

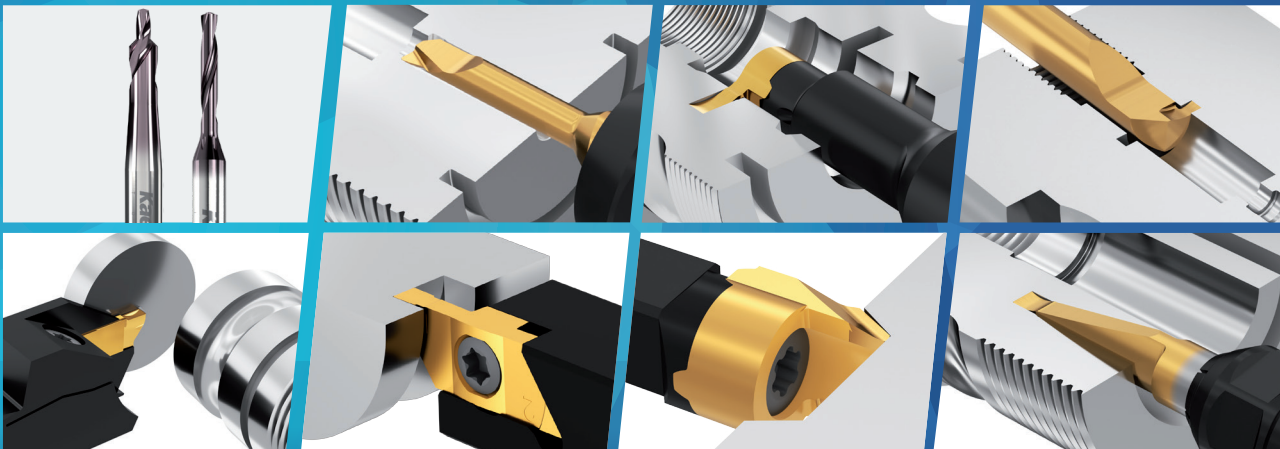
**SIMTEK**  
G R O U P

**SIMTEK**

**Kaestner**  
T O O L S

Tools for  
highest  
expectations

经济高效用于小型零件加工的刀具。  
High-performance tools for cost-efficient small part machining.



经济-高效  
Cost-effective

工艺稳定  
Process reliable

高效  
Efficient

交货期短  
Short delivery times





经济高效的小型零件加工  
Cost-efficient small part machining

**Edition  
R23CN**



## 用SIMTEK和Kaestner 刀具加工精密小型零件

25年以来，SIMTEK集团一直致力于为高精度小型零件加工而生产精密刀具。

SIMTEK集团生产标准刀具约5600种，用于内孔加工的最小刀具直径从0.3mm到24.5mm，以及外形加工的刀柄尺寸从7.0mm x 7.0 mm起。SIMTEK集团的刀具工艺稳定性高，重复加工精度高，可为绝大部分小型零件加工提供最适宜的刀具。

特别是SIMTEK在1998年开发的SIMTEK车削刀具系统，实现了更高的加工性能和工艺稳定性，即使在0.3mm的小孔加工中也能发挥处杰出的性能。

更多信息 // Further information on  
[www.simtek.com](http://www.simtek.com)

## High-precision small part machining with SIMTEK and Kaestner-Tools

For more than 25 years, the SIMTEK Group has been the specialist for precision tools for high-precision small part machining.

With around 5.600 standard tools for internal machining starting with a minimum diameter of 0.3 mm up to a minimum diameter of 24.5 mm as well as for external machining with shank dimensions from 7.0 mm x 7.0 mm on, SIMTEK Präzisionswerkzeuge GmbH offers the right tool for almost any application in small part machining, combined with high process reliability, repeatability and performance.

Especially the tool system simturn AX, developed and introduced by SIMTEK in 1998, is designed for maximum performance and stability and allows great performance in smallest bores as of  $\varnothing$  0.3 mm.

**SIMTEK**

**Kaestner**  
T O O L S

与集团中的姐妹公司Kaestner的高精密刀具一起提供用于钻孔、镗孔、锪孔和铣削的刀具，SIMTEK集团能更广泛、经济、高效的提供完整的小零件加工工艺方案。

本手册可指导您全面了解用于小型零件加工的各种高精度加工刀具。此外，对于您的个别特殊需求，SIMTEK集团公司也可为您提供最佳工艺方案，并以最佳方式满足您的具体需求。

Together with the high-performance precision tools from sister company Kaestner-Tools GmbH, for drilling, countersinking, reaming and milling, an even wider range of cost-effective machining solutions from the SIMTEK Group can be offered.

This brochure will guide you through the comprehensive range of high-precision tools for small part machining. Also for your individual application, the SIMTEK Group will find the best possible solutions - optimally adapted to your individual needs and requirements.



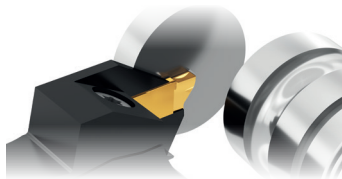
引导钻 // Pilot-drills



simturnAX



simturnH2



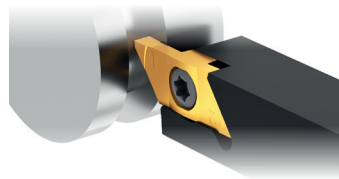
微型精密钻头 // Micro precision-drills



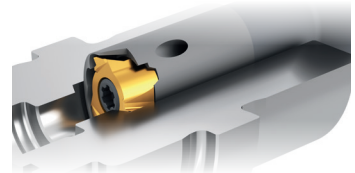
simturnDX



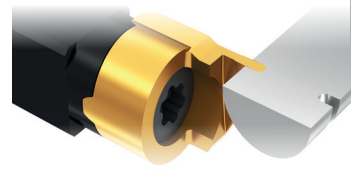
simturnK2



simturnPX



simturnC4



## 小型加工刀具和加工直径 Tools for small part machining and the machinable bore diameters

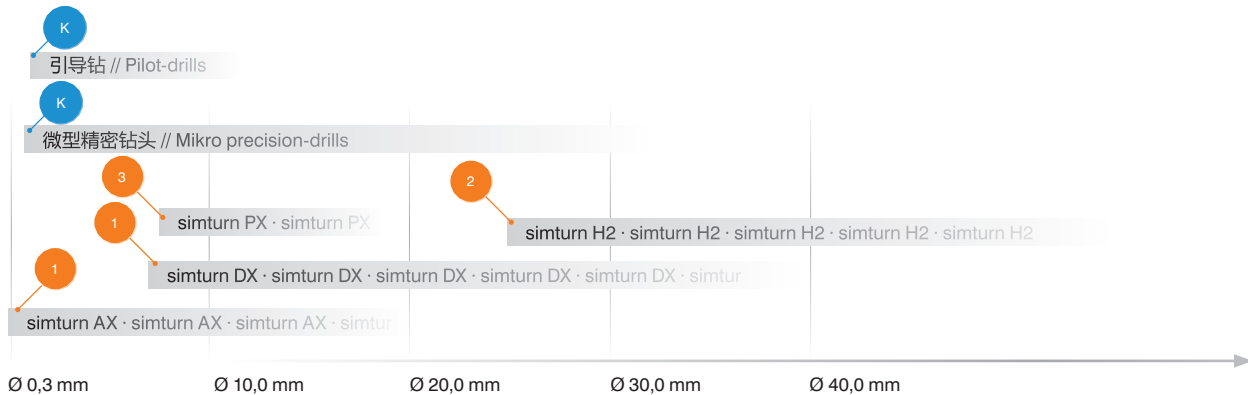
**Kaestner**  
T O O L S

simturnAX

simturnDX

simturnPX

simturnH2



- 1 单切削刃刀具系统 // Tool system with single edged cutting insert
- 2 双切削刃可转位刀片系统 // Tool system with two-edged indexable cutting insert
- 3 三切削刃可转位刀片系统 // Tool system with three-edged indexable cutting insert
- K 孔加工工具 // Drilling tools



引導鑽



用于引导孔和倒角加工的高精度引导钻。

Highly precise pilot-drills for  
piloting and countersinking.

从 8xD深孔加工开始,为保证孔的加工质量,应先钻出引导孔,引导孔至少需要直径相同深度2xD,才能保证深孔加工时深孔钻得到良好的定位和引导。

Kaestner-Tools的引导钻不仅可以加工出钻深孔前所需的引导孔,还可以再加工出引导孔入口处的倒角,这样就不需要在钻深孔后再用铰钻加工倒角了。

For optimum preparation of deep hole drilling from 8xD, a guide channel for the deep hole drill should be produced by a pilot hole drilled upstream. Here, a pilot-drill of at least the same diameter size is used to pre-drill up to approx. 2xD in order to achieve ideal positioning and guidance of the deep hole drill.

The pilot-drills from Kaestner-Tools allow not only the creation of a guide hole necessary for the deep hole drill, but also the creation of a counterbore at the entrance to the hole. This eliminates the need for subsequent countersinking with a special countersinking tool.

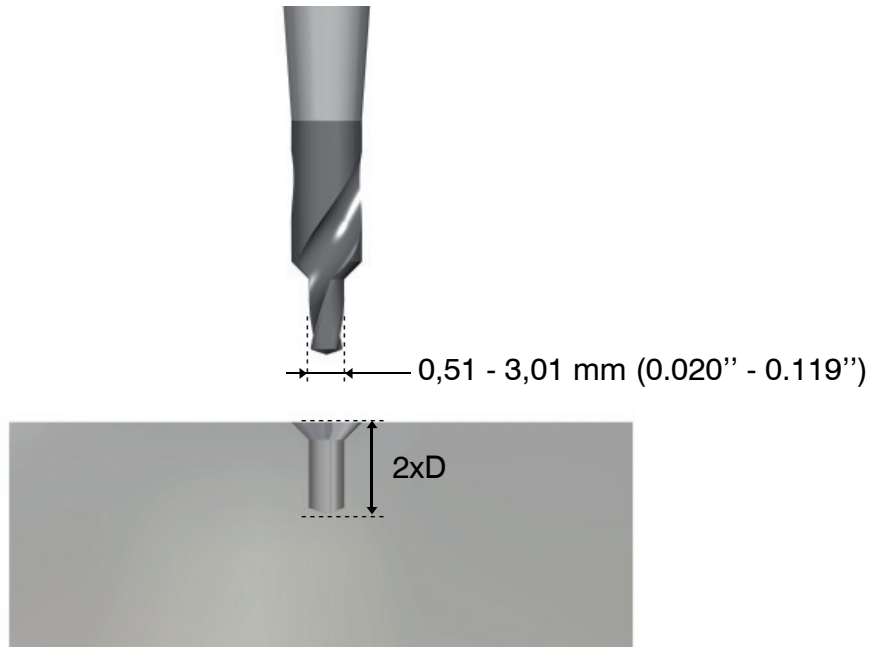


## 小零件加工 // Small part machining

引导钻 // Pilot-drills > 总体介绍 // General information

用一把刀即可加工引导孔和孔口倒角!

Pilot-drilling and chamfering with just one tool!





微型精密钻头

# 用于钻 $\varnothing$ 0.5 - 3.0 mm 孔的微型精密钻头。 Micro precision-drills for $\varnothing$ 0,5 - 3,0 mm.

## 小零件加工 // Small part machining

微型精密钻头 // Micro precision-drills > 总体介绍 // General information

微型精密钻头由整体硬质合金制成，加工直径在0.5mm-3.0mm之间，孔深从3xD到12xD，冷却液可通过刀柄上的6个外冷孔和2个弯曲的内冷孔，钻头的直径公差达m7，在正常条件下加工出的直径孔公差可达H9。

得益于超细硬质合金的相互作用及最适合ISO材料的涂层选择，使得Kaestner的微型精密加工钻头几乎在任何条件下都能表现出最高的切削性能，加工稳定，寿命长。

### 概要:

- VHM微型精密钻头，直径从0.5mm到3.0mm
- 钻孔深度从3xD到12xD
- 精密钻头尖端磨削及优化切削刃几何形状
- 涂层优化，适合加工ISO标准的各种材料

Micro precision-drills made of solid carbide for the production of holes between 0.5 mm and 3.0 mm with hole depths 3xD to 12xD. Available with both external shank cooling via six cooling channels and internal shank cooling via two twisted cooling channels. The standard drill tolerance of m7 enables the production of holes with a hole quality of H9 under normal conditions.

Thanks to the optimal interaction of finest carbide and a coating selection optimally adapted to the ISO material groups, the micro precision-drills from Kaestner-Tools offer highest performance, longevity and process reliability under almost any condition.

