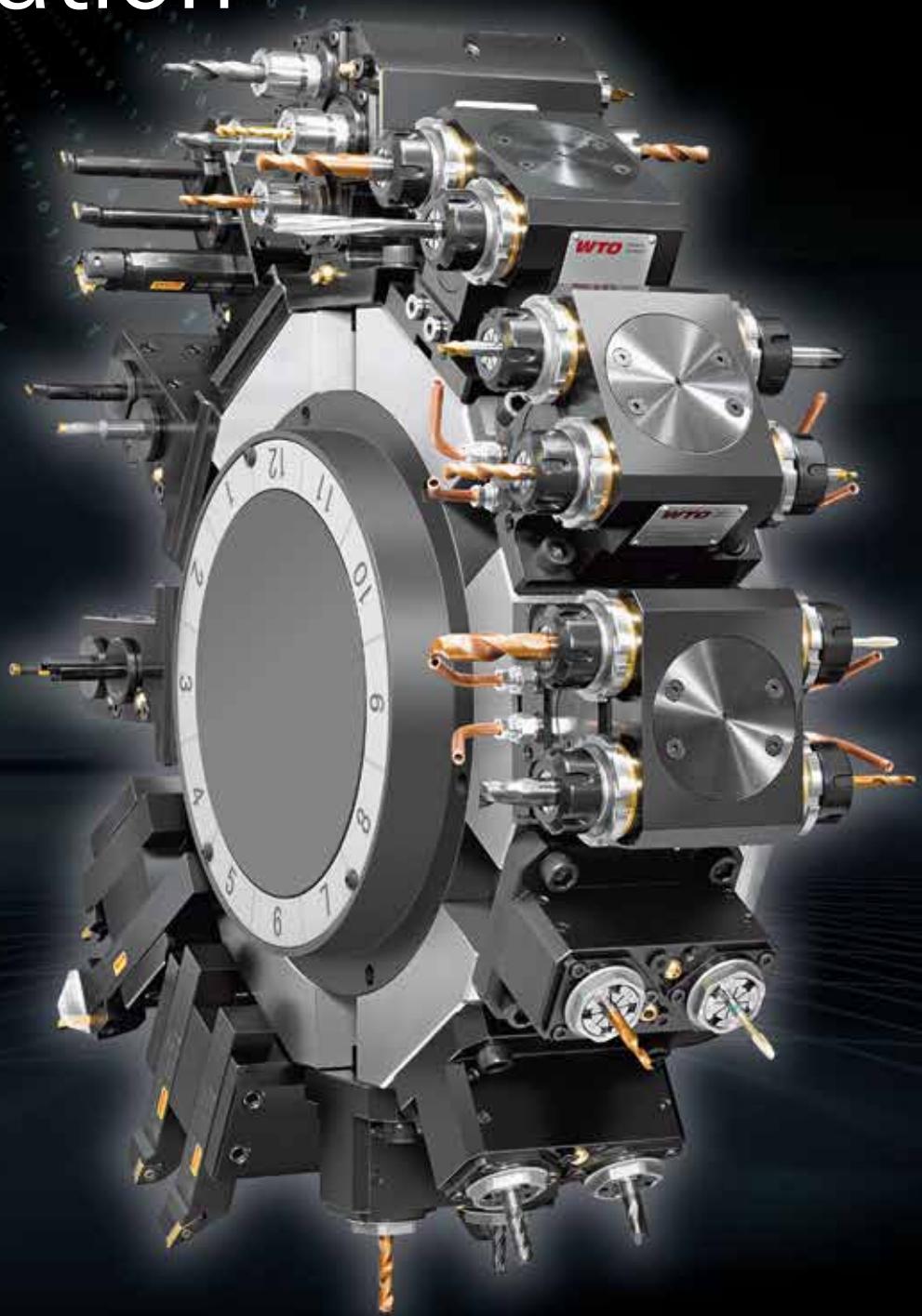


**WTO**

# Intelligent Process Optimization



**„Innovation is our future.“**

*Sascha Tschiggfrei, CEO*



**WTO**

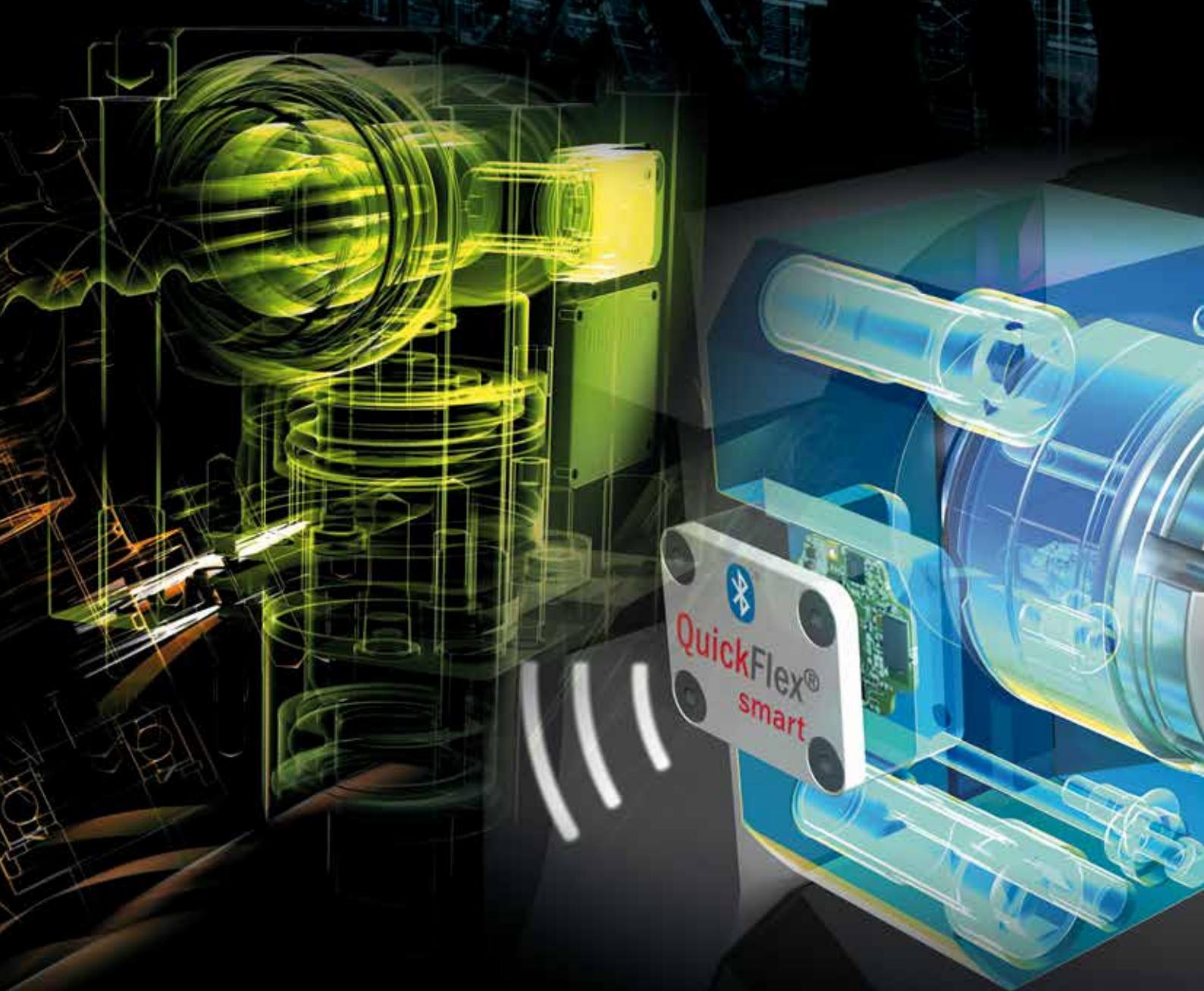
# The Future has begun

As a global market leader, we manufacture technologically advanced high precision tool holders for turning centers and swiss type lathes that are known for high performance and long life-time.

Using our new “smart” technology, our customers will be able to intelligently optimize and monitor their processes in the future.



# INDUSTRY 4.0



**WTO**

# Intelligent Process Optimization

State-of-the-art technology for maximum productivity. With this claim, WTO develops and produces superior precision tool holders in terms of technology and quality.

Used intelligently, processes are optimized and production becomes more productive.

WTO Driven Precision Tool Holders equipped with innovative „smart“ technology enable intelligent online process monitoring.

**“Consistent development -  
always one step ahead.”**

*Karlheinz Jansen, CTO*



# High Tech – Made in Germany



# **WTO**

From the technical design to the finished product we make no compromises when it comes to manufacturing our high precision tool holders.

Permanent investment in state-of-the-art production technologies, high quality standards and a large manufacturing depth.

Our products are in use worldwide, wherever precision parts are manufactured on turning centers with high productivity.





**„Our employees don't work for WTO.  
They work for the success of our customers.“**

*Daniel Sierra, Sales Director WTO*



# **WTO**

## Your Success is our Business

Motivated employees are the basis for 100 % consistent customer focus.

WTO offers its employees a state-of-the-art working environment to work independently and ensures highly motivated employees in a family-owned technology company.

To a large extent, WTO relies on its own highly qualified employees in order to achieve high quality standards.





