0.80 | 20.00 | 7.0 |
| F201M6 | 6.000 | 1.00 | 20.00 | 7.0 |
| F201M8 | 8.000 | 1.25 | 25.00 | 9.0 |
| F201M10 | 10.000 | 1.50 | 30.00 | 11.0 |
| F201M12 | 12.000 | 1.75 | 38.00 | 14.0 |
| F201M14 | 14.000 | 2.00 | 38.00 | 14.0 |
| F201M16 | 16.000 | 2.00 | 45.00 | 18.0 |
| F201M18 | 18.000 | 2.50 | 45.00 | 18.0 |
| F201M20 | 20.000 | 2.50 | 45.00 | 18.0 |

| Pos. | Description |
|------|---------------------------|
| 1 | Designation of taps |
| 2 | Product description |
| 3 | Illustrative picture |
| 4 | Schematic drawing of tool |

| Pos. | Description |
|------|--|
| 5 | Product features |
| 6 | Material group recommendations incl. speed and feed guidance |
| 7 | Product code |
| 8 | Product dimensions |



HSS DIES – ICONS OVERVIEW

General icons

| | |
|--|--------------|
| | Primary use |
| | Possible use |

Basic standard group (BSG)

| | |
|--|---------------------------------|
| | BS 1127:1950 – Round Dies Stds. |
| | DIN 382 – Hex Die Stds. |

| | |
|--|----------------------|
| | ISO 2568 – Die Stds. |
|--|----------------------|

Material code (BMC)

| | |
|--|---------------------------------------|
| | High Speed Cobalt Steel Tool Material |
|--|---------------------------------------|

| | |
|--|--------------------------------|
| | High Speed Steel Tool Material |
|--|--------------------------------|

Coating

| | |
|--|-------------------|
| | Bright (uncoated) |
|--|-------------------|

Die chamfer to pitch ratio (DCPR)

| | |
|--|--|
| | Die Thread Chamfer to Pitch Ratio (1.75xP) |
|--|--|

| | |
|--|--|
| | Die Thread Chamfer to Pitch Ratio (2.25xP) |
|--|--|

Hand (Cutting direction)

| | |
|--|------------------------------|
| | Left Hand Rotation / Cutting |
|--|------------------------------|

| | |
|--|-------------------------------|
| | Right Hand Rotation / Cutting |
|--|-------------------------------|

Thread form type (THFT)

| | |
|--|---|
| | Thread Form, American National Pipe Taper |
|--|---|

| | |
|--|---|
| | Thread Form, British Standard Whitworth |
|--|---|

| | |
|--|--|
| | Thread Form, Steel Conduit DIN 40 430 (electrical) |
|--|--|

| | |
|--|------------------------------------|
| | Thread Form, British Standard Fine |
|--|------------------------------------|

| | |
|--|----------------------------|
| | Thread Form, Metric Coarse |
|--|----------------------------|

| | |
|--|-----------------------------|
| | Thread Form, Unified Coarse |
|--|-----------------------------|

| | |
|--|------------------------------------|
| | Thread Form, British Standard Pipe |
|--|------------------------------------|

| | |
|--|--------------------------|
| | Thread Form, Metric Fine |
|--|--------------------------|

| | |
|--|---------------------------|
| | Thread Form, Unified Fine |
|--|---------------------------|

Thread tolerance class (TCTR)

| | |
|--|-------------------------------------|
| | Normal Fit "middle" Tolerance Class |
|--|-------------------------------------|

| | |
|--|---------------------------------|
| | Medium Inch Thread Class of Fit |
|--|---------------------------------|

| | |
|--|----------------------------------|
| | Normal Fit Class for Pipe Thread |
|--|----------------------------------|



| | |
|--|--|
| | External Inch Thread Medium Class of Fit |
|--|--|

| | |
|--|---------------------------------|
| | Medium Inch Thread Class of Fit |
|--|---------------------------------|




HSS DIES – TOOL MATERIAL NAVIGATOR

Tool materials

| | | |
|--------------------------------|---|--|
| High Speed Steel |  HSS | A medium-alloyed high speed steel that has good machinability and good performance. HSS exhibits hardness, toughness and wear resistance characteristics that make it attractive in a wide range of applications, for example in drills and taps. |
| Cobalt High Speed Steel |  HSS-E | This high speed steel contains cobalt for increased hot hardness. The composition of HSCo provides a good combination of toughness and hardness. It has good machinability and good wear resistance, which makes it excellent for producing drills, taps, reamers and milling cutters. |

Surface Coatings

| | | |
|--------------------------|--|---|
| Bright (uncoated) |  Bright | Bright finish (uncoated surface) improves chip flow in soft or non-ferrous materials and maintains sharp cutting edges in abrasive materials. |
|--------------------------|--|---|

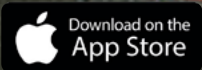
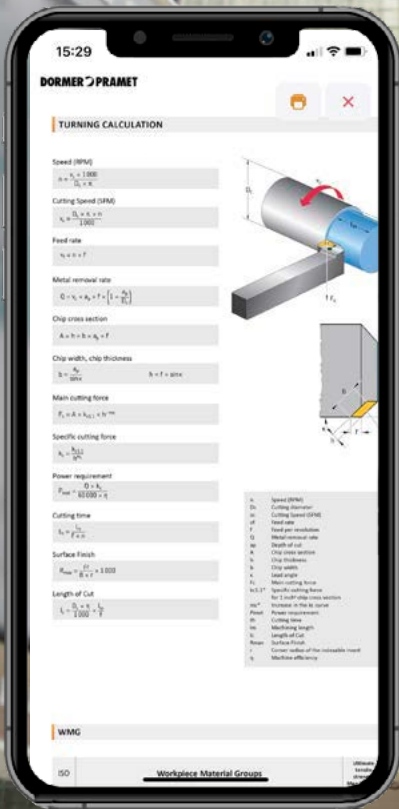


DORMER PRAMET



HELP IS AT HAND

Our technical support team are always at hand to help with any technical questions or queries you have about our technical apps. Use the contact us details to reach out to your local Dormer Pramet sales office. **Simply Reliable.**





| Thread form (THFT) | | | | | | | |
|-----------------------------------|----|-------------|-------------|-------------|-------------|-------------|-------------|
| Basic standard group (BSG) | | ISO 2568 | ISO 2568 | ISO 2568 | ISO 2568 | ISO 2568 | ISO 2568 |
| Thread tolerance class (TCTR) | | 6g | 6g | 6g | 6g | 2A | 2A |
| Die chamfer to pitch ratio (DCPR) | | 1.75 XP | 1.75 XP | 2.25 XP | 1.75 XP | 1.75 XP | 1.75 XP |
| Material code (BMC) | | HSS | HSS | HSS-E | HSS | HSS | HSS |
| Hand (Cutting direction) | | | | | | | |
| Coating | | | | | | | |
| | | | | | | | |
| Product Family Code | | F100 | F201 | F108 | F110 | F120 | F130 |
| | | M2 - M42 | M3 - M20 | M2 - M20 | M4 - M40 | No.8 - 1" | No.10 - 1" |
| | | 248 | 249 | 250 | 251 | 252 | 253 |
| P | P1 | ■ | ■ | ▣ | ■ | ■ | ■ |
| | P2 | ■ | ■ | ▣ | ■ | ■ | ■ |
| | P3 | ▣ | ▣ | ■ | ▣ | ▣ | ▣ |
| | P4 | ▣ | ▣ | ■ | ▣ | ▣ | ▣ |
| M | M1 | ■ | ■ | ▣ | ■ | ■ | ■ |
| | M2 | ▣ | ▣ | ■ | ▣ | ▣ | ▣ |
| | M3 | | | ■ | | | |
| | M4 | | | ▣ | | | |
| K | K1 | ■ | ■ | | ■ | ■ | ■ |
| | K2 | ■ | ■ | | ■ | ■ | ■ |
| | K3 | ■ | ■ | | ■ | ■ | ■ |
| | K4 | | | ■ | | | |
| | K5 | ■ | ■ | | ■ | ■ | ■ |
| N | N1 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| | N2 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| | N3 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| | N4 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| | N5 | | | | | | |
| S | S1 | | | ▣ | | | |
| | S2 | | | | | | |
| | S3 | | | | | | |
| | S4 | | | | | | |
| H | H1 | | | | | | |
| | H2 | | | | | | |
| | H3 | | | | | | |
| | H4 | | | | | | |

■ Primary use ▣ Possible use



BSW
ISO
2568
Medium
1.75
XP
HSS
R
Bright

BSF
ISO
2568
Medium
1.75
XP
HSS
R
Bright

G
ISO
2568
Class
A
1.75
XP
HSS
R
Bright

NPT
ISO
2568
Normal
1.75
XP
HSS
R
Bright

PG
ISO
2568
Normal
1.75
XP
HSS
R
Bright

M
BS
1127:1950
1.75
XP
HSS
R
Bright

MF
BS
1127:1950
1.75
XP
HSS
R
Bright



F140

F150

F170

F180

F190

F300

F310

1/8 - 1"

3/16 - 1/2

1/8 - 2"

1/8 - 1"

No.7 - No.36

M2 - M36

M3 - M30

254

255

256

257

258

259

260

| | | | | | | | |
|----|---|---|---|---|---|---|---|
| P1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| P3 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| P4 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| M1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M2 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| M3 | | | | | | | |
| M4 | | | | | | | |
| K1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| K2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| K3 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| K4 | | | | | | | |
| K5 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N1 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| N2 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| N3 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| N4 | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| N5 | | | | | | | |
| S1 | | | | | | | |
| S2 | | | | | | | |
| S3 | | | | | | | |
| S4 | | | | | | | |
| H1 | | | | | | | |
| H2 | | | | | | | |
| H3 | | | | | | | |
| H4 | | | | | | | |



| | | UNC | UNF | G | M | M | MF |
|-----------------------------------|----|-----------------|-----------------|-----------------|-------------|-----------------|-----------------|
| Thread form (THFT) | | | | | | | |
| Basic standard group (BSG) | | BS 1127:1950 | BS 1127:1950 | BS 1127:1950 | DIN 382 | BS 1127:1950 | BS 1127:1950 |
| Thread tolerance class (TCTR) | | | | | 6g | 6g | 6g |
| Die chamfer to pitch ratio (DCPR) | | 1.75 XP | 1.75 XP | 1.75 XP | 1.75 XP | 1.75 XP | 1.75 XP |
| Material code (BMC) | | HSS | HSS | HSS | HSS | HSS | HSS |
| Hand (Cutting direction) | | | | | | | |
| Coating | | | | | | | |
| | | | | | | | |
| Product Family Code | | F320 | F330 | F370 | F202 | F302 | F312 |
| | | No.4 - 1.1/4 | No.4 - 1.1/2 | 1/8 - 1.1/2 | M3 - M36 | M3 - M36 | M8 - M24 |
| | | 261 | 262 | 263 | 264 | 265 | 266 |
| P | P1 | ■ | ■ | ■ | ■ | ■ | ■ |
| | P2 | ■ | ■ | ■ | ■ | ■ | ■ |
| | P3 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| | P4 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| M | M1 | ■ | ■ | ■ | ■ | ■ | ■ |
| | M2 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| | M3 | | | | | | |
| | M4 | | | | | | |
| K | K1 | ■ | ■ | ■ | ■ | ■ | ■ |
| | K2 | ■ | ■ | ■ | ■ | ■ | ■ |
| | K3 | ■ | ■ | ■ | ■ | ■ | ■ |
| | K4 | | | | | | |
| | K5 | ■ | ■ | ■ | ■ | ■ | ■ |
| N | N1 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| | N2 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| | N3 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| | N4 | ▣ | ▣ | ▣ | ▣ | ▣ | ▣ |
| | N5 | | | | | | |
| S | S1 | | | | | | |
| | S2 | | | | | | |
| | S3 | | | | | | |
| | S4 | | | | | | |
| H | H1 | | | | | | |
| | H2 | | | | | | |
| | H3 | | | | | | |
| | H4 | | | | | | |