### At one glance:

- Solid carbide micro precision-drills for diameters from 0,5 to 3,0 mm
- Bore depths 3xD to 12xD
- Precision tip grinding with optimized cutting edge geometry
- Coating selection optimally adapted to ISO material groups

## 小零件加工 // Small part machining

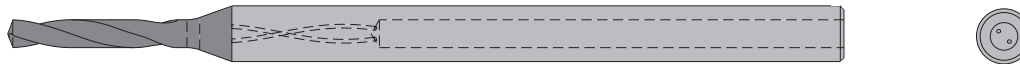
微型精密钻头 // Micro precision-drills > 总体介绍 // General information

两种不同的冷却液供应变为标准供应方式:

Two different coolant supply variants as standard:

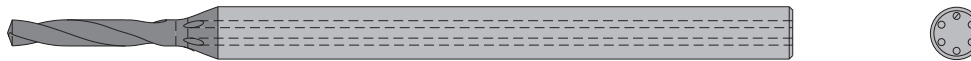
冷却液通过刀柄内部的两个内冷通道喷出:

Shank cooling inside via two twisted cooling channels:



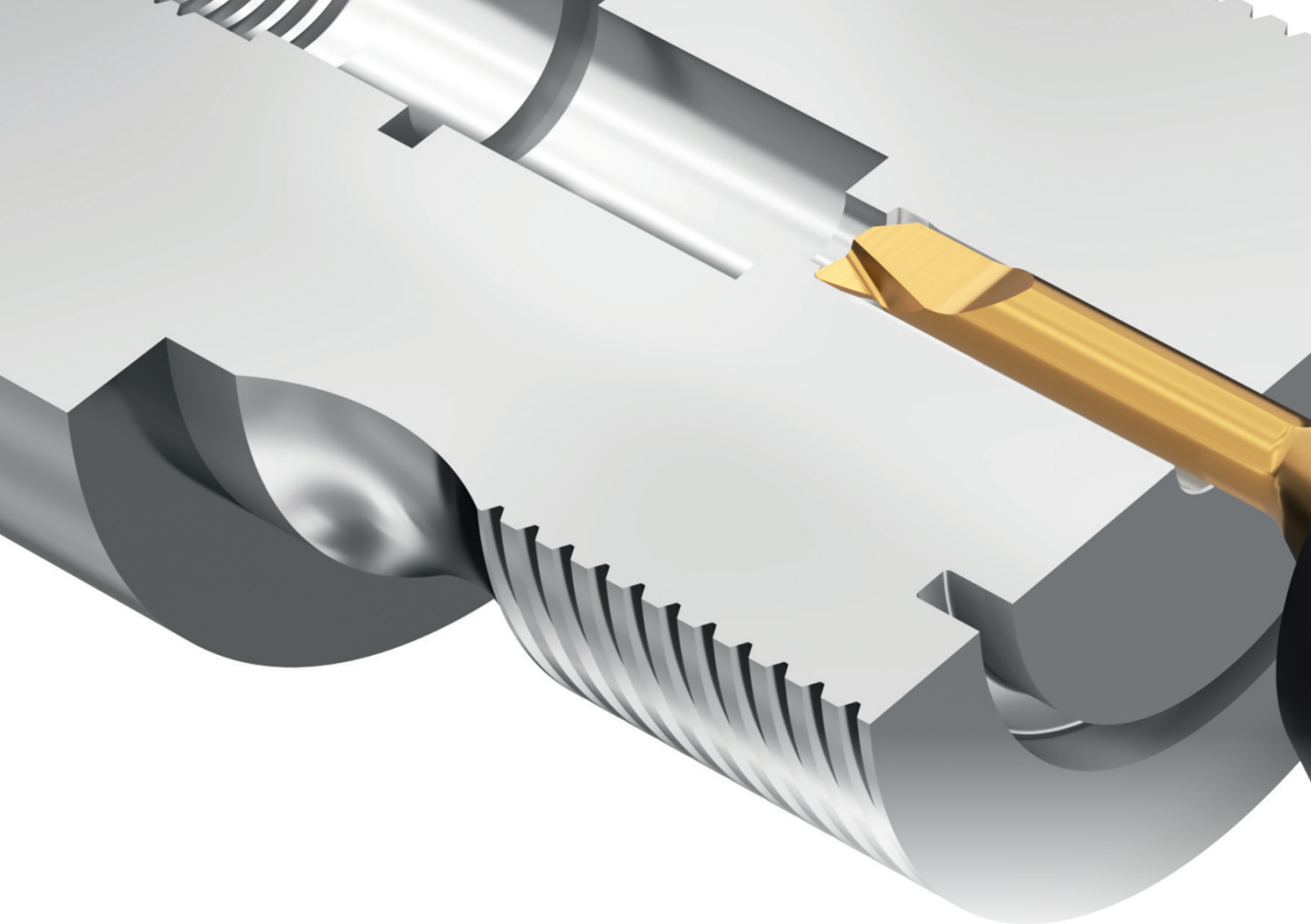
冷却液通过刀柄外6个通道在钻头外喷出:

External shank cooling via six coolant channels:

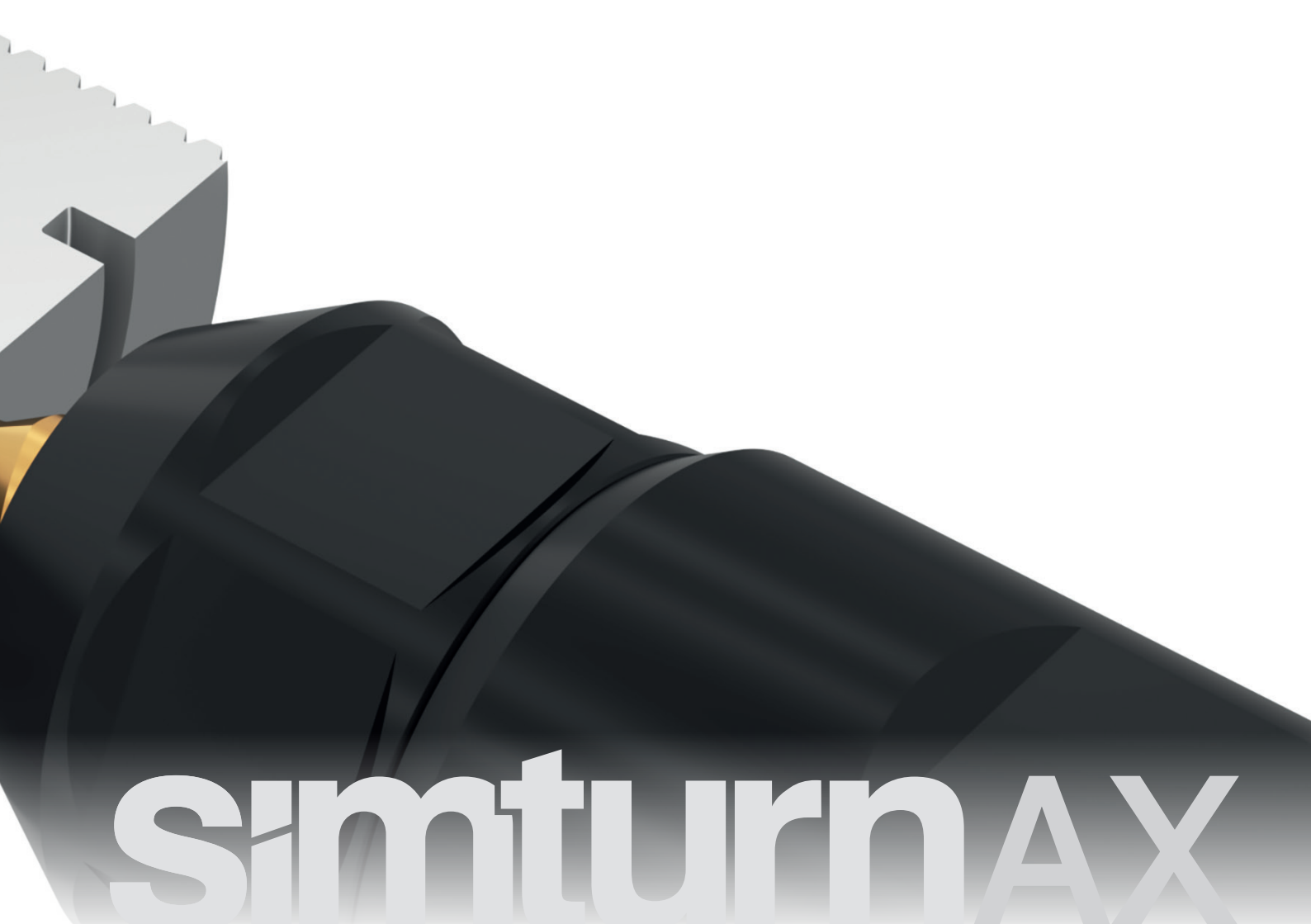


使用我们的微型精密钻头钻8xD以上深孔时, 建议先用Kaestner-Tools的引导钻钻出引导孔。

For the use of our micro precision-drills, we recommend a pilot bore with pilot-drills from Kaestner-Tools upstream from a bore depth of 8xD.







simturn AX

**在  $\varnothing 0.3$  mm 的  
孔中表现出色。  
Great Performance  
in bores as of  $\varnothing 0,3$  mm.**

## 小零件加工 // Small part machining

simturn AX > 总体介绍 // General information

**simturnAX**  
SIMTEK small part machining type AX

非常精确和强壮的刀具系统，整体硬质合金刀片，使用钢和硬质合金刀柄。为了使直径从 $\varnothing 0,3\text{mm}$ 及以上的孔获得最佳表现。

刀片的重复安装精度高，可用长度可达 $9 \times D$ ！

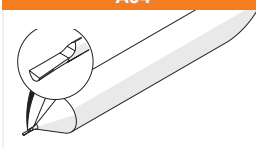
有超过3000种标准产品，可为几乎所有的内孔加工提供正确的方案。

Very precise and very strong tool system of solid carbide cutting insert, steel and carbide toolholders. For best performance in bores starting at  $\varnothing 0,3 \text{ mm}$ .

High repeat accuracy from insert to insert and usable lengths up to  $9 \times D$ !


More than 3.000 standard items provide the right answer for almost every internal turning application.

**A04**




$\varnothing D$ mm	$\varnothing D_{\text{min}}$ mm	L2 mm
4,0	0,3 - 4,2	1,2 - 35,6

**A05**




$\varnothing D$ mm	$\varnothing D_{\text{min}}$ mm	L2 mm
5,0	4,9 - 5,2	10,2 - 40,6

**A06**




$\varnothing D$ mm	$\varnothing D_{\text{min}}$ mm	L2 mm
6,0	5,9 - 6,2	15,2 - 50,8

**A07**



$\varnothing D$ mm	$\varnothing D_{\text{min}}$ mm	L2 mm
7,0	7,2	25,4 - 60,8


**A08**



轴向加工 // axial machining

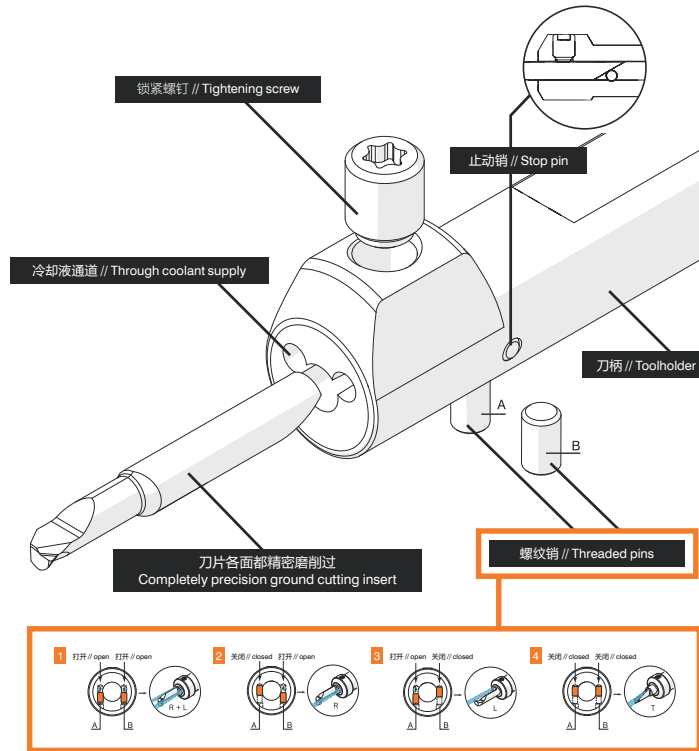
$\varnothing D$ mm	$\varnothing D_{\text{min}}$ mm	L2 mm
8,0	16,0	10,0 - 15,0

**A10**



轴向加工 // axial machining

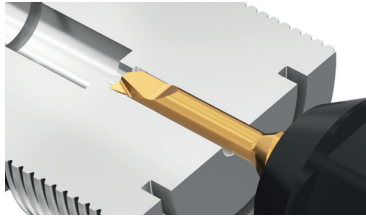
$\varnothing D$ mm	$\varnothing D_{\text{min}}$ mm	L2 mm
10,0	20,0	20,0 - 30,0



\*刀柄下面能分别调整冷却液供应通道  
\*For adjusting the coolant supply individually on the following toolholders

A04...T 截至 // as of ODg6 12,0 mm  
A05...T 截至 // as of ODg6 12,0 mm  
A06...T, A07...T, A08...T, A10...T

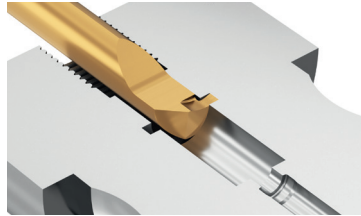
## 镗孔 Boring



镗孔加工直径范围从0.3mm起,可提供不同形状刀具,硬材加工时,可使用CBN多种材料刀具。

Boring applications as of bore diameter of 0,3 mm. Available with different geometries as well as for hard part turning with CBN grades.

