# UP2DATE

## Robust roughing with turbo feeds

Maximum process security – even for hard-to-reach components.

### ... OUR NEW HIGHLIGHT PRODUCTS

- **MaxiMill – Tangent** rough milling system, compatible with actively vibration-damped transverse slot shell mill adapter
- **WTX – Micropilot** drill for handling the trickiest jobs on very small components with maximum precision
- **MaxiMill – Slot-SNHX** side and face milling cutter system for extra-soft cuts

CERATIZIT is a high-technology engineering group specialized in cutting tools and hard material solutions.

**Tooling a Sustainable Future**

ceratizit.com

CERATIZIT GROUP

# Welcome!

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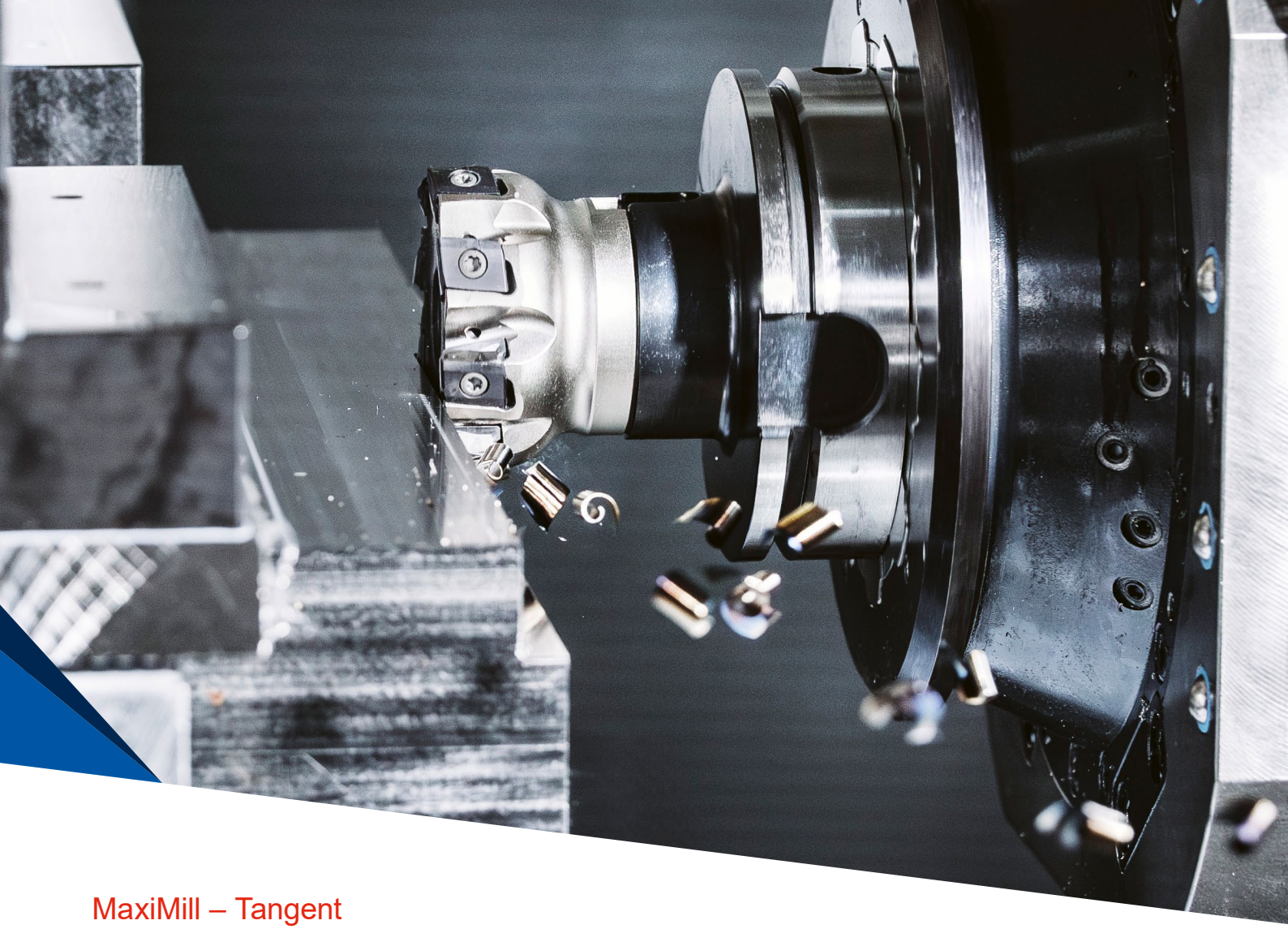


MaxiMill – Tangent

# Robust roughing of steel and cast iron

**CERATIZIT**

## Tangential indexable milling cutter with maximum tooth utilization

The MaxiMill – Tangent delivers the best cutting edge stability for turbo feeds

We've all been there. You're trying to machine a component, but interfering contours are making it hard to see what's happening. Face milling cutters are not an option here, especially when long overhangs make stable, low-vibration machining impossible.

While this might sound like a problem with no solution, you just need the right tool – which is where the new **MaxiMill – Tangent** comes in. This tangential indexable milling cutter has got what it takes, especially when machining steel and cast iron parts.

→ **from page 37**
You can find further information on the product here.

cts.ceratizit.com/us/en/maximill-tangent

## MaxiMill – Tangent: advantages at a glance

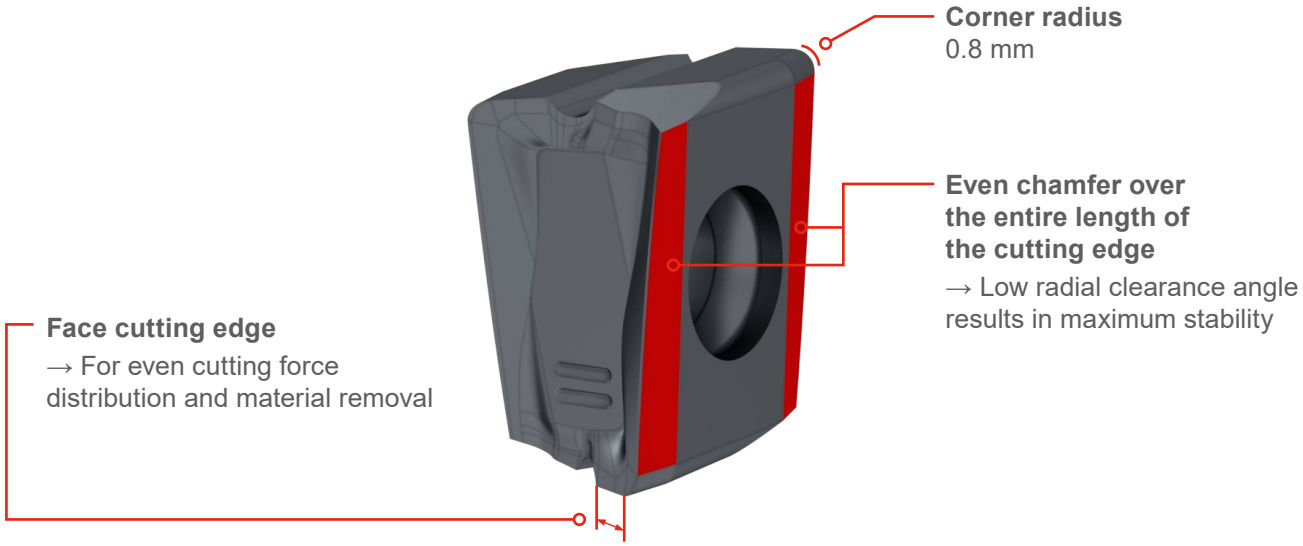
- ▲ Stable, soft-cutting system
- ▲ Robust design for up to 50% higher feed rate per tooth
- ▲ Wide range of holders with different connections:
  G (thread) / A (shell mill adapter) / C (cylindrical shank)
- ▲ Maximum number of teeth on the milling body thanks to tangential clamping
- ▲ Precision-ground indexable inserts and tight manufacturing tolerances for the tool holder result in superb axial and concentric run-out properties
- ▲ Irregular pitch for reduced vibrations
- ▲ Quick tool changes thanks to improved accessibility

# ... also compatible with actively vibration-damped adapter

→ For maximum process security,
even with hard-to-access components

## Ground indexable inserts with extra-robust cutting edges

- ▲ Indexable inserts for wide range of applications **P** / **K** / S / M
- ▲ Four usable cutting edges
- ▲ Chip breakers: -F50 and -M50
- ▲ Precision-ground indexable inserts (size -09 and -13)
- ▲ Maximum depth of cut:
  - With insert size -09 > 8 mm
  - With insert size -13 > 12 mm




Maximum cutting edge stability

For working at high feed rates

Longer tool life

Boosts performance and productivity

"The MaxiMill – Tangent has what it takes. Thanks to its super-stable design, the powerful, four-edged indexable inserts and tangential clamping, we now have a simple, cost-effective way of machining components with interfering contours – with the built-in turbo feed."

Robert Frei, Product Manager Indexable Insert Milling Systems

WTX – Micropilot

# Cut down on tool changes, time, and costs – with ultimate precision

Our brand-new WTX – Micropilot puts the impossible in reach: In the past, spot drilling on angled or curved surfaces meant spot-facing each milling cutter first – but now you need only one tool: the WTX – Micropilot. Do you want a 90° countersink at the drill entrance? The WTX – Micropilot gets it done in a single run. And cuts down on tool changes, time and money.

A perfect match for our micro drill, the WTX – Micro for a range from 8xD–30xD, the pilot drill is used for hole depths up to 2.5xD. Thanks to its sophisticated end geometry with a 160° point angle, the tool lets you make a clean plunge during the drilling process and prevents wandering. The special Dragonskin coating guarantees optimum chip clearance and longer tool lives.

WNT

→ **from page 12**
You can find further information on the product here.

cts.ceratizit.com/us/en/wtx-micro

## Advantages of the WTX – Micropilot:

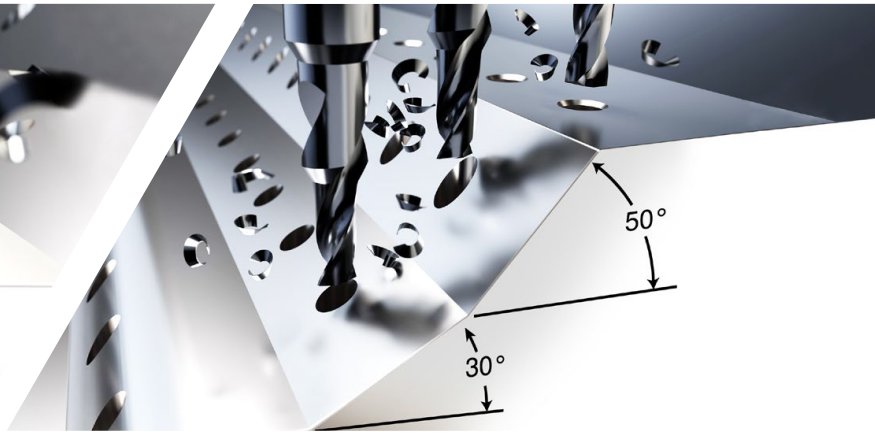
- State of the art: Substrate, geometry, coating
- WTX – Micropilot (pilot drill) and WTX – Micro (deep hole drill) are a perfect match
- Extremely tight tolerances prevent deep hole drill from wandering
- Optimum chip clearance thanks to sophisticated end geometry and DPX74M Dragonskin coating
- Option of 90° countersink at the drill entrance (with straight drilling applications)

**Maximum productivity and process security thanks to optimized geometry and high-performance coating**

- Direct spot drilling of straight, angled, and curved surfaces with a pitch of up to 50°

**No need for an additional tool, so you save time and money, and the process takes two steps instead of three**

Direct spot drilling on convex and concave surfaces




Direct spot drilling on angled surfaces up to 50° or 90° countersink in flat drilling applications

MaxiMill – Slot-SNHX

# Robust side and face milling cutter system for soft cuts

CERATIZIT

## MaxiMill – Slot-SNHX: Slot milling the soft and easy way

Many manufacturers struggle with unstable processes when machining slots in steel, stainless steel, cast iron materials, and aluminum. Soft-cutting side and face milling cutters are ideal in these cases, as this universal solution can adapt to the various challenges at hand while optimizing costs during cutting. The **MaxiMill – Slot-SNHX system** is a great choice in these situations, offering a wide range of tool holders and indexable inserts to create a perfect solution for cutting widths from 6 mm to 16 mm and diameters from 50 mm to 200 mm.

→ **from page 43**
You can find further information on the product here.

cts.ceratizit.com/us/en/maximill-slot-snhx

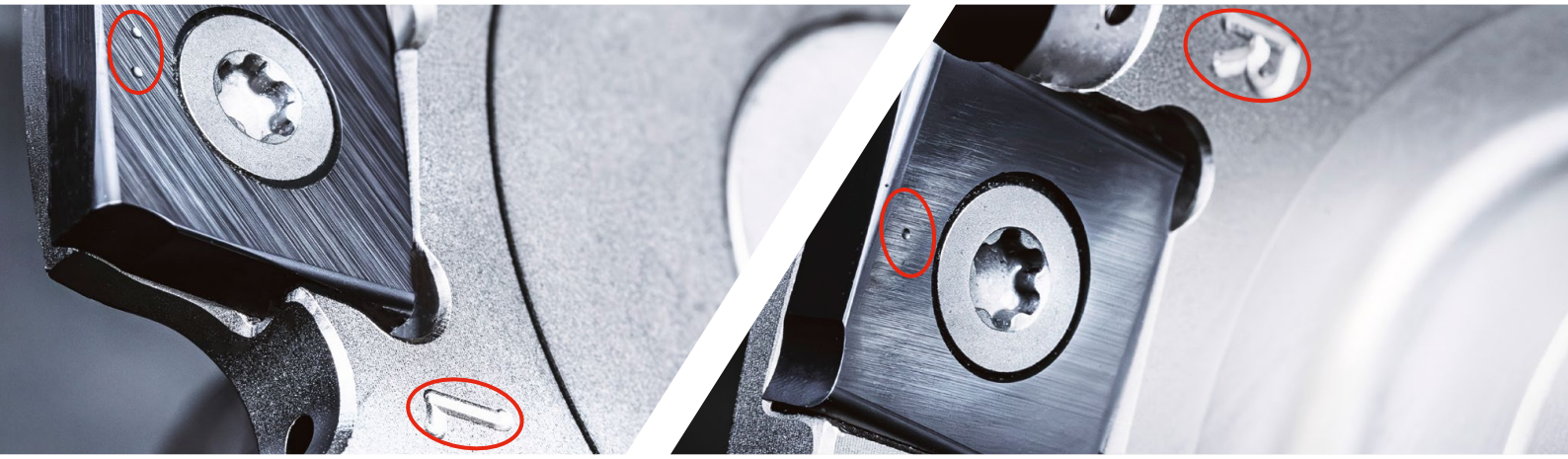
## Advantages/benefits

### Supports

- ▲ Wide range of tool holders with different connections:
  G (thread) / A (shell mill adapter) / C (cylindrical shank)
- ▲ Cutting widths from 6 mm to 16 mm and diameters from 50 mm to 200 mm
- ▲ Excellent performance and process security with a through-coolant supply
- ▲ Reduced risk of chip jams due to cut distribution
- ▲ Tight manufacturing tolerances for the tool holder eliminate interfering contours on the end
- ▲ System can be easily adapted for special sizes and custom tools

### Indexable insert

- ▲ Reliable indexable inserts with wide range of applications **P** / **M** / **K** / N
- ▲ Precision-ground indexable inserts result in superb axial and concentric run-out properties
- ▲ Flat groove base and good tool clearance thanks to ground indexable inserts and adapted position for installing the indexable insert in the tool holder
- ▲ Textured surface for easy identification of holders and inserts
  → incredibly simple installation



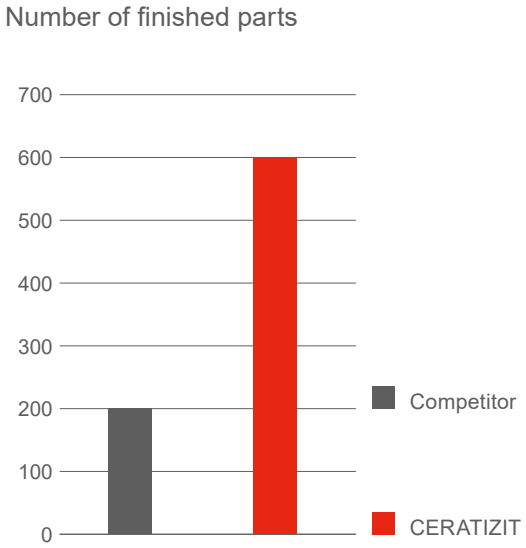
L ●● Left insert

R ● Right insert

## Results of tool life testing for new MaxiMill – Slot-SNHX

| | |
|---|---|
| **Application:** | Reverse-side machining |
| **Material:** | SG-Iron 500 / EN-GJS 500 |
| **Tool:** | MaxiMill – Slot-SNHX |
| **$a_p$:** | 3 mm |
| **$a_e$:** | 42 mm |
| **Tool life:** | 600 pieces |

- ▲ Improved handling thanks to large indexable insert clamping screw
- ▲ Softer cuts that beat the competition due to a ground cutting edge
- ▲ Improved tool life and fewer indexable inserts for a streamlined setup




**THE RESULTS ARE IN**

Superior performance, long tool life and simple handling

Pilot drill

**WTX – Micropilot**

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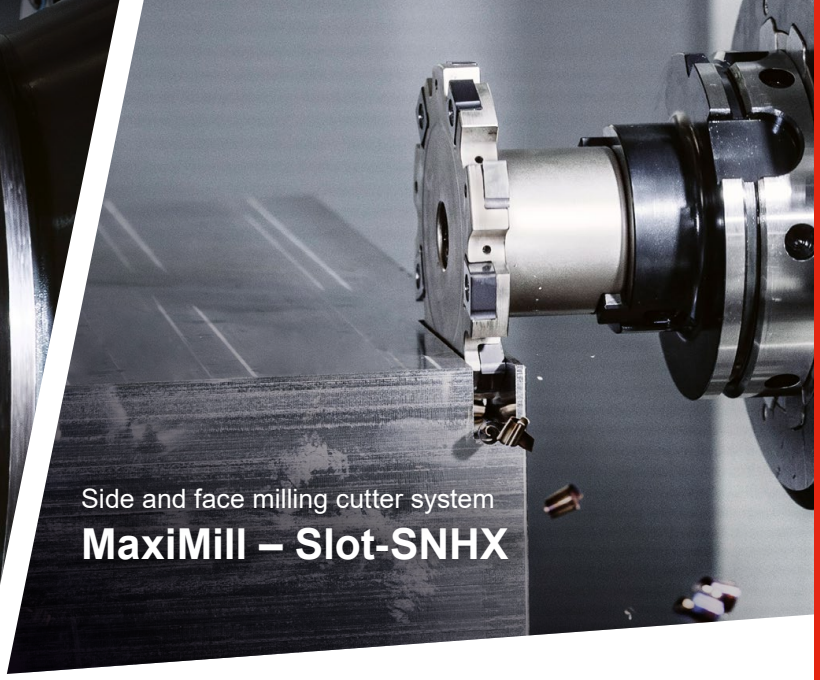



**CERATIZIT** Indexable milling tools

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**WNT** Adapters and accessories

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**WNT** Workpiece clamping

58–60 MNG base plates

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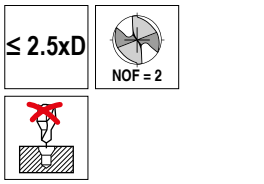
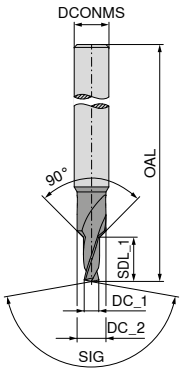
To the products

# WTX – 90° pilot drill

- ▲ Specially designed pilot drill for WTX – Micro deep hole drill (8xD–30xD)
- ▲ For direct spot drilling on angled and curved surfaces up to a 50° angle of inclination
- ▲ 90° countersink can be achieved at the drill entrance on flat spot drilling surfaces




NEW

MICRO PILOT

DPX74M

DRAGONSKIN

SIG 160°

Solid carbide

**10 692 ...**

| DC_1 m6 mm | DC_2 mm | DCONMS h6 mm | OAL mm | SDL_1 mm | |
|---|---|---|---|---|---|
| **0.8** | 1.7 | 4 | 55 | 2.00 | **00800** |
| **0.9** | 1.7 | 4 | 55 | 2.25 | **00900** |
| **1.0** | 2.0 | 4 | 55 | 2.50 | **01000** |
| **1.1** | 2.0 | 4 | 55 | 2.75 | **01100** |
| **1.2** | 2.0 | 4 | 55 | 3.00 | **01200** |
| **1.3** | 2.5 | 4 | 55 | 3.25 | **01300** |
| **1.4** | 2.5 | 4 | 55 | 3.50 | **01400** |
| **1.5** | 3.0 | 4 | 55 | 3.75 | **01500** |
| **1.6** | 3.0 | 4 | 55 | 4.00 | **01600** |
| **1.7** | 3.0 | 4 | 55 | 4.25 | **01700** |
| **1.8** | 3.5 | 4 | 55 | 4.50 | **01800** |
| **1.9** | 3.5 | 4 | 55 | 4.75 | **01900** |
| **2.0** | 3.5 | 6 | 65 | 5.00 | **02000** |
| **2.1** | 3.5 | 6 | 65 | 5.25 | **02100** |
| **2.2** | 4.5 | 6 | 65 | 5.50 | **02200** |
| **2.3** | 4.5 | 6 | 65 | 5.75 | **02300** |
| **2.4** | 4.5 | 6 | 65 | 6.00 | **02400** |
| **2.5** | 4.5 | 6 | 65 | 6.25 | **02500** |
| **2.6** | 4.5 | 6 | 65 | 6.50 | **02600** |
| **2.7** | 5.0 | 6 | 65 | 6.75 | **02700** |
| **2.8** | 5.0 | 6 | 65 | 7.00 | **02800** |
| **2.9** | 5.0 | 6 | 65 | 7.25 | **02900** |

| | |
|---|---|
| P | ● |
| M | ○ |
| K | ● |
| N | |
| S | ● |
| H | |
| O | |

→ $v_c$ Page 13
→ Machining information: Page 14+15

# Cutting data standard values for WTX – Micropilot

| | Material sub-group | Index | Tensile strength lbf/in²* / HB / HRC | 10 692 ... without IK | 2.5xD | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | ≤ Ø 1 | > Ø 1–1.25 | > Ø 1.25–1.5 | > Ø 1.5–2 | > Ø 2–2.5 | > Ø 2.5–3 |
| | | | | $v_c$ (m/min) | f (mm/rev) | | | | | |
| P | Unalloyed steel | P.1.1 | 60900 lbf/in² / 125 HB | 70 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | P.1.2 | 92800 lbf/in² / 190 HB | 60 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | P.1.3 | 121800 lbf/in² / 250 HB | 60 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | P.1.4 | 132000 lbf/in² / 270 HB | 60 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | P.1.5 | 146500 lbf/in² / 300 HB | 60 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | Low-alloy steel | P.2.1 | 88500 lbf/in² / 180 HB | 70 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | P.2.2 | 134900 lbf/in² / 275 HB | 60 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | P.2.3 | 146500 lbf/in² / 300 HB | 60 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | P.2.4 | 174000 lbf/in² / 375 HB | | | | | | | |
| | High-alloy steel and high-alloy tool steel | P.3.1 | 98600 lbf/in² / 200 HB | 60 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | P.3.2 | 159500 lbf/in² / 300 HB | 50 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | P.3.3 | 188500 lbf/in² / 400 HB | | | | | | | |
| | Stainless steel | P.4.1 | 98600 lbf/in² / 200 HB | 50 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| | | P.4.2 | 117500 lbf/in² / 250 HB | 35 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| M | Stainless steel | M.1.1 | 88500 lbf/in² / 200 HB | 40 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| | | M.2.1 | 300 HB | 40 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| | | M.3.1 | 113100 lbf/in² / 230 HB | 40 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| K | Grey cast iron | K.1.1 | 88500 lbf/in² / 180 HB | 70 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | K.1.2 | 127600 lbf/in² / 260 HB | 70 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | Spherulitic graphite cast iron | K.2.1 | 78300 lbf/in² / 160 HB | 70 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | K.2.2 | 122600 lbf/in² / 250 HB | 70 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | Malleable iron | K.3.1 | 63800 lbf/in² / 130 HB | 70 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| | | K.3.2 | 113100 lbf/in² / 230 HB | 70 | 0.010 | 0.013 | 0.015 | 0.019 | 0.022 | 0.025 |
| N | Aluminum wrought alloy | N.1.1 | 60 HB | | | | | | | |
| | | N.1.2 | 49300 lbf/in² / 100 HB | | | | | | | |
| | Cast aluminum alloy | N.2.1 | 36300 lbf/in² / 75 HB | | | | | | | |
| | | N.2.2 | 43500 lbf/in² / 90 HB | | | | | | | |
| | | N.2.3 | 63800 lbf/in² / 130 HB | | | | | | | |
| | Copper and copper alloys (bronze/brass) | N.3.1 | 54400 lbf/in² / 110 HB | | | | | | | |
| | | N.3.2 | 43500 lbf/in² / 90 HB | | | | | | | |
| | | N.3.3 | 49300 lbf/in² / 100 HB | | | | | | | |
| | Magnesium alloys | N.4.1 | 70 HB | | | | | | | |
| S | Heat-resistant alloys | S.1.1 | 98600 lbf/in² / 200 HB | 15 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| | | S.1.2 | 137800 lbf/in² / 280 HB | 15 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| | | S.2.1 | 121800 lbf/in² / 250 HB | 10 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| | | S.2.2 | 171100 lbf/in² / 350 HB | 10 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| | | S.2.3 | 156600 lbf/in² / 320 HB | 10 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| | Titanium alloys | S.3.1 | 5800 lbf/in² | 30 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| | | S.3.2 | 152300 lbf/in² | 20 | 0.005 | 0.006 | 0.007 | 0.010 | 0.013 | 0.015 |
| | | S.3.3 | 203100 lbf/in² / 410 HB | | | | | | | |
| H | Hardened steel | H.1.1 | 46-55 HRC | | | | | | | |
| | | H.1.2 | 56-60 HRC | | | | | | | |
| | | H.1.3 | 61-65 HRC | | | | | | | |
| | | H.1.4 | 66-70 HRC | | | | | | | |
| | Chilled iron | H.2.1 | 400 HB | | | | | | | |
| | Hardened cast iron | H.3.1 | 55 HRC | | | | | | | |
| O | Non-metal materials | O.1.1 | ≤ 21800 lbf/in² | | | | | | | |
| | | O.1.2 | ≤ 14500 lbf/in² | | | | | | | |
| | | O.2.1 | ≤ 145000 lbf/in² | | | | | | | |
| | | O.2.2 | ≤ 145000 lbf/in² | | | | | | | |
| | | O.3.1 | | | | | | | | |

* Tensile Strength at Rupture (Rm)

The cutting data is strongly influenced by external conditions. such as the stability of the tool and workpiece clamping. material and type of machine.
The specified values represent guideline cutting data that must be corrected according to the usage conditions.