■ Primary use ▣ Possible use

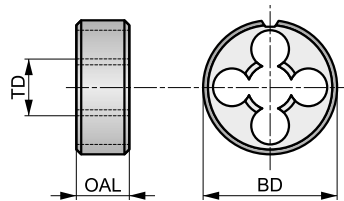


F100



HSS Gun Nosed Machine Die, Metric, Right Hand

Solid die for external thread. Generally for use on lathes, small diameters can be produced by hand with a die stock holder. The gun-nose will drive the chip ahead of the cutting edge, increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action.



| | | |
|-------------------|--------------------|-----------|
| M | ISO 2568 | 6g |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

Products from this series are also available in set with taps. Please see L120.

| Product | TD [mm] | TP [mm] | BD [mm] | OAL [mm] |
|-------------------------------|------------|------------|------------|-------------|
| F100M2 ¹⁾ | 2.000 | 0.40 | 16.00 | 5.0 |
| F100M2.5 ¹⁾ | 2.500 | 0.45 | 16.00 | 5.0 |
| F100M2.6 ¹⁾ | 2.600 | 0.45 | 16.00 | 5.0 |
| F100M3 | 3.000 | 0.50 | 20.00 | 5.0 |
| F100M3.5 | 3.500 | 0.60 | 20.00 | 5.0 |
| F100M4 | 4.000 | 0.70 | 20.00 | 5.0 |
| F100M4.5 | 4.500 | 0.75 | 20.00 | 7.0 |
| F100M5 | 5.000 | 0.80 | 20.00 | 7.0 |
| F100M6 | 6.000 | 1.00 | 20.00 | 7.0 |
| F100M7 | 7.000 | 1.00 | 25.00 | 9.0 |
| F100M8 | 8.000 | 1.25 | 25.00 | 9.0 |
| F100M9 | 9.000 | 1.25 | 25.00 | 9.0 |
| F100M10 | 10.000 | 1.50 | 30.00 | 11.0 |
| F100M11 | 11.000 | 1.50 | 30.00 | 11.0 |

| Product | TD [mm] | TP [mm] | BD [mm] | OAL [mm] |
|----------------|------------|------------|------------|-------------|
| F100M12 | 12.000 | 1.75 | 38.00 | 14.0 |
| F100M14 | 14.000 | 2.00 | 38.00 | 14.0 |
| F100M16 | 16.000 | 2.00 | 45.00 | 18.0 |
| F100M18 | 18.000 | 2.50 | 45.00 | 18.0 |
| F100M20 | 20.000 | 2.50 | 45.00 | 18.0 |
| F100M22 | 22.000 | 2.50 | 55.00 | 22.0 |
| F100M24 | 24.000 | 3.00 | 55.00 | 22.0 |
| F100M27 | 27.000 | 3.00 | 65.00 | 25.0 |
| F100M30 | 30.000 | 3.50 | 65.00 | 25.0 |
| F100M33 | 33.000 | 3.50 | 65.00 | 25.0 |
| F100M36 | 36.000 | 4.00 | 65.00 | 25.0 |
| F100M39 | 39.000 | 4.00 | 75.00 | 30.0 |
| F100M42 | 42.000 | 4.50 | 75.00 | 30.0 |

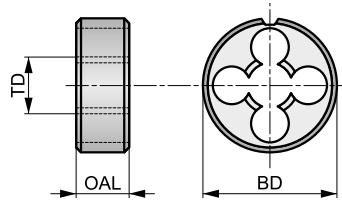
¹⁾ Without gun-nose.



F201

HSS Gun Nosed Machine Die, Metric, Left Hand

Solid die for external thread. Generally for use on lathes, small diameters can be produced by hand with a die stock holder. The gun-nose will drive the chip ahead of the cutting edge, increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action.



| | | |
|-------------------|--------------------|-----------|
| M | ISO 2568 | 6g |
| 1.75 XP | HSS | L |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▧ 8 | P3.1 ■ 8 | P3.2 ▧ 7 | P4.1 ▧ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▧ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▧ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▧ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▧ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▧ 6 | N1.1 ▧ 20 | N1.2 ▧ 15 | N1.3 ▧ 10 |
| N2.1 ▧ 10 | N2.2 ▧ 9 | N2.3 ▧ 6 | N3.1 ■ 11 | N3.2 ▧ 6 | N3.3 ▧ 3 | N4.1 ▧ 11 | N4.2 ▧ 4 | N4.3 ▧ 4 | | | | | |

| Product | TD | TP | BD | OAL |
|---------|--------|------|-------|------|
| | [mm] | [mm] | [mm] | [mm] |
| F201M3 | 3.000 | 0.50 | 20.00 | 5.0 |
| F201M4 | 4.000 | 0.70 | 20.00 | 5.0 |
| F201M5 | 5.000 | 0.80 | 20.00 | 7.0 |
| F201M6 | 6.000 | 1.00 | 20.00 | 7.0 |
| F201M8 | 8.000 | 1.25 | 25.00 | 9.0 |
| F201M10 | 10.000 | 1.50 | 30.00 | 11.0 |
| F201M12 | 12.000 | 1.75 | 38.00 | 14.0 |
| F201M14 | 14.000 | 2.00 | 38.00 | 14.0 |
| F201M16 | 16.000 | 2.00 | 45.00 | 18.0 |
| F201M18 | 18.000 | 2.50 | 45.00 | 18.0 |
| F201M20 | 20.000 | 2.50 | 45.00 | 18.0 |

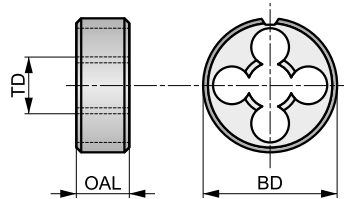


F108



HSS-E Gun Nosed Machine Die, Metric, Right Hand

Solid die for producing external thread. The gun-nose will drive the chip ahead of the cutting edge, increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action. Specific geometry to cut accurate threads in stainless steel.



| | | |
|-------------------|--------------------|-----------|
| M | ISO 2568 | 6g |
| 2.25 XP | HSS-E | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|
| P1.1 ▣12 | P1.2 ▣13 | P1.3 ▣14 | P2.1 ▣10 | P2.2 ▣9 | P2.3 ■8 | P3.1 ▣8 | P3.2 ■7 | P3.3 ■6 | P4.1 ■5 | P4.2 ■4 | M1.1 ▣7 | M1.2 ▣6 | M2.1 ■6 |
| M2.2 ■5 | M2.3 ▣5 | M3.1 ■6 | M3.2 ■5 | M3.3 ■4 | M4.1 ■5 | K4.1 ■9 | K4.2 ■7 | K4.3 ■5 | K4.4 ■4 | K4.5 ▣4 | N1.1 ▣20 | N1.2 ▣15 | N1.3 ■10 |
| N2.1 ▣10 | N2.2 ▣9 | N2.3 ■6 | N3.1 ■11 | N3.2 ▣6 | N3.3 ▣3 | N4.1 ▣11 | N4.2 ▣4 | N4.3 ▣4 | S1.1 ▣5 | | | | |

| Product | TD [mm] | TP [mm] | BD [mm] | OAL [mm] |
|-------------------------------|------------|------------|------------|-------------|
| F108M2 ¹⁾ | 2.000 | 0.40 | 16.00 | 5.0 |
| F108M2.5 ¹⁾ | 2.500 | 0.45 | 16.00 | 5.0 |
| F108M3 | 3.000 | 0.50 | 20.00 | 5.0 |
| F108M4 | 4.000 | 0.70 | 20.00 | 5.0 |
| F108M5 | 5.000 | 0.80 | 20.00 | 7.0 |
| F108M6 | 6.000 | 1.00 | 20.00 | 7.0 |
| F108M8 | 8.000 | 1.25 | 25.00 | 9.0 |
| F108M10 | 10.000 | 1.50 | 30.00 | 11.0 |
| F108M12 | 12.000 | 1.75 | 38.00 | 14.0 |
| F108M14 | 14.000 | 2.00 | 38.00 | 14.0 |
| F108M16 | 16.000 | 2.00 | 45.00 | 18.0 |
| F108M18 | 18.000 | 2.50 | 45.00 | 18.0 |
| F108M20 | 20.000 | 2.50 | 45.00 | 18.0 |

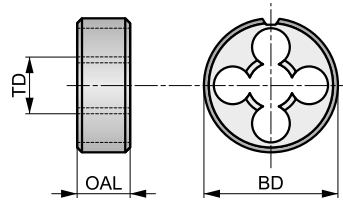
¹⁾ Without gun-nose.



F110

HSS Gun Nosed Machine Die, Metric Fine, Right Hand

Solid die for external thread. Generally for use on lathes, small diameters can be produced by hand with a die stock holder. The gun-nose will drive the chip ahead of the cutting edge increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action.



| | | |
|-------------------|--------------------|-----------|
| MF | ISO 2568 | 6g |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

| Product | TD [mm] | TP [mm] | BD [mm] | OAL [mm] |
|--------------|------------|------------|------------|-------------|
| F110M4X.5 | 4.000 | 0.50 | 20.00 | 5.0 |
| F110M5X.5 | 5.000 | 0.50 | 20.00 | 5.0 |
| F110M6X.75 | 6.000 | 0.75 | 20.00 | 7.0 |
| F110M7X.75 | 7.000 | 0.75 | 25.00 | 9.0 |
| F110M8X.75 | 8.000 | 0.75 | 25.00 | 9.0 |
| F110M8X1.0 | 8.000 | 1.00 | 25.00 | 9.0 |
| F110M9X1.0 | 9.000 | 1.00 | 25.00 | 9.0 |
| F110M10X.75 | 10.000 | 0.75 | 30.00 | 11.0 |
| F110M10X1.0 | 10.000 | 1.00 | 30.00 | 11.0 |
| F110M10X1.25 | 10.000 | 1.25 | 30.00 | 11.0 |
| F110M11X1.0 | 11.000 | 1.00 | 30.00 | 11.0 |
| F110M12X1.0 | 12.000 | 1.00 | 38.00 | 10.0 |
| F110M12X1.25 | 12.000 | 1.25 | 38.00 | 10.0 |
| F110M12X1.5 | 12.000 | 1.50 | 38.00 | 10.0 |
| F110M13X1.0 | 13.000 | 1.00 | 38.00 | 10.0 |
| F110M14X1.0 | 14.000 | 1.00 | 38.00 | 10.0 |
| F110M14X1.25 | 14.000 | 1.25 | 38.00 | 10.0 |
| F110M14X1.5 | 14.000 | 1.50 | 38.00 | 10.0 |
| F110M15X1.0 | 15.000 | 1.00 | 38.00 | 10.0 |
| F110M15X1.5 | 15.000 | 1.50 | 38.00 | 10.0 |
| F110M16X1.0 | 16.000 | 1.00 | 45.00 | 14.0 |

| Product | TD [mm] | TP [mm] | BD [mm] | OAL [mm] |
|-------------|------------|------------|------------|-------------|
| F110M16X1.5 | 16.000 | 1.50 | 45.00 | 14.0 |
| F110M18X1.0 | 18.000 | 1.00 | 45.00 | 14.0 |
| F110M18X1.5 | 18.000 | 1.50 | 45.00 | 14.0 |
| F110M20X1.0 | 20.000 | 1.00 | 45.00 | 14.0 |
| F110M20X1.5 | 20.000 | 1.50 | 45.00 | 14.0 |
| F110M22X1.0 | 22.000 | 1.00 | 55.00 | 16.0 |
| F110M22X1.5 | 22.000 | 1.50 | 55.00 | 16.0 |
| F110M24X1.0 | 24.000 | 1.00 | 55.00 | 16.0 |
| F110M24X1.5 | 24.000 | 1.50 | 55.00 | 16.0 |
| F110M24X2.0 | 24.000 | 2.00 | 55.00 | 16.0 |
| F110M25X1.5 | 25.000 | 1.50 | 55.00 | 16.0 |
| F110M26X1.5 | 26.000 | 1.50 | 55.00 | 16.0 |
| F110M27X1.5 | 27.000 | 1.50 | 65.00 | 18.0 |
| F110M27X2.0 | 27.000 | 2.00 | 65.00 | 18.0 |
| F110M28X1.5 | 28.000 | 1.50 | 65.00 | 18.0 |
| F110M30X1.5 | 30.000 | 1.50 | 65.00 | 18.0 |
| F110M32X1.5 | 32.000 | 1.50 | 65.00 | 18.0 |
| F110M35X1.5 | 35.000 | 1.50 | 65.00 | 18.0 |
| F110M36X1.5 | 36.000 | 1.50 | 65.00 | 18.0 |
| F110M40X1.5 | 40.000 | 1.50 | 75.00 | 20.0 |