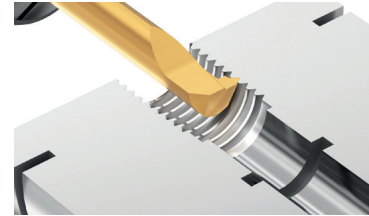
## 切槽 Grooving



切槽加工最小可在孔径2mm中进行有多种宽度、长度和带圆弧半径的切槽刀。

Grooving in bores as of minimum bore diameter 2,0 mm. With different cutting widths, usable lengths as well as with full radius.

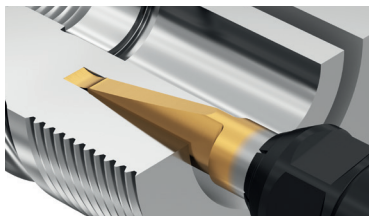
## 车螺纹 Threading



具有能够加工几种主要类型螺纹的内螺纹刀具,能加工不同尺寸、不同螺距的螺纹。

Inserts for the machining of internal threads for all major types of threads. Available in different sizes and for different pitches or threads.

## 端面槽加工 Face Grooving



有在孔端面或轴端面上切槽的刀具，还有带内冷、带圆弧的切槽刀。

Inserts for face grooving in bores or on pivots. Also available with coolant supply through the insert as well as with full radius.

## ME-夹紧系统\* ME-clamping system\*



创新的加压定位夹紧刀柄，它有4种冷却供应方式（R, L, R+L, 内冷信道），按要求可分别调节选用。

Toolholders with innovative ME-clamping system for force-fitted clamping. Four different types of through coolant supply (R, L, R+L or supply through the insert) individually adjustable as required.



\*欧洲专利号 No. 2 992 988 / European Patent No. 2 992 988

ME夹紧系统的刀柄  
The ME-clamping system



## ME夹紧系统具有更高的精度和稳定性! Higher precision and stability with the ME-clamping system!

创新的ME夹紧系统\*提供了更高精度和稳定性和夹紧力。

刀柄有钢制与硬质合金制, 硬质合金刀柄可夹持延伸的较长的刀具。

螺纹销的进出可调节, 分别控制开通4种冷却通道 (R, L, R+L 或内冷通道)\*2。

The innovative ME-clamping system\* provides force-fitted clamping along with higher precision and stability.

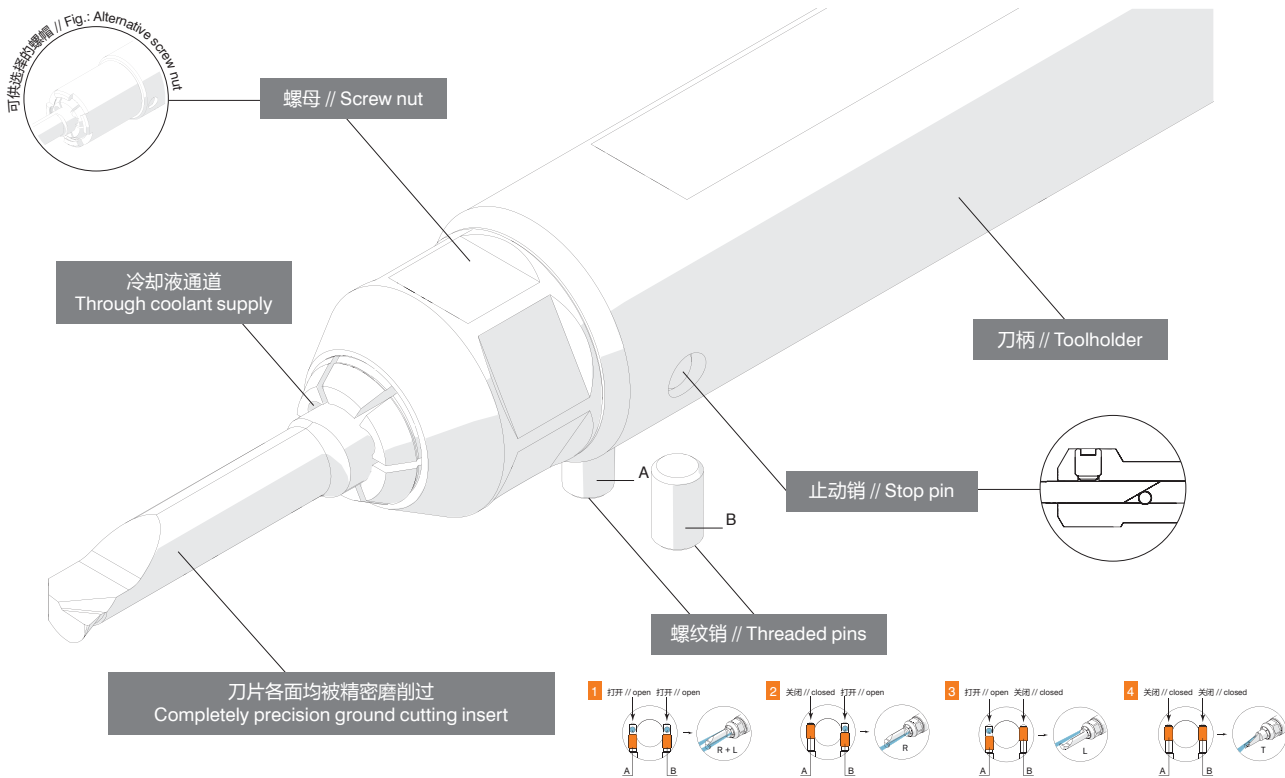
Those toolholders are available in steel as well as in carbide, whereas the carbide toolholders are especially suitable to extend the overall tool reach.

Thanks to adjustable threaded pins, four different types of coolant supply (R, L, R+L or supply through the insert) can individually be realized as required\*2.















\*欧洲专利号 No. 2 992 988 / European Patent No. 2 992 988

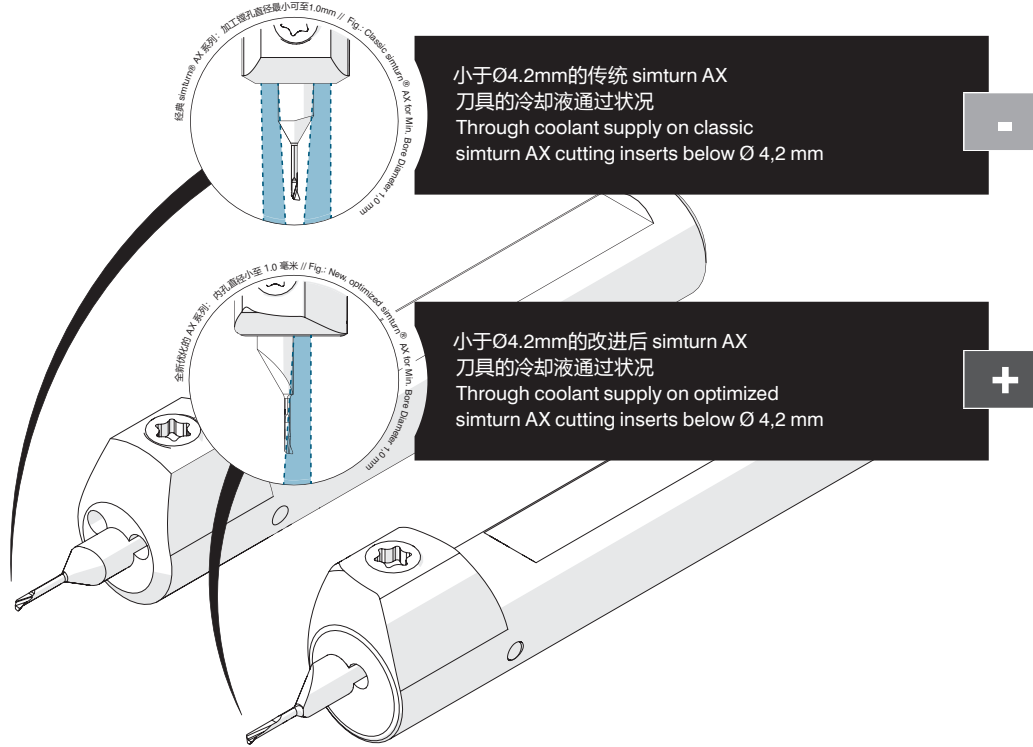
\*2注册使用新型号 no. DE 20 2015 101 834.7 / \*2 Registered utility model no. DE 20 2015 101 834.7

