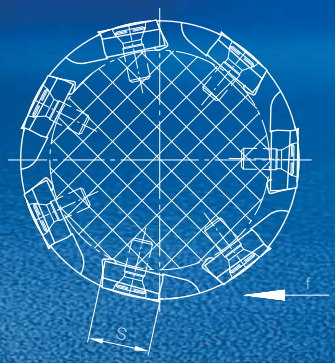
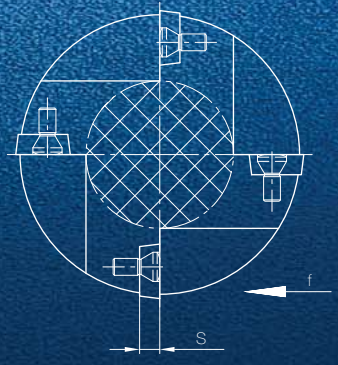
Tangential inserts

HOLLFELDER
GÜHRING
CUTTING TOOLS

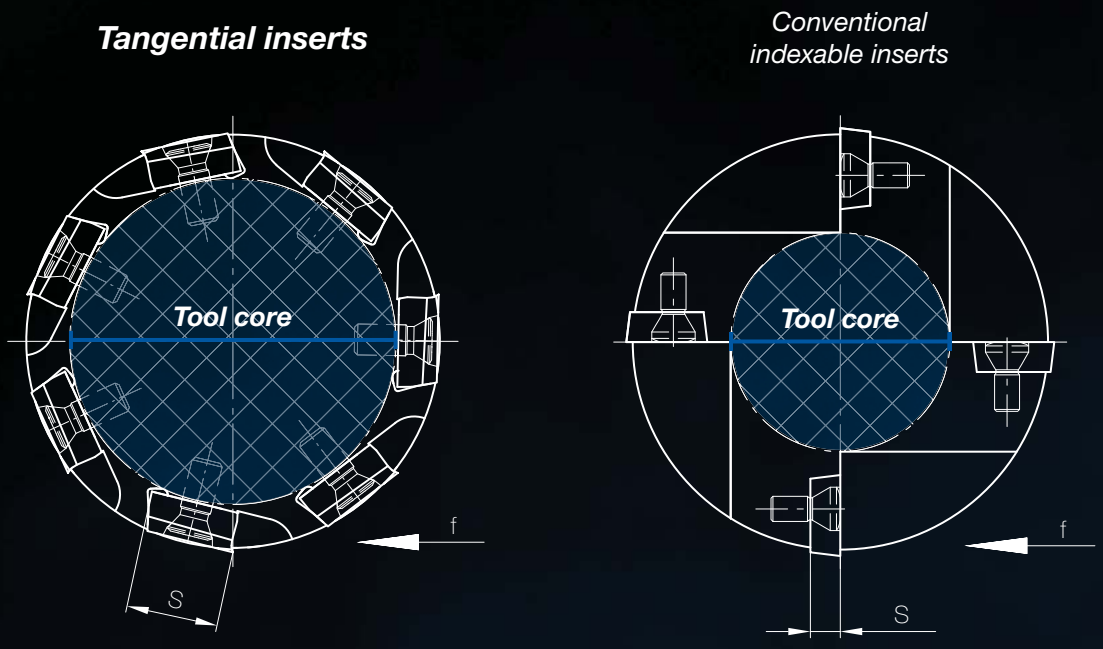
Tangential inserts



Conventional indexable inserts



Tools with tangentially mounted indexable inserts



maximum carbide cross-section enables high feed rates

Tangential inserts have a fundamentally different geometry to the cutting edges of conventional indexable inserts. The carbide cross-section in the cutting direction is considerably larger, protecting the insert seat in the event of wear or chunking.

larger core cross-section for high process reliability

Having the indexable inserts positioned tangentially on the outer edge of the base body enables the size and stability of the core to remain unchanged, which increases the stability and precision of the tool. This decreases vibrations, resulting in a high level of process reliability and precise work results.