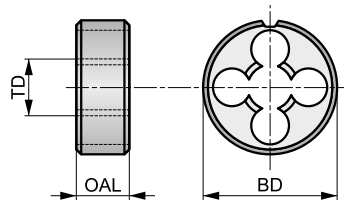


F120



HSS Gun Nosed Machine Die, UNC, Right Hand

Solid die for external thread. Generally for use on lathes, small diameters can be produced by hand with a die stock holder. The gun-nose will drive the chip ahead of the cutting edge, increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action.



| | | |
|-------------------|--------------------|-----------|
| UNC | ISO 2568 | 2A |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

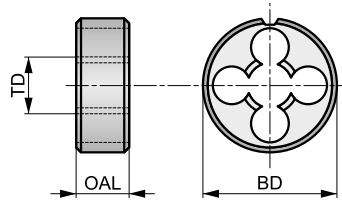
| Product | TDZ | TPI | TD | BD | OAL |
|-----------|------|-----|--------|-------|------|
| | | | [mm] | [mm] | [mm] |
| F1208-32 | 8 | 32 | 4.170 | 20.00 | 7.0 |
| F12010-24 | 10 | 24 | 4.830 | 20.00 | 7.0 |
| F1201/4 | 1/4 | 20 | 6.350 | 20.00 | 7.0 |
| F1205/16 | 5/16 | 18 | 7.940 | 25.00 | 9.0 |
| F1203/8 | 3/8 | 16 | 9.530 | 30.00 | 11.0 |
| F1207/16 | 7/16 | 14 | 11.110 | 30.00 | 11.0 |
| F1201/2 | 1/2 | 13 | 12.700 | 38.00 | 14.0 |
| F1209/16 | 9/16 | 12 | 14.290 | 38.00 | 14.0 |
| F1205/8 | 5/8 | 11 | 15.880 | 45.00 | 18.0 |
| F1203/4 | 3/4 | 10 | 19.050 | 45.00 | 18.0 |
| F1207/8 | 7/8 | 9 | 22.230 | 55.00 | 22.0 |
| F1201 | 1" | 8 | 25.400 | 55.00 | 22.0 |



F130

HSS Gun Nosed Machine Die, UNF, Right Hand

Solid die for external thread. Generally for use on lathes, small diameters can be produced by hand with a die stock holder. The gun-nose will drive the chip ahead of the cutting edge, increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action.



| | | |
|-------------------|--------------------|-----------|
| UNF | ISO 2568 | 2A |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

| Product | TDZ | TPI | TD | BD | OAL |
|-----------|------|-----|--------|-------|------|
| | | | [mm] | [mm] | [mm] |
| F13010-32 | 10 | 32 | 4.830 | 20.00 | 7.0 |
| F1301/4 | 1/4 | 28 | 6.350 | 20.00 | 7.0 |
| F1305/16 | 5/16 | 24 | 7.940 | 25.00 | 9.0 |
| F1303/8 | 3/8 | 24 | 9.530 | 30.00 | 11.0 |
| F1307/16 | 7/16 | 20 | 11.110 | 30.00 | 11.0 |
| F1301/2 | 1/2 | 20 | 12.700 | 38.00 | 10.0 |
| F1309/16 | 9/16 | 18 | 14.290 | 38.00 | 10.0 |
| F1305/8 | 5/8 | 18 | 15.880 | 45.00 | 14.0 |
| F1303/4 | 3/4 | 16 | 19.050 | 45.00 | 14.0 |
| F1307/8 | 7/8 | 14 | 22.230 | 55.00 | 16.0 |
| F1301 | 1" | 12 | 25.400 | 55.00 | 16.0 |

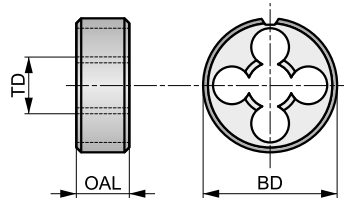


F140



HSS Gun Nosed Machine Die, BSW, Right Hand

Solid die for external thread. Generally for use on lathes, small diameters can be produced by hand with a die stock holder. The gun-nose will drive the chip ahead of the cutting edge, increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action.



| | | |
|-------------------|--------------------|----------|
| BSW | ISO 2568 | Medium |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

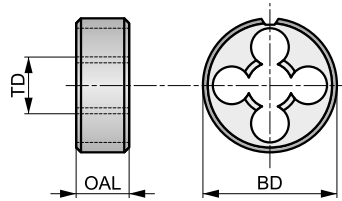
| Product | TDZ | TPI | TD | BD | OAL |
|----------|------|-----|--------|-------|------|
| | | | [mm] | [mm] | [mm] |
| F1401/8 | 1/8 | 40 | 3.170 | 20.00 | 5.0 |
| F1403/16 | 3/16 | 24 | 4.760 | 20.00 | 7.0 |
| F1401/4 | 1/4 | 20 | 6.350 | 20.00 | 7.0 |
| F1405/16 | 5/16 | 18 | 7.940 | 25.00 | 9.0 |
| F1403/8 | 3/8 | 16 | 9.530 | 30.00 | 11.0 |
| F1407/16 | 7/16 | 14 | 11.110 | 30.00 | 11.0 |
| F1401/2 | 1/2 | 12 | 12.700 | 38.00 | 14.0 |
| F1405/8 | 5/8 | 11 | 15.880 | 45.00 | 18.0 |
| F1403/4 | 3/4 | 10 | 19.050 | 45.00 | 18.0 |
| F1407/8 | 7/8 | 9 | 22.230 | 55.00 | 22.0 |
| F1401 | 1" | 8 | 25.400 | 55.00 | 22.0 |



F150

HSS Gun Nosed Machine Die, BSF, Right Hand

Solid die for external thread. Generally for use on lathes, yet small diameters can be produced by hand with a die stock holder. The gun-nose will drive the chip ahead of the cutting edge, increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action.



| | | |
|------------|--------------------|--------|
| | ISO 2568 | Medium |
| 1.75 XP | HSS | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▧ 8 | P3.1 ■ 8 | P3.2 ▧ 7 | P4.1 ▧ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▧ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▧ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▧ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▧ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▧ 6 | N1.1 ▧ 20 | N1.2 ▧ 15 | N1.3 ▧ 10 |
| N2.1 ▧ 10 | N2.2 ▧ 9 | N2.3 ▧ 6 | N3.1 ■ 11 | N3.2 ▧ 6 | N3.3 ▧ 3 | N4.1 ▧ 11 | N4.2 ▧ 4 | N4.3 ▧ 4 | | | | | |

| Product | TDZ | TPI | TD | | BD | | OAL |
|----------|------|-----|--------|--|-------|--|------|
| | | | [mm] | | [mm] | | |
| F1503/16 | 3/16 | 32 | 4.760 | | 20.00 | | 7.0 |
| F1501/4 | 1/4 | 26 | 6.350 | | 20.00 | | 7.0 |
| F1505/16 | 5/16 | 22 | 7.940 | | 25.00 | | 9.0 |
| F1503/8 | 3/8 | 20 | 9.530 | | 30.00 | | 11.0 |
| F1507/16 | 7/16 | 18 | 11.110 | | 30.00 | | 11.0 |
| F1501/2 | 1/2 | 16 | 12.700 | | 38.00 | | 10.0 |

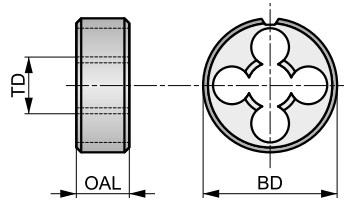


F170



HSS Gun Nosed Machine Die, G(BSP) Right Hand

Solid die for external thread. Generally for use on lathes, small diameters can be produced by hand with a die stock holder. The gun-nose will drive the chip ahead of the cutting edge, increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action.



| | | |
|-------------------|--------------------|-------------------|
| G | ISO 2568 | Class A |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▧ 8 | P3.1 ■ 8 | P3.2 ▧ 7 | P4.1 ▧ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▧ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▧ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▧ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▧ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▧ 6 | N1.1 ▧ 20 | N1.2 ▧ 15 | N1.3 ▧ 10 |
| N2.1 ▧ 10 | N2.2 ▧ 9 | N2.3 ▧ 6 | N3.1 ■ 11 | N3.2 ▧ 6 | N3.3 ▧ 3 | N4.1 ▧ 11 | N4.2 ▧ 4 | N4.3 ▧ 4 | | | | | |

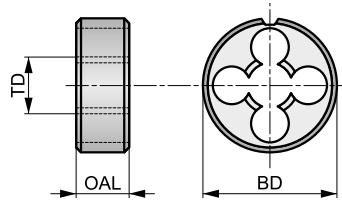
| Product | TDZ | TPI | TD | BD | OAL |
|-----------|-------|-----|--------|--------|------|
| | | | [mm] | [mm] | [mm] |
| F1701/8 | 1/8 | 28 | 9.730 | 30.00 | 11.0 |
| F1701/4 | 1/4 | 19 | 13.160 | 38.00 | 10.0 |
| F1703/8 | 3/8 | 19 | 16.660 | 45.00 | 14.0 |
| F1701/2 | 1/2 | 14 | 20.960 | 45.00 | 14.0 |
| F1705/8 | 5/8 | 14 | 22.910 | 55.00 | 16.0 |
| F1703/4 | 3/4 | 14 | 26.440 | 55.00 | 16.0 |
| F1707/8 | 7/8 | 14 | 30.200 | 65.00 | 18.0 |
| F1701 | 1" | 11 | 33.250 | 65.00 | 18.0 |
| F1701.1/8 | 1.1/8 | 11 | 37.890 | 75.00 | 20.0 |
| F1701.1/4 | 1.1/4 | 11 | 41.910 | 75.00 | 20.0 |
| F1701.1/2 | 1.1/2 | 11 | 47.800 | 90.00 | 22.0 |
| F1702 | 2" | 11 | 59.610 | 105.00 | 22.0 |



F180

HSS Gun Nosed Machine Die, NPT, Right Hand

Solid die for external thread. Generally for use on lathes, small diameters can be produced by hand with a die stock holder. The gun-nose will drive the chip ahead of the cutting edge, increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action.



| | | |
|-------------------|--------------------|--------|
| | ISO 2568 | Normal |
| 1.75 XP | HSS | |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▧ 8 | P3.1 ■ 8 | P3.2 ▧ 7 | P4.1 ▧ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▧ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▧ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▧ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▧ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▧ 6 | N1.1 ▧ 20 | N1.2 ▧ 15 | N1.3 ▧ 10 |
| N2.1 ▧ 10 | N2.2 ▧ 9 | N2.3 ▧ 6 | N3.1 ■ 11 | N3.2 ▧ 6 | N3.3 ▧ 3 | N4.1 ▧ 11 | N4.2 ▧ 4 | N4.3 ▧ 4 | | | | | |

| Product | TDZ | TPI | TD | BD | OAL |
|---------|-----|------|--------|-------|------|
| | | | [mm] | [mm] | [mm] |
| F1801/8 | 1/8 | 27 | 9.490 | 30.00 | 11.0 |
| F1801/4 | 1/4 | 18 | 12.490 | 38.00 | 14.0 |
| F1803/8 | 3/8 | 18 | 15.930 | 45.00 | 14.0 |
| F1801/2 | 1/2 | 14 | 19.770 | 45.00 | 18.0 |
| F1803/4 | 3/4 | 14 | 25.120 | 55.00 | 22.0 |
| F1801 | 1" | 11.5 | 31.460 | 65.00 | 25.0 |