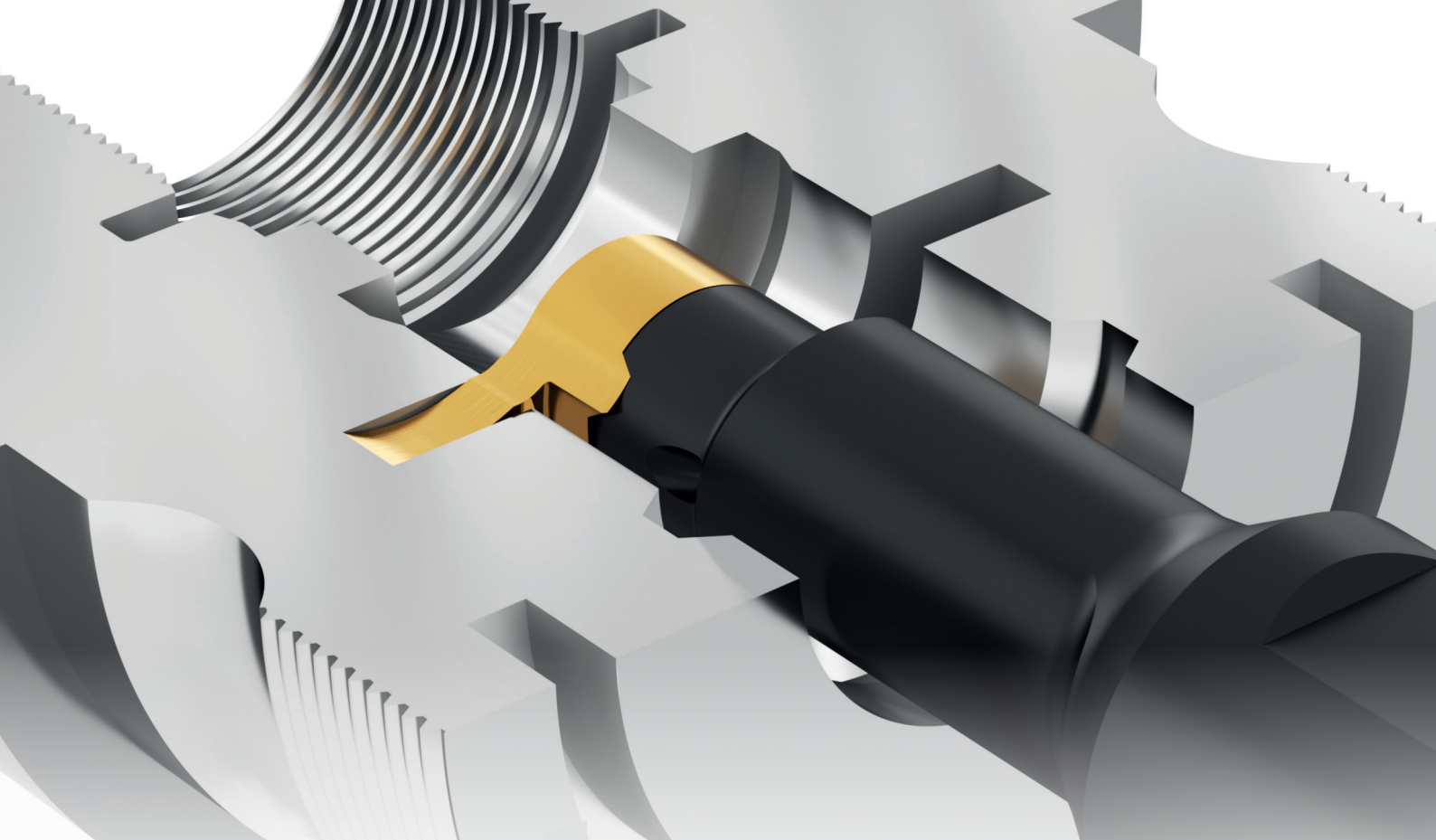




## 选择+号改进冷却液供应方式! Choose the plus for improved through coolant supply!

- + 如要使传统的刀具  /  和改进了的刀具 均能兼容,  这意味着每种类型的刀片都有一个专用类型的刀架,但可以相互切换。
- + The classic cutting inserts  /  and the optimized cutting inserts  are fully compatible to each other, meaning that each type of insert has a dedicated type of holder, but can be switched with each other.
- + 用  将改进设计的刀具装在匹配的刀柄上,使用优化的冷却液通道,可以获得最佳的切削性能。
- + The  sign indicates that the cutting inserts was designed and optimized for an improved through coolant supply. Please choose a matching toolholder using the given Connectcode for best performance.
- + 小于2mm的传统刀具用  来标示。我们建议应该改用新的改进过的刀具  且最佳的冷却液通道。
- + The classic cutting inserts for bore diameters below 2,0 mm are marked with a  sign. Our recommendation for these tools is, to rather use the new, optimized cutting inserts  for best through coolant supply.
- + 直径超过2mm的传统刀具标有  记号时,表示这些刀具已经拥有充分的冷却液供应。
- + The classic cutting inserts for bore diameters above 2,0 mm are marked with a  sign. These cutting inserts already provide a sufficient through coolant supply.





simturnDX

在  $\varnothing 7.0$  mm 的  
孔中表现出色。  
Great Performance  
in bores as of  $\varnothing 7,0$  mm.



硬质合金刀头可用螺钉固定在刀杆前端，它有15种不同的尺寸，可加工孔径范围从Ø7.0mm到Ø22mm。

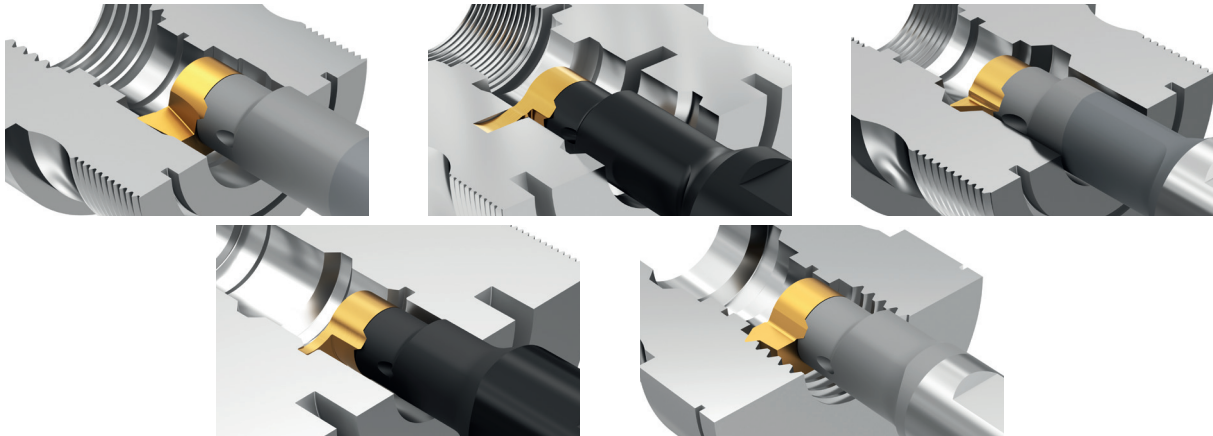
抗震硬质合金和钢刀杆可应用于不同的场景。

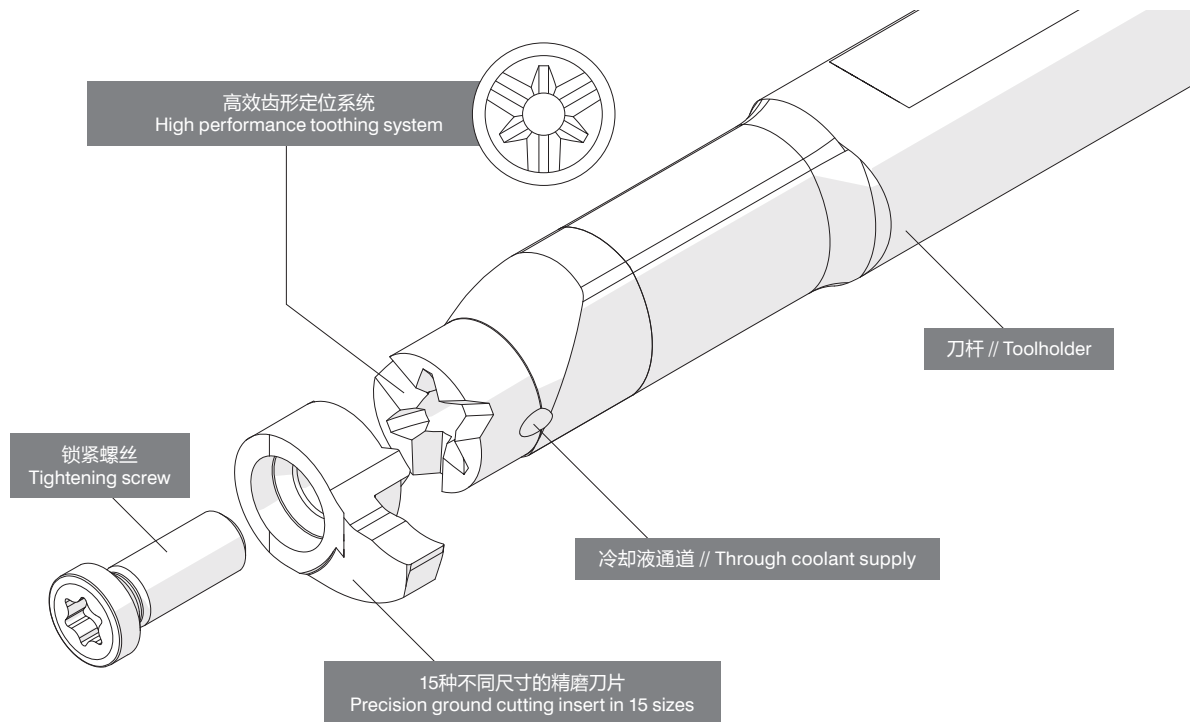
有超过2,000种标准产品，可为几乎所有的内孔加工提供正确的方案。

Wide range of carbide cutting inserts, fixed with a screw on the toolholder front side. Available in 15 different sizes, for best results in bores with minimum bore diameter 7,0 mm up to minimum bore diameter 22,0 mm.


Anti-vibration carbide and steel toolholders are available for a variety of applications.

More than 2.000 standard items provide the right answer for almost every internal turning application.






**D07...07**




Ø Dmin mm	tmax mm
7,0	1,0

**D07...08**




Ø Dmin mm	tmax mm
7,8	2,0

**D08**




Ø Dmin mm	tmax mm
7,8	1,0

**D09...09**




Ø Dmin mm	tmax mm
9,0	1,8

**D09...10**




Ø Dmin mm	tmax mm
10,0	2,8

**D10...10**




Ø Dmin mm	tmax mm
10,0	1,8

**D10...11**



Ø Dmin mm	tmax mm
11,0	2,8


**D11**



Ø Dmin mm	tmax mm
11,0	2,3

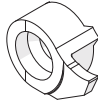


**D10...12**



Ø Dmin mm	tmax mm
12,0	3,4

**D14**



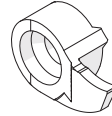
Ø Dmin mm	tmax mm
14,0	4,0

**D16**




Ø Dmin mm	tmax mm
16,0	4,3

**D14...16**



Ø Dmin mm	tmax mm
16,0	5,5

**D14...17**



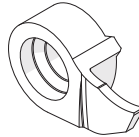
Ø Dmin mm	tmax mm
17,0	6,5

**D18...18**



Ø Dmin mm	tmax mm
18,0	6,0

**D18...20**

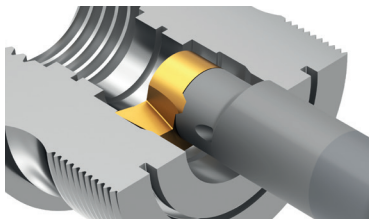


Ø Dmin mm	tmax mm
20,0	8,0

**ØDmin**  
适合加工孔径  
Suitable as of bore diameter

**tmax**  
合理的切削深度  
Possible cutting depths

## 镗孔 Boring



镗孔可以从 $\varnothing 7.0\text{mm}$ 开始,也可产生特殊切屑形态的材料加工,可用CBN刀片切削硬材料。

Boring applications as of bore diameter  $\varnothing 7,0$  mm. Available with special chip former as well as with CBN-grades for hard part turning.

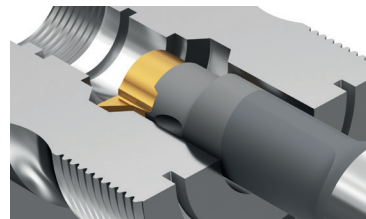
## 切槽 Grooving



可切一般槽和卡簧槽,种类多,具有多种尺寸和宽度。

Wide range of tools for general grooving as well as for circlip ring grooving. Great variety in different tools sizes and cutting edge widths.

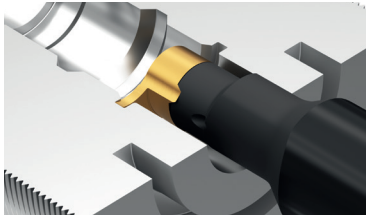
## 仿形加工 Copying



在 simturn DX 系列中,优化设计后的刀具可在 $\varnothing 7.0\text{mm}$ 到 $\varnothing 22\text{mm}$ 的孔内仿形加工。

Optimally designed tools for copying and profiling in bores between  $\varnothing 7,0$  mm and  $\varnothing 20,0$  mm. Available in all sizes of the system simturn DX.

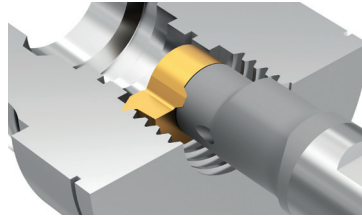
## 切槽和仿形加工 Grooving and Profiling



切槽和仿形加工刀具。除了能加工复杂的凹槽外，还可用相同刀具对凹槽侧面进行成型加工。

Tools for grooving and profiling. Besides the machining of a complex groove, the groove flanks can be profiled with the same tool.

