Tangential 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

**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

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.

Machining example

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