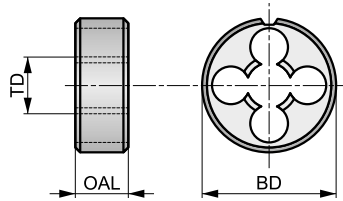


F190



HSS Gun Nosed Machine Die, PG Conduit Thread, Right Hand

Solid die for external thread. Generally for use on lathes, small diameters can be produced by hand with a die stock holder. The gun-nose will drive the chip ahead of the cutting edge, increasing performance. Bright finish lapped surface prevents the workpiece material from sticking and improves the threading action.



| | | |
|-------------------|--------------------|----------|
| PG | ISO 2568 | Normal |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▧ 8 | P3.1 ■ 8 | P3.2 ▧ 7 | P4.1 ▧ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▧ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▧ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▧ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▧ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▧ 6 | N1.1 ▧ 20 | N1.2 ▧ 15 | N1.3 ▧ 10 |
| N2.1 ▧ 10 | N2.2 ▧ 9 | N2.3 ▧ 6 | N3.1 ■ 11 | N3.2 ▧ 6 | N3.3 ▧ 3 | N4.1 ▧ 11 | N4.2 ▧ 4 | N4.3 ▧ 4 | | | | | |

| Product | TDZ | TPI | TD | BD | OAL |
|------------|------|-----|--------|-------|------|
| | | | [mm] | | |
| F190PG7 | 7 | 20 | 12.500 | 38.00 | 10.0 |
| F190PG9 | 9 | 18 | 15.200 | 38.00 | 10.0 |
| F190PG11 | 11 | 18 | 18.600 | 45.00 | 14.0 |
| F190PG13.5 | 13.5 | 18 | 20.400 | 45.00 | 14.0 |
| F190PG16 | 16 | 18 | 22.500 | 55.00 | 16.0 |
| F190PG21 | 21 | 16 | 28.300 | 65.00 | 18.0 |
| F190PG29 | 29 | 16 | 37.000 | 65.00 | 18.0 |
| F190PG36 | 36 | 16 | 47.000 | 90.00 | 22.0 |

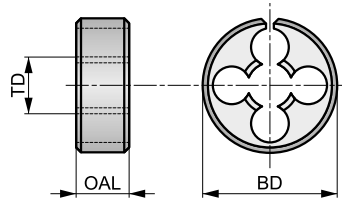


F300



HSS Adjustable Split Hand Die, Metric, Right Hand

Split die to produce external thread by hand in multiple passes, adjusting each pass. By tightening the die stock holder, different classes of thread can be achieved - tight, regular or loose fit. Slightly tightened in the holder, it can be used to clean up or produce a partial thread.



| | | |
|----------|-----------------|------------|
| M | BS 1127:1950 | 1.75 XP |
| HSS | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

Products from this series are also available in set with taps. Please see L120.

| Product | TD [mm] | TP [mm] | BD [inch] | OAL [inch] |
|----------------|------------|------------|--------------|---------------|
| F300M2X13/16 | 2.000 | 0.40 | 13/16 | 1/4 |
| F300M2.5X13/16 | 2.500 | 0.45 | 13/16 | 1/4 |
| F300M3X13/16 | 3.000 | 0.50 | 13/16 | 1/4 |
| F300M3.5X13/16 | 3.500 | 0.60 | 13/16 | 1/4 |
| F300M4X13/16 | 4.000 | 0.70 | 13/16 | 1/4 |
| F300M5X13/16 | 5.000 | 0.80 | 13/16 | 1/4 |
| F300M5X1 | 5.000 | 0.80 | 1" | 3/8 |
| F300M6X13/16 | 6.000 | 1.00 | 13/16 | 1/4 |
| F300M6X1 | 6.000 | 1.00 | 1" | 3/8 |
| F300M6X1.5/16 | 6.000 | 1.00 | 1.5/16 | 7/16 |
| F300M7X13/16 | 7.000 | 1.00 | 13/16 | 1/4 |
| F300M7X1 | 7.000 | 1.00 | 1" | 3/8 |
| F300M8X1 | 8.000 | 1.25 | 1" | 3/8 |
| F300M8X1.5/16 | 8.000 | 1.25 | 1.5/16 | 7/16 |
| F300M9X1 | 9.000 | 1.25 | 1" | 3/8 |
| F300M9X1.5/16 | 9.000 | 1.25 | 1.5/16 | 7/16 |
| F300M10X1 | 10.000 | 1.50 | 1" | 3/8 |
| F300M10X1.5/16 | 10.000 | 1.50 | 1.5/16 | 7/16 |

| Product | TD [mm] | TP [mm] | BD [inch] | OAL [inch] |
|----------------|------------|------------|--------------|---------------|
| F300M10X1.1/2 | 10.000 | 1.50 | 1.1/2 | 1/2 |
| F300M11X1.5/16 | 11.000 | 1.50 | 1.5/16 | 7/16 |
| F300M12X1.5/16 | 12.000 | 1.75 | 1.5/16 | 7/16 |
| F300M12X1.1/2 | 12.000 | 1.75 | 1.1/2 | 1/2 |
| F300M14X1.5/16 | 14.000 | 2.00 | 1.5/16 | 7/16 |
| F300M14X1.1/2 | 14.000 | 2.00 | 1.1/2 | 1/2 |
| F300M16X1.1/2 | 16.000 | 2.00 | 1.1/2 | 1/2 |
| F300M16X2 | 16.000 | 2.00 | 2" | 5/8 |
| F300M18X1.1/2 | 18.000 | 2.50 | 1.1/2 | 1/2 |
| F300M18X2 | 18.000 | 2.50 | 2" | 5/8 |
| F300M20X1.1/2 | 20.000 | 2.50 | 1.1/2 | 1/2 |
| F300M20X2 | 20.000 | 2.50 | 2" | 5/8 |
| F300M22X2 | 22.000 | 2.50 | 2" | 5/8 |
| F300M24X2 | 24.000 | 3.00 | 2" | 5/8 |
| F300M27X3 | 27.000 | 3.00 | 3" | 7/8 |
| F300M30X3 | 30.000 | 3.50 | 3" | 7/8 |
| F300M36X3 | 36.000 | 4.00 | 3" | 7/8 |

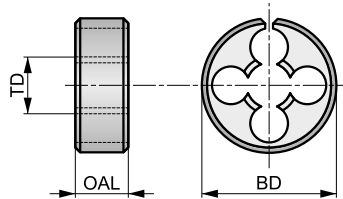


F310



HSS Adjustable Split Hand Die, Metric Fine, Right Hand

Split die to produce external thread by hand in multiple passes, adjusting each pass. By tightening the die stock holder, different classes of thread fit can be achieved - tight, regular or loose fit. Slightly tightened in the holder, it can be used to clean up or produce a partial thread.



| | | |
|-----------|-----------------|------------|
| MF | BS 1127:1950 | 1.75 XP |
| HSS | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

| Product | TD [mm] | TP [mm] | BD [inch] | OAL [inch] |
|---------------------|------------|------------|--------------|---------------|
| F310M3X.35X13/16 | 3.000 | 0.35 | 13/16 | 1/4 |
| F310M4X.5X13/16 | 4.000 | 0.50 | 13/16 | 1/4 |
| F310M4X.75X13/16 | 4.000 | 0.75 | 13/16 | 1/4 |
| F310M5X.5X13/16 | 5.000 | 0.50 | 13/16 | 1/4 |
| F310M5X.9X13/16 | 5.000 | 0.90 | 13/16 | 1/4 |
| F310M6X.75X13/16 | 6.000 | 0.75 | 13/16 | 1/4 |
| F310M8X.75X1 | 8.000 | 0.75 | 1" | 3/8 |
| F310M8X1.0X1 | 8.000 | 1.00 | 1" | 3/8 |
| F310M9X1.0X1 | 9.000 | 1.00 | 1" | 3/8 |
| F310M10X.75X1 | 10.000 | 0.75 | 1" | 3/8 |
| F310M10X1.0X1 | 10.000 | 1.00 | 1" | 3/8 |
| F310M10X1.25X1 | 10.000 | 1.25 | 1" | 3/8 |
| F310M10X1.25X1.5/16 | 10.000 | 1.25 | 1.5/16 | 7/16 |
| F310M12X1.0X1.5/16 | 12.000 | 1.00 | 1.5/16 | 7/16 |
| F310M12X1.25X1.5/16 | 12.000 | 1.25 | 1.5/16 | 7/16 |

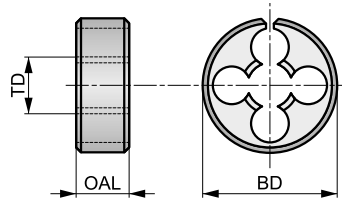
| Product | TD [mm] | TP [mm] | BD [inch] | OAL [inch] |
|---------------------|------------|------------|--------------|---------------|
| F310M12X1.5X1.5/16 | 12.000 | 1.50 | 1.5/16 | 7/16 |
| F310M14X1.25X1.5/16 | 14.000 | 1.25 | 1.5/16 | 7/16 |
| F310M14X1.5X1.5/16 | 14.000 | 1.50 | 1.5/16 | 7/16 |
| F310M16X1.0X1.1/2 | 16.000 | 1.00 | 1.1/2 | 1/2 |
| F310M16X1.5X1.1/2 | 16.000 | 1.50 | 1.1/2 | 1/2 |
| F310M18X1.5X1.1/2 | 18.000 | 1.50 | 1.1/2 | 1/2 |
| F310M20X1.0X1.1/2 | 20.000 | 1.00 | 1.1/2 | 1/2 |
| F310M20X1.5X2 | 20.000 | 1.50 | 2" | 5/8 |
| F310M20X2.0X1.1/2 | 20.000 | 2.00 | 1.1/2 | 1/2 |
| F310M22X1.5X2 | 22.000 | 1.50 | 2" | 5/8 |
| F310M24X1.5X2 | 24.000 | 1.50 | 2" | 5/8 |
| F310M24X2.0X2 | 24.000 | 2.00 | 2" | 5/8 |
| F310M25X1.5X2 | 25.000 | 1.50 | 2" | 5/8 |
| F310M27X2.0X2.1/4 | 27.000 | 2.00 | 2.1/4 | 11/16 |
| F310M30X2.0X2.1/4 | 30.000 | 2.00 | 2.1/4 | 11/16 |



F320

HSS Adjustable Split Hand Die, UNC, Right Hand

Split die to produce external thread by hand in multiple passes, adjusting each pass. By tightening the die stock holder, different classes of thread fit can be achieved - tight, regular or loose fit. Slightly tightened in the holder it can be used to clean up or produce a partial thread.



| | | |
|------------|-----------------|------------|
| UNC | BS 1127:1950 | 1.75 XP |
| HSS | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ■ 8 | P3.1 ■ 8 | P3.2 ■ 7 | P4.1 ■ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ■ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ■ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ■ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ■ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ■ 6 | N1.1 ■ 20 | N1.2 ■ 15 | N1.3 ■ 10 |
| N2.1 ■ 10 | N2.2 ■ 9 | N2.3 ■ 6 | N3.1 ■ 11 | N3.2 ■ 6 | N3.3 ■ 3 | N4.1 ■ 11 | N4.2 ■ 4 | N4.3 ■ 4 | | | | | |

Products from this series are also available in set with taps. Please see L120.