# WTO

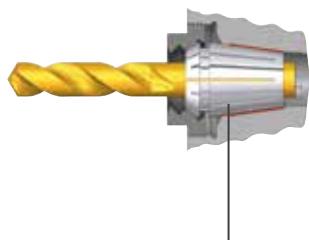
## QuickFlex®



The perfect combination: ER collet chuck and quick change system in one driven tool holder made by WTO.

High run-out accuracy and stability are guaranteed by two independent taper connections.

Quick and safe tool change with the patented one-hand wrench.



With ER collet



With QuickFlex®  
mill arbor adapter





# QuickFlex® *smart*

## The New Generation of Smart Driven Tool Holders with intelligent Condition Monitoring

- Integrated wireless electronic sensor/transmitter unit
- Secure data transfer with Bluetooth standard BLE 4.2
- Monitoring of speed, temperature, vibrations, runtime
- Clear status presentation of all assigned driven tool holders
- Condition monitoring of the assigned machines
- Complete data history of each driven toolholder

### True online process monitoring

- All relevant data is transmitted live during operation
- Permanent monitoring of production parameters
- Display of the operating time and remaining time until the service interval



### Integrated in the machine control

Currently available as option in the latest CELOS version of DMG MORI.



### Software for condition monitoring

Installation requirements

Hardware: PC, Tablet with Bluetooth 4.2

Operating system: Windows 10



15  
16

>

N

# WTO

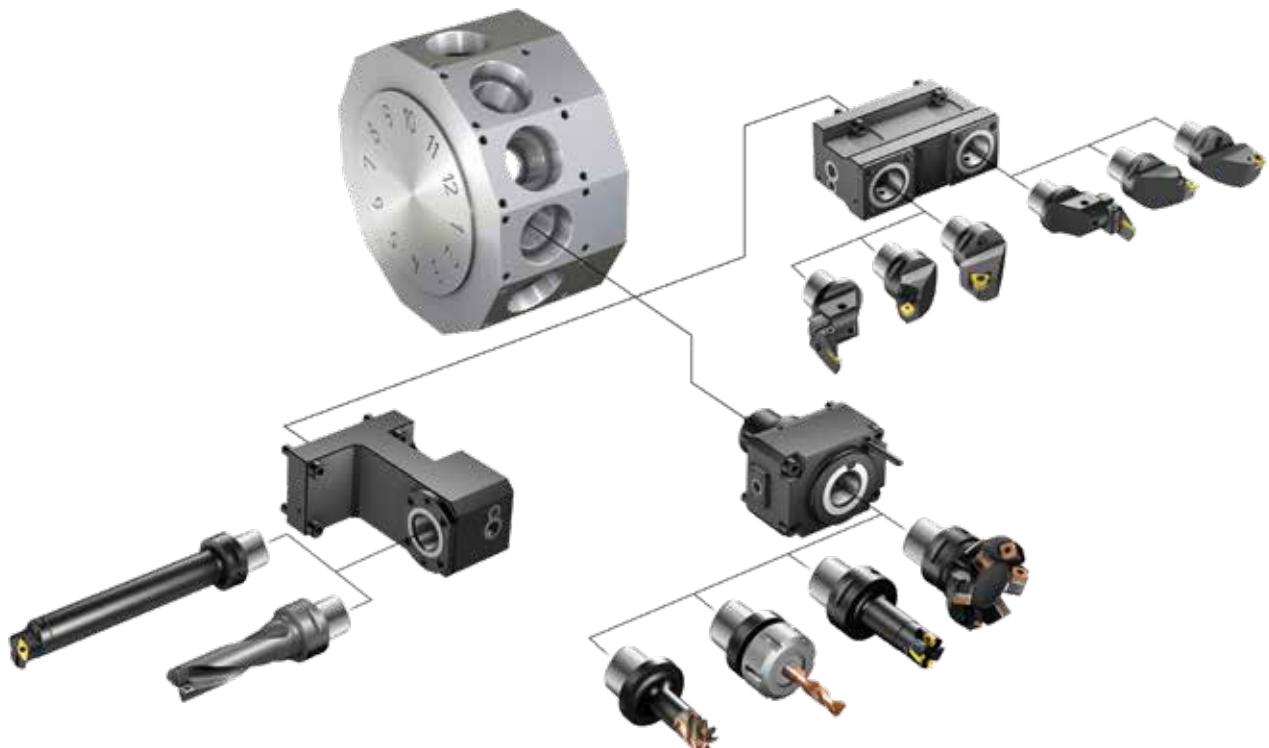
# Coromant Capto®

The quick change system from Sandvik Coromant for fastest tool setup time. Faster return on investment.

Coromant Capto® is a modular quick change system certified according to ISO 26623. It combines high rigidity with high flexibility in one system.

The globally available quick change system for turning centers is universally applicable for turning, drilling and milling.