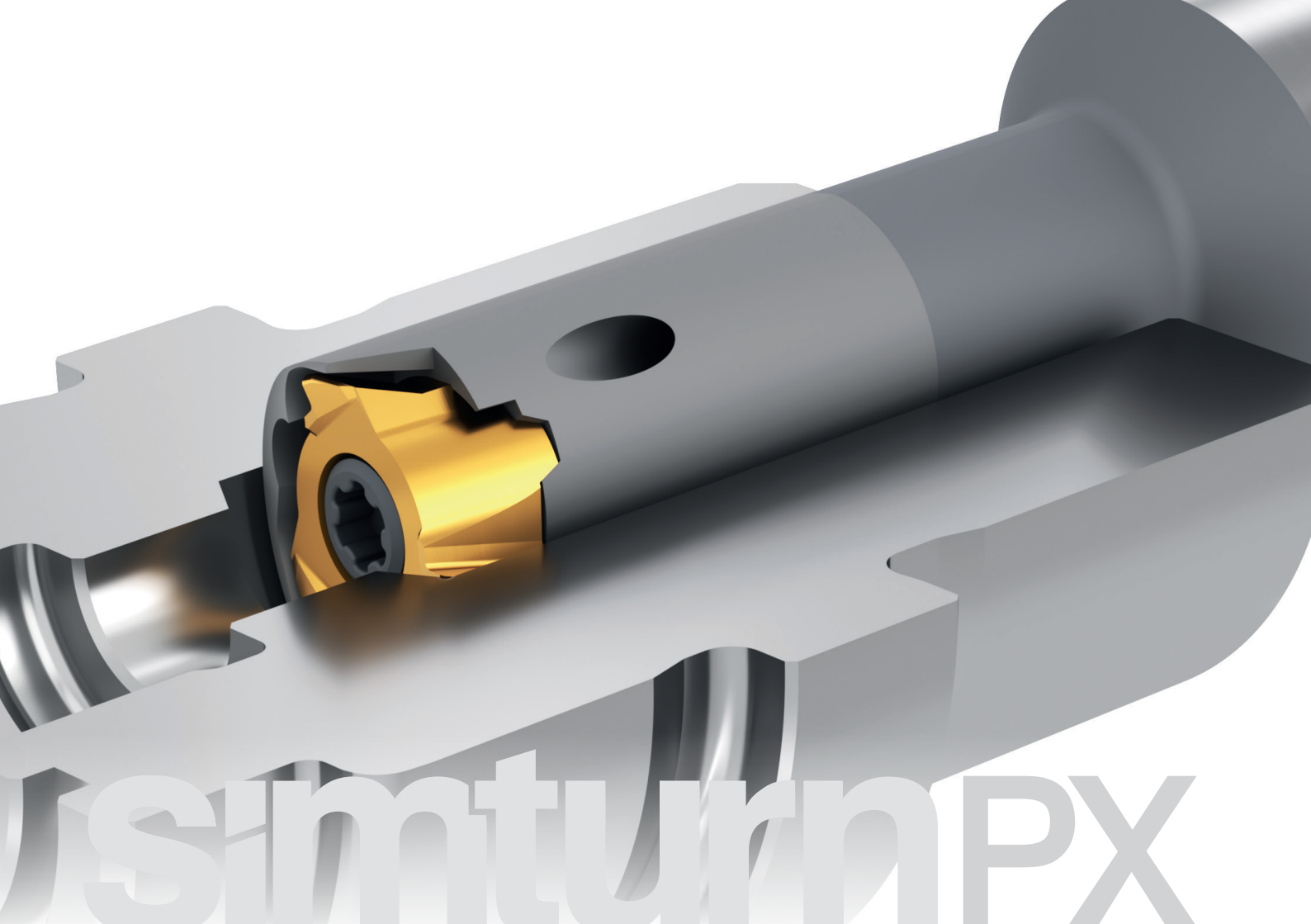
## 车螺纹 Threading



simturn DX 的车内螺纹刀片,可加工公制/英制的不同螺距和尺寸的螺纹。

simturn DX inserts for the machining of all major internal thread types. Different pitches, threads/inch and sizes available.





Simturn PX

# 创新的镗削! Boring reinvented!



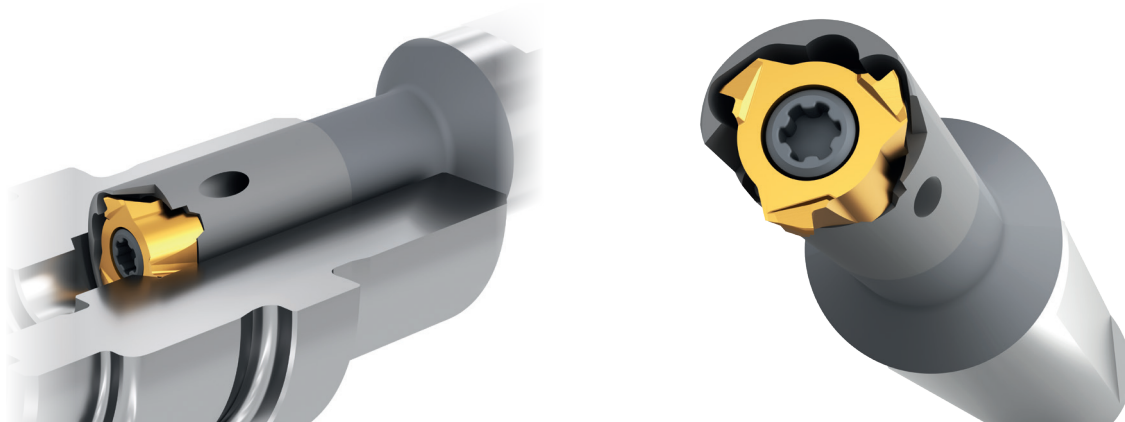
创新的镗削刀具系统，适用于 $\varnothing 7.8\text{mm}$ 的镗削，它含有多种不同切削刃形状的三刃可转位刀片，带有内冷的抗振硬质合金刀柄和钢刀柄。

simturn PX 具有三个精磨过的切削刃刀片，可正面安装在能自定心的刀座上，切削刃可得到特殊保护，操作方便，性价比能达到最高。

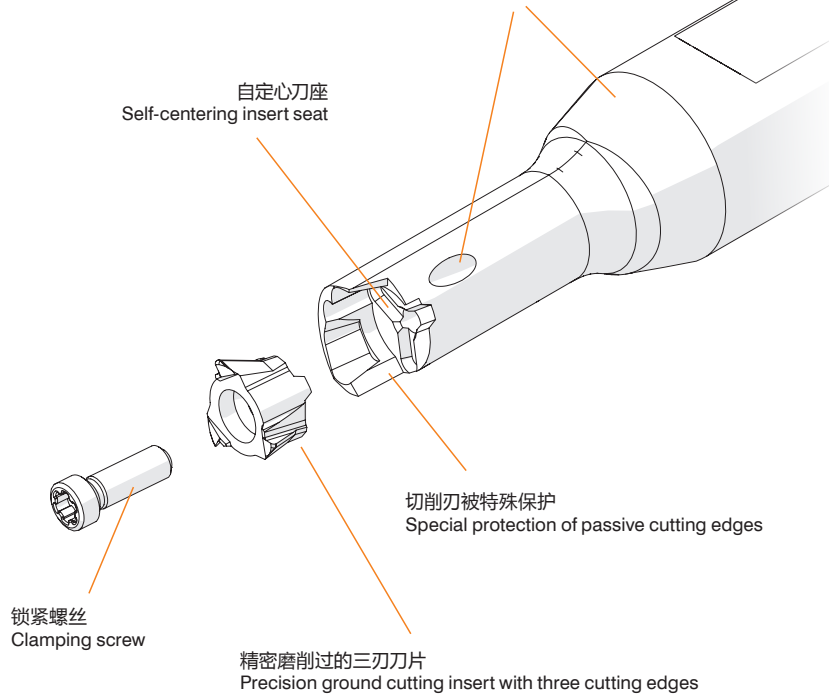
小零件加工 // Small part machining  
simturn PX > 总体介绍 // General information

Innovative tool system for boring applications in bores from  $\varnothing 7.8 \text{ mm}$  on, consisting of triple-edged indexable inserts with different cutting edge geometries as well as anti-vibration solid carbide shanks or steel shanks with internal coolant supply.

With three precision-ground cutting edges, easy handling thanks to a frontal insert mounting and self-centering insert seat as well as a special protection of the passive cutting edges, simturn PX offers a maximum price/performance ratio.



抗振的硬质合金刀柄和带冷却液通道的钢刀柄  
Anti-vibration solid carbide shank or steel shank with through coolant supply



## SIMTEK -长度可调节的刀具解决方案! Length-variable tooling solutions by SIMTEK!

可调节性是所有生产中成功的重要因素。刀具面对新的加工需求时，能以高效益的成本做出快速反应调整的能力，已经在加工中扮演着日益重要的角色。

通过这些可调节使用长度的刀具，SIMTEK可以为您提供满足您需求的理想解决方案。得益于ME-夹持系统专利，在保证最大稳定性的同时，您还可以在刀具的可使用长度范围内按需求精确、简易的进行调节，因此，这些刀具解决方案能减少您在加工新零件时的采购新刀具的需要。

Variability is one of the main success factors of any production. The ability to react quickly and at the same time cost-effectively to new requirements is therefore taking on an increasingly important role.

With tools that can be used in variable lengths, SIMTEK offers you ideal solutions to meet these requirements. Thanks to the patented ME-clamping system\*, you can adjust these tools precisely and steplessly in their usable length as required while providing maximum stability. As a result, these tooling solutions enable you to reduce the need for a new purchase at the start of a new component series.

\*欧洲专利号 No. 2 992 988 / \*European Patent No. 2 992 988



## 小零件加工 // Small part machining

长度可调节刀具的解决方案 // Length adjustable tooling solutions > 总体介绍 // General information

### simturnAX SIMTEK small part machining type AX

- 镗孔加工直径  $\varnothing$  4,7 mm起
- 可使用长度: 13,0 mm - 48 mm

- Boring applications in bores starting at  $\varnothing$  4,7 mm
- Usable lengths: 13,0 mm - 48 mm

### simturnDX SIMTEK small part machining type DX

- 可应用于镗孔加工、槽加工、型面加工、车螺纹和其他加工场景
- **内孔应用:**  $\varnothing$  7,0 mm,  $\varnothing$  10,0 mm,  $\varnothing$  13,7 mm
- 可使用长度:
- simturn D07:** 20,0 mm - 55,0 mm
- simturn D10:** 31,0 mm - 87,5 mm
- simturn D14:** 42,0 mm - 124,0 mm

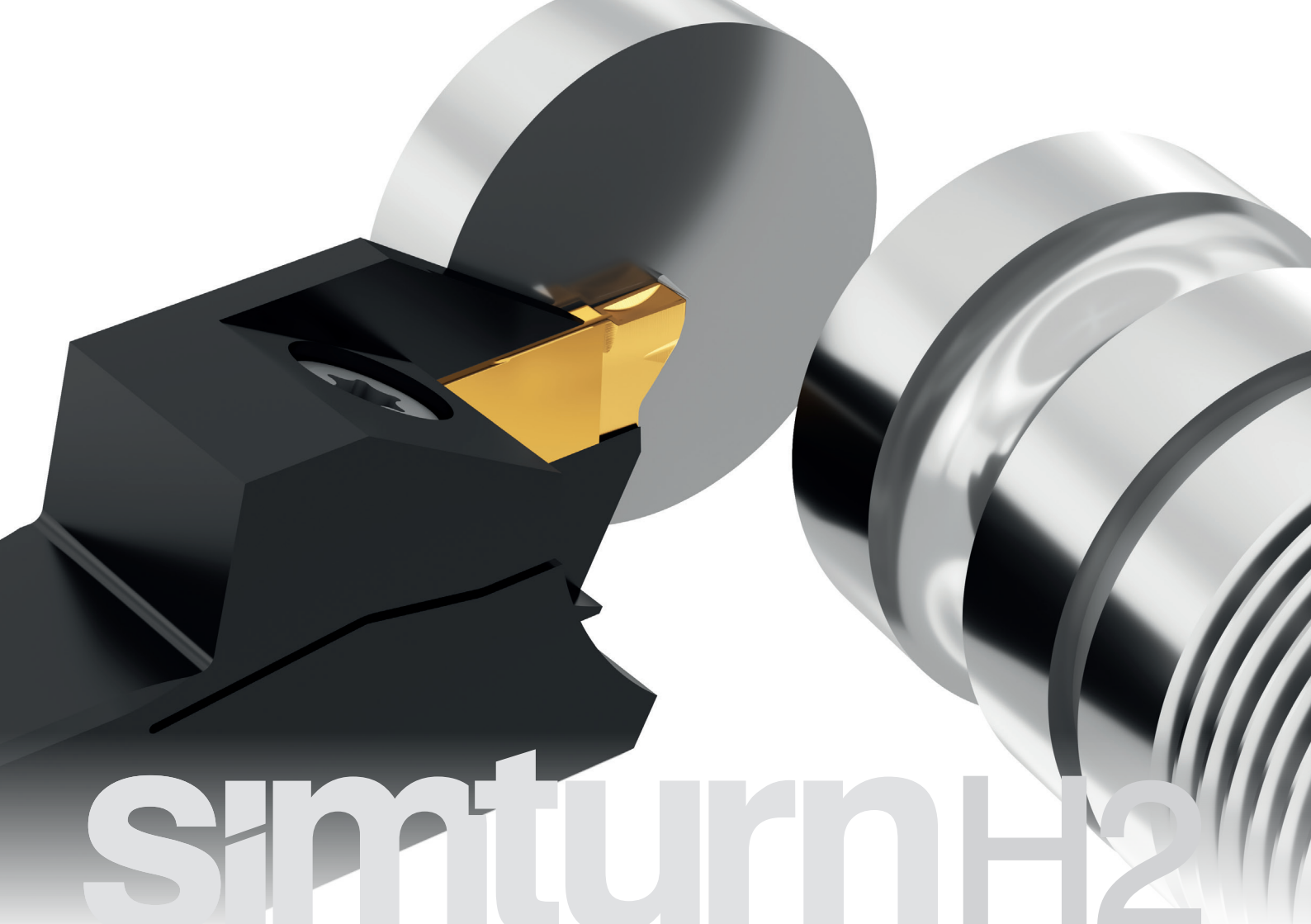
- Boring of bores, grooving, profiling, threading and many other applications
- **Internal applications:**  $\varnothing$  7,0 mm,  $\varnothing$  10,0 mm,  $\varnothing$  13,7 mm
- Usable lengths:
- simturn D07:** 20,0 mm - 55,0 mm
- simturn D10:** 31,0 mm - 87,5 mm
- simturn D14:** 42,0 mm - 124,0 mm

### simturnPX SIMTEK small part machining type PX

- 镗孔加工孔径  $\varnothing$  10,5 mm起
- 可使用长度: 31,0 mm - 87,5 mm
- 精磨过的三刃刀片

- Boring applications in bores starting at  $\varnothing$  10,5 mm
- Usable lengths: 31,0 mm - 87,5 mm
- Three precision ground cutting edges





simturn H2

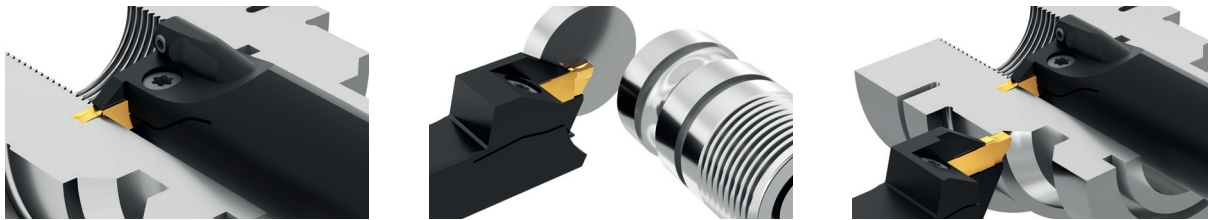
具有两个切削刃、可进行  
外形面加工和小孔内加工。  
Two cutting edges **external**  
and in **small bores**.