| Product | TDZ | TPI | TD | BD | OAL | Product | TDZ | TPI | TD | BD | OAL |
|-----------------|------|-----|-------|--------|--------|-----------------|-------|-----|--------|--------|--------|
| | | | [mm] | [inch] | [inch] | | | | [mm] | [inch] | [inch] |
| F3204-40X13/16 | 4 | 40 | 2.850 | 13/16 | 1/4 | F3203/8X1.1/2 | 3/8 | 16 | 9.530 | 1.1/2 | 1/2 |
| F3205-40X13/16 | 5 | 40 | 3.180 | 13/16 | 1/4 | F3207/16X1.5/16 | 7/16 | 14 | 11.110 | 1.5/16 | 7/16 |
| F3206-32X13/16 | 6 | 32 | 3.510 | 13/16 | 1/4 | F3207/16X1.1/2 | 7/16 | 14 | 11.110 | 1.1/2 | 1/2 |
| F3208-32X13/16 | 8 | 32 | 4.170 | 13/16 | 1/4 | F3201/2X1.5/16 | 1/2 | 13 | 12.700 | 1.5/16 | 7/16 |
| F3208-32X1 | 8 | 32 | 4.170 | 1" | 3/8 | F3201/2X1.1/2 | 1/2 | 13 | 12.700 | 1.1/2 | 1/2 |
| F32010-24X13/16 | 10 | 24 | 4.830 | 13/16 | 1/4 | F3201/2X2 | 1/2 | 13 | 12.700 | 2" | 5/8 |
| F32010-24X1 | 10 | 24 | 4.830 | 1" | 3/8 | F3209/16X1.1/2 | 9/16 | 12 | 14.290 | 1.1/2 | 1/2 |
| F32012-24X13/16 | 12 | 24 | 5.490 | 13/16 | 1/4 | F3205/8X1.1/2 | 5/8 | 11 | 15.880 | 1.1/2 | 1/2 |
| F3201/4X13/16 | 1/4 | 20 | 6.350 | 13/16 | 1/4 | F3205/8X2 | 5/8 | 11 | 15.880 | 2" | 5/8 |
| F3201/4X1 | 1/4 | 20 | 6.350 | 1" | 3/8 | F3203/4X1.1/2 | 3/4 | 10 | 19.050 | 1.1/2 | 1/2 |
| F3201/4X1.5/16 | 1/4 | 20 | 6.350 | 1.5/16 | 7/16 | F3203/4X2 | 3/4 | 10 | 19.050 | 2" | 5/8 |
| F3201/4X1.1/2 | 1/4 | 20 | 6.350 | 1.1/2 | 1/2 | F3207/8X2 | 7/8 | 9 | 22.230 | 2" | 5/8 |
| F3205/16X1 | 5/16 | 18 | 7.940 | 1" | 3/8 | F3201X2 | 1" | 8 | 25.400 | 2" | 5/8 |
| F3205/16X1.1/2 | 5/16 | 18 | 7.940 | 1.1/2 | 1/2 | F3201.1/8X3 | 1.1/8 | 7 | 28.580 | 3" | 7/8 |
| F3203/8X1 | 3/8 | 16 | 9.530 | 1" | 3/8 | F3201.1/4X3 | 1.1/4 | 7 | 31.750 | 3" | 7/8 |
| F3203/8X1.5/16 | 3/8 | 16 | 9.530 | 1.5/16 | 7/16 | | | | | | |

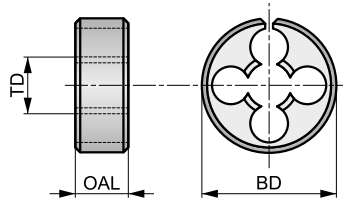


F330



HSS Adjustable Split Hand Die, UNF, Right Hand

Split die to produce external thread by hand in multiple passes, adjusting each pass. By tightening the die stock holder, different classes of thread fit can be achieved - tight, regular or loose fit. Slightly tightened in the holder it can be used to clean up or produce a partial thread.



| | | |
|------------|-----------------|------------|
| UNF | BS 1127:1950 | 1.75 XP |
| HSS | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

Products from this series are also available in set with taps. Please see L120.

| Product | TDZ | TPI | TD | BD | OAL |
|-----------------|------|-----|-------|--------|--------|
| | | | [mm] | [inch] | [inch] |
| F3304-48X13/16 | 4 | 48 | 2.850 | 13/16 | 1/4 |
| F3305-44X13/16 | 5 | 44 | 3.180 | 13/16 | 1/4 |
| F3306-40X13/16 | 6 | 40 | 3.510 | 13/16 | 1/4 |
| F3308-36X13/16 | 8 | 36 | 4.170 | 13/16 | 1/4 |
| F33010-32X13/16 | 10 | 32 | 4.830 | 13/16 | 1/4 |
| F33010-32X1 | 10 | 32 | 4.830 | 1" | 3/8 |
| F33012-28X13/16 | 12 | 28 | 5.490 | 13/16 | 1/4 |
| F3301/4X13/16 | 1/4 | 28 | 6.350 | 13/16 | 1/4 |
| F3301/4X1 | 1/4 | 28 | 6.350 | 1" | 3/8 |
| F3301/4X1.1/2 | 1/4 | 28 | 6.350 | 1.1/2 | 1/2 |
| F3305/16X1 | 5/16 | 24 | 7.940 | 1" | 3/8 |
| F3305/16X1.5/16 | 5/16 | 24 | 7.940 | 1.5/16 | 7/16 |
| F3305/16X1.1/2 | 5/16 | 24 | 7.940 | 1.1/2 | 1/2 |
| F3303/8X1 | 3/8 | 24 | 9.530 | 1" | 3/8 |
| F3303/8X1.5/16 | 3/8 | 24 | 9.530 | 1.5/16 | 7/16 |
| F3303/8X1.1/2 | 3/8 | 24 | 9.530 | 1.1/2 | 1/2 |

| Product | TDZ | TPI | TD | BD | OAL |
|-----------------|-------|-----|--------|--------|--------|
| | | | [mm] | [inch] | [inch] |
| F3307/16X1 | 7/16 | 20 | 11.110 | 1" | 3/8 |
| F3307/16X1.5/16 | 7/16 | 20 | 11.110 | 1.5/16 | 7/16 |
| F3307/16X1.1/2 | 7/16 | 20 | 11.110 | 1.1/2 | 1/2 |
| F3301/2X1.5/16 | 1/2 | 20 | 12.700 | 1.5/16 | 7/16 |
| F3301/2X1.1/2 | 1/2 | 20 | 12.700 | 1.1/2 | 1/2 |
| F3309/16X1.5/16 | 9/16 | 18 | 14.290 | 1.5/16 | 7/16 |
| F3309/16X1.1/2 | 9/16 | 18 | 14.290 | 1.1/2 | 1/2 |
| F3305/8X1.1/2 | 5/8 | 18 | 15.880 | 1.1/2 | 1/2 |
| F3305/8X2 | 5/8 | 18 | 15.880 | 2" | 5/8 |
| F3303/4X1.1/2 | 3/4 | 16 | 19.050 | 1.1/2 | 1/2 |
| F3303/4X2 | 3/4 | 16 | 19.050 | 2" | 5/8 |
| F3307/8X2 | 7/8 | 14 | 22.230 | 2" | 5/8 |
| F3301X2 | 1" | 12 | 25.400 | 2" | 5/8 |
| F3301.1/8X3 | 1.1/8 | 12 | 28.580 | 3" | 7/8 |
| F3301.1/4X3 | 1.1/4 | 12 | 31.750 | 3" | 7/8 |
| F3301.1/2X3 | 1.1/2 | 12 | 38.100 | 3" | 7/8 |

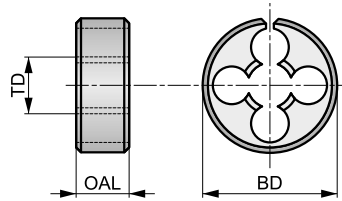


F370



HSS Adjustable Split Hand Die, G(BSP) Right Hand

Split die to produce external thread by hand in multiple passes, adjusting each pass. By tightening the die stock holder, different classes of thread fit can be achieved - tight, regular or loose fit. Slightly tightened in the holder it can be used to clean up or produce a partial thread.



| | | |
|----------|-----------------|------------|
| G | BS 1127:1950 | 1.75 XP |
| HSS | R | Bright |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

| Product | TDZ | TPI | TD | | BD | OAL |
|----------------|-------|-----|--------|--------|-------|-----|
| | | | [mm] | [inch] | | |
| F3701/8X1 | 1/8 | 28 | 9.730 | 1" | 3/8 | |
| F3701/4X1.5/16 | 1/4 | 19 | 13.160 | 1.5/16 | 7/16 | |
| F3703/8X1.1/2 | 3/8 | 19 | 16.660 | 1.1/2 | 1/2 | |
| F3701/2X2 | 1/2 | 14 | 20.960 | 2" | 5/8 | |
| F3705/8X2 | 5/8 | 14 | 22.910 | 2" | 5/8 | |
| F3703/4X2 | 3/4 | 14 | 26.440 | 2" | 5/8 | |
| F3707/8X2.1/4 | 7/8 | 14 | 30.200 | 2.1/4 | 11/16 | |
| F3701X2.1/4 | 1" | 11 | 33.250 | 2.1/4 | 11/16 | |
| F3701.1/4X3 | 1.1/4 | 11 | 41.910 | 3" | 7/8 | |
| F3701.1/2X4 | 1.1/2 | 11 | 47.800 | 4" | 1" | |

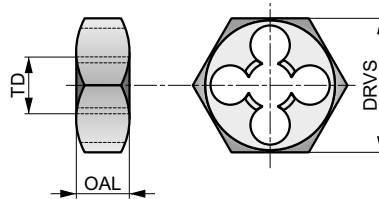


F202



HSS Die Nut Metric, Right Hand

Hexagon die nut designed to repair or clean out damaged external threads by re-cutting the original thread form by hand. A wrench or spanner can be used to rotate the die nut around the outside of the bolt, thus it can be used in difficult to access locations.



| | | |
|-------------------|-------------------|-----------|
| M | DIN 382 | 6g |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

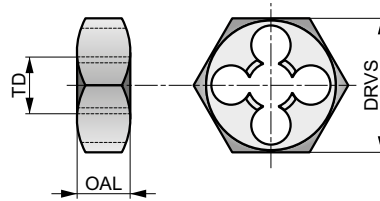
| Product | TD [mm] | TP [mm] | DRVS [mm] | OAL [mm] |
|---------|------------|------------|--------------|-------------|
| F202M3 | 3.000 | 0.50 | 19.00 | 5.0 |
| F202M4 | 4.000 | 0.70 | 19.00 | 5.0 |
| F202M5 | 5.000 | 0.80 | 19.00 | 7.0 |
| F202M6 | 6.000 | 1.00 | 19.00 | 7.0 |
| F202M7 | 7.000 | 1.00 | 22.00 | 9.0 |
| F202M8 | 8.000 | 1.25 | 22.00 | 9.0 |
| F202M10 | 10.000 | 1.50 | 27.00 | 11.0 |
| F202M12 | 12.000 | 1.75 | 36.00 | 14.0 |
| F202M14 | 14.000 | 2.00 | 36.00 | 14.0 |
| F202M16 | 16.000 | 2.00 | 41.00 | 18.0 |
| F202M18 | 18.000 | 2.50 | 41.00 | 18.0 |
| F202M20 | 20.000 | 2.50 | 41.00 | 18.0 |
| F202M22 | 22.000 | 2.50 | 50.00 | 22.0 |
| F202M24 | 24.000 | 3.00 | 50.00 | 22.0 |
| F202M27 | 27.000 | 3.00 | 60.00 | 25.0 |
| F202M30 | 30.000 | 3.50 | 60.00 | 25.0 |
| F202M36 | 36.000 | 4.00 | 60.00 | 25.0 |



F302

HSS Die Nut Metric, Right Hand

Hexagon die nut designed to repair or clean out damaged external threads by re-cutting the original thread form by hand. A wrench or spanner can be used to rotate the die nut around the outside of the bolt, thus it can be used in difficult to access locations.