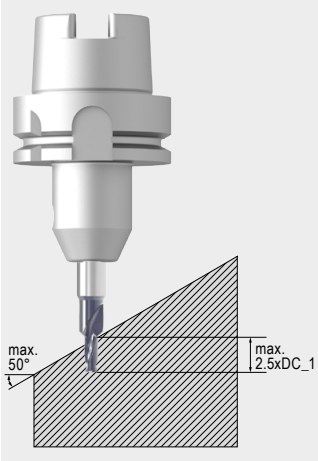
# WTX – Micropilot application recommendations

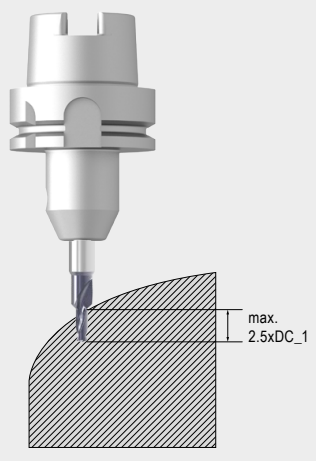
## General information

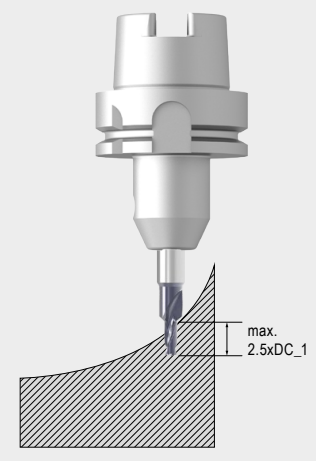
We recommend using the tool with external cooling. Check that the coolant is applied directly at the tool tip, as this will ensure adequate cooling and chip clearance.
Refer to our cutting data recommendations when using the tool.

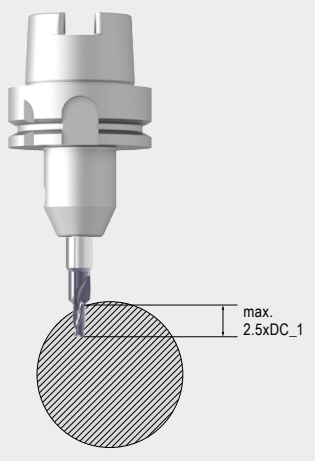
## 1. Pilot hole on angled or curved surfaces

Produce pilot holes in a single step up to a maximum hole depth of 2.5xD. Angled or curved surfaces can be machined up to a maximum pitch of 50° without prior spot facing. Countersinks cannot be made at the drill entrance on angled or curved surfaces.



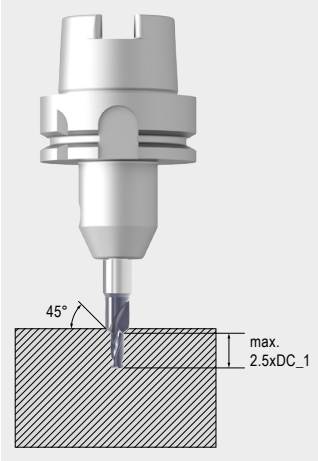




## 2. Pilot hole with 90° chamfer

Pilot holes can be drilled in a single step. If necessary, a 90° chamfer can also be produced at the drill entrance (for flat spot drilling applications) after reaching a hole depth of 2.5xD.

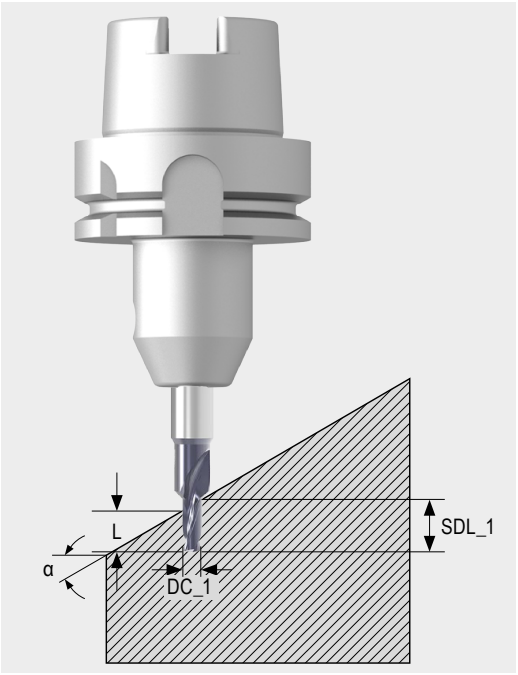


## Calculating the pilot hole depth for angled drilling applications

In angled drilling applications, the remaining depth of the pilot hole changes depending on the angle of inclination. This can be calculated using the following formula:

$$L = SDL\_1 - (DC\_1 \times \tan(\alpha))$$

DC_1 = Cutting diameter
SDL_1 = Step length (max. 2.5xDC_1)
α = Angle of inclination of component surface (max. 50°)
L = Remaining pilot hole depth

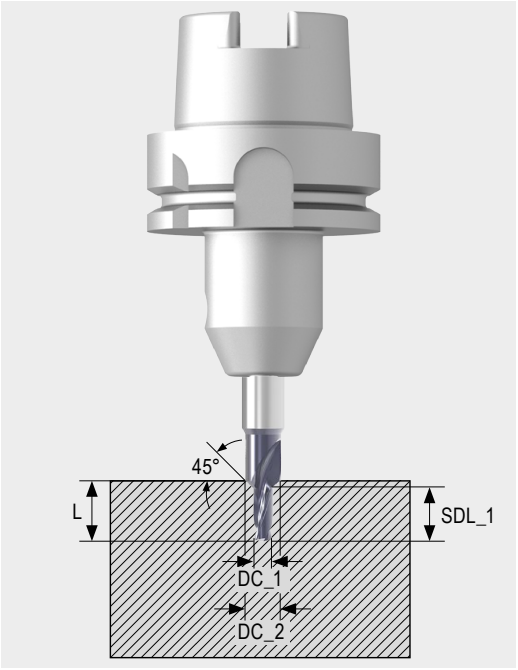



## Calculating the maximum hole depth with 90° countersink

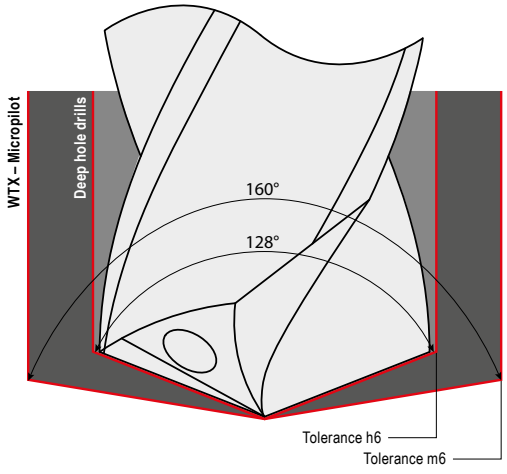
Use the following formula to find the maximum hole depth incl. 90° countersink.

$$L = \left(\frac{DC\_2 - DC\_1}{2}\right) + SDL\_1$$

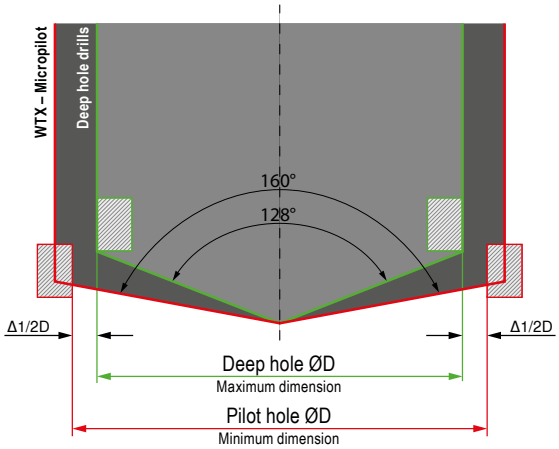
DC_1 = Cutting diameter
DC_2 = Maximum countersink diameter
SDL_1 = Step length (max. 2.5xDC_1)
L = Maximum hole depth including countersink




## Tolerances and angles

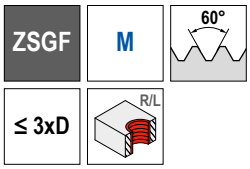


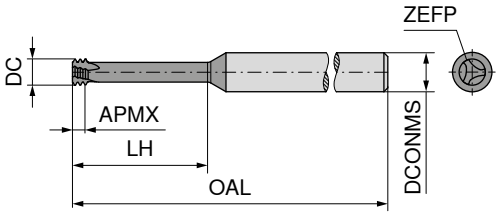

The following must apply to use the pilot and deep hole drill consecutively and without collisions: ΔD = ØD (pilot hole) – ØD (deep hole) > 0



# **MonoThread** – Circular shank thread milling cutter

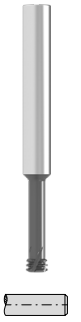
▲ Profile-corrected




NEW

AlTiN



Solid carbide

**50 545 ...**

| DC mm | Thread | TP mm | OAL mm | APMX mm | LH mm | DCONMS $_{h6}$ mm | ZEFP | |
|---|---|---|---|---|---|---|---|---|
| **1.53** | M2 | 0.40 | 39 | 0.80 | 6.0 | 3 | 3 | **02000** |
| **2.37** | M3 | 0.50 | 58 | 1.35 | 9.5 | 6 | 3 | **03000** |
| **3.10** | M4 | 0.70 | 58 | 1.95 | 12.5 | 6 | 3 | **04000** |
| **3.80** | M5 | 0.80 | 58 | 2.30 | 16.0 | 6 | 3 | **05000** |
| **4.65** | M6 | 1.00 | 58 | 2.70 | 20.0 | 6 | 3 | **06000** |
| **6.00** | M8 | 1.25 | 58 | 3.20 | 24.0 | 6 | 3 | **08000** |
| **7.80** | M10 | 1.50 | 64 | 3.80 | 31.5 | 8 | 3 | **10000** |
| **9.00** | M12 | 1.75 | 73 | 4.55 | 37.8 | 10 | 3 | **12000** |


NEW

**50 550 ...**

| DC mm | Thread | TP mm | OAL mm | APMX mm | LH mm | DCONMS $_{h6}$ mm | ZEFP | |
|---|---|---|---|---|---|---|---|---|
| **1.53** | M2 | 0.40 | 39 | 1.00 | 10.4 | 3 | 3 | **02000**[1)] |
| **2.37** | M3 | 0.50 | 39 | 1.30 | 12.5 | 3 | 3 | **03000** |
| **3.10** | M4 | 0.70 | 58 | 1.80 | 16.7 | 6 | 3 | **04000** |
| **4.00** | M5 | 0.80 | 58 | 2.10 | 20.8 | 6 | 3 | **05000** |
| **4.80** | M6 | 1.00 | 58 | 2.55 | 25.0 | 6 | 3 | **06000** |
| **6.40** | M8 | 1.25 | 64 | 3.15 | 33.5 | 8 | 3 | **08000** |
| **8.00** | M10 | 1.50 | 76 | 3.85 | 41.5 | 8 | 3 | **10000** |

| | |
|---|---|
| P | ● |
| M | ○ |
| K | ● |
| N | ● |
| S | ● |
| H | |
| O | ● |

**1)** 5xD

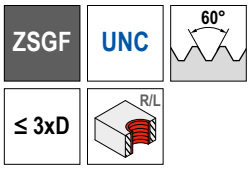
→ $v_c/f_z$ Page 21

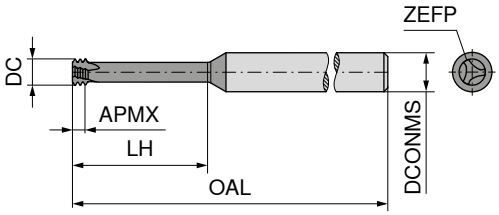
→ **Chapter 7 – Circular and thread milling cutters**

When calculating the feed for circular milling, check whether machining is taking place with the contour feed $v_f$ or center path feed $v_{fm}$.

# **MonoThread** – Circular shank thread milling cutter

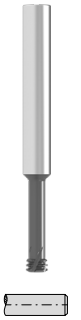
▲ Profile corrected




NEW

AlTiN



Solid carbide

**50 557 ...**

| DC mm | Thread | TP mm | OAL mm | APMX mm | LH mm | DCONMS $_{h6}$ mm | ZEFP | |
|---|---|---|---|---|---|---|---|---|
| **3.678** | UNC No.10-No.12 | 1,058 | 58 | 3.17 | 15.5 | 6 | 3 | **01000** |
| **4.697** | UNC 1/4 | 1,27 | 58 | 3.81 | 19.0 | 6 | 3 | **01400** |
| **6.000** | UNC 5/16 | 1,411 | 58 | 4.23 | 23.0 | 6 | 3 | **51600** |
| **7.345** | UNC 3/8 | 1,588 | 64 | 4.76 | 30.2 | 8 | 3 | **03800** |
| **7.700** | UNC 7/16 | 1,814 | 64 | 5.44 | 35.2 | 8 | 3 | **71600** |
| **9.376** | UNC 1/2 | 1,954 | 73 | 5.86 | 40.1 | 10 | 3 | **01200** |
| **10.920** | UNC 9/16 | 2,117 | 105 | 6.35 | 45.0 | 12 | 3 | **91600** |
| **11.419** | UNC 5/8 | 2,309 | 105 | 6.93 | 50.0 | 12 | 3 | **05800** |
| **15.210** | UNC 3/4 | 2,540 | 105 | 7.62 | 59.7 | 16 | 4 | **03400** |


NEW

**50 559 ...**

| DC mm | Thread | TP mm | OAL mm | APMX mm | LH mm | DCONMS $_{h6}$ mm | ZEFP | |
|---|---|---|---|---|---|---|---|---|
| **4.696** | UNF 1/4 | 0,907 | 58 | 2.72 | 19.0 | 6 | 3 | **01400** |
| **6.217** | UNF 5/16, 3/8 | 1,058 | 64 | 3.17 | 24.0 | 8 | 3 | **51600** |
| **7.994** | UNF 7/16 | 1,270 | 64 | 3.81 | 34.5 | 8 | 3 | **71600** |
| **11.993** | UNF 5/8 | 1,411 | 105 | 4.23 | 49.0 | 12 | 4 | **05800** |

| | |
|---|---|
| P | ● |
| M | ○ |
| K | ● |
| N | ● |
| S | ● |
| H | |
| O | ● |

→ $v_c/f_z$ Page 21

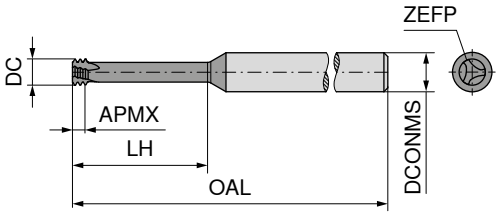
→ **Chapter 7 – Circular and thread milling cutters**
When calculating the feed for circular milling, check whether machining is taking place with the contour feed $v_f$ or center path feed $v_{fm}$.

# **MonoThread** – Circular shank thread milling cutter

▲ Profile corrected

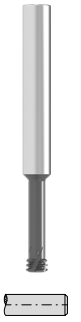
ZSGF | UNC | UNF | 60°

≤ 2xD | R/L




NEW

AlTiN



Solid carbide

**50 568 ...**

| DC mm | Thread | TP mm | OAL mm | APMX mm | LH mm | DCONMS $_{h6}$ mm | ZEFP | |
|---|---|---|---|---|---|---|---|---|
| **1.400** | UNC No.1 / UNF No.2 | 0,397 | 58 | 1.19 | 3.8 | 6 | 3 | **01200** |
| **1.646** | UNC No.2 / UNF No.3 | 0,454 | 58 | 1.36 | 4.4 | 6 | 3 | **02300** |
| **1.901** | UNC No.3 / UNF No.4 | 0,529 | 58 | 1.59 | 5.2 | 6 | 3 | **03400** |
| **2.034** | UNC No.4 | 0,635 | 58 | 1.91 | 6.3 | 6 | 3 | **04000** |
| **2.416** | UNC No.5 / UNF No.6 | 0,635 | 58 | 1.91 | 7.0 | 6 | 3 | **05600** |

≤ 2xD | G | 55°

NEW

**50 569 ...**

| DC mm | Thread | TP mm | OAL mm | APMX mm | LH mm | DCONMS $_{h6}$ mm | ZEFP | |
|---|---|---|---|---|---|---|---|---|
| **7.790** | G1/8 | 0,907 | 64 | 2.72 | 19.5 | 8 | 3 | **01800** |
| **10.015** | G 1/4-3/8 | 1,337 | 73 | 4.01 | 30.0 | 10 | 4 | **01400** |
| **12.013** | G 1/2-G7/8 | 1,814 | 84 | 5.44 | 37.0 | 12 | 4 | **01200** |
| **15.900** | G 1-2 | 2,309 | 105 | 6.93 | 44.0 | 16 | 4 | **01000** |

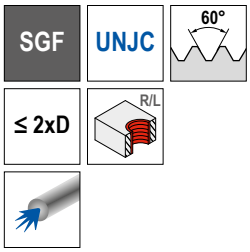
| | |
|---|---|
| P | ● |
| M | ○ |
| K | ● |
| N | ● |
| S | ● |
| H | |
| O | ● |

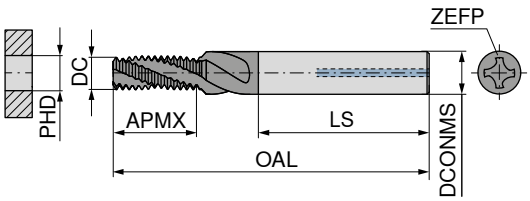
→ $v_c/f_z$ Page 21

→ **Chapter 7 – Circular and thread milling cutters**
When calculating the feed for circular milling, check whether machining is taking place with the contour feed $v_f$ or center path feed $v_{fm}$.

# **MonoThread** – Thread milling cutters

▲ Profile-corrected




NEW

AlTiN

Solid carbide

**50 524 ...**

| DC mm | Thread | TP mm | OAL mm | APMX mm | LS mm | DCONMS h6 mm | ZEFP | PHD mm | |
|---|---|---|---|---|---|---|---|---|---|
| **4.70** | UNJC 1/4-20 | 0.907 | 55 | 14.27 | 36 | 6 | 4 | 5.6 | **01400** |
| **6.22** | UNJC 5/16-18 | 1.411 | 62 | 16.32 | 36 | 8 | 4 | 7.0 | **05160** |
| **7.79** | UNJC 3/8-16 | 1.588 | 74 | 20.01 | 40 | 10 | 4 | 8.6 | **03800** |
| **8.57** | UNJC 7/16-14 | 1.814 | 79 | 22.87 | 45 | 12 | 4 | 10.0 | **07160** |
| **9.38** | UNJC 1/2-13 | 1.270 | 79 | 26.75 | 45 | 12 | 5 | 11.5 | **01200** |


NEW

**50 533 ...**

| DC mm | Thread | TP mm | OAL mm | APMX mm | LS mm | DCONMS h6 mm | ZEFP | PHD mm | |
|---|---|---|---|---|---|---|---|---|---|
| **2.44** | UNJF 6-40 | 0.635 | 42 | 7.42 | 28 | 4 | 3 | 2.95 | **06000** |
| **3.14** | UNJF 8-36 | 0.706 | 49 | 8.91 | 36 | 6 | 3 | 3.50 | **08000** |
| **3.95** | UNJF 10-32 | 0.794 | 55 | 9.97 | 36 | 6 | 3 | 4.10 | **10000** |
| **4.70** | UNJF 1/4-28 | 0.907 | 55 | 14.27 | 36 | 6 | 4 | 5.60 | **01400** |
| **6.22** | UNJF 5/16-24 | 1.058 | 62 | 16.59 | 36 | 8 | 4 | 7.00 | **05160** |
| **7.79** | UNJF 3/8-24 | 1.058 | 74 | 19.77 | 40 | 10 | 4 | 8.60 | **03800** |
| **9.32** | UNJF 7/16-20 | 1.270 | 79 | 22.39 | 45 | 12 | 5 | 10.00 | **07160** |
| **9.38** | UNJF 1/2-20 | 1.270 | 79 | 25.34 | 45 | 12 | 5 | 11.50 | **01200** |
| **12.90** | UNJF 5/8-18 | 1.411 | 102 | 33.59 | 48 | 16 | 5 | 14.50 | **05800** |

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | ● |
| S | ● |
| H | |
| O | ● |

→ $v_c/f_z$ Page 21

→ **Chapter 7 – Circular and thread milling cutters**
When calculating the feed for circular milling, check whether machining is taking place with the contour feed $v_f$ or center path feed $v_{fm}$.