more cutting edges and tighter spacing between them

The tangential positioning enables a higher number of cutting edges per tool, which increases the metal removal rate of each. Tighter cutting edge spacing allows the cutting forces to be distributed precisely across the various cutting edges and minimises wear.

large corner radii can be achieved

highly positive cutting geometries are possible

the tangential inserts are available in a variety of cutting materials and geometries

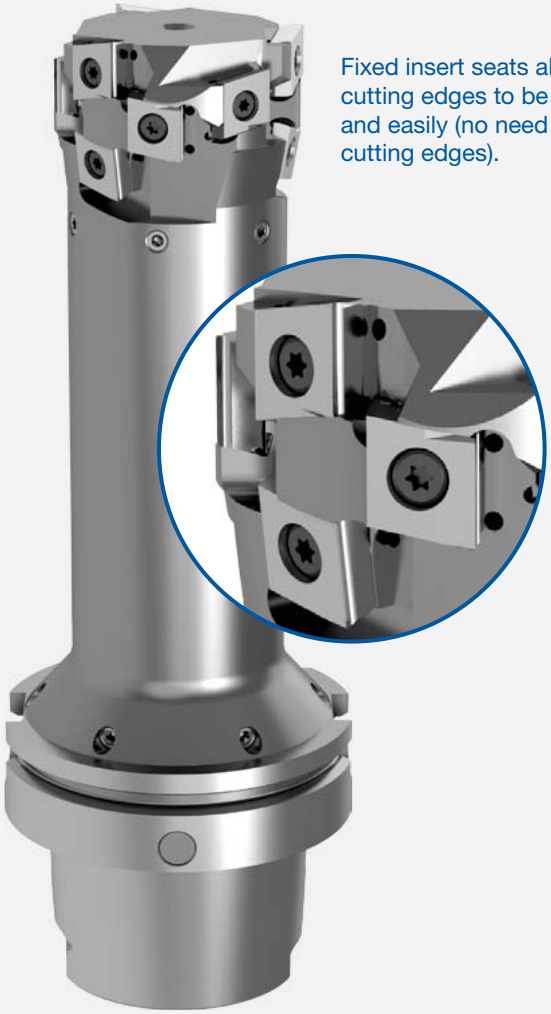
Motor block

Circular milling cutter

- *tight cutting edge spacing*
- *various cutting materials can be used*
- *with a stable core cross-section, this robust solution can achieve high feed rates*

Machining example

Circular milling a clearance cut for the honing tool into the cylinder bore
Material: AlSi9/GG25 (cast iron liner in aluminium component)
Cutting material: PCD/carbide with PROTON coating



Fixed insert seats allow individual cutting edges to be changed quickly and easily (no need to adjust the cutting edges).

Tangentially mounted indexable inserts with double positive cutting geometry.