| | | |
|------------|-----------------|----------|
| M | BS 1127:1950 | 6g |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▧ 8 | P3.1 ■ 8 | P3.2 ▧ 7 | P4.1 ▧ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▧ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▧ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▧ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▧ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▧ 6 | N1.1 ▧ 20 | N1.2 ▧ 15 | N1.3 ▧ 10 |
| N2.1 ▧ 10 | N2.2 ▧ 9 | N2.3 ▧ 6 | N3.1 ■ 11 | N3.2 ▧ 6 | N3.3 ▧ 3 | N4.1 ▧ 11 | N4.2 ▧ 4 | N4.3 ▧ 4 | | | | | |

| Product | TD | TP | DRVS | OAL |
|---------|--------|------|--------|--------|
| | [mm] | [mm] | [inch] | [inch] |
| F302M3 | 3.000 | 0.50 | 0.7100 | 1/4 |
| F302M4 | 4.000 | 0.70 | 0.7100 | 1/4 |
| F302M5 | 5.000 | 0.80 | 0.7100 | 1/4 |
| F302M6 | 6.000 | 1.00 | 0.7100 | 1/4 |
| F302M7 | 7.000 | 1.00 | 0.8200 | 5/16 |
| F302M8 | 8.000 | 1.25 | 0.8200 | 5/16 |
| F302M10 | 10.000 | 1.50 | 0.9200 | 3/8 |
| F302M11 | 11.000 | 1.50 | 1.0100 | 7/16 |
| F302M12 | 12.000 | 1.75 | 1.1000 | 1/2 |
| F302M14 | 14.000 | 2.00 | 1.3000 | 5/8 |
| F302M16 | 16.000 | 2.00 | 1.3000 | 5/8 |
| F302M18 | 18.000 | 2.50 | 1.4800 | 11/16 |
| F302M20 | 20.000 | 2.50 | 1.4800 | 11/16 |
| F302M22 | 22.000 | 2.50 | 1.6700 | 13/16 |
| F302M24 | 24.000 | 3.00 | 2.0500 | 15/16 |
| F302M27 | 27.000 | 3.00 | 2.2200 | 1.1/16 |
| F302M30 | 30.000 | 3.50 | 2.2200 | 1.1/16 |
| F302M33 | 33.000 | 3.50 | 2.5800 | 1.1/8 |
| F302M36 | 36.000 | 4.00 | 2.7600 | 1.1/4 |

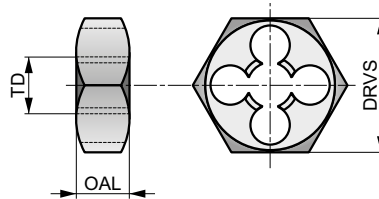


F312



HSS Die Nut Metric Fine, Right Hand

Hexagon die nut designed to repair or clean out damaged external threads by re-cutting the original thread form by hand. A wrench or spanner can be used to rotate the die nut around the outside of the bolt, thus it can be used in difficult to access locations.



| | | |
|------------|-----------------|----------|
| MF | BS 1127-1950 | 6g |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▣ 8 | P3.1 ■ 8 | P3.2 ▣ 7 | P4.1 ▣ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▣ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▣ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▣ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▣ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▣ 6 | N1.1 ▣ 20 | N1.2 ▣ 15 | N1.3 ▣ 10 |
| N2.1 ▣ 10 | N2.2 ▣ 9 | N2.3 ▣ 6 | N3.1 ■ 11 | N3.2 ▣ 6 | N3.3 ▣ 3 | N4.1 ▣ 11 | N4.2 ▣ 4 | N4.3 ▣ 4 | | | | | |

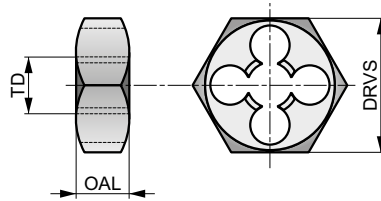
| Product | TD | TP | DRVS | OAL |
|--------------|--------|------|--------|--------|
| | [mm] | [mm] | [inch] | [inch] |
| F312M8X.75 | 8.000 | 0.75 | 0.8200 | 5/16 |
| F312M8X1.0 | 8.000 | 1.00 | 0.8200 | 5/16 |
| F312M10X1.0 | 10.000 | 1.00 | 0.9200 | 3/8 |
| F312M10X1.25 | 10.000 | 1.25 | 0.9200 | 3/8 |
| F312M12X1.0 | 12.000 | 1.00 | 1.0100 | 7/16 |
| F312M12X1.25 | 12.000 | 1.25 | 1.0100 | 7/16 |
| F312M12X1.5 | 12.000 | 1.50 | 1.0100 | 7/16 |
| F312M14X1.5 | 14.000 | 1.50 | 1.3000 | 5/8 |
| F312M16X1.5 | 16.000 | 1.50 | 1.3000 | 5/8 |
| F312M18X1.5 | 18.000 | 1.50 | 1.4800 | 11/16 |
| F312M20X1.5 | 20.000 | 1.50 | 1.4800 | 11/16 |
| F312M22X1.5 | 22.000 | 1.50 | 1.6700 | 13/16 |
| F312M24X1.5 | 24.000 | 1.50 | 2.0500 | 15/16 |
| F312M24X2.0 | 24.000 | 2.00 | 2.0500 | 15/16 |



F272

HSS Die Nut G(BSP) Right Hand

Hexagon die nut designed to repair or clean out damaged external threads by re-cutting the original thread form by hand. A wrench or spanner can be used to rotate the die nut around the outside of the bolt, thus it can be used in difficult to access locations.



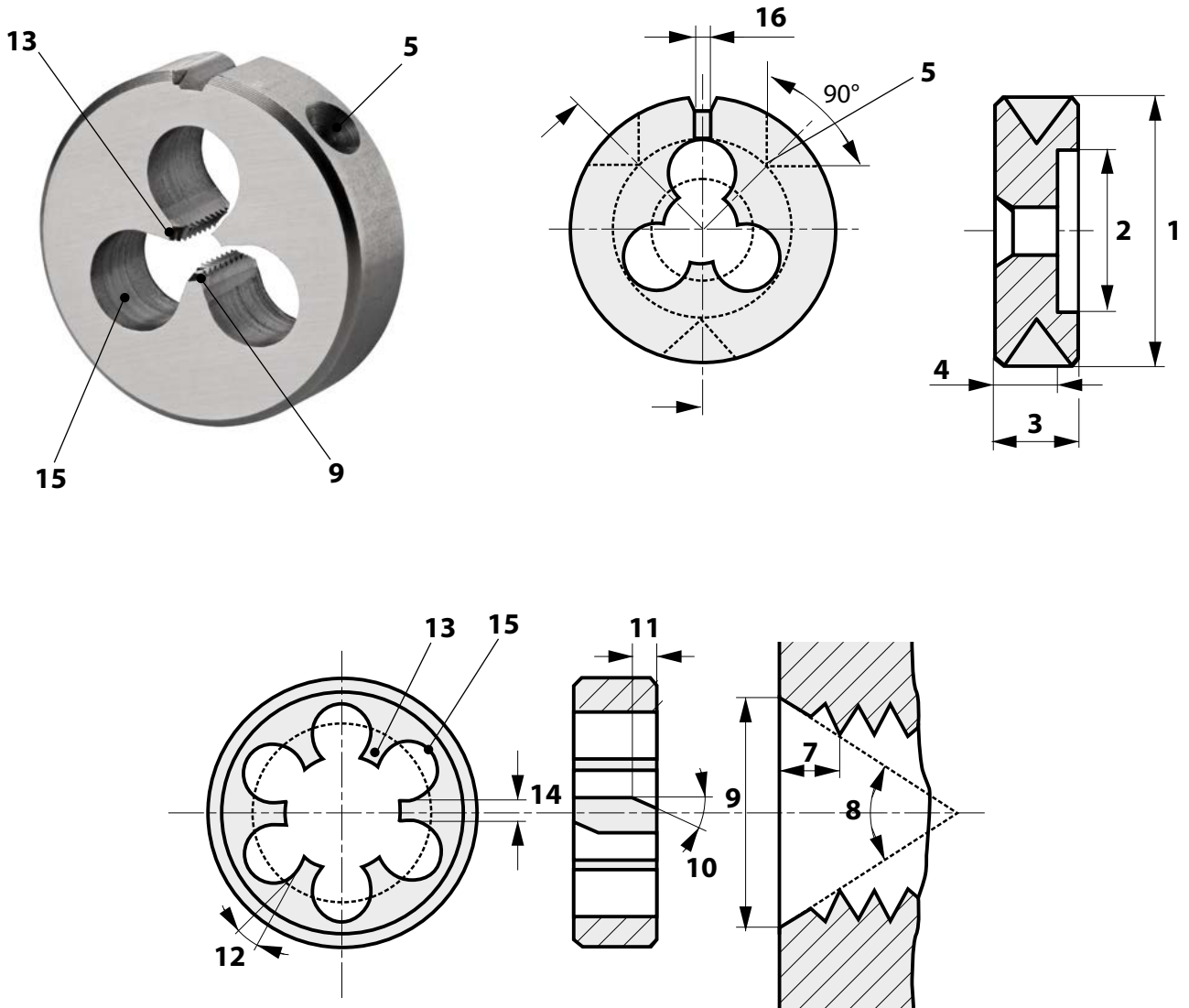
| | | |
|-------------------|-------------------|-------------------|
| G | DIN 382 | Class A |
| 1.75 XP | HSS | R |
| Bright | | |

Workpiece material group suitability and starting values for cutting speed (m/min).

| | | | | | | | | | | | | | |
|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| P1.1 ■ 12 | P1.2 ■ 13 | P1.3 ■ 14 | P2.1 ■ 10 | P2.2 ■ 9 | P2.3 ▧ 8 | P3.1 ■ 8 | P3.2 ▧ 7 | P4.1 ▧ 5 | M1.1 ■ 7 | M1.2 ■ 6 | M2.1 ■ 6 | M2.2 ▧ 5 | K1.1 ■ 11 |
| K1.2 ■ 8 | K1.3 ▧ 6 | K2.1 ■ 11 | K2.2 ■ 9 | K2.3 ▧ 7 | K3.1 ■ 10 | K3.2 ■ 8 | K3.3 ▧ 6 | K5.1 ■ 10 | K5.2 ■ 8 | K5.3 ▧ 6 | N1.1 ▧ 20 | N1.2 ▧ 15 | N1.3 ▧ 10 |
| N2.1 ▧ 10 | N2.2 ▧ 9 | N2.3 ▧ 6 | N3.1 ■ 11 | N3.2 ▧ 6 | N3.3 ▧ 3 | N4.1 ▧ 11 | N4.2 ▧ 4 | N4.3 ▧ 4 | | | | | |

| Product | TDZ | TPI | TD | DRVS | OAL |
|-----------|-------|-----|--------|-------|------|
| | | | [mm] | | |
| F2721/8 | 1/8 | 28 | 9.730 | 27.00 | 11.0 |
| F2721/4 | 1/4 | 19 | 13.160 | 36.00 | 10.0 |
| F2723/8 | 3/8 | 19 | 16.660 | 41.00 | 14.0 |
| F2721/2 | 1/2 | 14 | 20.960 | 41.00 | 14.0 |
| F2723/4 | 3/4 | 14 | 26.440 | 60.00 | 18.0 |
| F2721 | 1" | 11 | 33.250 | 60.00 | 18.0 |
| F2721.1/4 | 1.1/4 | 11 | 41.910 | 70.00 | 20.0 |
| F2721.1/2 | 1.1/2 | 11 | 47.800 | 85.00 | 22.0 |

Nomenclature



| | |
|----------|-------------------------------|
| 1 | Outside Diameter |
| 2 | Recess Diameter |
| 3 | Thickness |
| 4 | Thread Length |
| 5 | Conical Hole for Fixing Screw |
| 6 | Chamfer Angle |
| 7 | Chamfer Length |
| 8 | Chamfer Diameter |

| | |
|-----------|---------------------|
| 9 | Gun-nose |
| 10 | Spiral Angle |
| 11 | Spiral Length |
| 12 | Rake Angle |
| 13 | Land |
| 14 | Width of Land |
| 15 | Clearance Hole |
| 16 | Split of Adjustment |