# Material examples for cutting data tables

| | Material sub-group | Index | Composition / Structure / Heat treatment | | Tensile strength lbf/in²* / HB / HRC | Material number | Material designation | Material number | Material designation |
|---|---|---|---|---|---|---|---|---|---|
| P | Unalloyed steel | P.1.1 | < 0.15 % C | Annealed | 60900 lbf/in² / 125 HB | 1.0401 | 1015 | 1.0301 | 1010 |
| | | P.1.2 | < 0.45 % C | Annealed | 92800 lbf/in² / 190 HB | 1.1191 | 1045 | 1.0737 | 12L14 |
| | | P.1.3 | | Tempered | 121800 lbf/in² / 250 HB | 1.1191 | 1045 | 1.0503 | 1043 |
| | | P.1.4 | < 0.75 % C | Annealed | 132000 lbf/in² / 270 HB | 1.1223 | 1060 | 1.0535 | 1055 |
| | | P.1.5 | | Tempered | 146500 lbf/in² / 300 HB | 1.1223 | 1060 | 1.1274 | 1095 |
| | Low-alloy steel | P.2.1 | | Annealed | 88500 lbf/in² / 180 HB | 1.7131 | 5115 | 1.6523 | 8620 |
| | | P.2.2 | | Tempered | 134900 lbf/in² / 275 HB | 1.7131 | 5115 | 1.6582 | 4340 |
| | | P.2.3 | | Tempered | 146500 lbf/in² / 300 HB | 1.7225 | 4142 | 1.7131 | 5115 |
| | | P.2.4 | | Tempered | 174000 lbf/in² / 375 HB | 1.7225 | 4142 | 17223 | 4140 |
| | High-alloy steel and high-alloy tool steel | P.3.1 | | Annealed | 98600 lbf/in² / 200 HB | 1.4021 | 420 | 1.2379 | D2 |
| | | P.3.2 | | Hardened and tempered | 159500 lbf/in² / 300 HB | 1.2343 | H11 | 1.3343 | M2 |
| | | P.3.3 | | Hardened and tempered | 188500 lbf/in² / 400 HB | 1.2343 | H11 | 1.2363 | A2 |
| | Stainless steel | P.4.1 | Ferritic / martensitic | Annealed | 98600 lbf/in² / 200 HB | 1.4016 | 430 | 1.4125 | 440C |
| | | P.4.2 | Martensitic | Tempered | 117500 lbf/in² / 250 HB | 1.4112 | S44003 | 1.4021 | 420 |
| M | Stainless steel | M.1.1 | Austenitic / austenitic-ferritic | Quenched | 88500 lbf/in² / 200 HB | 1.4301 | 304 | 1.4401 | 316 |
| | | M.2.1 | Austenitic | Tempered | 300 HB | 1.4841 | 314 | 1.4568 | 17-7 PH |
| | | M.3.1 | Austenitic / ferritic (Duplex) | | 113100 lbf/in² / 230 HB | 1.4462 | S32205 | 1.4410 | S32750 |
| K | Grey cast iron | K.1.1 | Pearlitic / ferritic | | 88500 lbf/in² / 180 HB | 0.6010 | A48-20B | 0.6025 | A48-40 B |
| | | K.1.2 | Pearlitic (martensitic) | | 127600 lbf/in² / 260 HB | 0.6030 | A48-45B | 0.6040 | A48-60 B |
| | Spherulitic graphite cast iron | K.2.1 | Ferritic | | 78300 lbf/in² / 160 HB | 0.7040 | 60-40-18 | 0.7050 | 65-45-12 |
| | | K.2.2 | Pearlitic | | 122600 lbf/in² / 250 HB | 0.7070 | 100-70-03 | 0.7660 | A439 Type D2 |
| | Malleable iron | K.3.1 | Ferritic | | 63800 lbf/in² / 130 HB | 0.8035 | GTW-35-04 | | |
| | | K.3.2 | Pearlitic | | 113100 lbf/in² / 230 HB | 0.8170 | 70003 | | |
| N | Aluminum wrought alloy | N.1.1 | Non-hardenable | | 60 HB | 3.0255 | A91060 | 3.0255 | A91060 |
| | | N.1.2 | Hardenable | | 49300 lbf/in² / 100 HB | 3.1355 | 2024 | 3.1355 | 2024 |
| | Cast aluminum alloy | N.2.1 | ≤ 12 % Si, non-hardenable | | 36300 lbf/in² / 75 HB | 3.2581 | A04130 / A413-0 | 3.2581 | A04130 / A413-0 |
| | | N.2.2 | ≤ 12 % Si, hardenable | | 43500 lbf/in² / 90 HB | 3.2134 | G-AlSi5Cu1Mg | | |
| | | N.2.3 | > 12 % Si, non-hardenable | | 63800 lbf/in² / 130 HB | | G-AlSi17Cu4Mg | | |
| | Copper and copper alloys (bronze/brass) | N.3.1 | Free-machining alloys, PB > 1 % | | 54400 lbf/in² / 110 HB | 2.0380 | CuZn39Pb2 (Ms58) | 2.0380 | C37700 |
| | | N.3.2 | CuZn, CuSnZn | | 43500 lbf/in² / 90 HB | 2.0331 | CuZn15 | 2.0331 | C34000 |
| | | N.3.3 | CuSn, lead-free copper and electrolytic copper | | 49300 lbf/in² / 100 HB | 2.0060 | E-Cu57 | | |
| | Magnesium alloys | N.4.1 | Magnesium and magnesium alloys | | 70 HB | 3.5612 | MgAl6Zn | | |
| S | Heat-resistant alloys | S.1.1 | Fe - basis | Annealed | 98600 lbf/in² / 200 HB | 1.4864 | X12NiCrSi 36-16 | 1.4864 | 330 |
| | | S.1.2 | | | 137800 lbf/in² / 280 HB | 1.4980 | X6NiCrTiMoVB25-15-2 | 1.4980 | S66286 |
| | | S.2.1 | Ni or Co basis | Annealed | 121800 lbf/in² / 250 HB | 2.4856 | Inconel 625 | 2.4812 | Hastelloy C |
| | | S.2.2 | | | 171100 lbf/in² / 350 HB | 2.4952 | Nimonic 80A | 2.4668 | Inconel 718 |
| | | S.2.3 | | Cast | 156600 lbf/in² / 320 HB | 2.4674 | Nimocast PK24 | 2.4670 | Nimocast 713 |
| | Titanium alloys | S.3.1 | Pure titanium | | 5800 lbf/in² | 3.7025 | Ti99.8 | | |
| | | S.3.2 | Alpha + beta alloys | | 152300 lbf/in² | 3.7165 | TiAl6V4 | | |
| | | S.3.3 | Beta alloys | | 203100 lbf/in² / 410 HB | Ti555.3 | Ti-5Al-5V-5Mo-3Cr | | |
| H | Hardened steel | H.1.1 | | Hardened and tempered | 46-55 HRC | | | | |
| | | H.1.2 | | Hardened and tempered | 56-60 HRC | | | | |
| | | H.1.3 | | Hardened and tempered | 61-65 HRC | | | | |
| | | H.1.4 | | Hardened and tempered | 66-70 HRC | | | | |
| | Chilled iron | H.2.1 | | Cast | 400 HB | | | | |
| | Hardened cast iron | H.3.1 | | Hardened and tempered | 55 HRC | | | | |
| O | Non-metal materials | O.1.1 | Plastics, duroplastic | | ≤ 21800 lbf/in² | | | | |
| | | O.1.2 | Plastics, thermoplastic | | ≤ 14500 lbf/in² | | | | |
| | | O.2.1 | Aramid fibre-reinforced | | ≤ 145000 lbf/in² | | | | |
| | | O.2.2 | Glass/carbon-fibre reinforced | | ≤ 145000 lbf/in² | | | | |
| | | O.3.1 | Graphite | | | | | | |

*** Tensile Strength at Rupture (Rm)**

# Cutting data standard values

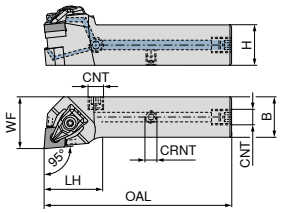
| Index | 50 545 ..., 50 550 ..., 50 557 ..., 50 559 ..., 50 568 ..., 50 569 ... | | | | 50 524 ..., 50 533 ... | | | |
|---|---|---|---|---|---|---|---|---|
| | ZSGF | AlTiN – Performance Solid carbide | | | SGF | AlTiN – Performance Solid carbide | | |
| | | Ø 1.5 – 5.9 | Ø 6.0 – 11.9 | Ø 12.0 – 20.0 | | Ø 2.4 – 5.9 | Ø 6.0 – 11.9 | Ø 12.0 – 20.0 |
| | $v_c$ (m/min) | $f_z$ (mm/tooth) | | | $v_c$ (m/min) | $f_z$ (mm/tooth) | | |
| P.1.1 | 60–120 | 0.04–0.11 | 0.13–0.17 | 0.18–0.20 | 80–150 | 0.015–0.04 | 0.04–0.08 | 0.08–0.15 |
| P.1.2 | 60–120 | 0.04–0.11 | 0.13–0.17 | 0.18–0.20 | 80–120 | 0.015–0.04 | 0.04–0.08 | 0.08–0.15 |
| P.1.3 | 60–120 | 0.04–0.11 | 0.13–0.17 | 0.18–0.20 | 80–120 | 0.015–0.04 | 0.04–0.08 | 0.08–0.15 |
| P.1.4 | 60–120 | 0.04–0.11 | 0.13–0.17 | 0.18–0.20 | 80–120 | 0.015–0.04 | 0.04–0.08 | 0.08–0.15 |
| P.1.5 | 60–120 | 0.04–0.11 | 0.13–0.17 | 0.18–0.20 | 60–100 | 0.01–0.04 | 0.04–0.06 | 0.04–0.10 |
| P.2.1 | 60–90 | 0.03–0.08 | 0.09–0.14 | 0.14–0.18 | 80–120 | 0.015–0.04 | 0.04–0.08 | 0.08–0.15 |
| P.2.2 | 60–90 | 0.03–0.08 | 0.09–0.14 | 0.14–0.18 | 80–100 | 0.015–0.04 | 0.04–0.08 | 0.08–0.15 |
| P.2.3 | 60–90 | 0.03–0.08 | 0.09–0.14 | 0.14–0.18 | 80–100 | 0.010–0.04 | 0.04–0.08 | 0.08–0.15 |
| P.2.4 | 60–90 | 0.03–0.08 | 0.09–0.14 | 0.14–0.18 | 80–100 | 0.010–0.04 | 0.04–0.08 | 0.08–0.15 |
| P.3.1 | 50–80 | 0.03–0.08 | 0.09–0.14 | 0.14–0.18 | 70–90 | 0.01–0.03 | 0.03–0.05 | 0.06–0.12 |
| P.3.2 | 50–80 | 0.03–0.08 | 0.09–0.14 | 0.14–0.18 | 60–80 | 0.006–0.02 | 0.02–0.04 | 0.04–0.06 |
| P.3.3 | 50–80 | 0.03–0.08 | 0.09–0.14 | 0.14–0.18 | 50–70 | 0.006–0.02 | 0.02–0.04 | 0.04–0.06 |
| P.4.1 | 50–80 | 0.03–0.08 | 0.09–0.14 | 0.14–0.18 | 70–90 | 0.006–0.02 | 0.02–0.04 | 0.04–0.06 |
| P.4.2 | 50–80 | 0.03–0.08 | 0.09–0.14 | 0.14–0.18 | 60–80 | 0.006–0.02 | 0.02–0.04 | 0.04–0.06 |
| M.1.1 | 60–90 | 0.02–0.06 | 0.06–0.11 | 0.12–0.13 | 60–100 | 0.01–0.04 | 0.04–0.08 | 0.08–0.10 |
| M.2.1 | 60–90 | 0.02–0.06 | 0.06–0.11 | 0.12–0.13 | 60–100 | 0.01–0.03 | 0.03–0.06 | 0.06–0.10 |
| M.3.1 | 60–90 | 0.02–0.06 | 0.06–0.11 | 0.12–0.13 | 60–100 | 0.01–0.03 | 0.03–0.06 | 0.06–0.10 |
| K.1.1 | 40–80 | 0.04–0.11 | 0.13–0.17 | 0.17–0.18 | 80–120 | 0.02–0.06 | 0.06–0.12 | 0.10–0.15 |
| K.1.2 | 40–80 | 0.04–0.11 | 0.13–0.17 | 0.17–0.18 | 80–120 | 0.02–0.05 | 0.05–0.10 | 0.10–0.12 |
| K.2.1 | 40–80 | 0.04–0.11 | 0.13–0.17 | 0.17–0.18 | 80–100 | 0.02–0.05 | 0.05–0.10 | 0.08–0.15 |
| K.2.2 | 40–80 | 0.04–0.11 | 0.13–0.17 | 0.17–0.18 | 80–100 | 0.02–0.05 | 0.05–0.10 | 0.08–0.12 |
| K.3.1 | 40–80 | 0.04–0.11 | 0.13–0.17 | 0.17–0.18 | 80–100 | 0.015–0.05 | 0.05–0.08 | 0.08–0.12 |
| K.3.2 | 40–80 | 0.04–0.11 | 0.13–0.17 | 0.17–0.18 | 80–100 | 0.015–0.03 | 0.03–0.08 | 0.08–0.12 |
| N.1.1 | 100–200 | 0.04–0.11 | 0.13–0.16 | 0.17–0.18 | 100–400 | 0.04–0.09 | 0.08–0.15 | 0.12–0.20 |
| N.1.2 | 100–200 | 0.04–0.11 | 0.13–0.16 | 0.17–0.18 | 100–400 | 0.04–0.09 | 0.08–0.15 | 0.12–0.20 |
| N.2.1 | 100–200 | 0.04–0.1 | 0.07–0.16 | 0.17–0.18 | 100–400 | 0.04–0.09 | 0.08–0.15 | 0.12–0.20 |
| N.2.2 | 100–200 | 0.04–0.1 | 0.07–0.16 | 0.17–0.18 | 100–400 | 0.04–0.09 | 0.08–0.15 | 0.12–0.20 |
| N.2.3 | 60–140 | 0.04–0.06 | 0.07–0.11 | 0.13–0.14 | 100–250 | 0.04–0.09 | 0.08–0.15 | 0.12–0.20 |
| N.3.1 | 50–200 | 0.05–0.16 | 0.14–0.19 | 0.19–0.20 | 100–400 | 0.04–0.09 | 0.08–0.15 | 0.12–0.20 |
| N.3.2 | 50–200 | 0.05–0.16 | 0.14–0.19 | 0.19–0.20 | 100–400 | 0.04–0.09 | 0.08–0.15 | 0.12–0.20 |
| N.3.3 | 50–200 | 0.05–0.16 | 0.14–0.19 | 0.19–0.20 | 100–400 | 0.04–0.09 | 0.08–0.15 | 0.12–0.20 |
| N.4.1 | 50–200 | 0.04–0.11 | 0.07–0.17 | 0.17–0.18 | 100–400 | 0.04–0.09 | 0.08–0.15 | 0.12–0.20 |
| S.1.1 | 20–40 | 0.03–0.05 | 0.06–0.07 | 0.08 | 40–100 | 0.01–0.04 | 0.04–0.07 | 0.07–0.12 |
| S.1.2 | 20–40 | 0.03–0.05 | 0.06–0.07 | 0.08 | | | | |
| S.2.1 | 20–40 | 0.03–0.05 | 0.06–0.07 | 0.08 | | | | |
| S.2.2 | 20–40 | 0.03–0.05 | 0.06–0.07 | 0.08 | | | | |
| S.2.3 | 20–40 | 0.03–0.05 | 0.06–0.07 | 0.08 | | | | |
| S.3.1 | 20–40 | 0.03–0.05 | 0.06–0.07 | 0.08 | 40–100 | 0.01–0.04 | 0.04–0.07 | 0.07–0.15 |
| S.3.2 | 20–40 | 0.03–0.05 | 0.06–0.07 | 0.08 | | | | |
| S.3.3 | 20–40 | 0.03–0.05 | 0.06–0.07 | 0.08 | | | | |
| H.1.1 | | | | | | | | |
| H.1.2 | | | | | | | | |
| H.1.3 | | | | | | | | |
| H.1.4 | | | | | | | | |
| H.2.1 | | | | | | | | |
| H.3.1 | | | | | | | | |
| O.1.1 | 100–200 | 0.06–0.16 | 0.19–0.22 | 0.22–0.3 | 100–400 | 0.03–0.08 | 0.08–0.15 | 0.15–0.20 |
| O.1.2 | 100–200 | 0.06–0.16 | 0.19–0.22 | 0.22–0.3 | 100–400 | 0.03–0.08 | 0.08–0.15 | 0.15–0.20 |
| O.2.1 | 100–200 | 0.06–0.16 | 0.19–0.22 | 0.22–0.3 | 50–80 | 0.03–0.08 | 0.08–0.15 | 0.15–0.20 |
| O.2.2 | 100–200 | 0.06–0.16 | 0.19–0.22 | 0.22–0.3 | 50–80 | 0.03–0.08 | 0.08–0.15 | 0.15–0.20 |
| O.3.1 | 60–140 | 0.05–0.15 | 0.14–0.20 | 0.20–0.25 | | | | |

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approximately **±20%** according to the usage conditions.

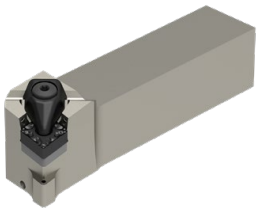
# **MaxiLock-D** – DCLN 95° DC – tool holder with top clamping

**Scope of supply:**

Tool holder with Torx key


Illustrations show right-hand versions



| | | | | | | | | | | NEW | NEW |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Left | Right |
| | | | | | | | | | | **70 510 ...** | **70 510 ...** |
| **Designation** | H | B | OAL | LH | WF | CRNT | CNT | Tightening torque | Indexable insert | | |
| | mm | mm | mm | mm | mm | | | Nm | | | |
| **DCLN R/L 2020 X09 DC** | 20 | 20 | 94 | 25 | 25 | M6 | G1/8" | 2 | CN.. 0903 | **52000** | **52001** |
| **DCLN R/L 2020 X12 DC** | 20 | 20 | 101 | 32 | 25 | M6 | G1/8" | 4 | CN.. 1204 | **62000** | **62001** |
| **DCLN R/L 2525 X12 DC** | 25 | 25 | 116 | 32 | 32 | M6 | G1/8" | 4 | CN.. 1204 | **62500** | **62501** |
| **DCLN R/L 3225 X12 DC** | 32 | 25 | 132 | 32 | 32 | M6 | G1/8" | 4 | CN.. 1204 | **63200** | **63201** |
| **DCLN R/L 2525 X16 DC** | 25 | 25 | 122 | 38 | 32 | M6 | G1/8" | 6.5 | CN.. 1606 | **72500** | **72501** |
| **DCLN R/L 3232 X16 DC** | 32 | 32 | 142 | 42 | 40 | M6 | G1/8" | 6.5 | CN.. 1606 | **73200** | **73201** |
| **DCLN R/L 3232 X19 DC** | 32 | 32 | 142 | 42 | 40 | M6 | G1/8" | 6.5 | CN.. 1906 | **83200** | **83201** |
| **DCLN R/L 4040 X19 DC** | 40 | 40 | 167 | 42 | 50 | M6 | G1/8" | 6.5 | CN.. 1906 | **94000** | **94001** |

Clamping screw

Carbide seat C

Set Screw

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | **70 950 ...** | | **70 950 ...** | | **70 950 ...** |
| **Spare parts for article number** | | | | | | | |
| 70 510 52000 / 70 510 52001 | M3x7 - IP | **819** | | **848** | M6x6 | | **86700** |
| 70 510 62000 / 70 510 62001 | M4,5x12 - IP | **820** | | **810** | M6x6 | | **86700** |
| 70 510 62500 / 70 510 62501 | M4,5x12 - IP | **820** | | **810** | M6x6 | | **86700** |
| 70 510 63200 / 70 510 63201 | M4,5x12 - IP | **820** | | **810** | M6x6 | | **86700** |
| 70 510 72500 / 70 510 72501 | M5x14 - IP | **821** | | **814** | M6x6 | | **86700** |
| 70 510 73200 / 70 510 73201 | M5x14 - IP | **821** | | **814** | M6x6 | | **86700** |
| 70 510 83200 / 70 510 83201 | M5x14 - IP | **821** | | **816** | M6x6 | | **86700** |
| 70 510 94000 / 70 510 94001 | M5x14 - IP | **821** | | **816** | M6x6 | | **86700** |

XPress range

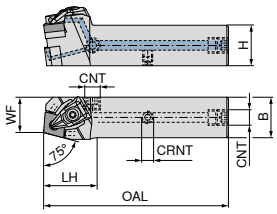
Screwdriver

Coolant screw plug

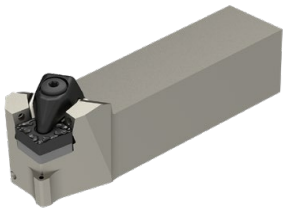
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | **70 950 ...** | | **80 950 ...** | | | **70 950 ...** | |
| **Spare parts for article number** | | | | | | | |
| 70 510 52000 / 70 510 52001 | **823** | T09 - IP | **126** | G 1/8" | | **294** | |
| 70 510 62000 / 70 510 62001 | **824** | T15 - IP | **128** | G 1/8" | | **294** | |
| 70 510 62500 / 70 510 62501 | **824** | T15 - IP | **128** | G 1/8" | | **294** | |
| 70 510 63200 / 70 510 63201 | **824** | T15 - IP | **128** | G 1/8" | | **294** | |
| 70 510 72500 / 70 510 72501 | **825** | T20 - IP | **129** | G 1/8" | | **294** | |
| 70 510 73200 / 70 510 73201 | **825** | T20 - IP | **129** | G 1/8" | | **294** | |
| 70 510 83200 / 70 510 83201 | **826** | T20 - IP | **129** | G 1/8" | | **294** | |
| 70 510 94000 / 70 510 94001 | **826** | T20 - IP | **129** | G 1/8" | | **294** | |

# **MaxiLock-D** – DCBN 75° DC – tool holder with top clamping

**Scope of supply:**
Tool holder with Torx key


Illustrations show right-hand versions



| Designation | H mm | B mm | OAL mm | LH mm | WF mm | CRNT | CNT | Tightening torque Nm | Indexable insert | NEW Left 70 507 ... | NEW Right 70 507 ... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DCBN R/L 2525 X12 DC** | 25 | 25 | 114 | 30 | 22 | M6 | G1/8" | 4 | CN.. 1204 | **82500** | **82501** |
| **DCBN R/L 2525 X16 DC** | 25 | 25 | 120 | 36 | 22 | M6 | G1/8" | 6.5 | CN.. 1606 | **62500** | **62501** |


Clamping screw


Carbide seat C


Set Screw

| Spare parts for article number | 70 950 ... | | 70 950 ... | | 70 950 ... | |
|---|---|---|---|---|---|---|
| 70 507 82500 / 70 507 82501 | M4.5x12 - IP | **820** | | **810** | M6x6 | **86700** |
| 70 507 62500 / 70 507 62501 | M5x14 - IP | **821** | | **814** | M6x6 | **86700** |


XPress range


Screwdriver

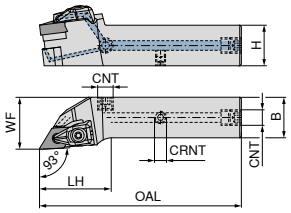

Coolant screw plug

| Spare parts for article number | 70 950 ... | | 80 950 ... | | 70 950 ... | |
|---|---|---|---|---|---|---|
| 70 507 82500 / 70 507 82501 | | **824** | T15 - IP | **128** | G 1/8" | **294** |
| 70 507 62500 / 70 507 62501 | | **825** | T20 - IP | **129** | G 1/8" | **294** |

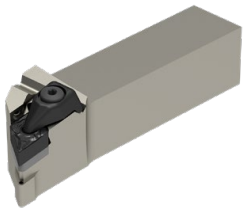
# **MaxiLock-D** – DDJN 93° DC – tool holder with top clamping

**Scope of supply:**

Tool holder with Torx key


Illustrations show right-hand versions



| Designation | H | B | OAL | LH | WF | CRNT | CNT | Tightening torque | Indexable insert | NEW Left | NEW Right |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm | mm | mm | mm | mm | | | Nm | | 70 546 ... | 70 546 ... |
| **DDJN R/L 2020 X11 DC** | 20 | 20 | 99 | 30 | 25 | M6 | G1/8" | 2 | DN.. 1104 | **82000** | **82001** |
| **DDJN R/L 2525 X11 DC** | 25 | 25 | 114 | 30 | 32 | M6 | G1/8" | 2 | DN.. 1104 | **82500** | **82501** |
| **DDJN R/L 2020 X15 DC** | 20 | 20 | 109 | 40 | 25 | M6 | G1/8" | 4 | DN.. 1504 / 1506 | **72000** | **72001** |
| **DDJN R/L 2525 X15 DC** | 25 | 25 | 124 | 40 | 32 | M6 | G1/8" | 4 | DN.. 1504 / 1506 | **72500** | **72501** |
| **DDJN R/L 3225 X15 DC** | 32 | 25 | 140 | 40 | 32 | M6 | G1/8" | 4 | DN.. 1504 / 1506 | **73200** | **73201** |

When working with DN.. 1504 indexable inserts, use insert seat with article no.**70 950 40000**.