High investment security through ISO standard. Sales worldwide via Sandvik Coromant.



## Short adapters available from WTO

For precision driven tool holders with Coromant Capto® the use of short adapters with no gripper groove lead to significant advantages: More available cutting tool length, higher accuracy and higher stability.





# WTO

## Precision Static Tool Holders

Precision Static Tool Holders from WTO are individually designed for each turning center and manufactured with the highest precision so that you are able to use the full capacity of your machine.



### Internal coolant supply for highest productivity

The new generation of shank and blade tool holders with internal coolant supply through the tool shank: for increasing cutting tool life and cutting feed rate with fast tool set-up time.



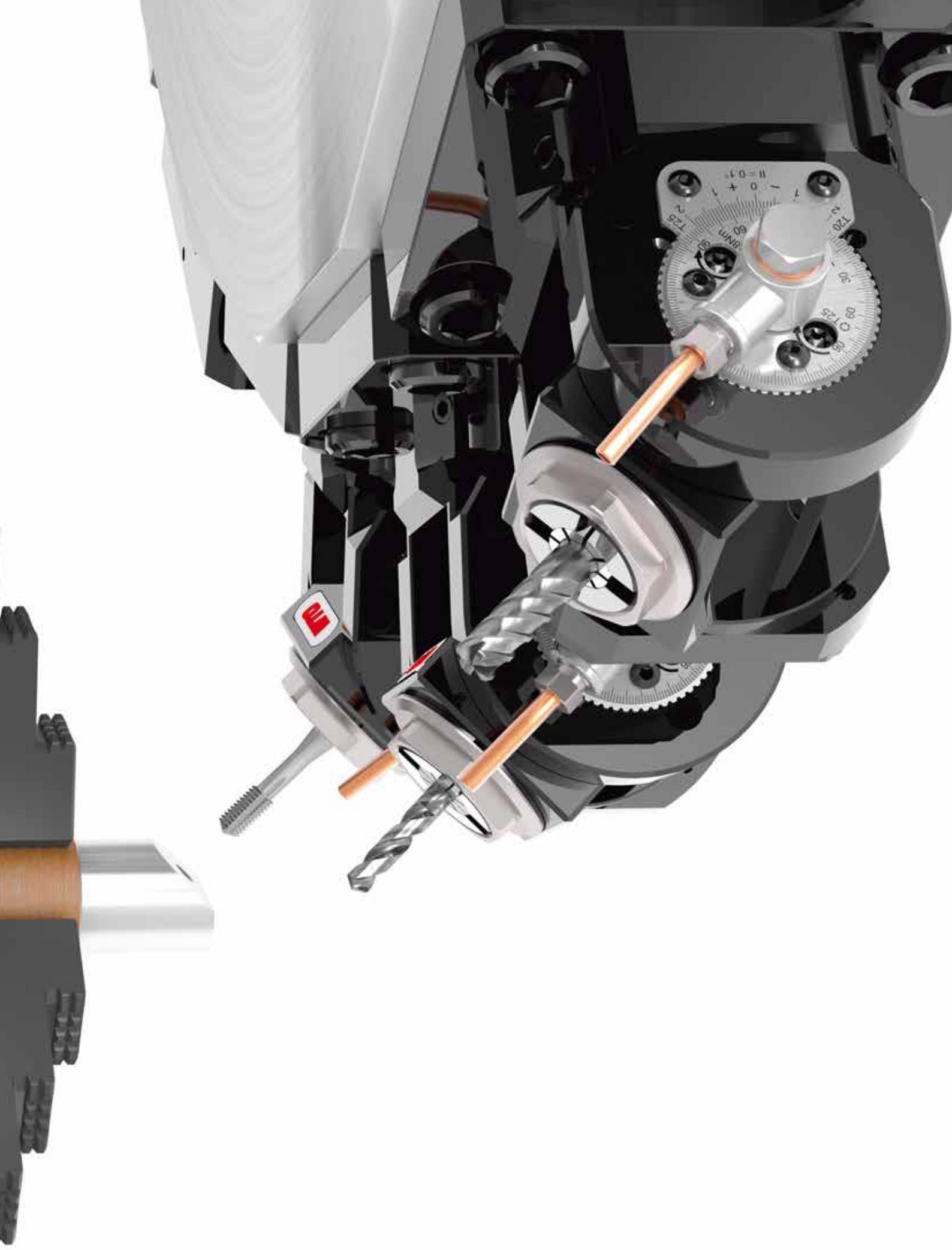


# Multiple Tool Holders

Multiple Tool Holders from WTO to multiply the available tools on turning centers with Y axis.