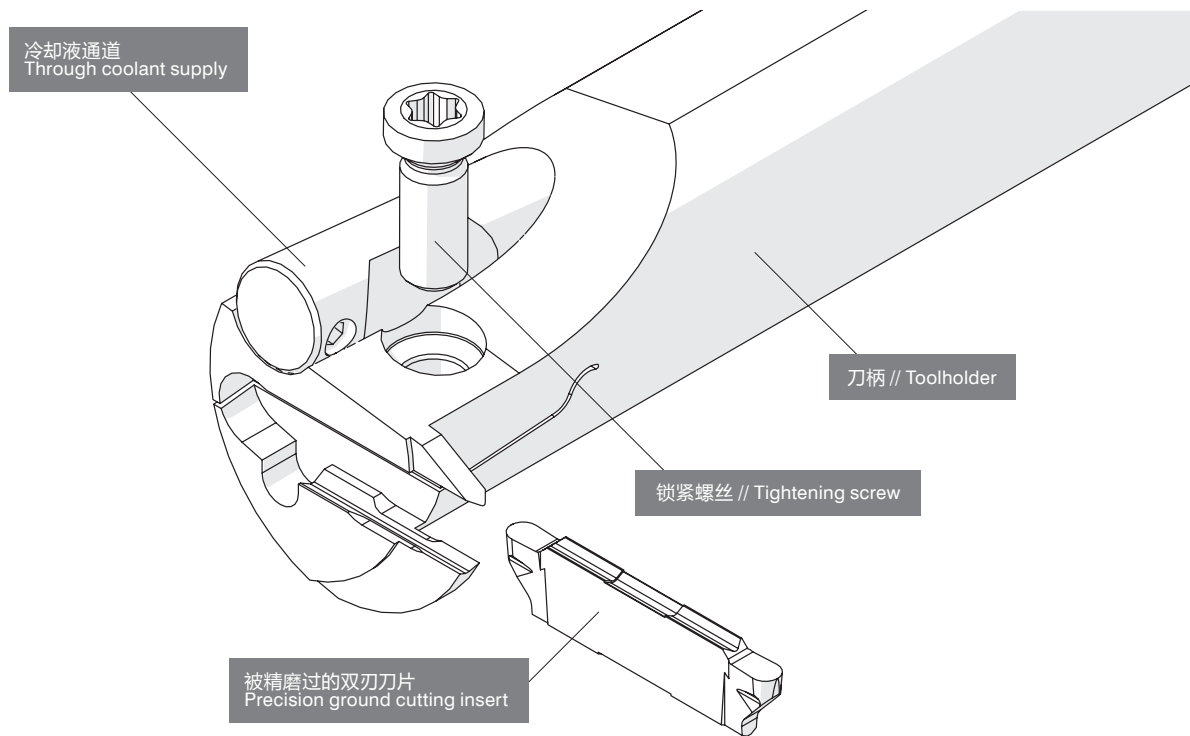
刀具系统由双刃刀片和钢制刀柄构成。为达到最佳切屑控制和改善孔内性能，改善了刀片刃口的设计，特别改进了刀柄上刀片的安装面，使得稳定性能提高，切削力得到吸收，从而改善了加工效果。

用于外形加工的刀柄尺寸是10x10mm,最大切削深度是18.0mm，内孔加工直径从Ø24.5mm起。

Tool system of carbide insert with two cutting edges and steel toolholder. The cutting insert, and especially the cutting edge, was designed to offer best chip control and improved performance in bores. The special insert seat design enhances the overall stability and cutting force absorption and leads to improved results.

External applications with shank sizes from 10,0 x 10,0 mm and with max. cutting depths of 18,0 mm. Internal applications in bores as of Ø 24,5 mm.

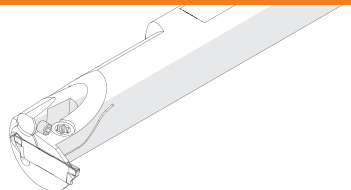




**simturn H2**  
SIMTEK small part machining type H2

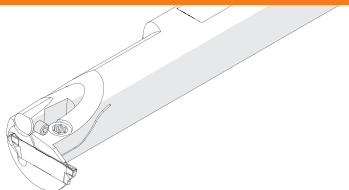
小零件加工 // Small part machining  
simturn H2 > 总体介绍 // General information

**TH2...A25...**



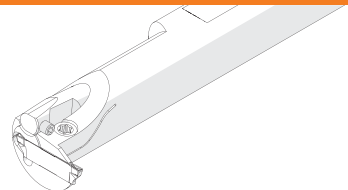
ØD mm	L2 mm	t1max mm
20,0 - 25,0	48,0	7,0

**TH2...A31...**



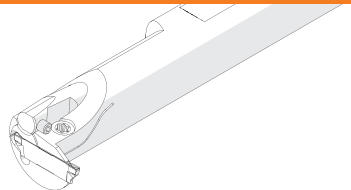
ØD mm	L2 mm	t1max mm
25,0 - 32,0	61,0	10,0

**TH2...B25...**

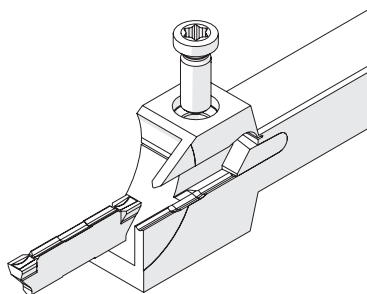


ØD mm	L2 mm	t1max mm
20,0 - 25,0	48,0	7,0

**TH2...B31...**



ØD mm	L2 mm	t1max mm
25,0 - 32,0	61,0	10,0

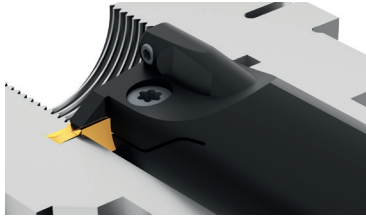


**适用于外形和内孔加工 // Available for  
internal and external applications**

**内孔 // Internal**  
加工孔径24.5mm起  
As of bore diameter 24,5 mm

**外径 // External**  
最大切深18mm  
Maximum cutting depth 18,0 mm

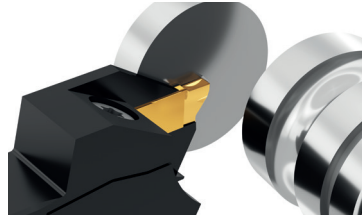
## 切槽 Grooving



切卡簧槽按DIN471/472和DIN983/984，标准宽度1.1mm到4.15mm。

Groove turning of circlip ring grooves according to DIN 471/472 and DIN 983/984. 1.1 mm to 4.15 mm nominal groove widths as standard.

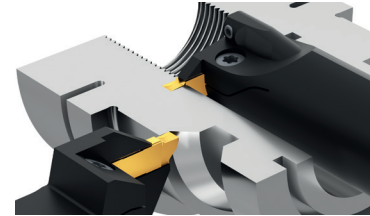
## 切断 Part-Off



切断刀具有不同的角度和切削宽度。

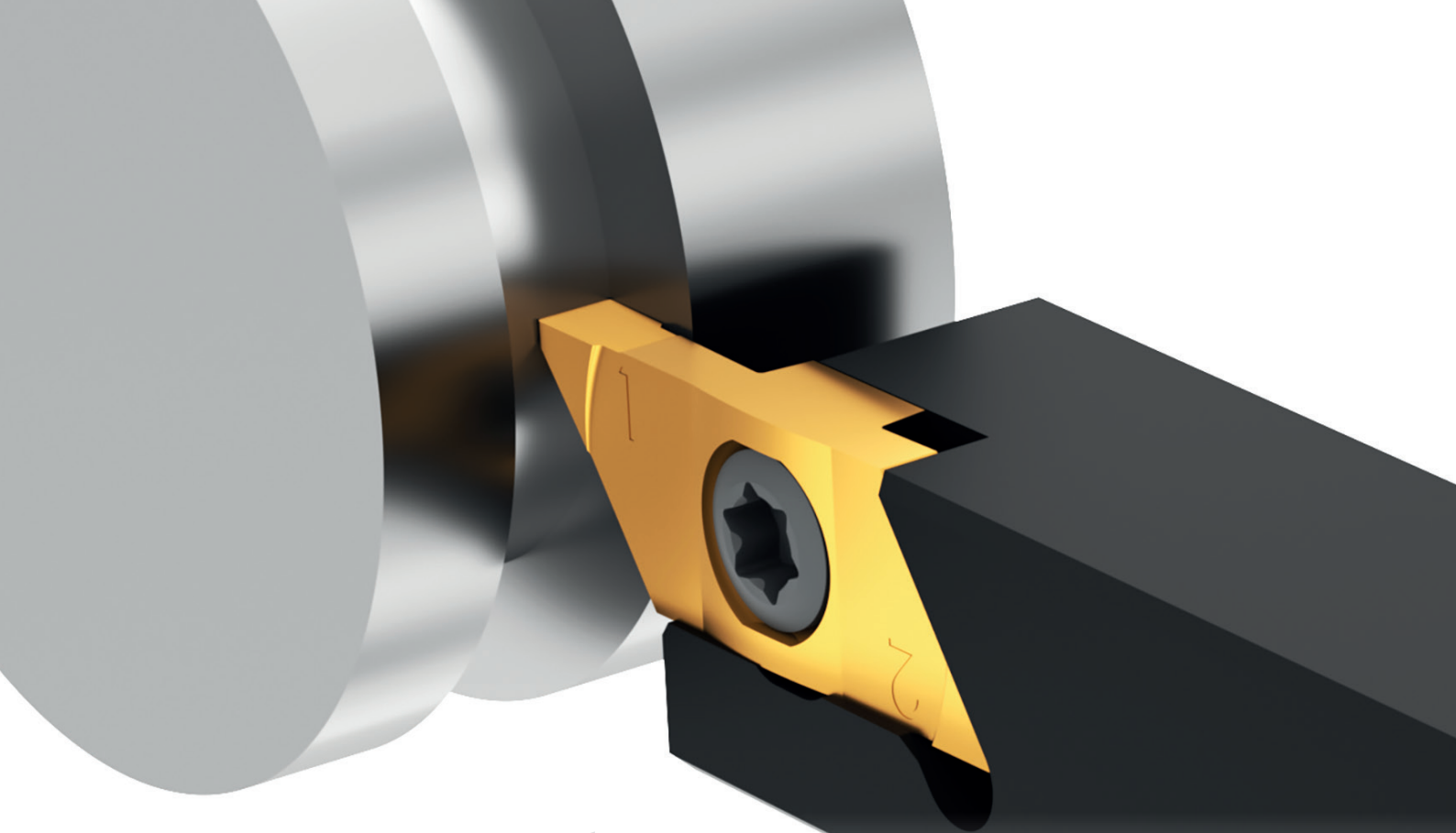
Parting off tools with different angles and cutting widths.