Clamping screw

Carbide seat D

Set Screw

| Spare parts for article number | | 70 950 ... | | 70 950 ... | | 70 950 ... |
|---|---|---|---|---|---|---|
| 70 546 82000 / 70 546 82001 | M3x7 - IP | **819** | | **808** | M6x6 | **86700** |
| 70 546 82500 / 70 546 82501 | M3x7 - IP | **819** | | **808** | M6x6 | **86700** |
| 70 546 72000 / 70 546 72001 | M4.5x12 - IP | **820** | | **811** | M6x6 | **86700** |
| 70 546 72500 / 70 546 72501 | M4.5x12 - IP | **820** | | **811** | M6x6 | **86700** |
| 70 546 73200 / 70 546 73201 | M4.5x12 - IP | **820** | | **811** | M6x6 | **86700** |

XPress range

Screwdriver

Coolant screw plug

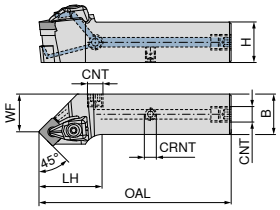
| Spare parts for article number | | 70 950 ... | | 80 950 ... | | 70 950 ... |
|---|---|---|---|---|---|---|
| 70 546 82000 / 70 546 82001 | **835** | T09 - IP | **126** | G 1/8" | **294** | |
| 70 546 82500 / 70 546 82501 | **835** | T09 - IP | **126** | G 1/8" | **294** | |
| 70 546 72000 / 70 546 72001 | **824** | T15 - IP | **128** | G 1/8" | **294** | |
| 70 546 72500 / 70 546 72501 | **824** | T15 - IP | **128** | G 1/8" | **294** | |
| 70 546 73200 / 70 546 73201 | **824** | T15 - IP | **128** | G 1/8" | **294** | |

# **MaxiLock-D** – DSSN 45° DC – tool holder with top clamping

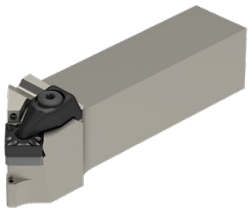
**Scope of supply:**

Tool holder with Torx key

Direct Cooling




Illustrations show right-hand versions



| | | | | | | | | | | NEW | | NEW | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Left | | Right | |
| | | | | | | | | | | **70 517 ...** | | **70 517 ...** | |
| **Designation** | H | B | OAL | LH | WF | CRNT | CNT | Tightening torque | Indexable insert | | | | |
| | mm | mm | mm | mm | mm | | | Nm | | | | | |
| **DSSN R/L 2020 X12 DC** | 20 | 20 | 104 | 35 | 16.7 | M6 | G1/8" | 4 | SN.. 1204 | | **62000** | | **62001** |
| **DSSN R/L 2525 X12 DC** | 25 | 25 | 119 | 35 | 24.2 | M6 | G1/8" | 4 | SN.. 1204 | | **62500** | | **62501** |
| **DSSN R/L 3225 X12 DC** | 32 | 25 | 135 | 35 | 24.2 | M6 | G1/8" | 4 | SN.. 1204 | | **63200** | | **63201** |

Clamping screw

Carbide seat S

Set Screw

| | | | | | | |
|---|---|---|---|---|---|---|
| | | **70 950 ...** | | **70 950 ...** | | **70 950 ...** |
| **Spare parts for article number** | | | | | | |
| 70 517 62000 / 70 517 62001 | M4,5x12 - IP | **820** | **813** | M6x6 | | **86700** |
| 70 517 62500 / 70 517 62501 | M4,5x12 - IP | **820** | **813** | M6x6 | | **86700** |
| 70 517 63200 / 70 517 63201 | M4,5x12 - IP | **820** | **813** | M6x6 | | **86700** |

XPress range

Screwdriver

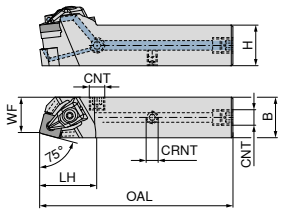
Coolant screw plug

| | | | | | | |
|---|---|---|---|---|---|---|
| | | **70 950 ...** | | **80 950 ...** | | **70 950 ...** |
| **Spare parts for article number** | | | | | | |
| 70 517 62000 / 70 517 62001 | | **824** | T15 - IP | **128** | G 1/8" | **294** |
| 70 517 62500 / 70 517 62501 | | **824** | T15 - IP | **128** | G 1/8" | **294** |
| 70 517 63200 / 70 517 63201 | | **824** | T15 - IP | **128** | G 1/8" | **294** |

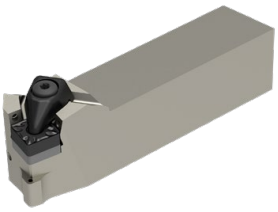
# **MaxiLock-D** – DSBN 75° DC – tool holder with top clamping

**Scope of supply:**

Tool holder with Torx key


Illustrations show right-hand versions



NEW

Right

**70 522 ...**

| Designation | H mm | B mm | OAL mm | LH mm | WF mm | CRNT | CNT | Tightening torque Nm | Indexable insert | |
|---|---|---|---|---|---|---|---|---|---|---|
| **DSBN R 2020 X12 DC** | 20 | 20 | 104 | 35 | 17.2 | M6 | G1/8" | 4 | SN.. 1204 | **62001** |
| **DSBN R 2525 X12 DC** | 25 | 25 | 119 | 35 | 22.2 | M6 | G1/8" | 4 | SN.. 1204 | **62501** |
| **DSBN R 2525 X15 DC** | 25 | 25 | 127 | 33 | 22.3 | M6 | G1/8" | 6.5 | SN.. 1506 | **72501** |
| **DSBN R 3232 X15 DC** | 32 | 32 | 142 | 42 | 26.1 | M6 | G1/8" | 6.5 | SN.. 1506 | **73201** |
| **DSBN R 3232 X19 DC** | 32 | 32 | 148 | 48 | 27.3 | M6 | G1/8" | 6.5 | SN.. 1906 | **83201** |
| **DSBN R 4040 X19 DC** | 40 | 40 | 173 | 48 | 35.3 | M6 | G1/8" | 6.5 | SN.. 1906 | **84001** |

Clamping screw

Carbide seat S

Set Screw

| Spare parts for article number | | | | | | |
|---|---|---|---|---|---|---|
| | **70 950 ...** | | **70 950 ...** | | **70 950 ...** | |
| 70 522 62001 | M4,5x12 - IP | **820** | | **813** | M6x6 | **86700** |
| 70 522 62501 | M4,5x12 - IP | **820** | | **813** | M6x6 | **86700** |
| 70 522 72501 | M5x14 - IP | **821** | | **833** | M6x6 | **86700** |
| 70 522 73201 | M5x14 - IP | **821** | | **833** | M6x6 | **86700** |
| 70 522 83201 | M5x14 - IP | **821** | | **817** | M6x6 | **86700** |
| 70 522 84001 | M5x14 - IP | **821** | | **817** | M6x6 | **86700** |

XPress range

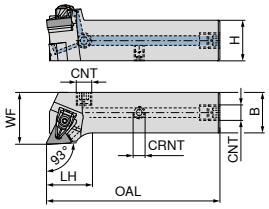
Screwdriver

Coolant screw plug

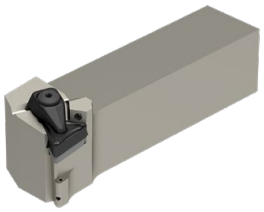
| Spare parts for article number | | | | | | |
|---|---|---|---|---|---|---|
| | **70 950 ...** | | **80 950 ...** | | **70 950 ...** | |
| 70 522 62001 | **824** | T15 - IP | **128** | G 1/8" | **294** |
| 70 522 62501 | **824** | T15 - IP | **128** | G 1/8" | **294** |
| 70 522 72501 | **825** | T20 - IP | **129** | G 1/8" | **294** |
| 70 522 73201 | **825** | T20 - IP | **129** | G 1/8" | **294** |
| 70 522 83201 | **826** | T20 - IP | **129** | G 1/8" | **294** |
| 70 522 84001 | **826** | T20 - IP | **129** | G 1/8" | **294** |

# **MaxiLock-D** – DTJN 93° DC – tool holder with top clamping

**Scope of supply:**
Tool holder with Torx key


Illustrations show right-hand versions



| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | NEW | | NEW |
| | | | | | | | | | | Left | | Right |
| | | | | | | | | | | **70 601 ...** | | **70 601 ...** |
| **Designation** | H | B | OAL | LH | WF | CRNT | CNT | Tightening torque | Indexable insert | | | |
| | mm | mm | mm | mm | mm | | | Nm | | | | |
| **DTJN R/L 2020 X16 DC** | 20 | 20 | 92 | 23 | 25 | M6 | G1/8" | 2 | TNM. 1604 | **82000** | | **82001** |
| **DTJN R/L 2525 X16 DC** | 25 | 25 | 107 | 23 | 32 | M6 | G1/8" | 2 | TNM. 1604 | **82500** | | **82501** |


Clamping screw


Carbide seat T


Set Screw

| | | | | | | |
|---|---|---|---|---|---|---|
| | | **70 950 ...** | | **70 950 ...** | | **70 950 ...** |
| **Spare parts for article number** | | | | | | |
| 70 601 82000 / 70 601 82001 | M3x7 - IP | **819** | | **847** | M6x6 | **86700** |
| 70 601 82500 / 70 601 82501 | M3x7 - IP | **819** | | **847** | M6x6 | **86700** |


XPress range

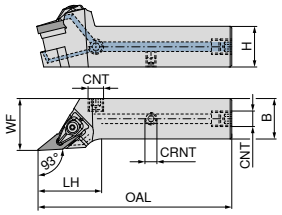

Screwdriver


Coolant screw plug

| | | | | | | |
|---|---|---|---|---|---|---|
| | | **70 950 ...** | | **80 950 ...** | | **70 950 ...** |
| **Spare parts for article number** | | | | | | |
| 70 601 82000 / 70 601 82001 | | **823** | T09 - IP | **126** | G 1/8" | **294** |
| 70 601 82500 / 70 601 82501 | | **823** | T09 - IP | **126** | G 1/8" | **294** |

# **MaxiLock-D** – DVJN 93° DC – tool holder with top clamping

**Scope of supply:**
Tool holder with Torx key


Illustrations show right-hand versions

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | NEW | | NEW |
| | | | | | | | | | | Left | | Right |
| | | | | | | | | | | **70 511 ...** | | **70 511 ...** |
| **Designation** | H | B | OAL | LH | WF | CRNT | CNT | Tightening torque | Indexable insert | | | |
| | mm | mm | mm | mm | mm | | | Nm | | | | |
| **DVJN R/L 2020 X16 DC** | 20 | 20 | 104 | 35 | 25 | M6 | G1/8" | 2 | VN.. 1604 | **62000** | | **62001** |
| **DVJN R/L 2525 X16 DC** | 25 | 25 | 119 | 35 | 32 | M6 | G1/8" | 2 | VN.. 1604 | **62500** | | **62501** |

Clamping screw

Carbide seat V

Set Screw

| | | | | | | |
|---|---|---|---|---|---|---|
| | | **70 950 ...** | | **70 950 ...** | | **70 950 ...** |
| **Spare parts for article number** | | | | | | |
| 70 511 62000 / 70 511 62001 | M3x7 - IP | **819** | | **806** | M6x6 | **86700** |
| 70 511 62500 / 70 511 62501 | M3x7 - IP | **819** | | **806** | M6x6 | **86700** |

XPress range



Screwdriver

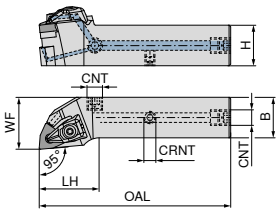
Coolant screw plug

| | | | | | | |
|---|---|---|---|---|---|---|
| | | **70 950 ...** | | **80 950 ...** | | **70 950 ...** |
| **Spare parts for article number** | | | | | | |
| 70 511 62000 / 70 511 62001 | | **835** | T09 - IP | **126** | G 1/8" | **294** |
| 70 511 62500 / 70 511 62501 | | **835** | T09 - IP | **126** | G 1/8" | **294** |

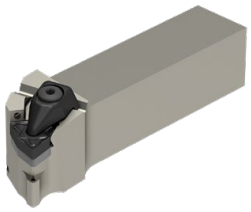
# **MaxiLock-D** – DWLN 95° DC – tool holder with top clamping

**Scope of supply:**

Tool holder with Torx key


Illustrations show right-hand versions



| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | NEW | | NEW |
| | | | | | | | | | | Left | | Right |
| | | | | | | | | | | **70 547 ...** | | **70 547 ...** |
| **Designation** | H | B | OAL | LH | WF | CRNT | CNT | Tightening torque | Indexable insert | | | |
| | mm | mm | mm | mm | mm | | | Nm | | | | |
| **DWLN R/L 2020 X06 DC** | 20 | 20 | 94 | 25 | 25 | M6 | G1/8" | 2 | WN.. 0604 | **62000** | | **62001** |
| **DWLN R/L 2525 X06 DC** | 25 | 25 | 109 | 25 | 32 | M6 | G1/8" | 2 | WN.. 0604 | **62500** | | **62501** |
| **DWLN R/L 2020 X08 DC** | 20 | 20 | 100 | 31 | 25 | M6 | G1/8" | 4 | WN.. 0804 | **72000** | | **72001** |
| **DWLN R/L 2525 X08 DC** | 25 | 25 | 118 | 34 | 32 | M6 | G1/8" | 4 | WN.. 0804 | **72500** | | **72501** |

Clamping screw

Carbide seat W

Set Screw

| **Spare parts for article number** | | | | | | |
|---|---|---|---|---|---|---|
| | | **70 950 ...** | | **70 950 ...** | | **70 950 ...** |
| 70 547 62000 / 70 547 62001 | M3x7 - IP | **819** | **807** | M6x6 | **86700** | |
| 70 547 62500 / 70 547 62501 | M3x7 - IP | **819** | **807** | M6x6 | **86700** | |
| 70 547 72000 / 70 547 72001 | M4.5x12 - IP | **820** | **812** | M6x6 | **86700** | |
| 70 547 72500 / 70 547 72501 | M4.5x12 - IP | **820** | **812** | M6x6 | **86700** | |

XPress range



Screwdriver

Coolant screw plug

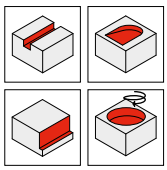
| **Spare parts for article number** | | | | | | |
|---|---|---|---|---|---|---|
| | | **70 950 ...** | | **80 950 ...** | | **70 950 ...** |
| 70 547 62000 / 70 547 62001 | **823** | T09 - IP | **126** | G 1/8" | **294** | |
| 70 547 62500 / 70 547 62501 | **823** | T09 - IP | **126** | G 1/8" | **294** | |
| 70 547 72000 / 70 547 72001 | **824** | T15 - IP | **128** | G 1/8" | **294** | |
| 70 547 72500 / 70 547 72501 | **824** | T15 - IP | **128** | G 1/8" | **294** | |

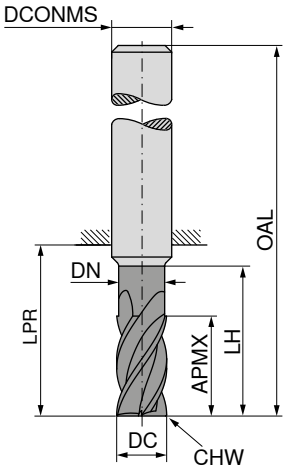
# End mill

N

$\lambda_s$ = 35°
$\gamma_s$ = 38°
$\gamma_s$ = 9°

HPC






NEW

Ti1000

≈DIN 6527

**54 071 ...**

| DC h10 mm | APMX mm | DN mm | LH mm | LPR mm | OAL mm | DCONMS h6 mm | CHW mm | ZEFP | |
|---|---|---|---|---|---|---|---|---|---|
| **6** | 13 | 5.8 | 21 | 21 | 57 | 6 | 0.1 | 4 | **06300** |
| **8** | 21 | 7.7 | 27 | 27 | 63 | 8 | 0.2 | 4 | **08300** |
| **10** | 22 | 9.7 | 32 | 32 | 72 | 10 | 0.2 | 4 | **10300** |
| **12** | 26 | 11.6 | 38 | 38 | 83 | 12 | 0.3 | 4 | **12300** |
| **14** | 26 | 11.6 | 38 | 38 | 83 | 14 | 0.3 | 4 | **14300** |
| **16** | 36 | 15.5 | 44 | 44 | 92 | 16 | 0.3 | 4 | **16300** |
| **18** | 36 | 17.5 | 44 | 44 | 92 | 18 | 0.3 | 4 | **18300** |
| **20** | 41 | 19.5 | 54 | 54 | 104 | 20 | 0.3 | 4 | **20300** |

| | |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | ○ |
| S | ○ |
| H | |
| O | |

→ $v_c/f_z$ Page 32+33

# Material examples for cutting data tables

| | Material sub-group | Index | Composition / Structure / Heat treatment | | Tensile strength lbf/in²* / HB / HRC | Material number | Material designation | Material number | Material designation |
|---|---|---|---|---|---|---|---|---|---|
| P | Unalloyed steel | P.1.1 | < 0.15 % C | Annealed | 60900 lbf/in² / 125 HB | 1.0401 | 1015 | 1.0301 | 1010 |
| | | P.1.2 | < 0.45 % C | Annealed | 92800 lbf/in² / 190 HB | 1.1191 | 1045 | 1.0737 | 12L14 |
| | | P.1.3 | | Tempered | 121800 lbf/in² / 250 HB | 1.1191 | 1045 | 1.0503 | 1043 |
| | | P.1.4 | < 0.75 % C | Annealed | 132000 lbf/in² / 270 HB | 1.1223 | 1060 | 1.0535 | 1055 |
| | | P.1.5 | | Tempered | 146500 lbf/in² / 300 HB | 1.1223 | 1060 | 1.1274 | 1095 |
| | Low-alloy steel | P.2.1 | | Annealed | 88500 lbf/in² / 180 HB | 1.7131 | 5115 | 1.6523 | 8620 |
| | | P.2.2 | | Tempered | 134900 lbf/in² / 275 HB | 1.7131 | 5115 | 1.6582 | 4340 |
| | | P.2.3 | | Tempered | 146500 lbf/in² / 300 HB | 1.7225 | 4142 | 1.7131 | 5115 |
| | | P.2.4 | | Tempered | 174000 lbf/in² / 375 HB | 1.7225 | 4142 | 17223 | 4140 |
| | High-alloy steel and high-alloy tool steel | P.3.1 | | Annealed | 98600 lbf/in² / 200 HB | 1.4021 | 420 | 1.2379 | D2 |
| | | P.3.2 | | Hardened and tempered | 159500 lbf/in² / 300 HB | 1.2343 | H11 | 1.3343 | M2 |
| | | P.3.3 | | Hardened and tempered | 188500 lbf/in² / 400 HB | 1.2343 | H11 | 1.2363 | A2 |
| | Stainless steel | P.4.1 | Ferritic / martensitic | Annealed | 98600 lbf/in² / 200 HB | 1.4016 | 430 | 1.4125 | 440C |
| | | P.4.2 | Martensitic | Tempered | 117500 lbf/in² / 250 HB | 1.4112 | S44003 | 1.4021 | 420 |
| M | Stainless steel | M.1.1 | Austenitic / austenitic-ferritic | Quenched | 88500 lbf/in² / 200 HB | 1.4301 | 304 | 1.4401 | 316 |
| | | M.2.1 | Austenitic | Tempered | 300 HB | 1.4841 | 314 | 1.4568 | 17-7 PH |
| | | M.3.1 | Austenitic / ferritic (Duplex) | | 113100 lbf/in² / 230 HB | 1.4462 | S32205 | 1.4410 | S32750 |
| K | Grey cast iron | K.1.1 | Pearlitic / ferritic | | 88500 lbf/in² / 180 HB | 0.6010 | A48-20B | 0.6025 | A48-40 B |
| | | K.1.2 | Pearlitic (martensitic) | | 127600 lbf/in² / 260 HB | 0.6030 | A48-45B | 0.6040 | A48-60 B |
| | Spherulitic graphite cast iron | K.2.1 | Ferritic | | 78300 lbf/in² / 160 HB | 0.7040 | 60-40-18 | 0.7050 | 65-45-12 |
| | | K.2.2 | Pearlitic | | 122600 lbf/in² / 250 HB | 0.7070 | 100-70-03 | 0.7660 | A439 Type D2 |
| | Malleable iron | K.3.1 | Ferritic | | 63800 lbf/in² / 130 HB | 0.8035 | GTW-35-04 | | |
| | | K.3.2 | Pearlitic | | 113100 lbf/in² / 230 HB | 0.8170 | 70003 | | |
| N | Aluminum wrought alloy | N.1.1 | Non-hardenable | | 60 HB | 3.0255 | A91060 | 3.0255 | A91060 |
| | | N.1.2 | Hardenable | | 49300 lbf/in² / 100 HB | 3.1355 | 2024 | 3.1355 | 2024 |
| | Cast aluminum alloy | N.2.1 | ≤ 12 % Si, non-hardenable | | 36300 lbf/in² / 75 HB | 3.2581 | A04130 / A413-0 | 3.2581 | A04130 / A413-0 |
| | | N.2.2 | ≤ 12 % Si, hardenable | | 43500 lbf/in² / 90 HB | 3.2134 | G-AlSi5Cu1Mg | | |
| | | N.2.3 | > 12 % Si, non-hardenable | | 63800 lbf/in² / 130 HB | | G-AlSi17Cu4Mg | | |
| | Copper and copper alloys (bronze/brass) | N.3.1 | Free-machining alloys, PB > 1 % | | 54400 lbf/in² / 110 HB | 2.0380 | CuZn39Pb2 (Ms58) | 2.0380 | C37700 |
| | | N.3.2 | CuZn, CuSnZn | | 43500 lbf/in² / 90 HB | 2.0331 | CuZn15 | 2.0331 | C34000 |
| | | N.3.3 | CuSn, lead-free copper and electrolytic copper | | 49300 lbf/in² / 100 HB | 2.0060 | E-Cu57 | | |
| | Magnesium alloys | N.4.1 | Magnesium and magnesium alloys | | 70 HB | 3.5612 | MgAl6Zn | | |
| S | Heat-resistant alloys | S.1.1 | Fe - basis | Annealed | 98600 lbf/in² / 200 HB | 1.4864 | X12NiCrSi 36-16 | 1.4864 | 330 |
| | | S.1.2 | | | 137800 lbf/in² / 280 HB | 1.4980 | X6NiCrTiMoVB25-15-2 | 1.4980 | S66286 |
| | | S.2.1 | Ni or Co basis | Annealed | 121800 lbf/in² / 250 HB | 2.4856 | Inconel 625 | 2.4812 | Hastelloy C |
| | | S.2.2 | | | 171100 lbf/in² / 350 HB | 2.4952 | Nimonic 80A | 2.4668 | Inconel 718 |
| | | S.2.3 | | Cast | 156600 lbf/in² / 320 HB | 2.4674 | Nimocast PK24 | 2.4670 | Nimocast 713 |
| | Titanium alloys | S.3.1 | Pure titanium | | 5800 lbf/in² | 3.7025 | Ti99.8 | | |
| | | S.3.2 | Alpha + beta alloys | | 152300 lbf/in² | 3.7165 | TiAl6V4 | | |
| | | S.3.3 | Beta alloys | | 203100 lbf/in² / 410 HB | Ti555.3 | Ti-5Al-5V-5Mo-3Cr | | |
| H | Hardened steel | H.1.1 | | Hardened and tempered | 46-55 HRC | | | | |
| | | H.1.2 | | Hardened and tempered | 56-60 HRC | | | | |
| | | H.1.3 | | Hardened and tempered | 61-65 HRC | | | | |
| | | H.1.4 | | Hardened and tempered | 66-70 HRC | | | | |
| | Chilled iron | H.2.1 | | Cast | 400 HB | | | | |
| | Hardened cast iron | H.3.1 | | Hardened and tempered | 55 HRC | | | | |
| O | Non-metal materials | O.1.1 | Plastics, duroplastic | | ≤ 21800 lbf/in² | | | | |
| | | O.1.2 | Plastics, thermoplastic | | ≤ 14500 lbf/in² | | | | |
| | | O.2.1 | Aramid fibre-reinforced | | ≤ 145000 lbf/in² | | | | |
| | | O.2.2 | Glass/carbon-fibre reinforced | | ≤ 145000 lbf/in² | | | | |
| | | O.3.1 | Graphite | | | | | | |

*** Tensile Strength at Rupture (Rm)**

# Cutting data standard values for end mills

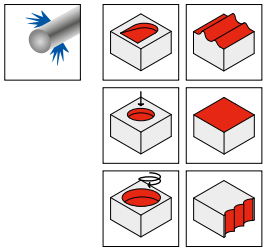
| Index | Short/long version | | 54 071 ... | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Ø DC (mm) = | | | | | | | | | | | | | | | |
| | | | 3 | | | 4 | | | 5 | | | 6 | | | 8 | | | |
| | $v_c$ (m/min) | $a_{p\,max.}$ x DC | $a_e$ 0.1–0.2 x DC | $a_e$ 0.3–0.4 x DC | $a_e$ 0.6–1.0 x DC | $a_e$ 0.1–0.2 x DC | $a_e$ 0.3–0.4 x DC | $a_e$ 0.6–1.0 x DC | $a_e$ 0.1–0.2 x DC | $a_e$ 0.3–0.4 x DC | $a_e$ 0.6–1.0 x DC | $a_e$ 0.1–0.2 x DC | $a_e$ 0.3–0.4 x DC | $a_e$ 0.6–1.0 x DC | $a_e$ 0.1–0.2 x DC | $a_e$ 0.3–0.4 x DC | $a_e$ 0.6–1.0 x DC |
| | | | $f_z$ (mm) | | | | | | | | | | | | | | | |
| P.1.1 | 210 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| P.1.2 | 200 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| P.1.3 | 200 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| P.1.4 | 190 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| P.1.5 | 190 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| P.2.1 | 200 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| P.2.2 | 190 | 1.0 | 0.022 | 0.018 | 0.011 | 0.030 | 0.024 | 0.015 | 0.038 | 0.030 | 0.019 | 0.046 | 0.037 | 0.023 | 0.062 | 0.050 | 0.031 | |
| P.2.3 | 180 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| P.2.4 | 170 | 1.0 | 0.022 | 0.018 | 0.011 | 0.030 | 0.024 | 0.015 | 0.038 | 0.030 | 0.019 | 0.046 | 0.037 | 0.023 | 0.062 | 0.050 | 0.031 | |
| P.3.1 | 180 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| P.3.2 | 170 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| P.3.3 | 140 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| P.4.1 | 100 | 1.0 | 0.017 | 0.014 | 0.009 | 0.024 | 0.019 | 0.012 | 0.031 | 0.025 | 0.016 | 0.038 | 0.030 | 0.019 | 0.052 | 0.042 | 0.026 | |
| P.4.2 | 80 | 1.0 | 0.017 | 0.014 | 0.009 | 0.024 | 0.019 | 0.012 | 0.031 | 0.025 | 0.016 | 0.038 | 0.030 | 0.019 | 0.052 | 0.042 | 0.026 | |
| M.1.1 | 100 | 1.0 | 0.017 | 0.014 | 0.009 | 0.024 | 0.019 | 0.012 | 0.031 | 0.025 | 0.016 | 0.038 | 0.030 | 0.019 | 0.052 | 0.042 | 0.026 | |
| M.2.1 | 100 | 1.0 | 0.017 | 0.014 | 0.009 | 0.024 | 0.019 | 0.012 | 0.031 | 0.025 | 0.016 | 0.038 | 0.030 | 0.019 | 0.052 | 0.042 | 0.026 | |
| M.3.1 | 100 | 1.0 | 0.017 | 0.014 | 0.009 | 0.024 | 0.019 | 0.012 | 0.031 | 0.025 | 0.016 | 0.038 | 0.030 | 0.019 | 0.052 | 0.042 | 0.026 | |
| K.1.1 | 200 | 1.0 | 0.037 | 0.030 | 0.019 | 0.048 | 0.038 | 0.024 | 0.060 | 0.048 | 0.030 | 0.070 | 0.056 | 0.035 | 0.094 | 0.075 | 0.047 | |
| K.1.2 | 180 | 1.0 | 0.037 | 0.030 | 0.019 | 0.048 | 0.038 | 0.024 | 0.060 | 0.048 | 0.030 | 0.070 | 0.056 | 0.035 | 0.094 | 0.075 | 0.047 | |
| K.2.1 | 190 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| K.2.2 | 170 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| K.3.1 | 180 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| K.3.2 | 160 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| N.1.1 | | | | | | | | | | | | | | | | | | |
| N.1.2 | | | | | | | | | | | | | | | | | | |
| N.2.1 | | | | | | | | | | | | | | | | | | |
| N.2.2 | | | | | | | | | | | | | | | | | | |
| N.2.3 | | | | | | | | | | | | | | | | | | |
| N.3.1 | 350 | 1.0 | 0.037 | 0.030 | 0.019 | 0.048 | 0.038 | 0.024 | 0.060 | 0.048 | 0.030 | 0.070 | 0.056 | 0.035 | 0.094 | 0.075 | 0.047 | |
| N.3.2 | 350 | 1.0 | 0.037 | 0.030 | 0.019 | 0.048 | 0.038 | 0.024 | 0.060 | 0.048 | 0.030 | 0.070 | 0.056 | 0.035 | 0.094 | 0.075 | 0.047 | |
| N.3.3 | 280 | 1.0 | 0.037 | 0.030 | 0.019 | 0.048 | 0.038 | 0.024 | 0.060 | 0.048 | 0.030 | 0.070 | 0.056 | 0.035 | 0.094 | 0.075 | 0.047 | |
| N.4.1 | | | | | | | | | | | | | | | | | | |
| S.1.1 | 30 | 1.0 | 0.015 | 0.012 | 0.008 | 0.020 | 0.016 | 0.010 | 0.025 | 0.020 | 0.013 | 0.030 | 0.024 | 0.015 | 0.040 | 0.032 | 0.020 | |
| S.1.2 | 30 | 1.0 | 0.015 | 0.012 | 0.008 | 0.020 | 0.016 | 0.010 | 0.025 | 0.020 | 0.013 | 0.030 | 0.024 | 0.015 | 0.040 | 0.032 | 0.020 | |
| S.2.1 | 30 | 1.0 | 0.015 | 0.012 | 0.008 | 0.020 | 0.016 | 0.010 | 0.025 | 0.020 | 0.013 | 0.030 | 0.024 | 0.015 | 0.040 | 0.032 | 0.020 | |
| S.2.2 | 30 | 1.0 | 0.015 | 0.012 | 0.008 | 0.020 | 0.016 | 0.010 | 0.025 | 0.020 | 0.013 | 0.030 | 0.024 | 0.015 | 0.040 | 0.032 | 0.020 | |
| S.2.3 | 30 | 1.0 | 0.015 | 0.012 | 0.008 | 0.020 | 0.016 | 0.010 | 0.025 | 0.020 | 0.013 | 0.030 | 0.024 | 0.015 | 0.040 | 0.032 | 0.020 | |
| S.3.1 | 90 | 1.0 | 0.028 | 0.022 | 0.014 | 0.038 | 0.030 | 0.019 | 0.049 | 0.039 | 0.025 | 0.060 | 0.048 | 0.030 | 0.080 | 0.064 | 0.040 | |
| S.3.2 | 50 | 1.0 | 0.017 | 0.014 | 0.009 | 0.024 | 0.019 | 0.012 | 0.031 | 0.025 | 0.016 | 0.038 | 0.030 | 0.019 | 0.052 | 0.042 | 0.026 | |
| S.3.3 | | | | | | | | | | | | | | | | | | |
| H.1.1 | | | | | | | | | | | | | | | | | | |
| H.1.2 | | | | | | | | | | | | | | | | | | |
| H.1.3 | | | | | | | | | | | | | | | | | | |
| H.1.4 | | | | | | | | | | | | | | | | | | |
| H.2.1 | | | | | | | | | | | | | | | | | | |
| H.3.1 | | | | | | | | | | | | | | | | | | |
| O.1.1 | | | | | | | | | | | | | | | | | | |
| O.1.2 | | | | | | | | | | | | | | | | | | |
| O.2.1 | | | | | | | | | | | | | | | | | | |
| O.2.2 | | | | | | | | | | | | | | | | | | |
| O.3.1 | | | | | | | | | | | | | | | | | | |