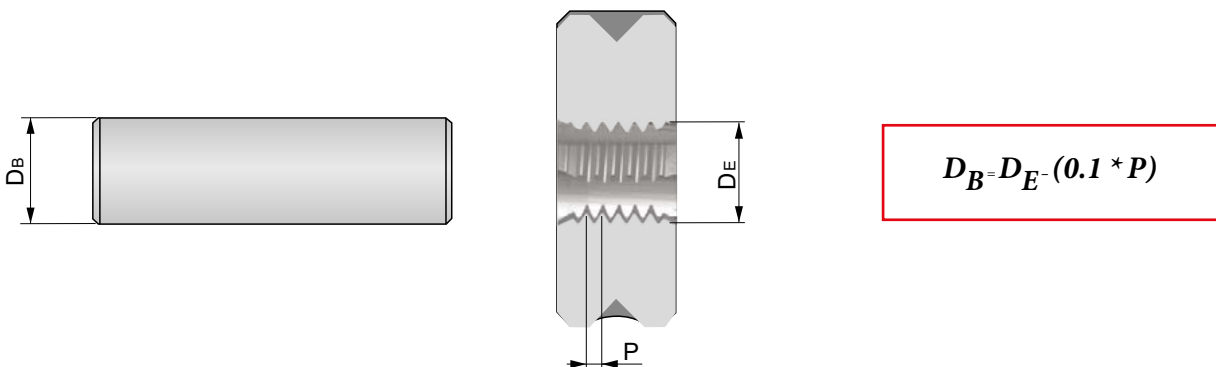
HSS DIES – TECHNICAL SECTION

Technical Tips on Threading with Dies

1. Before starting the die or dienut, chamfer the end of the bar at an angle of 45 degrees to eliminate sudden loading of the leading edges. Ensure the die or dienut is presented to the bolt squarely.
2. Make use of the large tolerances associated with the major diameter of the bolt, by reducing the diameter of the bar (see below). This will reduce the cutting force to a minimum.
3. Use the gun nose type of die, as this ensures the chips are directed away from the cutting area.
4. Ensure a good supply of the correct lubricant is aimed at the cutting area.
5. When adjusting split dies, avoid opening out as this will cause rubbing. Split dies may be closed down by approximately 0.15mm, by turning the adjustment screws equally. Pressure on one side of the die only may cause breakage.
6. Generally speaking, dienuts are used for reclaiming or cleaning out existing threads by hand. They tend to be of a more robust construction and should only be used in exceptional circumstances to cut a thread from solid.

Pre-machining Dimensions

The diameter of the bolt blank must be smaller than the max. external diameter of the screw thread.



Trouble Shooting When Threading With Dies

| Problem | Cause | Solution |
|-----------------------------|---------------------------------------|---|
| Oversize / Undersize | Misalignment | Correct alignment, ensure cleanliness |
| | Incorrect axial feed rate | Ensure axial feed rate is controlled accurately |
| Poor finish | Incorrect rake angle for the material | Try alternative dies or special die |
| | Incorrect/lack of lubricant | See lubricants section |
| | Incorrect speed | Follow recommendations in Catalogue |
| | Bar diameter too large | Reduce to appropriate size |
| | Bar end not chamfered | Ensure bar end is chamfered |
| Chipping / Breakage | Wrong type of die | Follow recommendations in Catalogue |
| | Speed too high | Follow recommendations in Catalogue |
| | Bar diameter too large | Reduce to appropriate size |
| | Bar end not chamfered | Ensure bar end is chamfered |
| | Misalignment | Correct alignment, ensure cleanliness |
| Rapid wear | Incorrect/lack of lubricant | See lubricants section |
| | Speed too high | Follow recommendations in Catalogue |
| Built up edge | Incorrect/lack of lubricant | See section lubricants |
| | Bar diameter too large | Reduce to appropriate size |
| | Speed too low | Follow recommendations in Catalogue |



CUTTING FLUIDS





THREADING – GENERAL CONTENT

| | | |
|-----|-------------|-------------------------------|
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| 12 | TAPS | INSTRUCTIONS |
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M200-1



M200 no. 1 Blue, Cutting Fluid for Heavy Machining

A high performance cutting oil for difficult operations, such as tapping, broaching and drilling by hand or with a pillar drill. For increased tool life and improved surface finishes. First choice recommendation for high strength steel, stainless steel and super alloys.

| Product | Nr. |
|------------------|--------------|
| M2000.25NR.1BLUE | 1/4 Ltr. 12x |
| M2001.0NR.1BLUE | 1 Ltr. |
| M2005.0NR.1BLUE | 5 Ltr. |
| M20020.0NR.1BLUE | 20 Ltr. |

M200-2



M200 no. 2 Red, Cutting Fluid for Non-Ferrous Metals

A neat oil for machining operations requiring chip removal in aluminium and its alloys. For lubrication and cooling to promote long tool life and ensure excellent surface finish. Low impact on the environment due to excellent anti-mist properties, high oxidation stability and low odours.

| Product | Nr. |
|-----------------|--------------|
| M2000.25NR.2RED | 1/4 Ltr. 12x |
| M2001.0NR.2RED | 1 Ltr. |
| M2005.0NR.2RED | 5 Ltr. |



M200-3



M200 no. 3 Green, Cutting Fluid for General Purpose Machining

A high performance cutting oil with extreme pressure (EP) additives to provide longer tool life. For general cutting or forming operations, such as tapping, broaching and drilling in steel or cast steel and stainless steel.

| Product | Nr. |
|-------------------|--------------|
| M2000.25NR.3GREEN | 1/4 Ltr. 12x |
| M2001.0NR.3GREEN | 1 Ltr. |
| M2005.0NR.3GREEN | 5 Ltr. |



GENERAL TECHNICAL INFORMATION

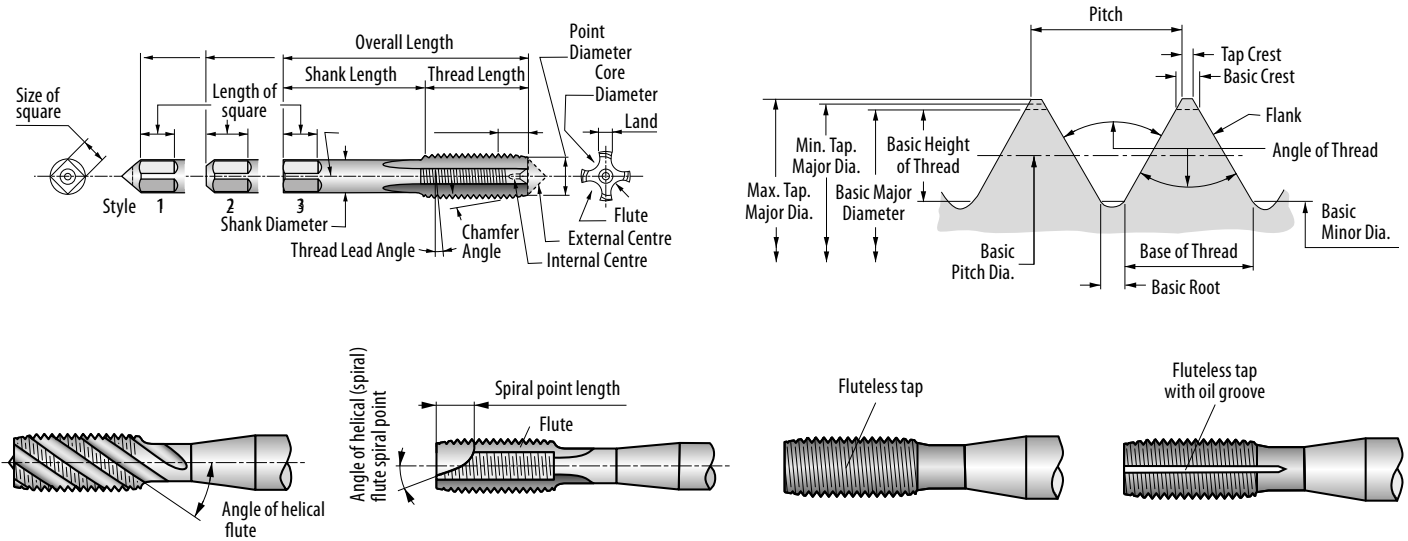




THREADING – GENERAL CONTENT

| | | |
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| 8 | | INSTRUCTIONS |
| 16 | | SOLID CARBIDE TAPS |
| 24 | | MATERIAL SPECIFIC SHARK TAPS |
| 60 | | HSS HAND & MACHINE TAPS |
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THREADING – GENERAL TECHNICAL INFORMATION



Allowance: The minimum clearance or maximum interference which is intended between mating parts.

Angle of Thread: The angle included between the flanks of a thread measured in an axial plane.

Back Taper: A slight taper on the threaded portion of the tap making the pitch diameter near the shank smaller than that at the chamfer.

Basic: The theoretical or nominal standard size from which all variations are made.

Chamfer: The tapered and relieved cutting teeth at the front end of the threaded section. Common types of chamfer are taper, 8 to 10 pitches long, plug, 3 to 5 pitches and bottoming, 1 to 2 pitches.

Crest: The top surface joining the two sides or flanks of a thread.

Cutting Face: The leading side of the land.

Flute: The longitudinal channels formed on a tap to create cutting edges on the thread profile.

Heel: The following side of the land.

Height of Thread: In profile, distance between crest and bottom section of thread measured normal to the axis.

Hook Face: A concave cutting face of the land. This may be varied for different materials and conditions.

Interrupted Thread: Alternate teeth are removed in the thread helix on a tap; usually restricted to those having an odd number of flutes.

Land: One of the threaded sections between the flutes of a tap.

Lead of Thread: The distance a screw thread advances axially in one turn.

Major Diameter: The largest diameter of the screw or nut on a straight screw thread.

Minor Diameter: The smallest diameter of the screw or nut on a straight screw thread.

Neck: The reduced diameter, on some taps, between the threaded portion and the shank.

Pitch: The distance from a point on one thread to a corresponding point on the next thread, measured parallel to the axis.

Pitch Diameter: On a straight screw thread, the diameter of an imaginary cylinder where the width of the thread and the width of the space between threads is equal.

Point Diameter: The diameter at the leading end of the chamfered portion.

Radial: The straight face of a land, the plane of which passes through the axis of the tap.

Rake: The angle of the cutting face of the land in relation to an axial plane intersecting the cutting face at the major diameter.

Relief: The removal of metal behind the cutting edge to provide clearance between the part being threaded and a portion of the threaded land. Also, see back taper.

CHAMFER RELIEF: The gradual decrease in land height from cutting edge to heel on the chamfered portion of the tap land to provide radial clearance for the cutting edge.

CONCENTRIC RELIEF: Radial relief in the thread form starting at the back of a concentric margin.

ECCENTRIC THREAD RELIEF: Radial relief in the thread form starting at the cutting edge and continuing to the heel.

Root: The bottom surface joining the flanks of two adjacent threads.

Side or flank of thread: The surface of the thread which connects the crest with the root.

Shank: The portion of the tap by which it is held and driven.

Spiral Point: An oblique cutting edge ground into the lands to provide a shear cutting action on the first few threads.

Square: The squared end of the tap shank.

Thread: The helical formed tooth of the tap which produces the thread in a tapped hole.

Thread Lead Angle: The angle made by the helix of the thread at the pitch diameter, with a plane perpendicular to the axis.

Threads Per Inch: The number of threads in one inch of length.

Thread: SINGLE: A thread in which lead is equal to pitch.

DOUBLE: A thread in which lead is equal to twice the pitch.

TRIPLE: A thread in which lead is equal to triple the pitch.



THREADING – GENERAL TECHNICAL INFORMATION

General hints on tapping

The success of any tapping operation depends on a number of factors, all of which affect the quality of the finished product.