## 切槽和仿形加工 Grooving and Profiling



由CNC控制车削，也有特殊形状的刀刃用以加工轻质金属和全圆弧型。

CNC contour turning. Also available with special geometry for machining light metals and as full radius version.



simturnK2



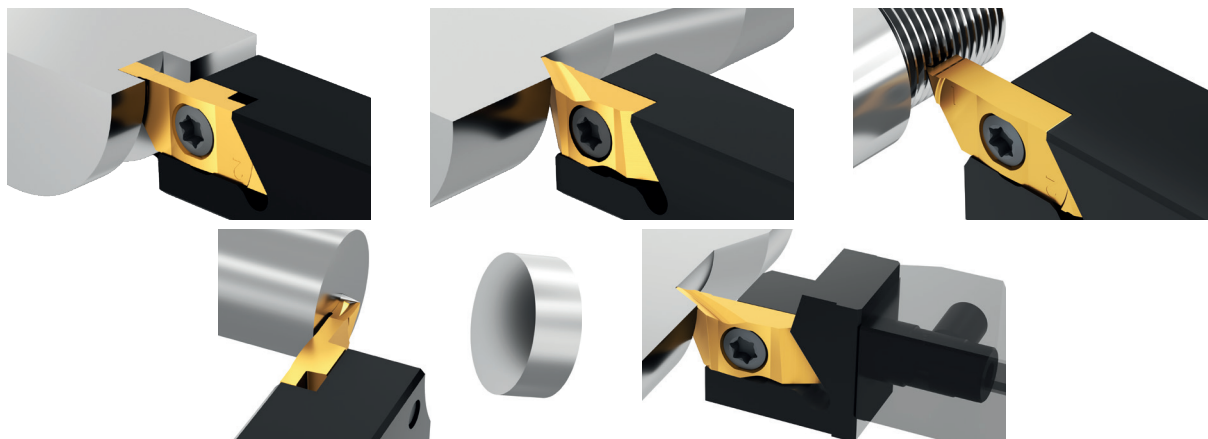
# 适用于小零件外形加工的双 切削刃刀片车刀系统。 Small part machining external, with **two-edged inserts.**

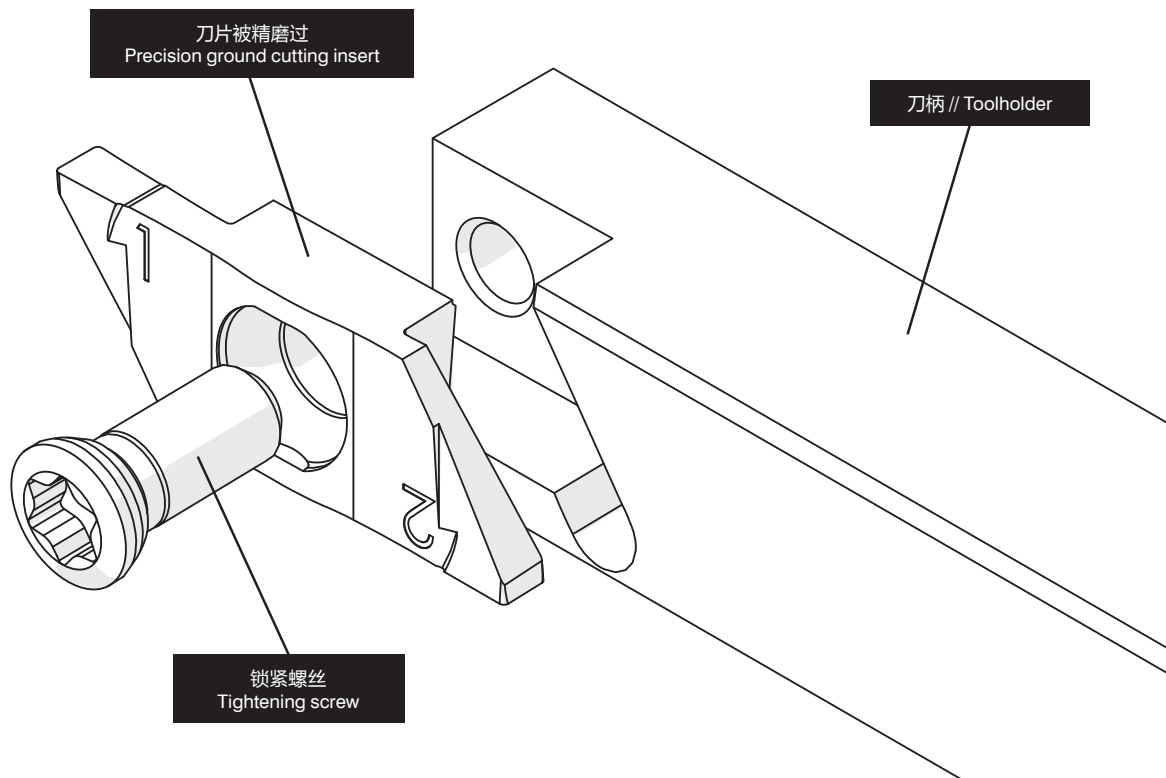
simturn KX 系统是用于满足小零件加工的最高要求而设计的,且带有双刃可转位刀片和尺寸为10x10mm以上的刀杆。

主要应用场合都可以作为标准品提供,切深最大为7mm。

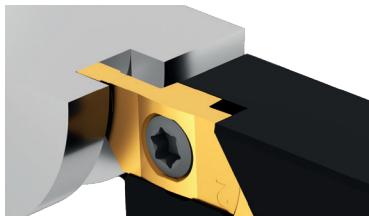
The tool system simturn KX was designed to meet highest expectations in small part machining. The system provides two-edged indexable cutting inserts and square shank sizes from 10x10 mm on.

All the major applications are available as standard items providing cutting depths up to 7,0 mm.





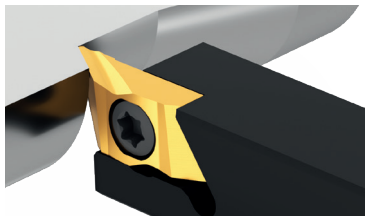
## 切槽和仿形加工 Grooving and Profiling



切外槽和仿形加工用可转位刀片,宽度由0.5mm到3mm,带有不同大小的R角和刃型,也有圆弧型。

Indexable inserts for external grooving and profiling applications with cutting edge widths between 0.5 mm and 3.0 mm, different corner radii and cutting edge geometries. Also available as full radius tools.

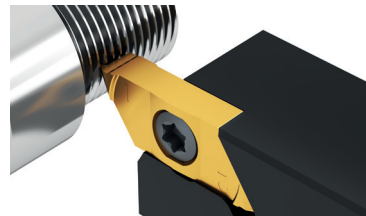
## 车削 Turning



刀具具有不同R角的刃口设计,用于纵车削、反向车削、后扫,或处在同一回转中心上用两个切削刃,用一把刀车削和开槽。

Cutting tools with different corner radii for longitudinal turning or back turning „behind shoulder“ or with two cutting edges located directly on the rotation center for turning and grooving with one tool.

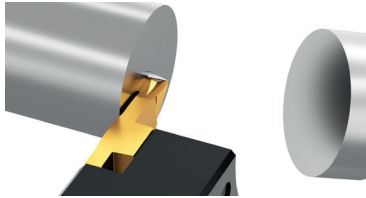
## 车螺纹 Threading



用于加工ISO公制的部分螺纹和全牙螺纹的各种刀片。还有专为加工黄铜、铜合金及其它形成短切屑的材料的设计的。

Wide range of inserts for the machining of metric ISO partial and full profile threads. Specially designed for the machining of brass, copper alloys and other short-chipping workpiece materials.

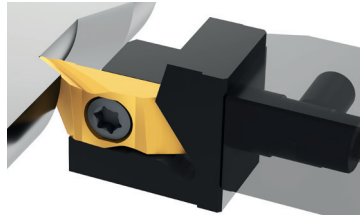
## 切断 Parting-Off



切断刀片宽度在1.0mm到2.0mm之间,具有不同的前角,刀片上有带或不带磨削出的断屑槽。

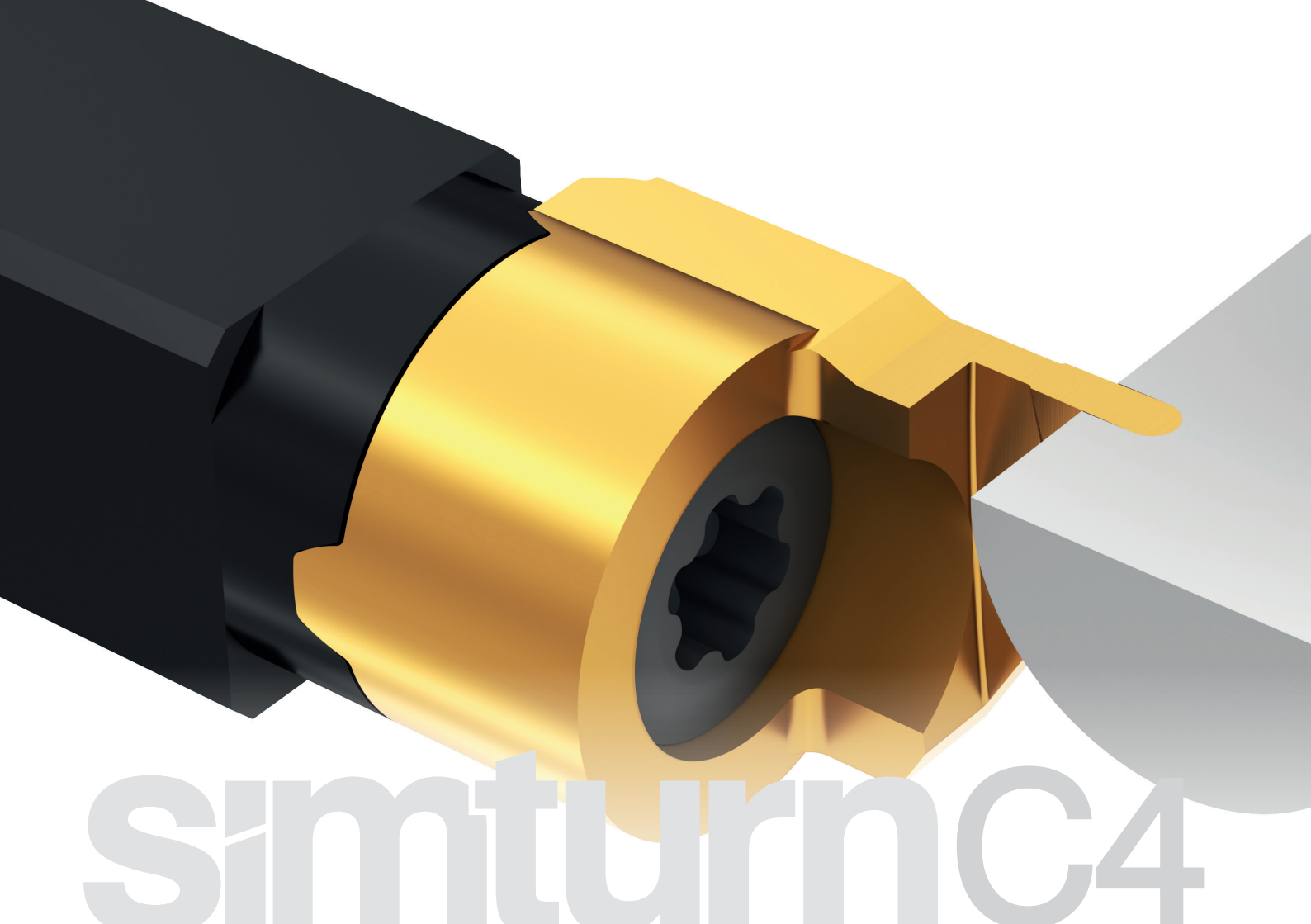
Tools for parting-off with cutting edge widths between 1.0 mm and 2.0 mm, different front-angles and with or without ground chip form channel.