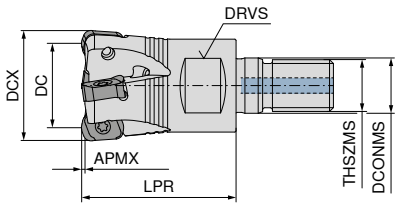
Plunging angle for ramping and helical milling = 3°

| Index | 54 071 ... | | | | | | | | | | | | ● 1st choice ○ Suitable | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø DC (mm) = | | | | | | | | | | | | | | |
| | 10 | | | 12 | | | 16 | | | 20 | | | | | |
| | $a_e$ 0.1–0.2 x DC | $a_e$ 0.3–0.4 x DC | $a_e$ 0.6–1.0 x DC | $a_e$ 0.1–0.2 x DC | $a_e$ 0.3–0.4 x DC | $a_e$ 0.6–1.0 x DC | $a_e$ 0.1–0.2 x DC | $a_e$ 0.3–0.4 x DC | $a_e$ 0.6–1.0 x DC | $a_e$ 0.1–0.2 x DC | $a_e$ 0.3–0.4 x DC | $a_e$ 0.6–1.0 x DC | Emulsion | Compressed air | MMS |
| | $f_z$ (mm) | | | | | | | | | | | | | | |
| P.1.1 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| P.1.2 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| P.1.3 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| P.1.4 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| P.1.5 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| P.2.1 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| P.2.2 | 0.078 | 0.062 | 0.039 | 0.094 | 0.075 | 0.047 | 0.118 | 0.094 | 0.059 | 0.134 | 0.107 | 0.067 | ● | ○ | ○ |
| P.2.3 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| P.2.4 | 0.078 | 0.062 | 0.039 | 0.094 | 0.075 | 0.047 | 0.118 | 0.094 | 0.059 | 0.134 | 0.107 | 0.067 | ● | ○ | ○ |
| P.3.1 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| P.3.2 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| P.3.3 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| P.4.1 | 0.066 | 0.053 | 0.033 | 0.080 | 0.064 | 0.040 | 0.101 | 0.081 | 0.051 | 0.115 | 0.092 | 0.058 | ● | | |
| P.4.2 | 0.066 | 0.053 | 0.033 | 0.080 | 0.064 | 0.040 | 0.101 | 0.081 | 0.051 | 0.115 | 0.092 | 0.058 | ● | | |
| M.1.1 | 0.066 | 0.053 | 0.033 | 0.080 | 0.064 | 0.040 | 0.101 | 0.081 | 0.051 | 0.115 | 0.092 | 0.058 | ● | | |
| M.2.1 | 0.066 | 0.053 | 0.033 | 0.080 | 0.064 | 0.040 | 0.101 | 0.081 | 0.051 | 0.115 | 0.092 | 0.058 | ● | | |
| M.3.1 | 0.066 | 0.053 | 0.033 | 0.080 | 0.064 | 0.040 | 0.101 | 0.081 | 0.051 | 0.115 | 0.092 | 0.058 | ● | | |
| K.1.1 | 0.116 | 0.093 | 0.058 | 0.140 | 0.112 | 0.070 | 0.173 | 0.138 | 0.087 | 0.196 | 0.157 | 0.098 | ● | ○ | ○ |
| K.1.2 | 0.116 | 0.093 | 0.058 | 0.140 | 0.112 | 0.070 | 0.173 | 0.138 | 0.087 | 0.196 | 0.157 | 0.098 | ● | ○ | ○ |
| K.2.1 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| K.2.2 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| K.3.1 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| K.3.2 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | ○ | ○ |
| N.1.1 | | | | | | | | | | | | | | | |
| N.1.2 | | | | | | | | | | | | | | | |
| N.2.1 | | | | | | | | | | | | | | | |
| N.2.2 | | | | | | | | | | | | | | | |
| N.2.3 | | | | | | | | | | | | | | | |
| N.3.1 | 0.116 | 0.093 | 0.058 | 0.140 | 0.112 | 0.070 | 0.173 | 0.138 | 0.087 | 0.196 | 0.157 | 0.098 | ● | | |
| N.3.2 | 0.116 | 0.093 | 0.058 | 0.140 | 0.112 | 0.070 | 0.173 | 0.138 | 0.087 | 0.196 | 0.157 | 0.098 | ● | | |
| N.3.3 | 0.116 | 0.093 | 0.058 | 0.140 | 0.112 | 0.070 | 0.173 | 0.138 | 0.087 | 0.196 | 0.157 | 0.098 | ● | | |
| N.4.1 | | | | | | | | | | | | | | | |
| S.1.1 | 0.050 | 0.040 | 0.025 | 0.060 | 0.048 | 0.030 | 0.075 | 0.060 | 0.038 | 0.084 | 0.067 | 0.042 | ● | | |
| S.1.2 | 0.050 | 0.040 | 0.025 | 0.060 | 0.048 | 0.030 | 0.075 | 0.060 | 0.038 | 0.084 | 0.067 | 0.042 | ● | | |
| S.2.1 | 0.050 | 0.040 | 0.025 | 0.060 | 0.048 | 0.030 | 0.075 | 0.060 | 0.038 | 0.084 | 0.067 | 0.042 | ● | | |
| S.2.2 | 0.050 | 0.040 | 0.025 | 0.060 | 0.048 | 0.030 | 0.075 | 0.060 | 0.038 | 0.084 | 0.067 | 0.042 | ● | | |
| S.2.3 | 0.050 | 0.040 | 0.025 | 0.060 | 0.048 | 0.030 | 0.075 | 0.060 | 0.038 | 0.084 | 0.067 | 0.042 | ● | | |
| S.3.1 | 0.100 | 0.080 | 0.050 | 0.120 | 0.096 | 0.060 | 0.150 | 0.120 | 0.075 | 0.170 | 0.136 | 0.085 | ● | | |
| S.3.2 | 0.066 | 0.053 | 0.033 | 0.080 | 0.064 | 0.040 | 0.101 | 0.081 | 0.051 | 0.115 | 0.092 | 0.058 | ● | | |
| S.3.3 | | | | | | | | | | | | | | | |
| H.1.1 | | | | | | | | | | | | | | | |
| H.1.2 | | | | | | | | | | | | | | | |
| H.1.3 | | | | | | | | | | | | | | | |
| H.1.4 | | | | | | | | | | | | | | | |
| H.2.1 | | | | | | | | | | | | | | | |
| H.3.1 | | | | | | | | | | | | | | | |
| O.1.1 | | | | | | | | | | | | | | | |
| O.1.2 | | | | | | | | | | | | | | | |
| O.2.1 | | | | | | | | | | | | | | | |
| O.2.2 | | | | | | | | | | | | | | | |
| O.3.1 | | | | | | | | | | | | | | | |

# **MaxiMill** – HFCD high-feed screw-in cutter

▲ Programmed radius r3D = 2.0 mm





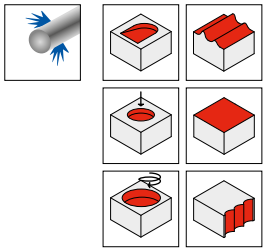

NEW

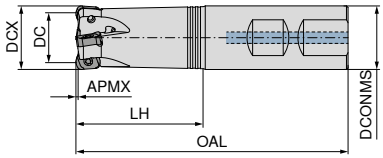
**50 357 ...**

| Designation | DC mm | DCX mm | ZNF | APMX mm | LPR mm | DCONMS mm | THSZMS | DRVS mm | RPMX 1/min. | Tightening torque Nm | Indexable insert | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **GHFCD.16.R.02-06** | 10 | 16 | 2 | 0.8 | 27 | 8.5 | M8 | 10 | 23500 | 1,2 | XNEU 06T3.. | **01602** |
| **GHFCD.20.R.03-06** | 14 | 20 | 3 | 0.8 | 33 | 10.5 | M10 | 15 | 20200 | 1,2 | XNEU 06T3.. | **02003** |
| **GHFCD.25.R.04-06** | 19 | 25 | 4 | 0.8 | 35 | 12.5 | M12 | 17 | 18100 | 1,2 | XNEU 06T3.. | **02504** |
| **GHFCD.32.R.05-06** | 26 | 32 | 5 | 0.8 | 35 | 17.0 | M16 | 24 | 17300 | 1,2 | XNEU 06T3.. | **03205** |
| **GHFCD.35.R.06-06** | 29 | 35 | 6 | 0.8 | 35 | 17.0 | M16 | 24 | 16100 | 1,2 | XNEU 06T3.. | **03506** |
| **GHFCD.42.R.06-06** | 36 | 42 | 6 | 0.8 | 35 | 17.0 | M16 | 24 | 14100 | 1,2 | XNEU 06T3.. | **04206** |

# **MaxiMill** – HFCD high-feed end mill

▲ Programmed radius r3D = 2.0 mm






NEW

**50 356 ...**

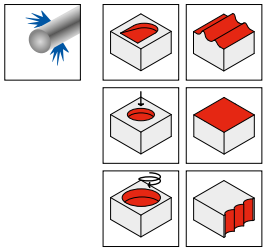
NEW

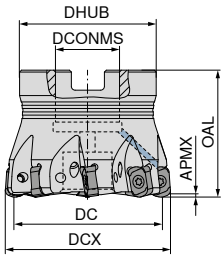
**50 356 ...**

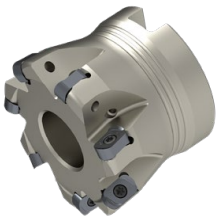
| Designation | DC mm | DCX mm | ZNF | APMX mm | OAL mm | LH mm | DCONMS $_{h6}$ mm | RPMX 1/min. | Tightening torque Nm | Indexable insert | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CHFCD.16.R.02-06-B-40** | 10 | 16 | 2 | 0.8 | 89 | 40 | 16 | 21700 | 1,2 | XNEU 06T3.. | | | **11602** |
| **CHFCD.16.R.02-06-A-40** | 10 | 16 | 2 | 0.8 | 89 | 40 | 16 | 21700 | 1,2 | XNEU 06T3.. | **01602** | | |
| **CHFCD.16.R.02-06-A-40-200** | 10 | 16 | 2 | 0.8 | 200 | 40 | 16 | 12300 | 1,2 | XNEU 06T3.. | **21602** | | |
| **CHFCD.20.R.03-06-B-50** | 14 | 20 | 3 | 0.8 | 101 | 50 | 20 | 17000 | 1,2 | XNEU 06T3.. | | | **12003** |
| **CHFCD.20.R.03-06-A-50** | 14 | 20 | 3 | 0.8 | 101 | 50 | 20 | 17000 | 1,2 | XNEU 06T3.. | **02003** | | |
| **CHFCD.20.R.03-06-A-50-225** | 14 | 20 | 3 | 0.8 | 225 | 50 | 20 | 8700 | 1,2 | XNEU 06T3.. | **22003** | | |
| **CHFCD.25.R.04-06-B-50** | 19 | 25 | 4 | 0.8 | 107 | 50 | 25 | 15400 | 1,2 | XNEU 06T3.. | | | **12504** |
| **CHFCD.25.R.04-06-A-50** | 19 | 25 | 4 | 0.8 | 107 | 50 | 25 | 15400 | 1,2 | XNEU 06T3.. | **02504** | | |
| **CHFCD.25.R.04-06-A-50-225** | 19 | 25 | 4 | 0.8 | 225 | 50 | 25 | 7100 | 1,2 | XNEU 06T3.. | **22504** | | |
| **CHFCD.32.R.05-06-B25-50** | 26 | 32 | 5 | 0.8 | 107 | 50 | 25 | 14400 | 1,2 | XNEU 06T3.. | | | **13205** |
| **CHFCD.32.R.05-06-A25-50** | 26 | 32 | 5 | 0.8 | 107 | 50 | 25 | 14400 | 1,2 | XNEU 06T3.. | **03205** | | |
| **CHFCD.32.R.05-06-A25-50-225** | 26 | 32 | 5 | 0.8 | 225 | 50 | 25 | 6400 | 1,2 | XNEU 06T3.. | **23205** | | |

# **MaxiMill** – HFCD high-feed face mill

▲ Programmed radius r3D = 2.0 mm





NEW

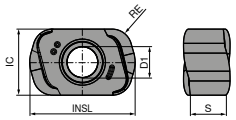
**50 358 ...**

| Designation | DC mm | DCX mm | ZNF | APMX mm | OAL mm | DCONMS $_{H6}$ mm | DHUB mm | RPMX 1/min. | Tightening torque Nm | Indexable insert | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AHFCD.32.R.05-06** | 26 | 32 | 5 | 0.8 | 40 | 16 | 38 | 17300 | 1,2 | XNEU 06T3.. | **03205** |
| **AHFCD.35.R.05-06** | 29 | 35 | 5 | 0.8 | 40 | 16 | 38 | 16100 | 1,2 | XNEU 06T3.. | **03505** |
| **AHFCD.40.R.06-06** | 34 | 40 | 6 | 0.8 | 40 | 16 | 38 | 14600 | 1,2 | XNEU 06T3.. | **04006** |
| **AHFCD.42.R.06-06** | 36 | 42 | 6 | 0.8 | 40 | 16 | 38 | 14100 | 1,2 | XNEU 06T3.. | **04206** |
| **AHFCD.50.R.07-06** | 44 | 50 | 7 | 0.8 | 40 | 22 | 43 | 12500 | 1,2 | XNEU 06T3.. | **05007** |
| **AHFCD.52.R.08-06** | 46 | 52 | 8 | 0.8 | 40 | 22 | 43 | 12200 | 1,2 | XNEU 06T3.. | **05208** |
| **AHFCD.63.R.09-06** | 57 | 63 | 9 | 0.8 | 40 | 22 | 48 | 10800 | 1,2 | XNEU 06T3.. | **06309** |
| **AHFCD.66.R.10-06** | 60 | 66 | 10 | 0.8 | 40 | 22 | 48 | 10500 | 1,2 | XNEU 06T3.. | **06610** |

| Spare parts |  TORX® interchangeable blade |  Screwdriver |  Molykote |  Clamping screw |  Torque screwdriver |
|---|---|---|---|---|---|
| | **80 950 ...** | **80 950 ...** | **70 950 ...** | **70 950 ...** | **80 950 ...** |
| **Indexable insert** | | | | | |
| XNEU 06T3.. | **033** | **110** | **303** | **13800** | **192** |

# XNEU

| Designation | IC mm | D1 mm | INSL mm | r3D mm | S mm |
|---|---|---|---|---|---|
| XNEU 06T3.. | 6.05 | 2.8 | 9.65 | 2 | 3.0 |



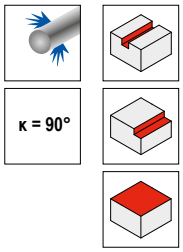

# XNEU

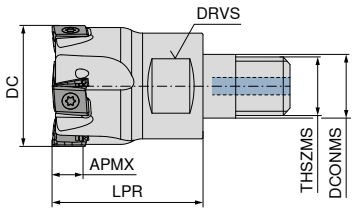
| | | NEW | NEW | NEW | NEW | NEW |
|---|---|---|---|---|---|---|
| | | -M50 CTCP230 | -M50 CTPP235 | -F50 CTPM240 | -M50 CTPM240 | -F50 CTPM245 |
| | | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN |
| | |  |  |  |  |  |
| | | XNEU | XNEU | XNEU | XNEU | XNEU |
| | | 51 261 ... | 51 261 ... | 51 260 ... | 51 261 ... | 51 260 ... |
| ISO | RE mm | | | | | |
| 06T318SER | 1.8 | 01800 | 11800 | 41800 | 41800 | 41801 |
| P | | ● | ● | ○ | ○ | ● |
| M | | | ○ | ● | ● | ● |
| K | | ○ | ○ | | | |
| N | | | | | | |
| S | | | | | | |
| H | | | | | | |
| O | | | | | | |

# XNEU

| | | NEW | NEW | NEW | NEW | NEW |
|---|---|---|---|---|---|---|
| | | -F50 CTCM245 | -R50 CTCK215 | -R50 CTPK220 | -F40 CTC5240 | -F40 CTCS245 |
| | | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN |
| | |  |  |  |  |  |
| | | XNEU | XNEU | XNEU | XNEU | XNEU |
| | | 51 260 ... | 51 262 ... | 51 262 ... | 51 259 ... | 51 259 ... |
| ISO | RE mm | | | | | |
| 06T318ER | 1.8 | | | | 11801 | 51801 |
| 06T318SER | 1.8 | 91801 | 51800 | 61800 | | |
| P | | ● | | | | |
| M | | ● | | | | |
| K | | | ● | ● | | |
| N | | | | | | |
| S | | ○ | | | ● | ● |
| H | | | | | | |
| O | | | | | | |

# **MaxiMill** – Tangent-09 screw-in cutter



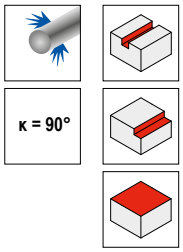



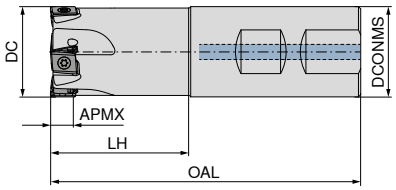

NEW

**50 355 ...**

| Designation | DC mm | ZNF | APMX mm | LPR mm | DCONMS mm | THSZMS | DRVS mm | RPMX 1/min. | Tightening torque Nm | Indexable insert | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **GTANG.25.R.03-09-M12** | 25 | 3 | 8 | 35 | 12.5 | M12 | 17 | 39600 | 2.2 | LN.U 0904 | **02503** |
| **GTANG.25.R.04-09-M12** | 25 | 4 | 8 | 35 | 12.5 | M12 | 17 | 39600 | 2.2 | LN.U 0904 | **02504** |
| **GTANG.32.R.04-09-M16** | 32 | 4 | 8 | 40 | 17.0 | M16 | 24 | 35000 | 2.2 | LN.U 0904 | **03204** |
| **GTANG.32.R.05-09-M16** | 32 | 5 | 8 | 40 | 17.0 | M16 | 24 | 35000 | 2.2 | LN.U 0904 | **03205** |

# **MaxiMill** – Tangent-09 end mill



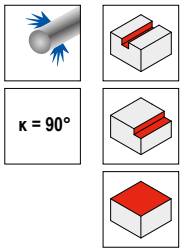



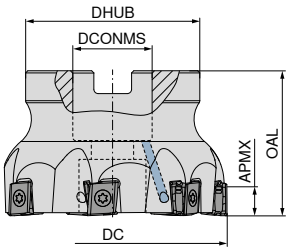

NEW

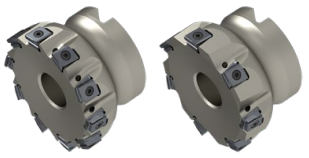
**50 354 ...**

| Designation | DC mm | ZNF | APMX mm | OAL mm | LH mm | DCONMS h6 mm | RPMX 1/min. | Tightening torque Nm | Indexable insert | |
|---|---|---|---|---|---|---|---|---|---|---|
| **CTANG.25.R.03-09-B-43-100** | 25 | 3 | 8 | 100 | 43 | 25 | 39600 | 2.2 | LN.U 0904 | **02503** |
| **CTANG.25.R.04-09-B-43-100** | 25 | 4 | 8 | 100 | 43 | 25 | 39600 | 2.2 | LN.U 0904 | **02504** |
| **CTANG.32.R.04-09-B-49-110** | 32 | 4 | 8 | 110 | 49 | 32 | 35000 | 2.2 | LN.U 0904 | **03204** |
| **CTANG.32.R.05-09-B-49-110** | 32 | 5 | 8 | 110 | 49 | 32 | 35000 | 2.2 | LN.U 0904 | **03205** |
| **CTANG.40.R.04-09-B32-49-110** | 40 | 4 | 8 | 110 | 49 | 32 | 31300 | 2.2 | LN.U 0904 | **04004** |
| **CTANG.40.R.06-09-B32-49-110** | 40 | 6 | 8 | 110 | 49 | 32 | 31300 | 2.2 | LN.U 0904 | **04006** |

# **MaxiMill** – Tangent-09 face mill



NEW NEW

| Designation | DC mm | ZNF | APMX mm | OAL mm | DHUB mm | DCONMS $_{H6}$ mm | RPMX 1/min. | Tightening torque Nm | Indexable insert | 50 353 ... | 50 353 ... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ATANG.40.R.04-09-A16** | 40 | 4 | 8 | 40 | 38 | 16 | 31300 | 2.2 | LN.U 0904 | | **04004** |
| **ATANG.40.R.06-09-A16** | 40 | 6 | 8 | 40 | 38 | 16 | 31300 | 2.2 | LN.U 0904 | **04006** | |
| **ATANG.50.R.05-09-A22** | 50 | 5 | 8 | 40 | 43 | 22 | 28000 | 2.2 | LN.U 0904 | | **05005** |
| **ATANG.50.R.07-09-A22** | 50 | 7 | 8 | 40 | 43 | 22 | 28000 | 2.2 | LN.U 0904 | **05007** | |
| **ATANG.63.R.07-09-A22** | 63 | 7 | 8 | 40 | 48 | 22 | 25000 | 2.2 | LN.U 0904 | | **06307** |
| **ATANG.63.R.10-09-A22** | 63 | 10 | 8 | 40 | 48 | 22 | 25000 | 2.2 | LN.U 0904 | **06310** | |
| **ATANG.80.R.08-09-A27** | 80 | 8 | 8 | 50 | 58 | 27 | 21000 | 2.2 | LN.U 0904 | | **08008** |
| **ATANG.80.R.11-09-A27** | 80 | 11 | 8 | 50 | 58 | 27 | 21000 | 2.2 | LN.U 0904 | **08011** | |