Turbocharger housing

Axial grooving tool

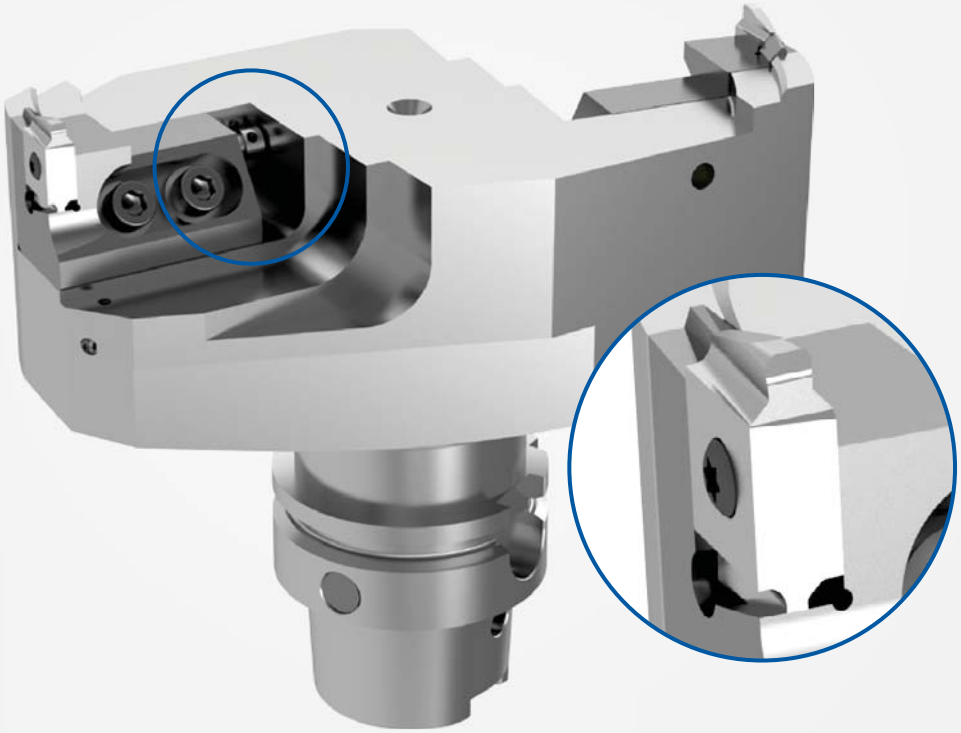
no damage to the cutter body if an insert breaks

maximum carbide cross-section enables high feed rates

Machining example

Producing an axial groove in the flange face
Material: 1.4848, GX40CrNiSi25-20 | Cutting material: carbide with SIGNUM coating

The machining diameter can be precisely adjusted via the short indexable insert holder.
If required, the large adjustment range enables a number of cutting passes.



Profile inserts with two usable cutting edges are mounted tangentially.

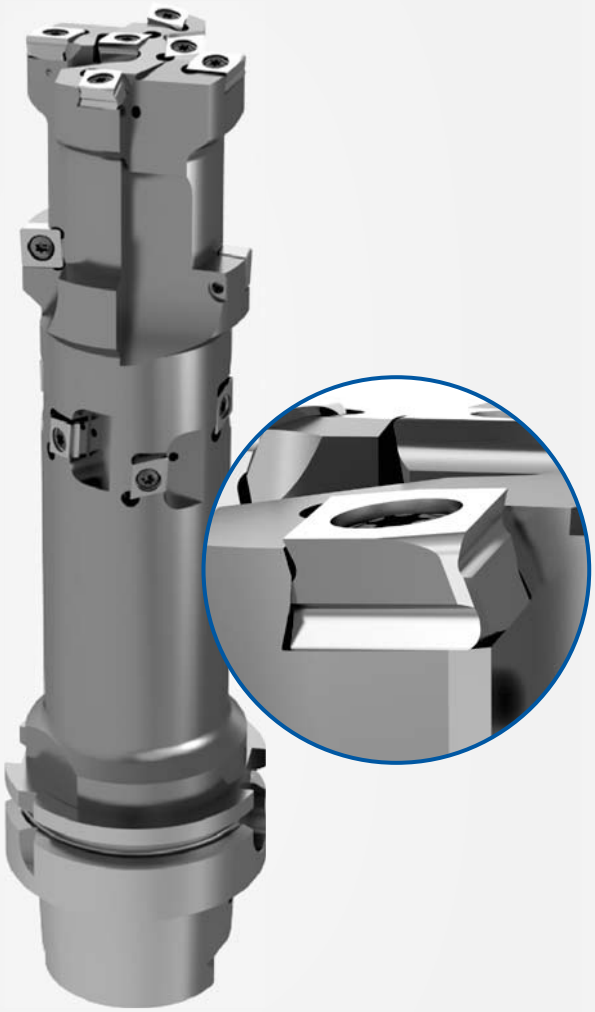
Brake calliper

Pre-machining tool

- *stable process*
- *stable core cross-section*
- *maximum carbide cross-section*

Machining example

Pre-machining the piston bore
Material: GG25 | Cutting material: carbide with PROTON coating



Tangential inserts with **four cutting edges** and double positive cutting geometry.