1. Select the correct design of tap for the component material and type of hole, i.e. through or blind, from the Materials Classification chart.
2. Ensure the component is securely clamped – lateral movement may cause tap breakage or poor quality threads.
3. Select the correct size of drill from the relevant catalogue page. Always ensure that work hardening of the component material is kept to a minimum.
4. Select the correct cutting speed as shown on the catalogue product page.
5. Use appropriate cutting fluid for correct application.
6. In NC applications ensure that the feed value chosen for the program is correct. When using a tapping attachment, 95% to 97% of the pitch is recommended to allow the tap to generate its own pitch.
7. Where possible, hold the tap in a good quality torque limiting tapping attachment, which ensures free axial movement of the tap and presents it squarely to the hole. It also protects the tap from breakage if accidentally 'bottomed' in a blind hole.
8. Ensure smooth entry of the tap into the hole, as an uneven feed may cause 'bell mouting'.

Tap tolerance vs tolerance on internal thread (nut)

| Tolerance class, Tap | | | Tolerance, Internal thread (Nut) | | | | | Application |
|----------------------|-----|---------|----------------------------------|-----|-----|-----|-----|--|
| ISO | DIN | ANSI BS | | | | | | |
| ISO 1 | 4 H | 3 B | 4 H | 5 H | – | – | – | Fit without allowance |
| ISO 2 | 6 H | 2 B | 4 G | 5 G | 6 H | – | – | Normal fit |
| ISO 3 | 6 G | 1 B | – | – | 6 G | 7 H | 8 H | Fit with large allowance |
| – | 7 G | – | – | – | – | 7 G | 8 G | Loose fit for following treatment or coating |

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Tap Geometries & Applications

| Description | Chips | Description | Chips |
|---|---|---|---|
| <p>Taps with straight flutes</p> <p>Straight flutes are the most commonly used type of tap. Suitable for use on most materials, mainly short chipping steel and cast iron, they form the basis of the program.</p> |  | <p>Taps with flutes only on the chamfer lead</p> <p>The cutting part of the tap is formed by gun nosing in the same manner as for a spiral point tap, the function being to drive the chips forward ahead of the cutting edges. This design is extremely rigid which facilitates good machining results. However, the short length of the gun nosing limits its application to a depth of hole less than about 1.5 x Ø.</p> |  |
| <p>Taps with interrupted thread</p> <p>The interrupted thread ensures less friction and therefore less resistance, which is particularly important when threading material which is resilient and difficult to machine (e.g. aluminium, bronze). It is also easier for lubricant to penetrate to the cutting edges, thus helping to minimize the torque generated</p> |  | <p>Taps with spiral flutes</p> <p>Taps with spiral flutes are intended primarily for threading in blind holes. The helical flute transports the chips back away from the cutting edges and out of the hole, thus avoiding packing of chips in the flutes or at the bottom of the hole. In this way, danger of breaking the tap or damaging the thread is minimised.</p> |  |
| <p>Spiral point taps</p> <p>The tap has a straight fairly shallow flute and is often referred to as a gun nose or spiral point tap. The gun nose or spiral point is designed to drive the chips forward. The relatively shallow flutes ensure that the sectional strength is maximised. They also act to allow lubricant to reach the cutting edges. This type of tap is recommended for threading through holes.</p> |  | <p>Cold forming taps</p> <p>Cold forming taps differ from cutting taps in that the thread is produced by plastic deformation of the component material rather than by the traditional cutting action. This means that no chips are produced by their action. The application range is materials with good formability. Tensile strength (Rm) should not exceed 1200 N/mm² and the elongation factor (A₅) should not be less than 10%.</p> <p>Cold forming taps without flutes are suitable for normal machining and are especially suitable when vertically tapping blind holes. They are also available with through coolant.</p> |  |
| <p>Nut taps</p> <p>These taps are generally used to thread nuts but can be used also on deep through holes. They have a shank diameter smaller than the nominal and a longer overall length, because their function is to accumulate nuts.</p> <p>They are used on special machines designed to thread huge amounts of nuts. They can work in steel and stainless steel.</p> <p>The first serial tap has a very long chamfer, in order to spread the cutting load on almost two thirds of the thread length.</p> |  | <p>Through coolant taps</p> <p>The performance of taps with through coolant holes is higher than the same taps used with external lubrication. These kinds of taps allow better evacuation of the chip, which is transported away from the cutting area itself. Wear on the cutting edge is reduced, since the cooling effect on the cutting zone is higher than the heat generation.</p> <p>Lubrication can be oil, emulsion or air pressurised with oil mist. Working pressure not less than 15 bar is required, but good results can be obtained with minimal lubrication.</p> |  |

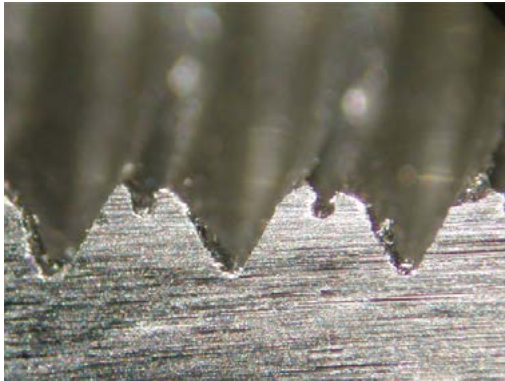


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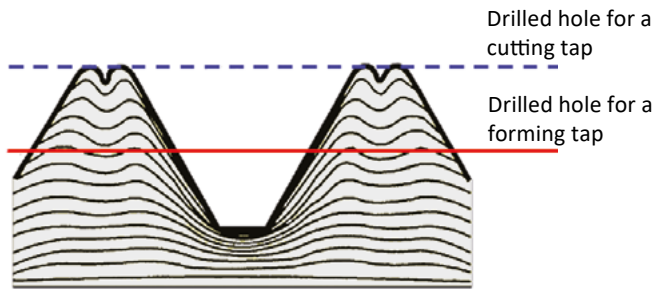
Flow Of Material When Forming A Thread

The tapping hole size depends upon the material being drilled, the cutting conditions selected and the condition of the equipment being used. If material is pushed up at the thread entry by the tap and/or

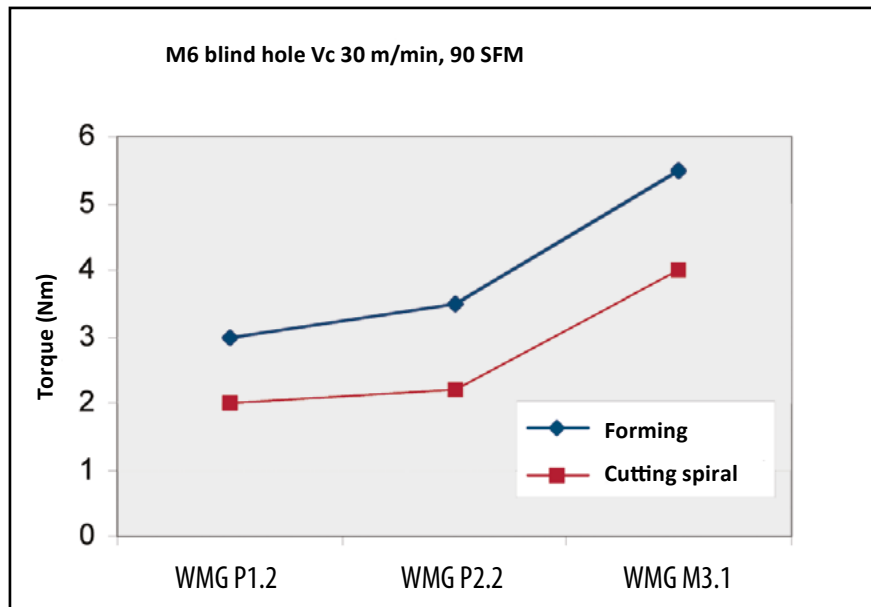
the life of the tap is too short, select a slightly larger drill diameter. If on the other hand the profile of the thread formed is insufficient, then select a slightly smaller drill diameter.



Section of thread obtained by forming tap on steel C45



Cold forming taps require more power on the spindle, compared to a cutting tap of the same size, since it generates higher torque.



Torque comparison between forming and cutting taps in different material groups.



THREADING – GENERAL TECHNICAL INFORMATION

Trouble Shooting When Tapping

| Problem | Cause | Remedy |
|------------------|-----------------------------------|--|
| Oversize | Incorrect tolerance | Choose a tap with lower thread tolerance |
| | Incorrect axial feed rate | Reduce feed rate by 5-10% or increase compression of tap holder |
| | Wrong type of tap for application | Use spiral point for through hole or spiral flute for blind hole. Use coated tool to prevent built up edge. Check Catalogue or Product Selector for correct tool alternative |
| | Tap not centered on the hole | Check tap holder and position tap centre on the hole |
| | Lack of lubrication | Use good lubrication in order to prevent built up edge. See lubricant section in technical handbook |
| | Tap speed too slow | Follow recommendation in Catalogue / Product Selector |
| Undersize | Wrong type of tap for application | Use spiral point for through hole or spiral flute for blind hole. Use coated tool to prevent built up edge. Use tap with higher rake angle. Check Catalogue or Product Selector for correct tool alternative |
| | Incorrect tolerance | Choose a tap with higher tolerance, especially on material with low oversize tendency, such as cast iron, stainless steel |
| | Incorrect or lack of lubricant | Use good lubrication in order to prevent chip blockage inside the hole. See lubricant section in technical handbook |
| | Tap drill hole too small | Increase drill diameter to the maximum value. Check tapping size drill |
| | Material closing in after tapping | See recommendation in Catalogue / Product Selector for correct tool alternative |
| Chipping | Wrong type of tap for application | Choose a tap with lower rake angle. Choose a tap with longer chamfer. Use spiral point taps for through hole and spiral flute for blind holes, in order to avoid chip blockage. Check Catalogue or Product Selector for correct tool alternative |
| | Incorrect or lack of lubricant | Use good lubrication in order to prevent built up edge. See lubricant section in technical handbook |
| | Taps hit bottom of hole | Increase depth of drilling or decrease depth of tapping |
| | Work hardening surface | Reduce speed, use coated tool, use good lubrication. See section for machining of stainless steel in technical handbook |
| | Swarf trapping on reversal | Avoid sudden return of tap on reversal motion |
| | Chamfer hits hole entrance | Check axial position and reduce axial error of tap point on hole centre |
| | Tap drill hole too small | Increase drill diameter to maximum value. Check tapping size drill |



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Trouble Shooting When Tapping

| Problem | Cause | Remedy |
|----------------------|-----------------------------------|---|
| Breakage | Tap worn out | Use a new tap or regrind the old one |
| | Lack of lubricant | Use good lubrication in order to prevent built up edge and chip blockage. See lubricant section in technical handbook |
| | Taps hit bottom of hole | Increase depth of drilling or decrease depth of tapping |
| | Tap speed too high | Reduce cutting speed. Follow recommendation in Catalogue / Product Selector |
| | Work hardening surface | Reduce speed. Use coated tool Use good lubrication. See section for machining of stainless steel in technical handbook |
| | Tap drill hole too small | Increase drill diameter up to maximum value. See tap drill tables |
| | Too high torque | Use tapping attachment with torque adjustment clutch |
| | Material closing in after tapping | See recommendation in Catalogue / Product Selector for correct tool alternative |
| Rapid wear | Wrong type of tap for application | Use tap with lower rake angle and/or higher relief and/or longer chamfer. Use coated tool. Check Catalogue or Product Selector for correct tool alternative |
| | Lack of lubricant | Use good lubrication in order to prevent built up edge and thermal stress on cutting edge. See lubricant section in technical handbook |
| | Tap speed too high | Reduce cutting speed. Follow recommendation in Catalogue / Product Selector |
| Built up edge | Wrong type of tap for application | Use tap with lower rake angle and/or higher relief. Check Catalogue or Product Selector for correct tool alternative |
| | Lack of lubricant | Use good lubrication in order to prevent built up edge. See lubricant section in technical handbook |
| | Surface treatment not suitable | Choose a tap with the recommended surface treatment |
| | Tap speed too low | Follow recommendation in Catalogue / Product Selector |





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SIMPLY RELIABLE

As a professional you can judge the quality of work by just looking at the chip. Our chip is a clean and uncomplicated shape that in itself tells a story. It is a clear and consistent signal and that's why we use it as a symbol for being **Simply Reliable**.

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