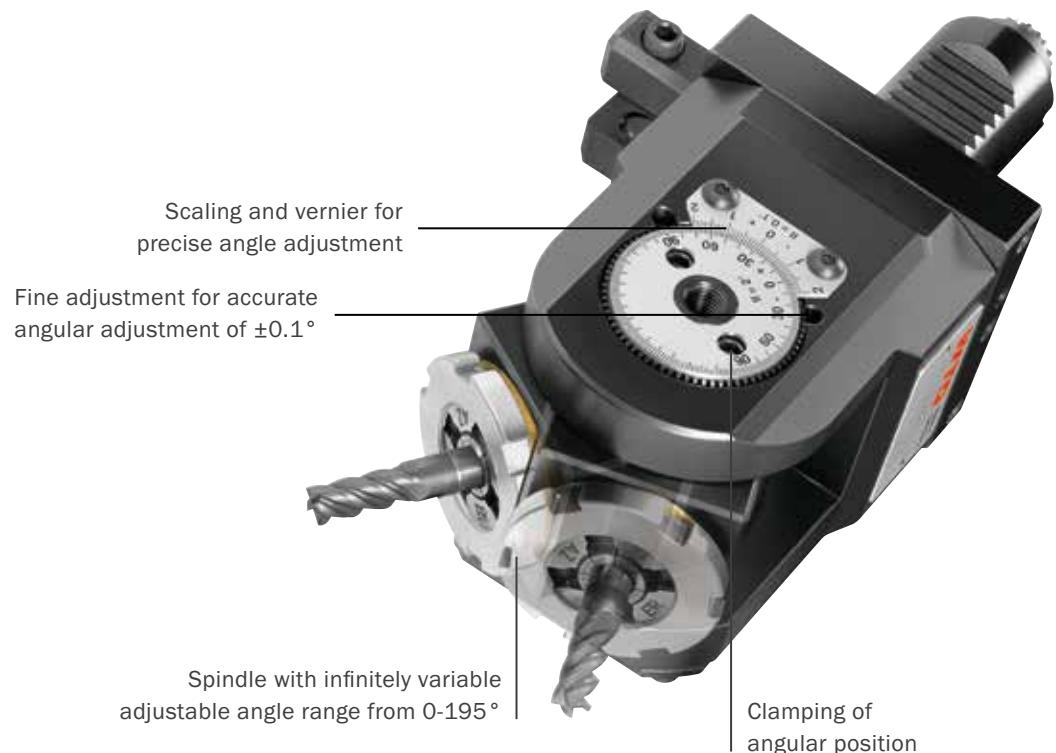
The enhancement of available cutting tools allows the production of a more complex and more comprehensive range of work pieces without changing the machine set-up.