Screwdriver


Molykote

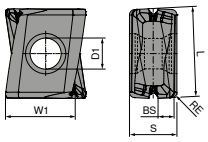

Clamping screw


Torque screwdriver

| Spare parts<br>Indexable insert | 80 950 ... | 70 950 ... | 70 950 ... | 80 950 ... |
|---|---|---|---|---|
| LN.U 0904 | **119** | **303** | **710** | **193** |

# LNHU

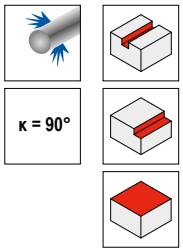
| Designation | D1 mm | L mm | BS mm | S mm | W1 mm |
|---|---|---|---|---|---|
| **LNHU 0904..** | 3.45 | 9.3 | 1 | 4.8 | 8 |

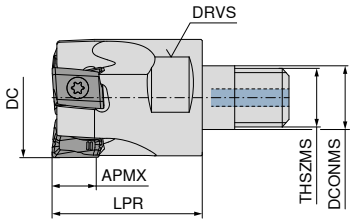



# LNHU

| | | NEW | NEW | NEW | NEW | NEW | NEW | NEW |
|---|---|---|---|---|---|---|---|---|
| | | **-M50** CTCP230 | **-M50** CTPP235 | **-M50** CTPM240 | **-M50** CTCM245 | **-M50** CTCK215 | **-M50** CTPK220 | **-F40** CTC5240 |
| | | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN |
| | |  |  |  |  |  |  |  |
| | | LNHU | LNHU | LNHU | LNHU | LNHU | LNHU | LNHU |
| | | **51 257 ...** | **51 257 ...** | **51 257 ...** | **51 257 ...** | **51 257 ...** | **51 257 ...** | **51 258 ...** |
| **ISO** | RE mm | | | | | | | |
| **090404** | 0.4 | **00400** | **10400** | **40400** | **40401** | **50400** | **60400** | **10401** |
| P | | ● | ● | ○ | ● | | | |
| M | | | ○ | ● | ● | | | |
| K | | ○ | ○ | | | ● | ● | |
| N | | | | | | | | |
| S | | | | | ○ | | | ● |
| H | | | | | | | | |
| O | | | | | | | | |

# **MaxiMill** – Tangent-13 screw-in cutter



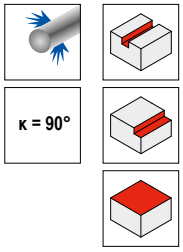



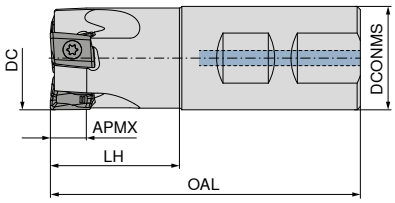

NEW

**50 352 ...**

| Designation | DC mm | ZNF | APMX mm | LPR mm | DCONMS mm | THSZMS | DRVS mm | RPMX 1/min. | Tightening torque Nm | Indexable insert | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **GTANG.32.R.03-13-M16** | 32 | 3 | 12 | 35 | 17 | M16 | 24 | 25000 | 5.0 | LN.U 1306 | **03203** |
| **GTANG.40.R.04-13-M16** | 40 | 4 | 12 | 40 | 17 | M16 | 27 | 22500 | 5.0 | LN.U 1306 | **04004** |

# **MaxiMill** – Tangent-13 end mill



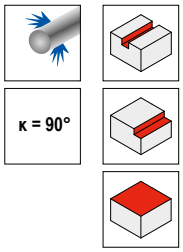



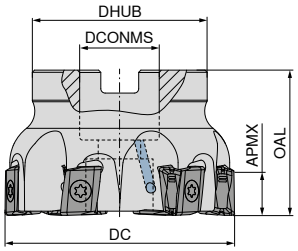

NEW

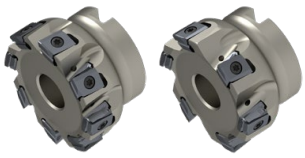
**50 351 ...**

| Designation | DC mm | ZNF | APMX mm | OAL mm | LH mm | DCONMS $_{h6}$ mm | RPMX 1/min. | Tightening torque Nm | Indexable insert | |
|---|---|---|---|---|---|---|---|---|---|---|
| **CTANG.32.R.03-13-B32-40** | 32 | 3 | 12 | 96 | 40 | 32 | 25000 | 5.0 | LN.U 1306 | **03203** |
| **CTANG.40.R.04-13-B32-50** | 40 | 4 | 12 | 110 | 50 | 32 | 22500 | 5.0 | LN.U 1306 | **04004** |

# **MaxiMill** – Tangent-13 face mill



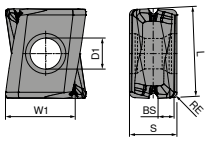
NEW NEW

| Designation | DC mm | ZNF | APMX mm | OAL mm | DHUB mm | DCONMS $_{H6}$ mm | RPMX 1/min. | Tightening torque Nm | Indexable insert | 50 350 ... | 50 350 ... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ATANG.40.R.04-13-A16** | 40 | 4 | 12 | 40 | 38 | 16 | 22500 | 5.0 | LN.U 1306 | | **04004** |
| **ATANG.40.R.05-13-A16** | 40 | 5 | 12 | 40 | 38 | 16 | 22500 | 5.0 | LN.U 1306 | **04005** | |
| **ATANG.40.R.05-13-A22** | 40 | 5 | 12 | 40 | 38 | 22 | 22500 | 5.0 | LN.U 1306 | **14005** | |
| **ATANG.50.R.05-13-A22** | 50 | 5 | 12 | 40 | 43 | 22 | 20200 | 5.0 | LN.U 1306 | | **05005** |
| **ATANG.50.R.06-13-A22** | 50 | 6 | 12 | 40 | 43 | 22 | 20200 | 5.0 | LN.U 1306 | **05006** | |
| **ATANG.50.R.06-13-A27** | 50 | 6 | 12 | 45 | 48 | 27 | 20200 | 5.0 | LN.U 1306 | **15006** | |
| **ATANG.63.R.06-13-A22** | 63 | 6 | 12 | 40 | 48 | 22 | 18000 | 5.0 | LN.U 1306 | | **06306** |
| **ATANG.63.R.08-13-A22** | 63 | 8 | 12 | 40 | 48 | 22 | 18000 | 5.0 | LN.U 1306 | **06308** | |
| **ATANG.63.R.08-13-A27** | 63 | 8 | 12 | 45 | 48 | 27 | 18000 | 5.0 | LN.U 1306 | **16308** | |
| **ATANG.80.R.07-13-A27** | 80 | 7 | 12 | 50 | 58 | 27 | 15900 | 5.0 | LN.U 1306 | | **08007** |
| **ATANG.80.R.10-13-A27** | 80 | 10 | 12 | 50 | 58 | 27 | 15900 | 5.0 | LN.U 1306 | **08010** | |
| **ATANG.100.R.09-13-A32** | 100 | 9 | 12 | 50 | 78 | 32 | 14200 | 5.0 | LN.U 1306 | | **10009** |
| **ATANG.100.R.13-13-A32** | 100 | 13 | 12 | 50 | 78 | 32 | 14200 | 5.0 | LN.U 1306 | **10013** | |
| **ATANG.125.R.11-13-A40** | 125 | 11 | 12 | 63 | 88 | 40 | 12700 | 5.0 | LN.U 1306 | | **12511** |
| **ATANG.125.R.16-13-A40** | 125 | 16 | 12 | 63 | 88 | 40 | 12700 | 5.0 | LN.U 1306 | **12516** | |

| Spare parts |  TORX® interchangeable blade |  Screwdriver |  Molykote |  Clamping screw |  Torque screwdriver |
|---|---|---|---|---|---|
| | **80 950 ...** | **80 950 ...** | **70 950 ...** | **70 950 ...** | **80 950 ...** |
| **Indexable insert** | | | | | |
| LN.U 1306 | **054** | **120** | **303** | **134** | **193** |

# LNHU

| Designation | D1 mm | L mm | BS mm | S mm | W1 mm |
|---|---|---|---|---|---|
| **LNHU 1306..** | 4.5 | 13.3 | 1.5 | 7.0 | 10.2 |



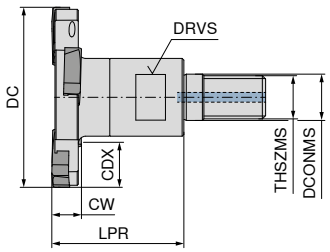

# LNHU

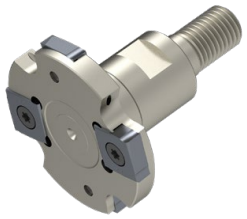
| | | NEW | NEW | NEW | NEW | NEW | NEW | NEW |
|---|---|---|---|---|---|---|---|---|
| | | **-M50** CTCP230 | **-M50** CTPP235 | **-F50** CTPM240 | **-F50** CTCM245 | **-M50** CTCK215 | **-M50** CTPK220 | **-F50** CTC5240 |
| | | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN | DRAGONSKIN |
| | |  |  |  |  |  |  |  |
| | | LNHU | LNHU | LNHU | LNHU | LNHU | LNHU | LNHU |
| | | **51 255 ...** | **51 255 ...** | **51 256 ...** | **51 256 ...** | **51 255 ...** | **51 255 ...** | **51 256 ...** |
| **ISO** | RE mm | | | | | | | |
| **130608** | 0.8 | **00800** | **10800** | **40800** | **40801** | **50800** | **60800** | **10801** |
| P | | ● | ● | ○ | ● | | | |
| M | | | ○ | ● | ● | | | |
| K | | ○ | ○ | | | ● | ● | |
| N | | | | | | | | |
| S | | | | | ○ | | | ● |
| H | | | | | | | | |
| O | | | | | | | | |

# **MaxiMill** – Slot-SNHX screw-in multipurpose milling cutter

Direct Cooling

κ = 90°



NEW

**50 373 ...**

| Designation | DC mm | CW mm | CDX mm | LPR mm | DCONMS mm | THSZMS | DRVS mm | ZNF | Indexable insert | |
|---|---|---|---|---|---|---|---|---|---|---|
| **GSLOT.50.R.04-SN13-06-DC-M12** | 50 | 6 | 13 | 35 | 12.5 | M12 | 17 | 4 | SNHX 1303.. | **05006** |
| **GSLOT.63.R.06-SN13-06-DC-M12** | 63 | 6 | 18 | 35 | 12.5 | M12 | 17 | 6 | SNHX 1303.. | **06306** |
| **GSLOT.80.R.08-SN13-06-DC-M16** | 80 | 6 | 21 | 35 | 17.0 | M16 | 24 | 8 | SNHX 1303.. | **08006** |
| | | | | | | | | | | |
| **GSLOT.50.R.04-SN13-08-DC-M12** | 50 | 8 | 13 | 35 | 12.5 | M12 | 17 | 4 | SNHX 1304.. | **05008** |
| **GSLOT.63.R.06-SN13-08-DC-M12** | 63 | 8 | 18 | 35 | 12.5 | M12 | 17 | 6 | SNHX 1304.. | **06308** |
| **GSLOT.80.R.08-SN13-08-DC-M16** | 80 | 8 | 21 | 35 | 17.0 | M16 | 24 | 8 | SNHX 1304.. | **08008** |

Clamping screw

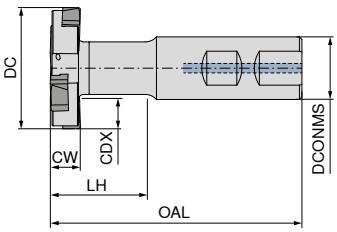
**50 950 ...**

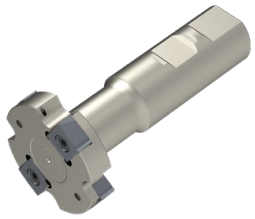
| **Spare parts for article number** | |
|---|---|
| 50 373 05006 / 50 373 06306 | **00500** |
| 50 373 05008 / 50 373 06308 | **00600** |
| 50 373 08006 | **00500** |
| 50 373 08008 | **00600** |

# **MaxiMill** – Slot-SNHX cylindrical shank saw

Direct Cooling

κ = 90°



NEW

**50 372 ...**

| Designation | DC mm | CW mm | CDX mm | OAL mm | LH mm | DCONMS mm | ZNF | Indexable insert | |
|---|---|---|---|---|---|---|---|---|---|
| **CSLOT.50.R.04-SN13-06-DC-B20-42** | 50 | 6 | 13 | 95 | 42 | 20 | 4 | SNHX 1303.. | **05006** |
| **CSLOT.63.R.06-SN13-06-DC-B25-41** | 63 | 6 | 18 | 100 | 41 | 25 | 6 | SNHX 1303.. | **06306** |
| **CSLOT.80.R.08-SN13-06-DC-B32-48** | 80 | 6 | 22 | 110 | 48 | 32 | 8 | SNHX 1303.. | **08006** |
| **CSLOT.100.R.10-SN13-06-DC-B40-52** | 100 | 6 | 29 | 125 | 52 | 40 | 10 | SNHX 1303.. | **10006** |
| **CSLOT.50.R.04-SN13-08-DC-B20-42** | 50 | 8 | 13 | 95 | 42 | 20 | 4 | SNHX 1304.. | **05008** |
| **CSLOT.63.R.06-SN13-08-DC-B25-41** | 63 | 8 | 18 | 100 | 41 | 25 | 6 | SNHX 1304.. | **06308** |
| **CSLOT.80.R.08-SN13-08-DC-B32-48** | 80 | 8 | 22 | 110 | 48 | 32 | 8 | SNHX 1304.. | **08008** |
| **CSLOT.100.R.10-SN13-08-DC-B40-52** | 100 | 8 | 29 | 125 | 52 | 40 | 10 | SNHX 1304.. | **10008** |
| **CSLOT.50.R.04-SN13-10-DC-B20-42** | 50 | 10 | 13 | 95 | 42 | 20 | 4 | SNHX 1305.. | **05010** |
| **CSLOT.63.R.06-SN13-10-DC-B25-41** | 63 | 10 | 18 | 100 | 41 | 25 | 6 | SNHX 1305.. | **06310** |
| **CSLOT.80.R.08-SN13-10-DC-B32-48** | 80 | 10 | 22 | 110 | 48 | 32 | 8 | SNHX 1305.. | **08010** |
| **CSLOT.100.R.10-SN13-10-DC-B40-52** | 100 | 10 | 29 | 125 | 52 | 40 | 10 | SNHX 1305.. | **10010** |
| **CSLOT.50.R.04-SN13-12-DC-B20-42** | 50 | 12 | 13 | 95 | 42 | 20 | 4 | SNHX 1307.. | **05012** |
| **CSLOT.63.R.06-SN13-12-DC-B25-41** | 63 | 12 | 18 | 100 | 41 | 25 | 6 | SNHX 1307.. | **06312** |
| **CSLOT.80.R.08-SN13-12-DC-B32-48** | 80 | 12 | 22 | 110 | 48 | 32 | 8 | SNHX 1307.. | **08012** |
| **CSLOT.100.R.10-SN13-12-DC-B40-52** | 100 | 12 | 29 | 125 | 52 | 40 | 10 | SNHX 1307.. | **10012** |

Clamping screw

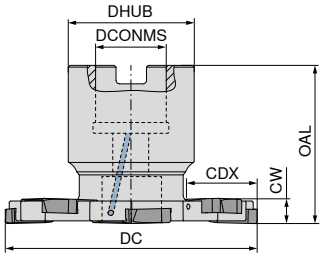
**50 950 ...**

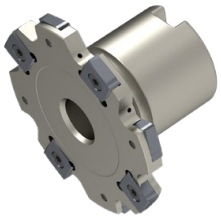
| **Spare parts for article number** | |
|---|---|
| 50 372 05006 / 50 372 06306 | **00500** |
| 50 372 05008 / 50 372 06308 | **00600** |
| 50 372 05010 / 50 372 06310 | **00700** |
| 50 372 05012 / 50 372 06312 | **00800** |
| 50 372 08006 / 50 372 10006 | **00500** |
| 50 372 08008 / 50 372 10008 | **00600** |
| 50 372 08010 / 50 372 10010 | **00700** |
| 50 372 08012 / 50 372 10012 | **00800** |

# **MaxiMill** – Slot-SNHX side and face milling cutter

Direct Cooling

κ = 90°



NEW

| Designation | DC mm | CW mm | CDX mm | OAL mm | DCONMS mm | DHUB mm | ZNF | Indexable insert | 50 374 ... |
|---|---|---|---|---|---|---|---|---|---|
| ASLOT.80.R.08-SN13-06-DC-A22 | 80 | 6 | 22.0 | 50 | 22 | 40 | 8 | SNHX 1303.. | 08006 |
| ASLOT.100.R.10-SN13-06-DC-A27 | 100 | 6 | 25.0 | 50 | 27 | 48 | 10 | SNHX 1303.. | 10006 |
| ASLOT.125.R.12-SN13-06-DC-A32 | 125 | 6 | 31.5 | 50 | 32 | 58 | 12 | SNHX 1303.. | 12506 |
| ASLOT.160.R.16-SN13-06-DC-A40 | 160 | 6 | 41.5 | 50 | 40 | 70 | 16 | SNHX 1303.. | 16006 |
| ASLOT.200.R.18-SN13-06-DC-A40 | 200 | 6 | 52.0 | 50 | 40 | 88 | 18 | SNHX 1303.. | 20006 |
| ASLOT.80.R.08-SN13-08-DC-A22 | 80 | 8 | 22.0 | 50 | 22 | 40 | 8 | SNHX 1304.. | 08008 |
| ASLOT.100.R.10-SN13-08-DC-A27 | 100 | 8 | 25.0 | 50 | 27 | 48 | 10 | SNHX 1304.. | 10008 |
| ASLOT.125.R.12-SN13-08-DC-A32 | 125 | 8 | 31.5 | 50 | 32 | 58 | 12 | SNHX 1304.. | 12508 |
| ASLOT.160.R.16-SN13-08-DC-A40 | 160 | 8 | 41.5 | 50 | 40 | 70 | 16 | SNHX 1304.. | 16008 |
| ASLOT.200.R.18-SN13-08-DC-A40 | 200 | 8 | 52.0 | 50 | 40 | 88 | 18 | SNHX 1304.. | 20008 |
| ASLOT.80.R.08-SN13-10-DC-A22 | 80 | 10 | 22.0 | 50 | 22 | 40 | 8 | SNHX 1305.. | 08010 |
| ASLOT.100.R.10-SN13-10-DC-A27 | 100 | 10 | 25.0 | 50 | 27 | 48 | 10 | SNHX 1305.. | 10010 |
| ASLOT.125.R.12-SN13-10-DC-A32 | 125 | 10 | 31.5 | 50 | 32 | 58 | 12 | SNHX 1305.. | 12510 |
| ASLOT.160.R.16-SN13-10-DC-A40 | 160 | 10 | 41.5 | 50 | 40 | 70 | 16 | SNHX 1305.. | 16010 |
| ASLOT.200.R.18-SN13-10-DC-A40 | 200 | 10 | 52.0 | 50 | 40 | 88 | 18 | SNHX 1305.. | 20010 |
| ASLOT.80.R.08-SN13-12-DC-A22 | 80 | 12 | 22.0 | 50 | 22 | 40 | 8 | SNHX 1307.. | 08012 |
| ASLOT.100.R.10-SN13-12-DC-A27 | 100 | 12 | 25.0 | 50 | 27 | 48 | 10 | SNHX 1307.. | 10012 |
| ASLOT.125.R.12-SN13-12-DC-A32 | 125 | 12 | 31.5 | 50 | 32 | 58 | 12 | SNHX 1307.. | 12512 |
| ASLOT.160.R.16-SN13-12-DC-A40 | 160 | 12 | 41.5 | 50 | 40 | 70 | 16 | SNHX 1307.. | 16012 |
| ASLOT.200.R.18-SN13-12-DC-A40 | 200 | 12 | 52.0 | 50 | 40 | 88 | 18 | SNHX 1307.. | 20012 |
| ASLOT.80.R.08-SN13-14-DC-A22 | 80 | 14 | 22.0 | 50 | 22 | 40 | 8 | SNHX 1309.. | 08014 |
| ASLOT.100.R.10-SN13-14-DC-A27 | 100 | 14 | 25.0 | 50 | 27 | 48 | 10 | SNHX 1309.. | 10014 |
| ASLOT.125.R.12-SN13-14-DC-A32 | 125 | 14 | 31.5 | 50 | 32 | 58 | 12 | SNHX 1309.. | 12514 |
| ASLOT.160.R.16-SN13-14-DC-A40 | 160 | 14 | 41.5 | 50 | 40 | 70 | 16 | SNHX 1309.. | 16014 |
| ASLOT.200.R.18-SN13-14-DC-A40 | 200 | 14 | 52.0 | 50 | 40 | 88 | 18 | SNHX 1309.. | 20014 |
| ASLOT.80.R.08-SN13-16-DC-A22 | 80 | 16 | 22.0 | 50 | 22 | 40 | 8 | SNHX 1309.. | 08016 |
| ASLOT.100.R.10-SN13-16-DC-A27 | 100 | 16 | 25.0 | 50 | 27 | 48 | 10 | SNHX 1309.. | 10016 |
| ASLOT.125.R.12-SN13-16-DC-A32 | 125 | 16 | 31.5 | 50 | 32 | 58 | 12 | SNHX 1309.. | 12516 |
| ASLOT.160.R.16-SN13-16-DC-A40 | 160 | 16 | 41.5 | 50 | 40 | 70 | 16 | SNHX 1309.. | 16016 |
| ASLOT.200.R.18-SN13-16-DC-A40 | 200 | 16 | 52.0 | 50 | 40 | 88 | 18 | SNHX 1309.. | 20016 |

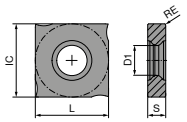
Clamping screw

Clamping screw

| Spare parts for article number | 50 950 ... | 50 950 ... |
|---|---|---|
| 50 374 08006 | 01000 | 00500 |
| 50 374 08008 | 01000 | 00600 |
| 50 374 08010 | 01000 | 00700 |
| 50 374 08012 | 01000 | 00800 |
| 50 374 08014 / 50 374 08016 | 01000 | 00900 |
| 50 374 10006 | 01100 | 00500 |
| 50 374 10008 | 01100 | 00600 |
| 50 374 10010 | 01100 | 00700 |
| 50 374 10012 | 01100 | 00800 |
| 50 374 10014 / 50 374 10016 | 01100 | 00900 |
| 50 374 12506 | 01200 | 00500 |
| 50 374 12508 | 01200 | 00600 |
| 50 374 12510 | 01200 | 00700 |
| 50 374 12512 | 01200 | 00800 |
| 50 374 12514 / 50 374 12516 | 01200 | 00900 |
| 50 374 16006 / 50 374 20006 | 01300 | 00500 |
| 50 374 16008 / 50 374 20008 | 01300 | 00600 |
| 50 374 16010 / 50 374 20010 | 01300 | 00700 |
| 50 374 16012 / 50 374 20012 | 01300 | 00800 |
| 50 374 16014 / 50 374 16016 | 01300 | 00900 |
| 50 374 20014 / 50 374 20016 | 01300 | 00900 |

# SNHX

| Designation | IC mm | D1 mm | L mm | S mm |
|---|---|---|---|---|
| SNHX 1303.. | 13 | 5.3 | 13 | 3.2 |
| SNHX 1304.. | 13 | 5.3 | 13 | 4.5 |
| SNHX 1305.. | 13 | 5.3 | 13 | 5.4 |
| SNHX 1307.. | 13 | 5.3 | 13 | 7.0 |
| SNHX 1309.. | 13 | 5.3 | 13 | 9.0 |




# SNHX

| | | NEW | NEW | NEW | NEW | NEW |
|---|---|---|---|---|---|---|
| | | CTPP235 | CTPP235 | CTPP235 | CTPP235 | CTPP235 |
| | |  |  |  |  |  |
| | | SNHX | SNHX | SNHX | SNHX | SNHX |
| | | 51 263 ... | 51 264 ... | 51 265 ... | 51 266 ... | 51 267 ... |
| ISO | RE mm | | | | | |
| 130308EL | 0.8 | 10800 | | | | |
| 130308ER | 0.8 | 11800 | | | | |
| 130408EL | 0.8 | | 10800 | | | |
| 130408ER | 0.8 | | 11800 | | | |
| 130508EL | 0.8 | | | 10800 | | |
| 130508ER | 0.8 | | | 11800 | | |
| 130708EL | 0.8 | | | | 10800 | |
| 130708ER | 0.8 | | | | 11800 | |
| 130908EL | 0.8 | | | | | 10800 |
| 130908ER | 0.8 | | | | | 11800 |
| P | | ● | ● | ● | ● | ● |
| M | | ○ | ○ | ○ | ○ | ○ |
| K | | ○ | ○ | ○ | ○ | ○ |
| N | | | | | | |
| S | | | | | | |
| H | | | | | | |
| O | | | | | | |