Shaft

OD turning tool

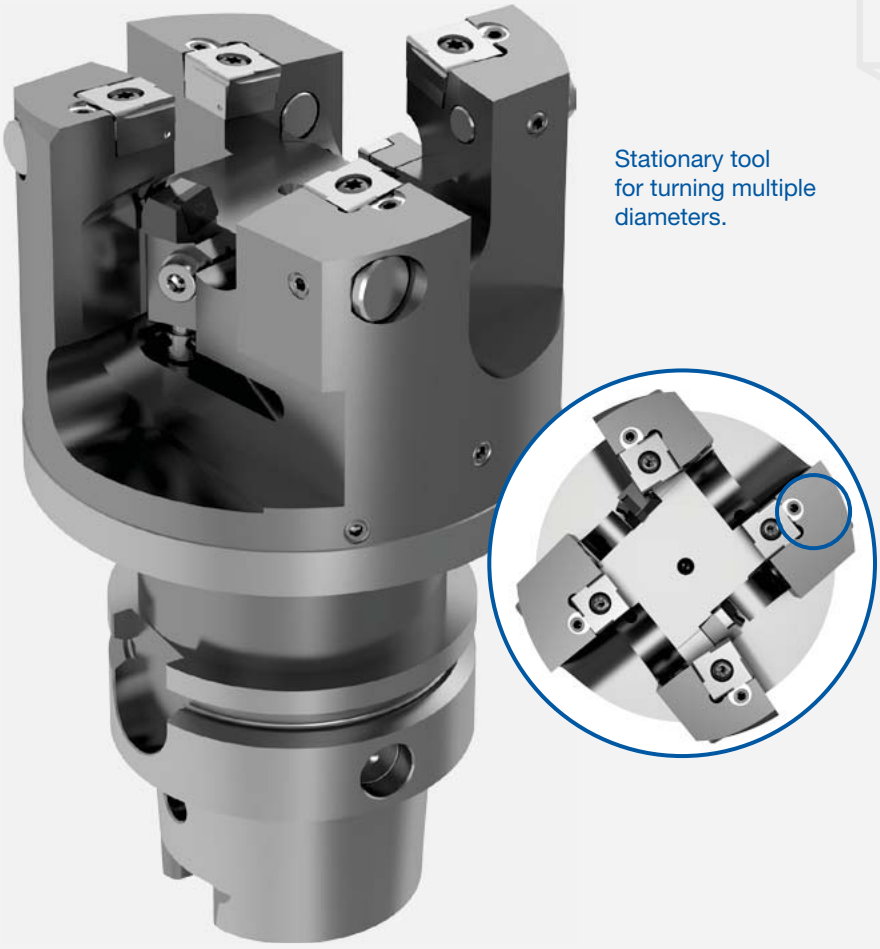
the diameter can be set with micrometre precision

efficient combination tool for processing diameters and machining chamfers

Machining example

Turning multiple diameters

Material: 1.4301, stainless steel | Cutting material: carbide with SIGNUM coating



Stationary tool for turning multiple diameters.

Tangential insert with **four cutting edges** that can be adjusted with micrometre precision.

Cross member

Gang milling cutter

- *large radii can be machined*
- *short machining times as a result of multiple operations being combined in one tool*
- *long service life thanks to PCD-coated cutting inserts*

Machining example

Milling connection taps in a single step
Material: AlSi9 | Cutting material: PCD

The gang milling cutter combines the double-sided milling of two taps.

Tangential inserts with PCD cutting edges ensure a long service life and short machining times.

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