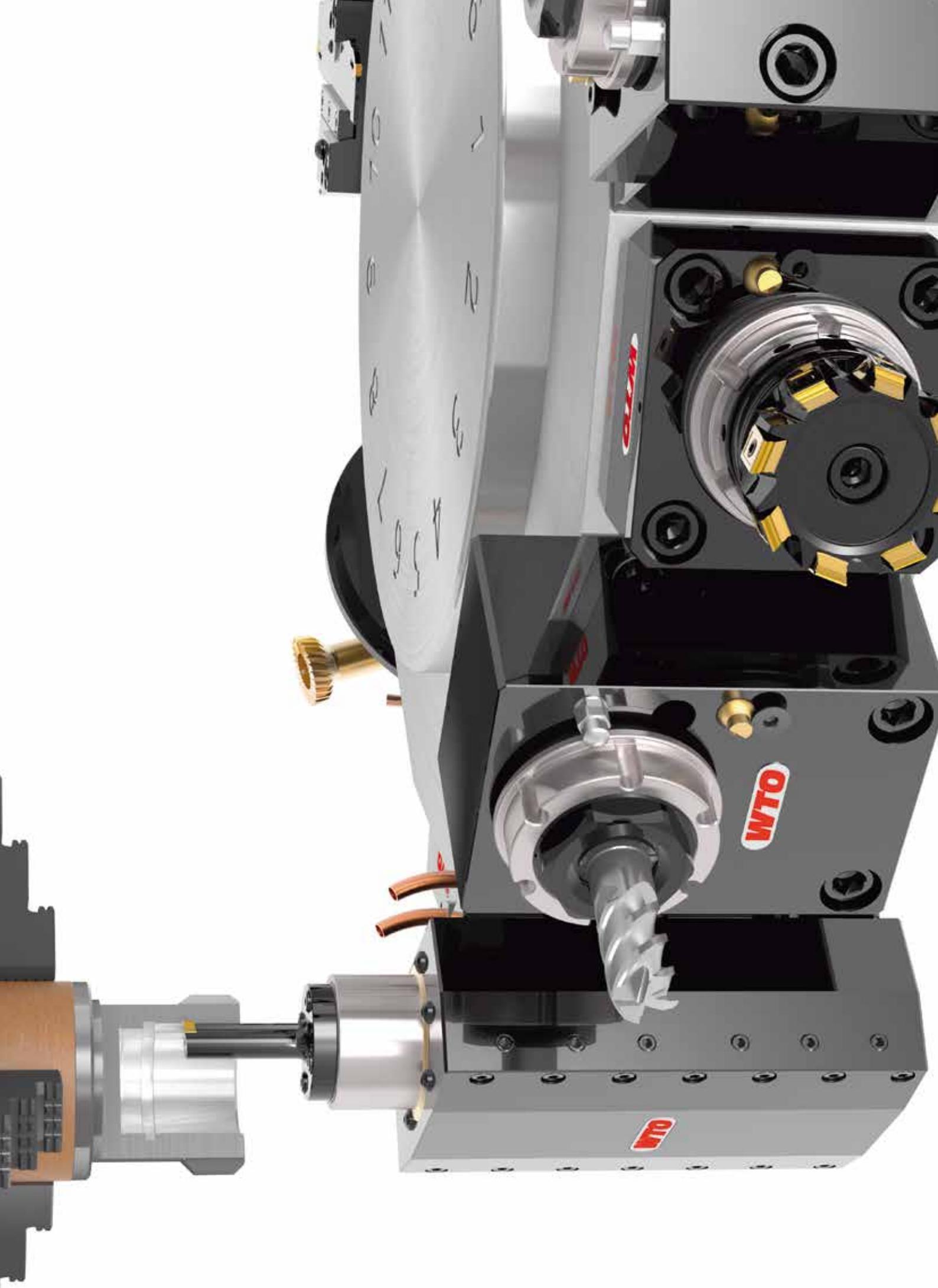
# Adjustable Angle Units

The WTO high precision Adjustable Angle Drill-Milling Units enable the complete machining at any angle on CNC Turning Centers.



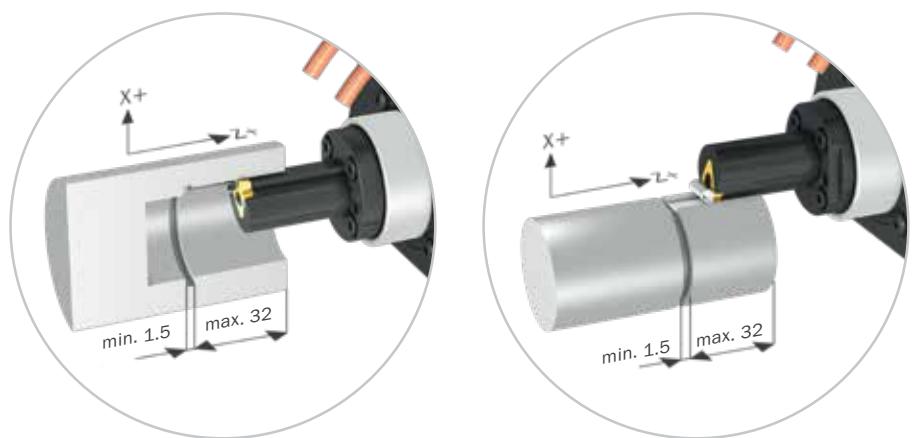
## Internal coolant supply through the spindle with max. 80 bar/1160 PSI

Through various gear ratios and internal high pressure coolant supply up to 80 bar/1160 PSI, drilling and milling cycles can be optimized for higher productivity of your machine.



# Broaching Unit

The automatic Broaching Unit from WTO for economic manufacturing of oriented keyways and splines with up to 1,000 strokes per minutes and max. 10 mm groove width.



Same insert holder for ID and OD broaching  
by rotating 180 degrees.