## 快换系统 Quick change systems



对于 Swisstools 的 „Swiss Micro“ 和 MAS公司的 „PZturn“ 快速更换系统, simturn KX 提供刀架,可在走心机和多轴车床上快速轻松地更换刀具。

For the quick-change systems „Swiss Micro“ from Swisstools and „PZturn“ by the company MAS, simturn KX offers toolholders for a quick and easy tool change on sliding head machined and multi-spindle lathes.



simturn C4

# 刀片可装在刀杆前端 加工小型零件外形。 Small part machining **external,** **front-side mountable.**

**simturn C4**  
SIMTEK small part machining type C4

小零件加工 // Small part machining  
simturn C4 > 总体介绍 // General information

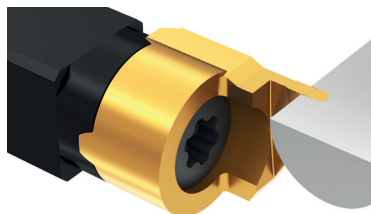
simturn C4 刀具系统是为满足小型零件加工的特殊要求而设计的，它提供了一个易于加工的方案，将刀片安装在刀杆前端，刀杆尺寸从7.0x7.0mm开始。

主要应用场合都可以作为标准品提供，切深可达5.5mm。

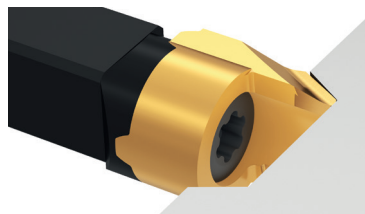
The tool system simturn C4 was designed to meet special requirements in small part machining: It provides an easy-to-use solution by mounting inserts from the front-side, along with shank sizes starting from 7,0 x 7,0 mm on.

All the major applications are available as standard items providing cutting depths up to 5,5 mm.

**切槽  
Grooving**



**车削  
Turning**





## SIMTEK集团的高效加工, 解决方案。

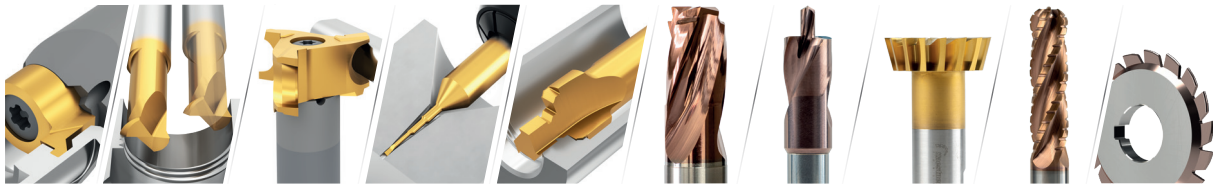
为能给客户提供各种应用提供最佳解决方案, SIMTEK突破各种标准的限制, 为客户提供最大附加价值, 增加工艺可靠性, 优化切削参数, 延长刀具寿命, 缩短加工周期, 目前已经有数以千计的客户定制刀具正在使用和认可, 这也是我们一直的追求和目标。

我们使您相信这无限的可能性和优势!

## Highly efficient machining solutions with individual tools of the SIMTEK Group.

In order to be able to offer customers the best possible solution for every application, the SIMTEK Group also thinks far beyond the limits of the comprehensive standard range. The main focus is always on the best possible added value for the customer, for example in forms of process reliability, improved cutting parameters, increased tool life or reduced cycle times. Thousands of successful and custom-made individual tools are currently in use and confirm our ambition.

Let us convince you of the almost innumerable possibilities and their advantages!



## Made by SIMTEK. **Made for you.**

SIMTEK集团新一代的高性能精密刀具：专为满足客户的高要求而设计、制造。

GRADIUM切削材质是硬质合金基体、切削刃表面处理和高性能涂层的理想组合。它们还代表着工艺可靠性和高质量、这也是将涂层生产添加到我们已有的其他生产工艺中的结果，这种生产工艺链还具有生产时间更短和物流更便捷等优势。

GRADIUM高性能材质：  
**为您的成功而生。**

更多信息 // Further information on  
**[www.simtek.com/gradium](http://www.simtek.com/gradium)**

A new generation of high performance grades for SIMTEK Group precision tools: Designed and made by SIMTEK in order to meet highest expectations.

GRADIUM cutting grades stand for an ideal combination of carbide substrate, cutting edge finish and high performance coatings. They also stand for process reliability and high quality, which is one of the results of adding the coating production to the rest of the manufacturing processes we already do inhouse. This chain of manufacturing processes also provides even shorter production times and logistical advantages.

GRADIUM high performance grades:  
**Made for your success.**

## GRADIUM高性能切削材质 GRADIUM high-performance cutting grades

凭借其广泛的高性能切削材质，SIMTEK集团可为每种刀具和应用组合提供合适的切削材质。

例如，**GRADIUM X8** 是一种金色的综合性高性能切削刀具，是成功使用SIMTEK工具进行高性能加工的理想选择。**GRADIUM X8** 适用于大多数材料的首选。此外，这种切削材料还以佳性价比、短交货期而闻名。

我们的内部设计与制造的切削材质将为您的加工带来优势，点击[此处](http://www.simtek.com/gradium)查看完整的切削材质系列：[www.simtek.com/gradium](http://www.simtek.com/gradium)。

With its extensive range of high-performance cutting grades, SIMTEK Group offers the right cutting grade for each combination of tool and application.

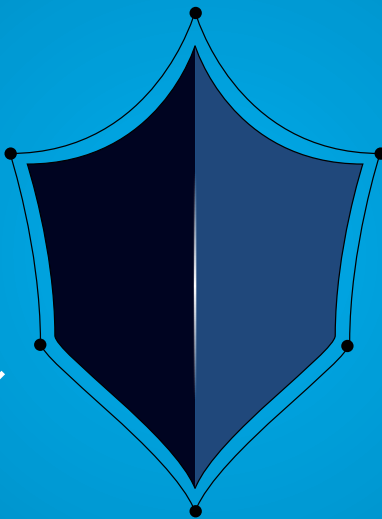
For example, **GRADIUM X8**, the gold-colored allround high-performance cutting grade, is ideally designed for the successful and high-performance use of SIMTEK tools. **GRADIUM X8** is our first choice and suitable for use in most materials. In addition, the cutting material is characterized by the best price-performance ratio and short delivery times.

Benefit from the advantages of the inhouse designed and manufactured cutting grades for your component machining. The complete range of cutting grades can be found here: [www.simtek.com/gradium](http://www.simtek.com/gradium).

交期短、设计迅速。  
Short delivery time and rapid prototyping.

# GRADIUM

高质量、工艺可靠性高。  
High quality and process reliability.



---

采用最先进的高精度磨床和测量机生产。

Produced with state-of-the-art high precision grinding and measuring machines.

---

来自我们最新的内部涂层中心的高性能涂层。

High performance coatings from our latest in-house coating centers.

**众多优势的总和: GRADIUM.**

**The sum of many advantages: GRADIUM.**



---

针对每种组合与应用场景都有特定的切削刃。

Specific cutting edge finish for each combination of tool and application.

---

各种硬度等级和耐磨硬质合金基体。

Wear-resistant carbide substrates in a variety of hardness scales.

## 利用三维激光断屑槽成型以降低成本。 Reduce your costs with 3D-lasered chip forming geometries.

减少无生产力时间, 避免 100% 控制: 需要在批量生产中确保最佳切屑控制的原因有很多。SIMTEK 提供高精度的三维激光断屑槽成形, 特别适合您的加工应用。它可以根据要求, 切屑成形、转向、分割、断裂或通过这此控制机制的组合, 将切屑从加工区域移除。

在整个加工过程中, 我们最关注两件事情:  
**降低成本和提高生产率!**

Reducing non-productive time, avoiding 100% controls: there are many reasons to ensure optimum chip control in series production. SIMTEK offers highly precise, 3D-lasered chip forming geometries, which are specifically adapted to your machining application. According to the requirements, the chips are shaped, steered, segmented, broken or, by combinations of these control mechanisms, removed from the machining area.

During the whole process, we focus on two things above all:  
**Reducing your costs and increasing your productivity!**



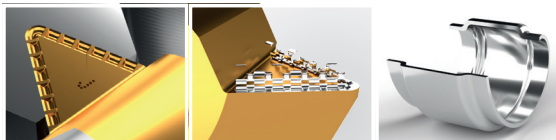
## 应用范例 // Exemplary applications

### 通过 13 个激光断屑槽，实现断屑的分割、成型和断裂。

这种定制的螺纹切削刀具为减少非生产时间而生。造成非生产时间较长的原因是难以控制的切屑，而传统的切屑控制方法无法解决这一问题。

#### Segmenting, forming and breaking of the chip thanks to 13 lasered chip forming pockets.

The conversion of this customized threading application was carried out with the goal to reduce non-productive times. The reason for the previously high non-productive times was a chip forming that was difficult-to-control and could not be solved with conventional methods for chip control.

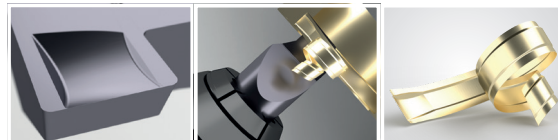


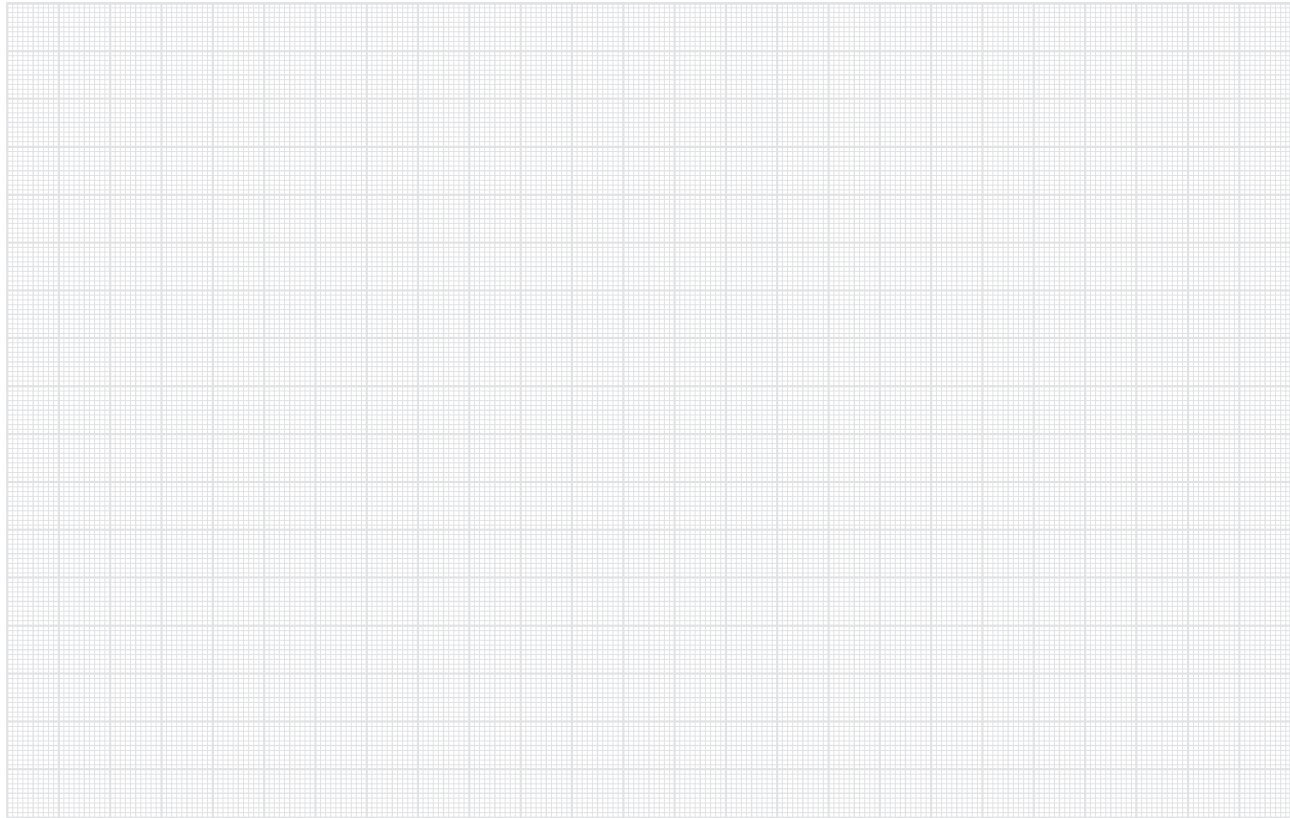
由于采用了三维轮廓的激光切屑槽成型，长切屑材料的排屑可控。

加工长切削和难以控制的材料时，例如无铅铜和黄铜，三维的激光切屑成型槽特别适用，尤其是在小直径镗孔的内形面加工时，断屑能以安全可控的方式从工件去除。因此，机床停机时间可以大大减少，甚至完全避免停机。

#### Controlled steering of long-chipping materials thanks to 3D-contoured, lasered chip forming pocket.

For long-chipping and difficult-to-control materials, such as lead-free copper and brass, 3D-contoured, lasered chip forming pockets are exceptionally suitable. Especially during internal machining applications with small bore diameters, chips can be steered out of the component in a safe and controlled manner this way. Machine downtimes can be significantly reduced or even avoided altogether as a result.







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