# SNHX

| | | NEW | NEW | NEW | NEW | NEW |
|---|---|---|---|---|---|---|
| | | CTPM240 | CTPM240 | CTPM240 | CTPM240 | CTPM240 |
| | |  |  |  |  |  |
| | | SNHX | SNHX | SNHX | SNHX | SNHX |
| | | 51 263 ... | 51 264 ... | 51 265 ... | 51 266 ... | 51 267 ... |
| ISO | RE mm | | | | | |
| 130308EL | 0.8 | 40800 | | | | |
| 130308ER | 0.8 | 41800 | | | | |
| 130408EL | 0.8 | | 40800 | | | |
| 130408ER | 0.8 | | 41800 | | | |
| 130508EL | 0.8 | | | 40800 | | |
| 130508ER | 0.8 | | | 41800 | | |
| 130708EL | 0.8 | | | | 40800 | |
| 130708ER | 0.8 | | | | 41800 | |
| 130908EL | 0.8 | | | | | 40800 |
| 130908ER | 0.8 | | | | | 41800 |
| P | | ○ | ○ | ○ | ○ | ○ |
| M | | ● | ● | ● | ● | ● |
| K | | | | | | |
| N | | | | | | |
| S | | | | | | |
| H | | | | | | |
| O | | | | | | |

# SNHX

| | | NEW | NEW | NEW | NEW | NEW |
|---|---|---|---|---|---|---|
| | | CTPK220 | CTPK220 | CTPK220 | CTPK220 | CTPK220 |
| | |  |  |  |  |  |
| | | SNHX | SNHX | SNHX | SNHX | SNHX |
| | | 51 263 ... | 51 264 ... | 51 265 ... | 51 266 ... | 51 267 ... |
| ISO | RE mm | | | | | |
| 130308EL | 0.8 | 60800 | | | | |
| 130308ER | 0.8 | 61800 | | | | |
| 130408EL | 0.8 | | 60800 | | | |
| 130408ER | 0.8 | | 61800 | | | |
| 130508EL | 0.8 | | | 60800 | | |
| 130508ER | 0.8 | | | 61800 | | |
| 130708EL | 0.8 | | | | 60800 | |
| 130708ER | 0.8 | | | | 61800 | |
| 130908EL | 0.8 | | | | | 60800 |
| 130908ER | 0.8 | | | | | 61800 |
| P | | | | | | |
| M | | | | | | |
| K | | ● | ● | ● | ● | ● |
| N | | | | | | |
| S | | | | | | |
| H | | | | | | |
| O | | | | | | |

# Material examples for cutting data tables

| | Material sub-group | Index | Composition / Structure / Heat treatment | | Tensile strength lbf/in²* / HB / HRC | Material number | Material designation | Material number | Material designation |
|---|---|---|---|---|---|---|---|---|---|
| P | Unalloyed steel | P.1.1 | < 0.15 % C | Annealed | 60900 lbf/in² / 125 HB | 1.0401 | 1015 | 1.0301 | 1010 |
| | | P.1.2 | < 0.45 % C | Annealed | 92800 lbf/in² / 190 HB | 1.1191 | 1045 | 1.0737 | 12L14 |
| | | P.1.3 | | Tempered | 121800 lbf/in² / 250 HB | 1.1191 | 1045 | 1.0503 | 1043 |
| | | P.1.4 | < 0.75 % C | Annealed | 132000 lbf/in² / 270 HB | 1.1223 | 1060 | 1.0535 | 1055 |
| | | P.1.5 | | Tempered | 146500 lbf/in² / 300 HB | 1.1223 | 1060 | 1.1274 | 1095 |
| | Low-alloy steel | P.2.1 | | Annealed | 88500 lbf/in² / 180 HB | 1.7131 | 5115 | 1.6523 | 8620 |
| | | P.2.2 | | Tempered | 134900 lbf/in² / 275 HB | 1.7131 | 5115 | 1.6582 | 4340 |
| | | P.2.3 | | Tempered | 146500 lbf/in² / 300 HB | 1.7225 | 4142 | 1.7131 | 5115 |
| | | P.2.4 | | Tempered | 174000 lbf/in² / 375 HB | 1.7225 | 4142 | 17223 | 4140 |
| | High-alloy steel and high-alloy tool steel | P.3.1 | | Annealed | 98600 lbf/in² / 200 HB | 1.4021 | 420 | 1.2379 | D2 |
| | | P.3.2 | | Hardened and tempered | 159500 lbf/in² / 300 HB | 1.2343 | H11 | 1.3343 | M2 |
| | | P.3.3 | | Hardened and tempered | 188500 lbf/in² / 400 HB | 1.2343 | H11 | 1.2363 | A2 |
| | Stainless steel | P.4.1 | Ferritic / martensitic | Annealed | 98600 lbf/in² / 200 HB | 1.4016 | 430 | 1.4125 | 440C |
| | | P.4.2 | Martensitic | Tempered | 117500 lbf/in² / 250 HB | 1.4112 | S44003 | 1.4021 | 420 |
| M | Stainless steel | M.1.1 | Austenitic / austenitic-ferritic | Quenched | 88500 lbf/in² / 200 HB | 1.4301 | 304 | 1.4401 | 316 |
| | | M.2.1 | Austenitic | Tempered | 300 HB | 1.4841 | 314 | 1.4568 | 17-7 PH |
| | | M.3.1 | Austenitic / ferritic (Duplex) | | 113100 lbf/in² / 230 HB | 1.4462 | S32205 | 1.4410 | S32750 |
| K | Grey cast iron | K.1.1 | Pearlitic / ferritic | | 88500 lbf/in² / 180 HB | 0.6010 | A48-20B | 0.6025 | A48-40 B |
| | | K.1.2 | Pearlitic (martensitic) | | 127600 lbf/in² / 260 HB | 0.6030 | A48-45B | 0.6040 | A48-60 B |
| | Spherulitic graphite cast iron | K.2.1 | Ferritic | | 78300 lbf/in² / 160 HB | 0.7040 | 60-40-18 | 0.7050 | 65-45-12 |
| | | K.2.2 | Pearlitic | | 122600 lbf/in² / 250 HB | 0.7070 | 100-70-03 | 0.7660 | A439 Type D2 |
| | Malleable iron | K.3.1 | Ferritic | | 63800 lbf/in² / 130 HB | 0.8035 | GTW-35-04 | | |
| | | K.3.2 | Pearlitic | | 113100 lbf/in² / 230 HB | 0.8170 | 70003 | | |
| N | Aluminum wrought alloy | N.1.1 | Non-hardenable | | 60 HB | 3.0255 | A91060 | 3.0255 | A91060 |
| | | N.1.2 | Hardenable | | 49300 lbf/in² / 100 HB | 3.1355 | 2024 | 3.1355 | 2024 |
| | Cast aluminum alloy | N.2.1 | ≤ 12 % Si, non-hardenable | | 36300 lbf/in² / 75 HB | 3.2581 | A04130 / A413-0 | 3.2581 | A04130 / A413-0 |
| | | N.2.2 | ≤ 12 % Si, hardenable | | 43500 lbf/in² / 90 HB | 3.2134 | G-AlSi5Cu1Mg | | |
| | | N.2.3 | > 12 % Si, non-hardenable | | 63800 lbf/in² / 130 HB | | G-AlSi17Cu4Mg | | |
| | Copper and copper alloys (bronze/brass) | N.3.1 | Free-machining alloys, PB > 1 % | | 54400 lbf/in² / 110 HB | 2.0380 | CuZn39Pb2 (Ms58) | 2.0380 | C37700 |
| | | N.3.2 | CuZn, CuSnZn | | 43500 lbf/in² / 90 HB | 2.0331 | CuZn15 | 2.0331 | C34000 |
| | | N.3.3 | CuSn, lead-free copper and electrolytic copper | | 49300 lbf/in² / 100 HB | 2.0060 | E-Cu57 | | |
| | Magnesium alloys | N.4.1 | Magnesium and magnesium alloys | | 70 HB | 3.5612 | MgAl6Zn | | |
| S | Heat-resistant alloys | S.1.1 | Fe - basis | Annealed | 98600 lbf/in² / 200 HB | 1.4864 | X12NiCrSi 36-16 | 1.4864 | 330 |
| | | S.1.2 | | | 137800 lbf/in² / 280 HB | 1.4980 | X6NiCrTiMoVB25-15-2 | 1.4980 | S66286 |
| | | S.2.1 | Ni or Co basis | Annealed | 121800 lbf/in² / 250 HB | 2.4856 | Inconel 625 | 2.4812 | Hastelloy C |
| | | S.2.2 | | | 171100 lbf/in² / 350 HB | 2.4952 | Nimonic 80A | 2.4668 | Inconel 718 |
| | | S.2.3 | | Cast | 156600 lbf/in² / 320 HB | 2.4674 | Nimocast PK24 | 2.4670 | Nimocast 713 |
| | Titanium alloys | S.3.1 | Pure titanium | | 5800 lbf/in² | 3.7025 | Ti99.8 | | |
| | | S.3.2 | Alpha + beta alloys | | 152300 lbf/in² | 3.7165 | TiAl6V4 | | |
| | | S.3.3 | Beta alloys | | 203100 lbf/in² / 410 HB | Ti555.3 | Ti-5Al-5V-5Mo-3Cr | | |
| H | Hardened steel | H.1.1 | | Hardened and tempered | 46-55 HRC | | | | |
| | | H.1.2 | | Hardened and tempered | 56-60 HRC | | | | |
| | | H.1.3 | | Hardened and tempered | 61-65 HRC | | | | |
| | | H.1.4 | | Hardened and tempered | 66-70 HRC | | | | |
| | Chilled iron | H.2.1 | | Cast | 400 HB | | | | |
| | Hardened cast iron | H.3.1 | | Hardened and tempered | 55 HRC | | | | |
| O | Non-metal materials | O.1.1 | Plastics, duroplastic | | ≤ 21800 lbf/in² | | | | |
| | | O.1.2 | Plastics, thermoplastic | | ≤ 14500 lbf/in² | | | | |
| | | O.2.1 | Aramid fibre-reinforced | | ≤ 145000 lbf/in² | | | | |
| | | O.2.2 | Glass/carbon-fibre reinforced | | ≤ 145000 lbf/in² | | | | |
| | | O.3.1 | Graphite | | | | | | |

*** Tensile Strength at Rupture (Rm)**

# Cutting data standard values for MaxiMill – Slot-SNHX

| Index | CTPP235 | | CTPM240 | | CTPK220 | |
|---|---|---|---|---|---|---|
| | DRAGONSKIN | | | | | |
| | Cutting material **hard** ($v_c$↑) → **tough** ($v_c$↓) | | | | | |
| | $v_c$ (m/min) | | | | | |
| P.1.1 | **246** | **137** | 226 | 141 | | |
| P.1.2 | **208** | **121** | 188 | 126 | | |
| P.1.3 | **172** | **106** | 152 | 112 | | |
| P.1.4 | **160** | **101** | 140 | 107 | | |
| P.1.5 | **143** | **94** | 123 | 100 | | |
| P.2.1 | **214** | **123** | 194 | 128 | | |
| P.2.2 | **157** | **100** | 137 | 106 | | |
| P.2.3 | **143** | **94** | 123 | 100 | | |
| P.2.4 | **98** | **76** | 78 | 83 | | |
| P.3.1 | **121** | **97** | 126 | 105 | | |
| P.3.2 | **108** | **83** | 112 | 95 | | |
| P.3.3 | **96** | **69** | 98 | 85 | | |
| P.4.1 | **121** | **97** | 126 | 105 | | |
| P.4.2 | **114** | **90** | 119 | 100 | | |
| M.1.1 | 121 | 97 | **126** | **105** | | |
| M.2.1 | 108 | 83 | **112** | **95** | | |
| M.3.1 | 117 | 93 | **121** | **102** | | |
| K.1.1 | 160 | 110 | | | **320** | **190** |
| K.1.2 | 150 | 110 | | | **170** | **100** |
| K.2.1 | 150 | 110 | | | **210** | **130** |
| K.2.2 | 150 | 110 | | | **140** | **90** |
| K.3.1 | | | | | **200** | **120** |
| K.3.2 | | | | | **170** | **100** |
| N.1.1 | | | | | | |
| N.1.2 | | | | | | |
| N.2.1 | | | | | | |
| N.2.2 | | | | | | |
| N.2.3 | | | | | | |
| N.3.1 | | | | | | |
| N.3.2 | | | | | | |
| N.3.3 | | | | | | |
| N.4.1 | | | | | | |
| S.1.1 | | | | | | |
| S.1.2 | | | | | | |
| S.2.1 | | | | | | |
| S.2.2 | | | | | | |
| S.2.3 | | | | | | |
| S.3.1 | | | | | | |
| S.3.2 | | | | | | |
| S.3.3 | | | | | | |
| H.1.1 | | | | | | |
| H.1.2 | | | | | | |
| H.1.3 | | | | | | |
| H.1.4 | | | | | | |
| H.2.1 | | | | | | |
| H.3.1 | | | | | | |
| O.1.1 | | | | | | |
| O.1.2 | | | | | | |
| O.2.1 | | | | | | |
| O.2.2 | | | | | | |
| O.3.1 | | | | | | |

Average chip thickness

$h_m$ in mm

$$h_m = \frac{f_z}{2} \sqrt{\frac{a_e}{DC}}$$

Feed per tooth

$f_z$ in mm

$$f_z = h_m \sqrt{\frac{DC}{a_e}}$$

Feed rate

$v_f$ in mm/min

$$v_f = f_z \times ZNF \times n$$

DC = Ø of the side and face milling cutter

ZNF = Number of teeth on milling cutter

**Reference tool 50 374 12506 – ASLOT.125.R.12-SN13-06-DC-A32**

| | $a_e$ | 10 | 20 | 30 |
|---|---|---|---|---|
| | $h_m$ | $f_z$ in mm | | |
| P | **0.11** | 0.39 | 0.28 | 0.22 |
| M | **0.08** | 0.28 | 0.20 | 0.16 |
| K | **0.13** | 0.46 | 0.33 | 0.27 |
| N | | | | |
| S | | | | |
| H | | | | |
| O | | | | |

**ASLOT.125.R.12-SN13-06-DC-A32**

| | |
|---|---|
| Number of teeth on tool (Z) | **12** |
| Effective number of teeth (Z/2) | **6** |

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approximately **±20%** according to the usage conditions.

# Cutting data standard values

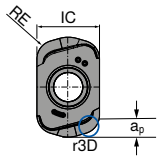
| Index | CTCP230 | | CTPP235 | | CTPM240 | | CTPM245 | | CTCM245 | | CTCK215 | | CTC5240 | | CTCS245 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DRAGONSKIN | | | | | | | | | | | | | | | |
| | Cutting material **hard** ($v_c$↑) → **tough** ($v_c$↓) | | | | | | | | | | | | | | | |
| | $v_c$ (m/min) | | | | | | | | | | | | | | | |
| P.1.1 | **286** | **150** | **246** | **137** | 226 | 141 | 244 | 139 | 279 | 134 | | | | | | |
| P.1.2 | **242** | **133** | **208** | **121** | 188 | 126 | 207 | 124 | 242 | 119 | | | | | | |
| P.1.3 | **202** | **118** | **172** | **106** | 152 | 112 | 173 | 109 | 208 | 104 | | | | | | |
| P.1.4 | **189** | **112** | **160** | **101** | 140 | 107 | 161 | 104 | 196 | 99 | | | | | | |
| P.1.5 | **169** | **105** | **143** | **94** | 123 | 100 | 144 | 97 | 179 | 92 | | | | | | |
| P.2.1 | **249** | **136** | **214** | **123** | 194 | 128 | 212 | 126 | 247 | 121 | | | | | | |
| P.2.2 | **185** | **111** | **157** | **100** | 137 | 106 | 158 | 103 | 193 | 98 | | | | | | |
| P.2.3 | **169** | **105** | **143** | **94** | 123 | 100 | 144 | 97 | 179 | 92 | | | | | | |
| P.2.4 | **118** | **85** | **98** | **76** | 78 | 83 | 101 | 78 | 136 | 73 | | | | | | |
| P.3.1 | **140** | **87** | **121** | **97** | 126 | 105 | 155 | 107 | 175 | 122 | | | | | | |
| P.3.2 | **90** | **55** | **108** | **83** | 112 | 95 | 143 | 93 | 163 | 108 | | | | | | |
| P.3.3 | **40** | **22** | **96** | **69** | 98 | 85 | 131 | 79 | 151 | 94 | | | | | | |
| P.4.1 | **140** | **87** | **121** | **97** | 126 | 105 | 155 | 107 | 175 | 122 | | | | | | |
| P.4.2 | **115** | **71** | **114** | **90** | 119 | 100 | 149 | 100 | 169 | 115 | | | | | | |
| M.1.1 | | | 121 | 97 | **126** | **105** | **155** | **107** | **175** | **122** | | | | | | |
| M.2.1 | | | 108 | 83 | **112** | **95** | **143** | **93** | **163** | **108** | | | | | | |
| M.3.1 | | | 117 | 93 | **121** | **102** | **152** | **103** | **172** | **118** | | | | | | |
| K.1.1 | 310 | 190 | 160 | 110 | | | | | | | **360** | **210** | | | | |
| K.1.2 | 160 | 100 | 150 | 110 | | | | | | | **220** | **130** | | | | |
| K.2.1 | 200 | 120 | 150 | 110 | | | | | | | **230** | **140** | | | | |
| K.2.2 | 130 | 80 | 150 | 110 | | | | | | | **160** | **100** | | | | |
| K.3.1 | 190 | 115 | | | | | | | | | **250** | **150** | | | | |
| K.3.2 | 160 | 100 | | | | | | | | | **210** | **130** | | | | |
| N.1.1 | | | | | | | | | | | | | | | | |
| N.1.2 | | | | | | | | | | | | | | | | |
| N.2.1 | | | | | | | | | | | | | | | | |
| N.2.2 | | | | | | | | | | | | | | | | |
| N.2.3 | | | | | | | | | | | | | | | | |
| N.3.1 | | | | | | | | | | | | | | | | |
| N.3.2 | | | | | | | | | | | | | | | | |
| N.3.3 | | | | | | | | | | | | | | | | |
| N.4.1 | | | | | | | | | | | | | | | | |
| S.1.1 | | | | | | | | | | 80 | | | | **80** | | **64** |
| S.1.2 | | | | | | | | | | 70 | | | | **70** | | **56** |
| S.2.1 | | | | | | | | | | 35 | | | | **35** | | **28** |
| S.2.2 | | | | | | | | | | 25 | | | | **25** | | **20** |
| S.2.3 | | | | | | | | | | 30 | | | | **30** | | **24** |
| S.3.1 | | | | | | | | | | 80 | | | | **80** | | **64** |
| S.3.2 | | | | | | | | | | 50 | | | | **50** | | **40** |
| S.3.3 | | | | | | | | | | 40 | | | | **40** | | **32** |
| H.1.1 | | | | | | | | | | | | | | | | |
| H.1.2 | | | | | | | | | | | | | | | | |
| H.1.3 | | | | | | | | | | | | | | | | |
| H.1.4 | | | | | | | | | | | | | | | | |
| H.2.1 | | | | | | | | | | | | | | | | |
| H.3.1 | | | | | | | | | | | | | | | | |
| O.1.1 | | | | | | | | | | | | | | | | |
| O.1.2 | | | | | | | | | | | | | | | | |
| O.2.1 | | | | | | | | | | | | | | | | |
| O.2.2 | | | | | | | | | | | | | | | | |
| O.3.1 | | | | | | | | | | | | | | | | |

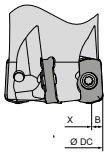
The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approximately **±20%** according to the usage conditions.

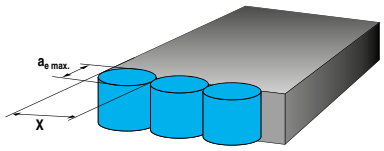
# MaxiMill HFCD-06 system

## Machining strategy

## Programmed radius r3D = 2.0 mm



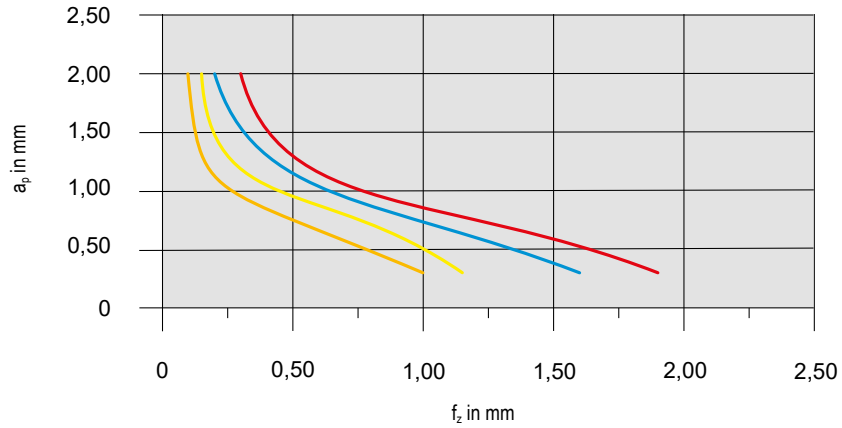

| Cutting depth and remaining material | | | Cutting width for flat surfaces | | | Engagement when plunging | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| IC in inch | RE in inch | $a_{p\ max.}$ in mm | DCX in inch | X in inch | B in inch | $a_{e\ max.}$ in inch | $f_z$ in mm | | | X |
| | | | | | | | initial | min. | max. | |
| 6,05 | 1,8 | 0,8 | 16–66 | DCX–(2 x B) | 4,3 | 5,3 | 0,10 | 0,08 | 0,15 | <0,7 x DCX |

| | Circular | | |
|---|---|---|---|
| | Circular bore milling (helical plunging into solid material) | | |
| DCX mm | $D_{min.}$ mm | $D_{max.}$ mm | $\alpha_{R\ max.}$ ° |
| **16** | 29 | 31 | 1,2° |
| **20** | 36 | 39 | 1° |
| **25** | 45 | 49 | 0,9° |
| **32** | 59 | 63 | 0,65° |
| **35** | 64 | 69 | 0,6° |
| **40** | 74 | 79 | 0,5° |
| **42** | 78 | 83 | 0,45° |
| **50** | 94 | 99 | 0,35° |
| **52** | 98 | 103 | 0,35° |
| **63** | 120 | 125 | 0,3° |
| **66** | 126 | 131 | 0,25° |

| | Axial | Angled |
|---|---|---|
| | Plunging | |
| DCX mm | $X_{max.}$ mm | $\alpha_{R\ max.}$ ° |
| **16** | 0,2 | 1,5° |
| **20** | | 1,4° |
| **25** | | 1,1° |
| **32** | | 0,9° |
| **35** | | 0,7° |
| **40** | | 0,65° |
| **42** | 0,25 | 0,6° |
| **50** | | 0,5° |
| **52** | | 0,45° |
| **63** | | 0,4° |
| **66** | | 0,35° |

## Starting parameters

XNEU 06




| Material | | | Indexable insert | | $v_c$ in ft/min | Cooling |
|---|---|---|---|---|---|---|
| Steel | **P.2.2** | 40CrMnMoS 8-6 | **XNEU 06T318SR-M50** | **CTPP235** | 200 | Dry |
| Stainless steel | **M.1.1** | X6CrNiMoTi 1712 2 | **XNEU 06T318SR-F50** | **CTPM240** | 180 | Dry |
| Cast iron | **K.1.1** | EN-GJL-250 (GG25) | **XNEU 06T318SR-R50** | **CTCK215** | 250 | Dry |
| Heat-resistant | **S.2.2** | Inconel 718 | **XNEU 06T318ER-F40** | **CTC5240** | 35 | Emulsion |

Detailed information on the cutting speed for individual cutting materials can be found on → page 49+50

From $v_c$ > 1300 SFM, the tool must be balanced!

# System MaxiMill – Tangent-09

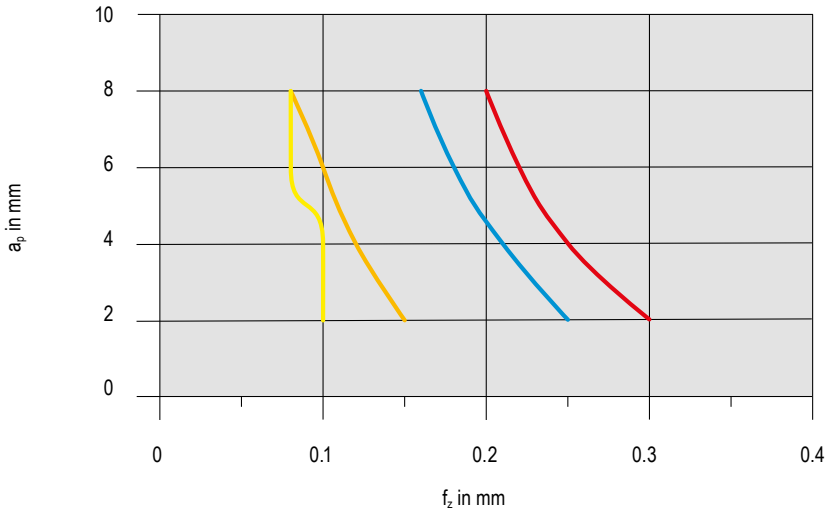
## Machining strategy

### LNHU 09 – DC/$a_e$ Ratio (Dry machining at $a_{p\ max.}$)

| DC | ZNF | 5 % | 10 % | 15 % | 20 % | 25 % | 30 % | 35 % | 40 % | 45 % | 50 % | 55 % | 60 % | 65 % | 70 % | 75 % | 80 % | 85 % | 90 % | 95 % | 100 % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 3 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 4 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 32 | 4 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 5 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 40 | 4 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 6 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 50 | 5 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 7 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 63 | 7 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 10 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 80 | 8 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 11 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |

## Starting parameters

LNHU 09




| Material | | | Indexable insert | | $v_c$ in m/min | Cooling |
|---|---|---|---|---|---|---|
| Steel | **P.2.2** | 40CrMnMoS 8-6 | **LNHU 090404-M50** | **CTPP235** | 200 | Dry |
| Stainless steel | **M.1.1** | X6CrNiMoTi 1712 2 | **LNHU 090404-M50** | **CTPM240** | 120 | Emulsion |
| Cast iron | **K.1.1** | EN-GJL-250 (GG25) | **LNHU 090404-M50** | **CTCK215** | 250 | Dry |
| Heat-resistant | **S.2.2** | Inconel 718 | **LNHU 090404-F40** | **CTC5240** | 35 | Emulsion |

Detailed information on the cutting speed for individual cutting materials can be found on → page 49+50

From $v_c$ > 1300 SFM, the tool must be balanced!