1  
Position insert on Z



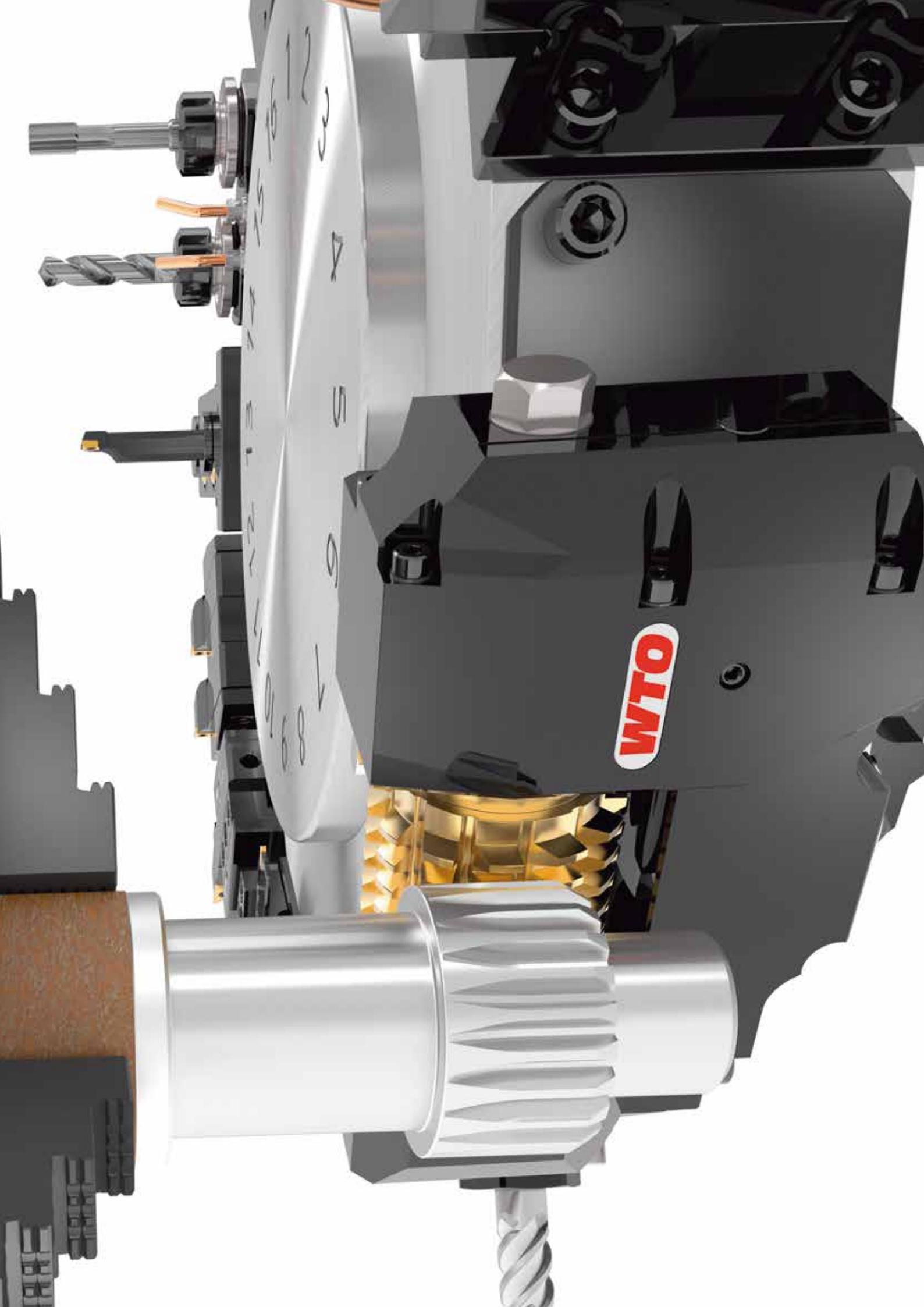
3  
Cutter lifts  
from workpiece



2  
Cutter drives  
into workpiece



4  
Lift-off function  
prevents wear/  
breakage when  
cutter retracts



wto

# WTO

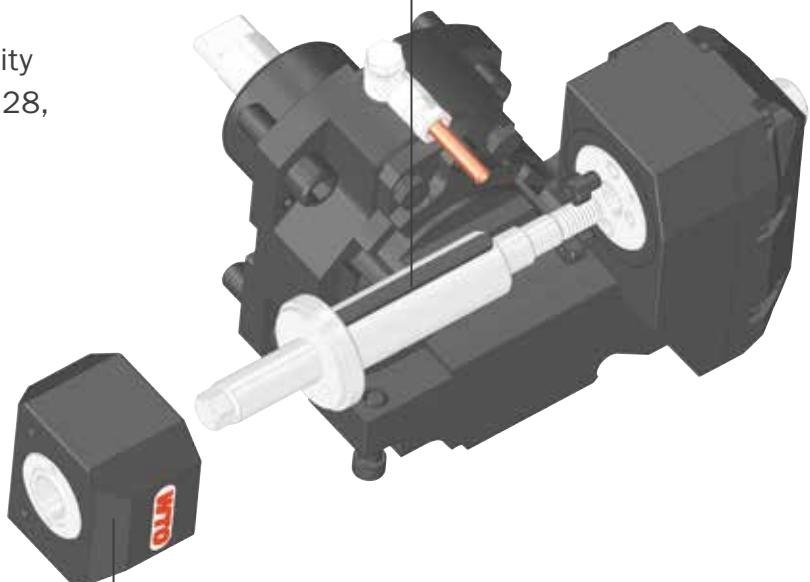
## Gear Hobbing Unit

Highly productive manufacturing of gears with CNC Turning Centers.