# System MaxiMill – Tangent-13

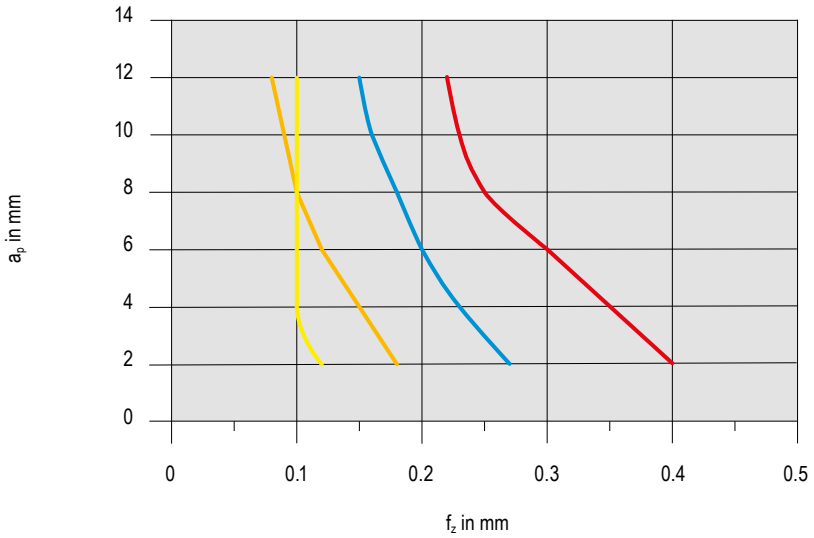
## Machining strategy

### LNHU 13 – DC/$a_e$ Ratio (Dry machining at $a_{p\ max.}$)

| DC | ZNF | 5 % | 10 % | 15 % | 20 % | 25 % | 30 % | 35 % | 40 % | 45 % | 50 % | 55 % | 60 % | 65 % | 70 % | 75 % | 80 % | 85 % | 90 % | 95 % | 100 % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 3 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 40 | 4 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 5 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 50 | 5 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 6 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 63 | 6 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 8 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 80 | 7 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 10 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 100 | 9 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 13 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| 125 | 11 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |
| | 16 | P | | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | | |
| | | K | | | | | | | | | | | | | | | | | | | |

## Starting parameters

LNHU 13




| Material | | | Indexable insert | | $v_c$ in m/min | Cooling |
|---|---|---|---|---|---|---|
| Steel | **P.2.2** | 40CrMnMoS 8-6 | **LNHU 130608-M50** | **CTPP235** | 200 | Dry |
| Stainless steel | **M.1.1** | X6CrNiMoTi 1712 2 | **LNHU 130608-F50** | **CTPM240** | 120 | Emulsion |
| Cast iron | **K.1.1** | EN-GJL-250 (GG25) | **LNHU 130608-M50** | **CTCK215** | 250 | Dry |
| Heat-resistant | **S.2.2** | Inconel 718 | **LNHU 130608-F50** | **CTC5240** | 35 | Emulsion |

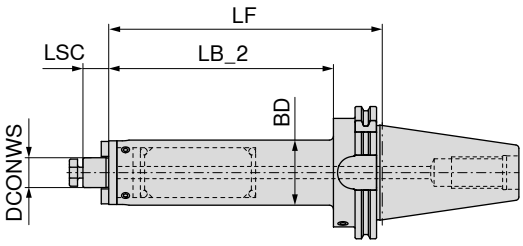
Detailed information on the cutting speed for individual cutting materials can be found on → page 49+50

From $v_c$ > 1300 SFM, the tool must be balanced!

# Actively vibration-damped shell mill adapter

- ▲ The specially mounted damping core enables perfect machining results even with longer tool overhangs
- ▲ Reduction in machining times due to optimum machining parameters
- ▲ Damped machining and therefore perfect surface qualities
- ▲ Protection of the machine spindle and increased tool life
- ▲ Screwed in drive keys
- ▲ **By request:**Also available with Balluff chip

**Scope of supply:**
Base body with retaining screw and drive key




NEW

AD
G 2.5 $n_{max.}$ 25000

**84 752 ...**

| Adapter | DCONWS mm | LB_2 mm | LF mm | BD mm | LSC mm | |
|---|---|---|---|---|---|---|
| **SK 40** | 16 | 180.9 | 200 | 39 | 17 | **51679** |
| **SK 40** | 22 | 180.9 | 200 | 48 | 19 | **52279** |
| **SK 50** | 16 | 180.9 | 200 | 39 | 17 | **51678** |
| **SK 50** | 22 | 180.9 | 200 | 48 | 19 | **52278** |
| **SK 50** | 27 | 180.9 | 200 | 58 | 21 | **52778** |


Carrier screws


Drive key


Retaining screws


Tightening screw

| Spare parts DCONWS | | **83 950 ...** | | **83 950 ...** | | **83 367 ...** | | **83 950 ...** |
|---|---|---|---|---|---|---|---|---|
| 16 | M3x8 | **296** | 8x9x17.5 | **120** | M8 | **016** | M8x25 | **113** |
| 22 | M4x12 | **297** | 10x11x20.5 | **121** | M10 | **022** | M10x25 | **124** |
| 27 | M5x12 | **136** | 12x13x24.3 | **122** | M12 | **027** | M12x30 | **125** |

*Accessories*


→ 58, 60
Pull studs

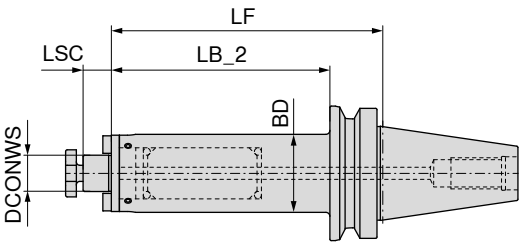

→ 284
Others

Accessories can be found in the clamping technology catalog
→ **Chapter 16, Adapters and accessories**

# Actively vibration-damped shell mill adapter

- ▲ The specially mounted damping core enables perfect machining results even with longer tool overhangs
- ▲ Reduction in machining times due to optimum machining parameters
- ▲ Damped machining and therefore perfect surface qualities
- ▲ Protection of the machine spindle and increased tool life
- ▲ Screwed in drive keys
- ▲ **By request:**Also available with Balluff chip

**Scope of supply:**
Base body with retaining screw and drive key




NEW

AD
G 2.5 $n_{max.}$ 25000

**84 752 ...**

| Adapter | DCONWS mm | LB_2 mm | LF mm | BD mm | LSC mm | |
|---|---|---|---|---|---|---|
| **BT 40** | 16 | 173.0 | 200 | 39 | 17 | **51669** |
| **BT 40** | 22 | 173.0 | 200 | 48 | 19 | **52269** |
| **BT 50** | 16 | 162.5 | 200 | 39 | 17 | **51668** |
| **BT 50** | 22 | 162.0 | 200 | 48 | 19 | **52268** |
| **BT 50** | 27 | 162.0 | 200 | 58 | 21 | **52768** |


Carrier screws


Drive key


Retaining screws


Tightening screw

| Spare parts DCONWS | **83 950 ...** | | **83 950 ...** | | **83 367 ...** | | **83 950 ...** | |
|---|---|---|---|---|---|---|---|---|
| 16 | M3x8 | **296** | 8x9x17,5 | **120** | M8 | **016** | M8x25 | **113** |
| 22 | M4x12 | **297** | 10x11x20,5 | **121** | M10 | **022** | M10x25 | **124** |
| 27 | M5x12 | **136** | 12x13x24,3 | **122** | M12 | **027** | M12x30 | **125** |

*Accessories*


→ 110+111
Pull studs

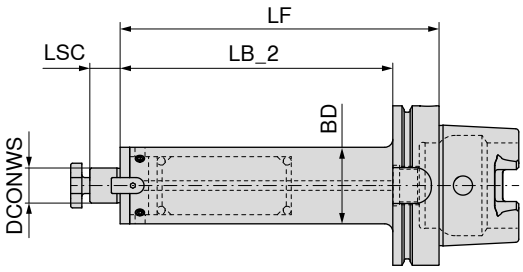

→ 284
Others

Accessories can be found in the clamping technology catalog
→ **Chapter 16, Adapters and accessories**

# Actively vibration-damped shell mill adapter

- ▲ The specially mounted damping core enables perfect machining results even with longer tool overhangs
- ▲ Reduction in machining times due to optimum machining parameters
- ▲ Damped machining and therefore perfect surface qualities
- ▲ Protection of the machine spindle and increased tool life
- ▲ Screwed in drive keys
- ▲ **By request:**Also available with Balluff chip

**Scope of supply:**
Base body with retaining screw and drive key




NEW

AD
G 2.5 $n_{max.}$ 25000

| Adapter | DCONWS mm | LB_2 mm | LF mm | BD mm | LSC mm | 84 752 ... |
|---|---|---|---|---|---|---|
| **HSK-A 63** | 16 | 174 | 200 | 39 | 17 | **51657** |
| **HSK-A 63** | 22 | 174 | 200 | 48 | 19 | **52257** |
| **HSK-A 100** | 16 | 171 | 200 | 39 | 17 | **51655** |
| **HSK-A 100** | 22 | 171 | 200 | 48 | 19 | **52255** |
| **HSK-A 100** | 27 | 171 | 200 | 58 | 21 | **52755** |


Carrier screws


Drive key


Retaining screws


Tightening screw

| Spare parts DCONWS | 83 950 ... | 83 950 ... | 83 367 ... | 83 950 ... |
|---|---|---|---|---|
| 16 | **296** | **120** | **016** | **113** |
| 22 | **297** | **121** | **022** | **124** |
| 27 | **136** | **122** | **027** | **125** |

*Accessories*


→ 156
Pull studs


→ 284
Others

Accessories can be found in the clamping technology catalog
→ **Chapter 16, Adapters and accessories**

# Sustainability is not a goal, it’s a mission.

We have an ambitious sustainability mission that will affect and change the entire supply chain. But we can only achieve true sustainability together. That's why our mission goes beyond our own scope:

We want to enable our customers to produce more sustainably with our products and services. With our ambitious mission, we want to make an important contribution to tackling the climate crisis.

**Mission #1:**
Climate neutral by 2025

**Mission #2:**
Minimize the use of virgin raw materials

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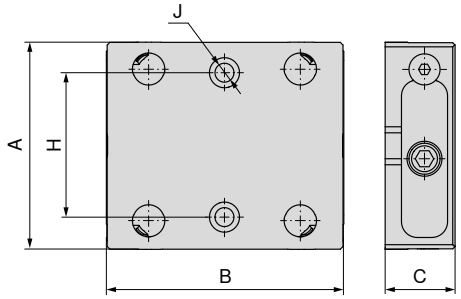
# MNG mini – base plate, rectangular, 52 x 52 mm

▲ Order mounting bolts separately

**MNG mini** | **52 x 52**





NEW

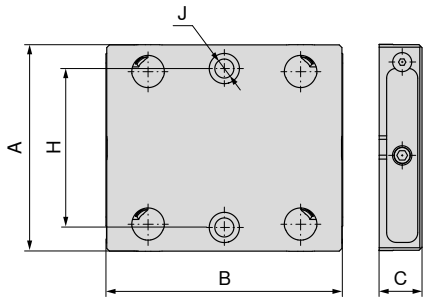
**80 915 ...**

| Size | A mm | B mm | C ±0.005 mm | H ±0.01 mm | J F7 mm | WT kg | |
|---|---|---|---|---|---|---|---|
| **52 x 52** | 80 | 100 | 27 | 50 | 12 | 1.36 | **75200** |

# MNG mini – base plate, rectangular, 96 x 96 mm

▲ Order mounting bolts separately

**MNG mini** | **96 x 96**





NEW

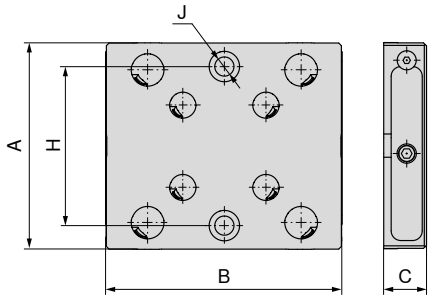
**80 915 ...**

| Size | A mm | B mm | C ±0.005 mm | H ±0.01 mm | J F7 mm | WT kg | |
|---|---|---|---|---|---|---|---|
| **96 x 96** | 130 | 148 | 27 | 100 | 12 | 3.59 | **79600** |

# MNG mini – combi insert, 52 x 52 mm and 96 x 96 mm

▲ Order mounting bolts separately

**MNG mini** | **52 x 52** | **96 x 96**




NEW

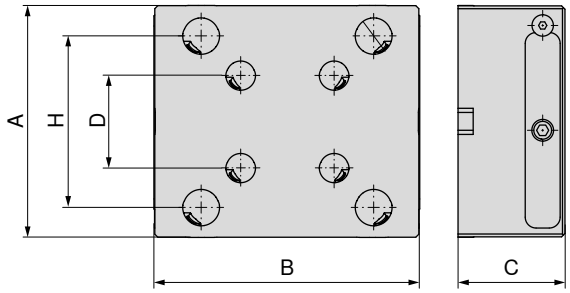
**80 915 ...**

| Size | A mm | B mm | C ±0.005 mm | H ±0.01 mm | J F7 mm | WT kg | |
|---|---|---|---|---|---|---|---|
| **52 x 52 / 96 x 96** | 130 | 148 | 27 | 100 | 12 | 3.43 | **75900** |

# MNG mini – combi 5-axis increase, 52 x 52 mm and 96 x 96 mm

▲ Order mounting bolts separately

**MNG mini** | **52 x 52** | **96 x 96**

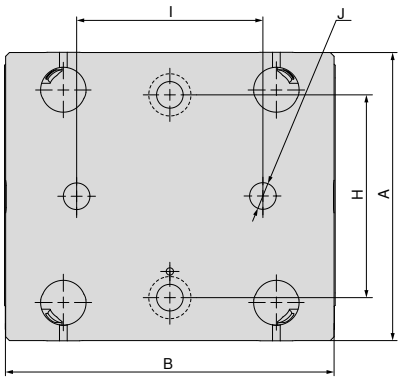



NEW

**80 915 ...**

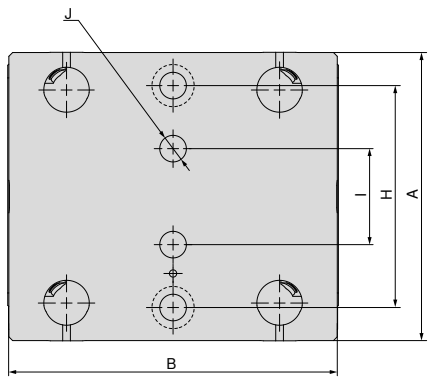
| A mm | B mm | C mm | D mm | H mm | |
|---|---|---|---|---|---|
| **130** | 148 | 60 | 52 | 96 | **56000** |
| **130** | 148 | 100 | 52 | 96 | **51000** |

# Underside dimensions of MNG mini



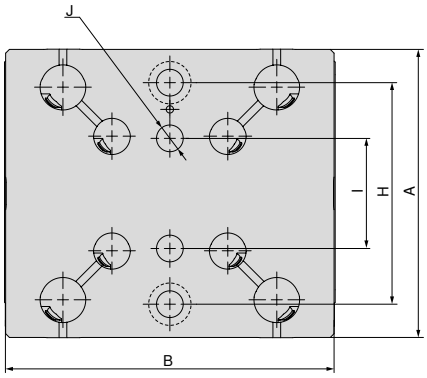

## Base plate, rectangular, 52 x 52 mm

| A mm | B mm | H mm | $I_{\pm 0.01}$ mm | $J_{H7}$ mm |
|---|---|---|---|---|
| **80** | 100 | 50 | 40 | 12 |



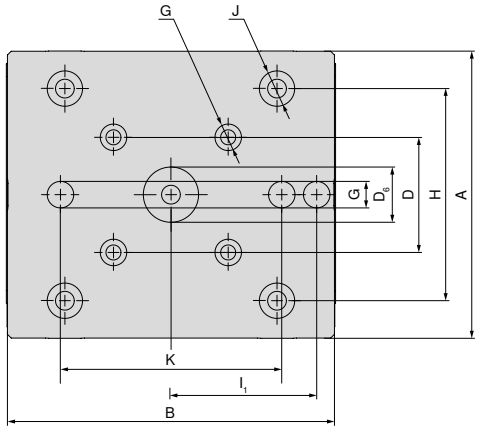

## Base plate, rectangular, 96 x 96 mm

| A mm | B mm | H mm | $I_{\pm 0.01}$ mm | $J_{H7}$ mm |
|---|---|---|---|---|
| **130** | 148 | 100 | 50 | 12 |




## Combi insert, 1-sided, 52 x 52 mm and 96 x 96 mm

| A mm | B mm | H mm | $I_{\pm 0.01}$ mm | $J_{H7}$ mm |
|---|---|---|---|---|
| **130** | 148 | 100 | 50 | 12 |



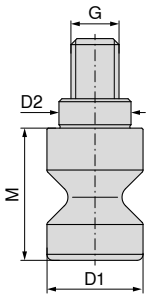

## Combi 5-axis increase, 52 x 52 mm and 96 x 96 mm

| A mm | B mm | D mm | $D_{6\,H7}$ mm | $G_{H7}$ mm | H mm | $I_{1\,\pm 0.01}$ mm | $J_{H7}$ mm | K mm |
|---|---|---|---|---|---|---|---|---|
| **130** | 148 | 52 | 25 | 12 | 96 | 66 | 16 | 100 |

# MNG mini mounting bolt set

**Scope of supply:**
Set includes four mounting bolts

**MNG mini** | **96 x 96**




NEW

**80 915 ...**

| $D_{1\ h6}$ mm | $D_{2\ h6}$ mm | M mm | G mm | TQX Nm | Clamping force kN | for | |
|---|---|---|---|---|---|---|---|
| **20** | 16 | 22 | M10 | 18 | 15 | 96 x 96 | **51100** |

# Expansion tool

**MNG mini**

NEW

**80 915 ...**

| $D_1$ mm | M mm | |
|---|---|---|
| **15** | 40 | **51300** |

# Clamping screw set for T-slot for MNG mini

**Scope of supply:**
Clamping screw with T-nut

**MNG mini**

NEW

**80 915 ...**

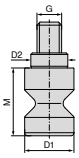
| For slot width mm | G | |
|---|---|---|
| **14** | M12 | **62400** |
| **16** | M12 | **62600** |
| **18** | M12 | **62800** |

# Mounting bolt set – LANG/HWR

**Scope of supply:**

Set includes four mounting bolts

MNG mini




NEW

| TQX Nm | Clamping force kN | $D_{1\ h6}$ mm | $D_{2\ h6}$ mm | M mm | for | 80 915 ... |
|---|---|---|---|---|---|---|
| **18** | 15 | 15 | 12 | 22 | 52 x 52 | **51500** |
| **18** | 15 | 19 | 16 | 22 | 96 x 96 | **51400** |

# Alignment/centering set for T-slots

▲ A = distance between slots

**Scope of supply:**

1 Terminal block, 2 T-nuts, 2 screws, 2 washers for width 12 mm (0.4724 in), without clamping strip!

MNG mini

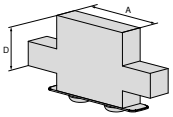
NEW

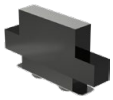
| For slot width mm | A mm | G | 80 915 ... |
|---|---|---|---|
| **12** | 35 | M10 | **82200** |
| **14** | 35 | M10 | **82400** |
| **16** | 35 | M10 | **82600** |
| **18** | 40 | M10 | **82800** |

# Workpiece supports overview – Verso

## Workpiece support, offset

▲ Price per two pieces

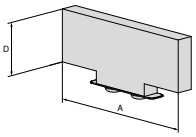


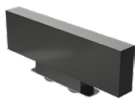



| For vise width | A | $A_1$ | D | $D_1$ | $D_2$ | E | M | $M_1$ | $M_2$ | | NEW | NCG | H5G / -S / -Z | X6G-Z / -S | ESG 4 | ESG 5 | HDG 2 | ZSG 4 | ZSG mini | DSG 4 | Verso | HSG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90 | 40 | | 22 | | | | | | | | **80 914 70300** | | | | | | | | | | ● | |

## Workpiece support, offset

▲ Price per two pieces



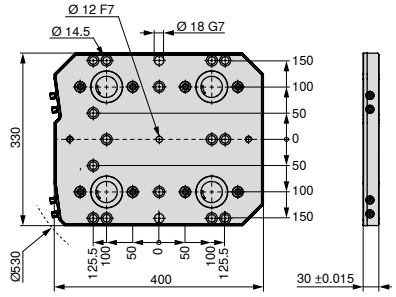



| For vise width | A | $A_1$ | D | $D_1$ | $D_2$ | E | M | $M_1$ | $M_2$ | | NEW | NCG | H5G / -S / -Z | X6G-Z / -S | ESG 4 | ESG 5 | HDG 2 | ZSG 4 | ZSG mini | DSG 4 | Verso | HSG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90 | 90 | | 22 | | | | | | | | **80 914 72500** | | | | | | | | | | ● | |

# MNG – base plate with 4 indexes, 330 x 400 mm

- ▲ MNG – mechanical zero point clamping system
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force of 20 kN on each clamping bolt
- ▲ 15 x mounting holes for M12, for T-slot spread 50, 63, 100, 125 mm
- ▲ 2 x locating holes Ø18 G7 for positioning
- ▲ 1 x locating hole Ø12 F7 for positioning

**MNG**




NEW

**80 899 ...**

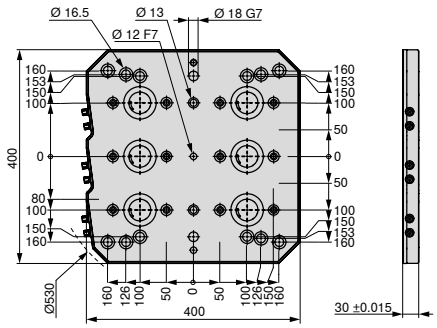
| Size | WT kg | |
|---|---|---|
| **330x400 mm** | 28 | **64200**[1)] |

**1)** Not in stock

# MNG – base plate with 6 indexes, 400 x 400 mm

- ▲ MNG – mechanical zero point clamping system
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force of 20 kN on each clamping bolt
- ▲ 14 x mounting holes for M16, for T-slot spread 63, 80, 100, 125 mm
- ▲ 2 x mounting holes for M12
- ▲ 2 x locating holes Ø18 G7 for positioning
- ▲ 1 x locating hole Ø12 F7 for positioning

**MNG**




NEW

**80 899 ...**

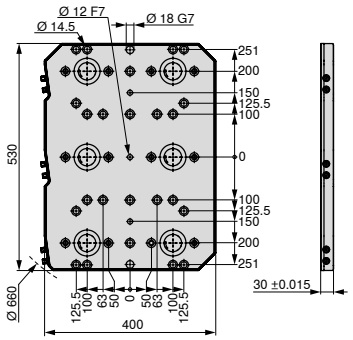
| Size | WT kg | |
|---|---|---|
| **400x400 mm** | 33 | **64300**[1)] |

**1)** Not in stock

# MNG – base plate with 6 indexes, 400 x 530 mm

- ▲ MNG – mechanical zero point clamping system
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force of 20 kN on each clamping bolt
- ▲ 24 x mounting holes for M12, for T-slot spread 63, 100, 125 mm
- ▲ 2 x locating holes Ø18 G7 for positioning
- ▲ 1 x locating hole Ø12 F7 for positioning

**MNG**




NEW

80 899 ...

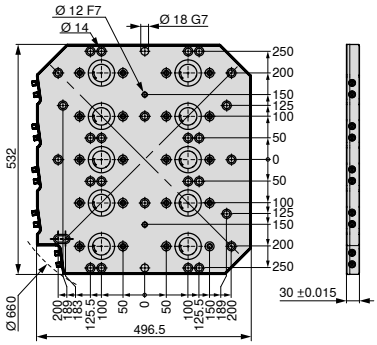
| Size | WT kg | |
|---|---|---|
| **400x530 mm** | 45 | **64400**[1)] |

1) Not in stock

# MNG – base plate with 10 indexes, 496.5 x 532 mm

- ▲ MNG – mechanical zero point clamping system
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force of 20 kN on each clamping bolt
- ▲ 27 x mounting holes for M12, for T-slot spread 50, 63, 100, 125 mm and 45° star slots
- ▲ 2 x locating holes Ø18 G7 for positioning
- ▲ 1 x locating hole Ø12 F7 for positioning

**MNG**




NEW

80 899 ...

| Size | WT kg | |
|---|---|---|
| **496.5x532 mm** | 54 | **64500**[1)] |

1) Not in stock

## THE Cutting Tool Solution

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