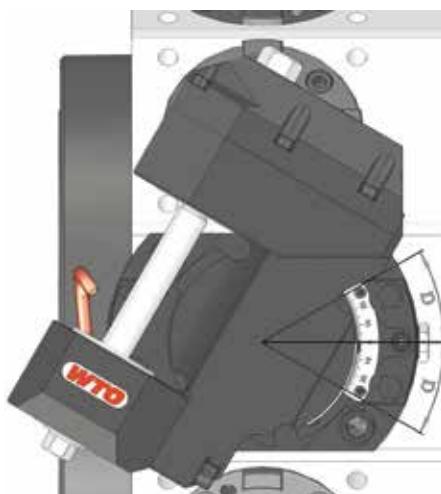
The Gear Hobbing Unit from WTO offers high stiffness and runout accuracy. High versatility due to interchangeable milling arbors for different cutting tools.

Usable for machining gear quality according to standard 8 ISO 1328, AGMA 8

Interchangeable milling arbor available in different sizes



Easy cutting tool change through removable counter support and withdrawal of the complete milling arbor



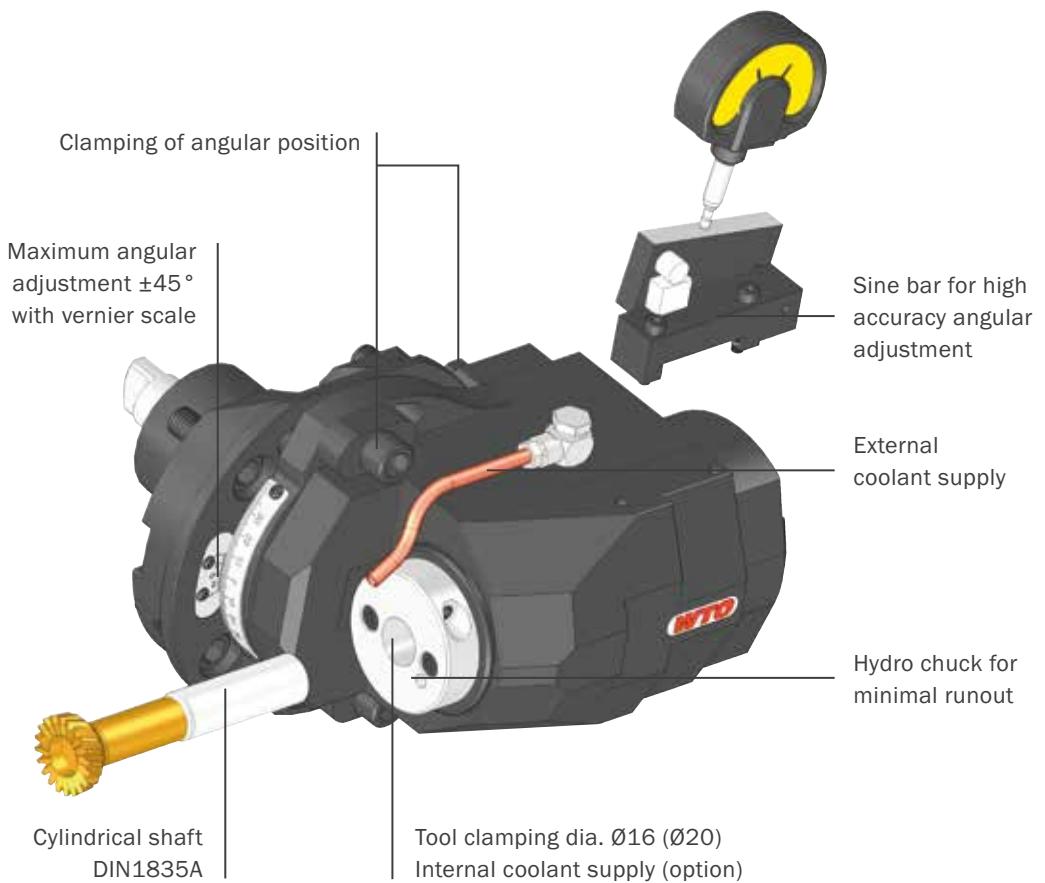
Maximum scale swing of  $\pm 30^\circ$  with scale and vernier



# Power Skiving Unit

Highly productive gear machining: Skiving of ID and OD splines on CNC Turning Centers.

The WTO Power Skiving Unit offers high stiffness and runout accuracy. The hydro chuck spindle enables an accurate and quick cutting tool change.



**WTO**

**WTO**

**WTO**

# *nanoFlex®*

The perfect combination: ER collet chuck and modular quick change system in one tool holder.



Regular tool clamping  
using ER collet.

Quick change using  
nanoFlex® adapter.

## **Large product range for Swiss Type Turning Centers**

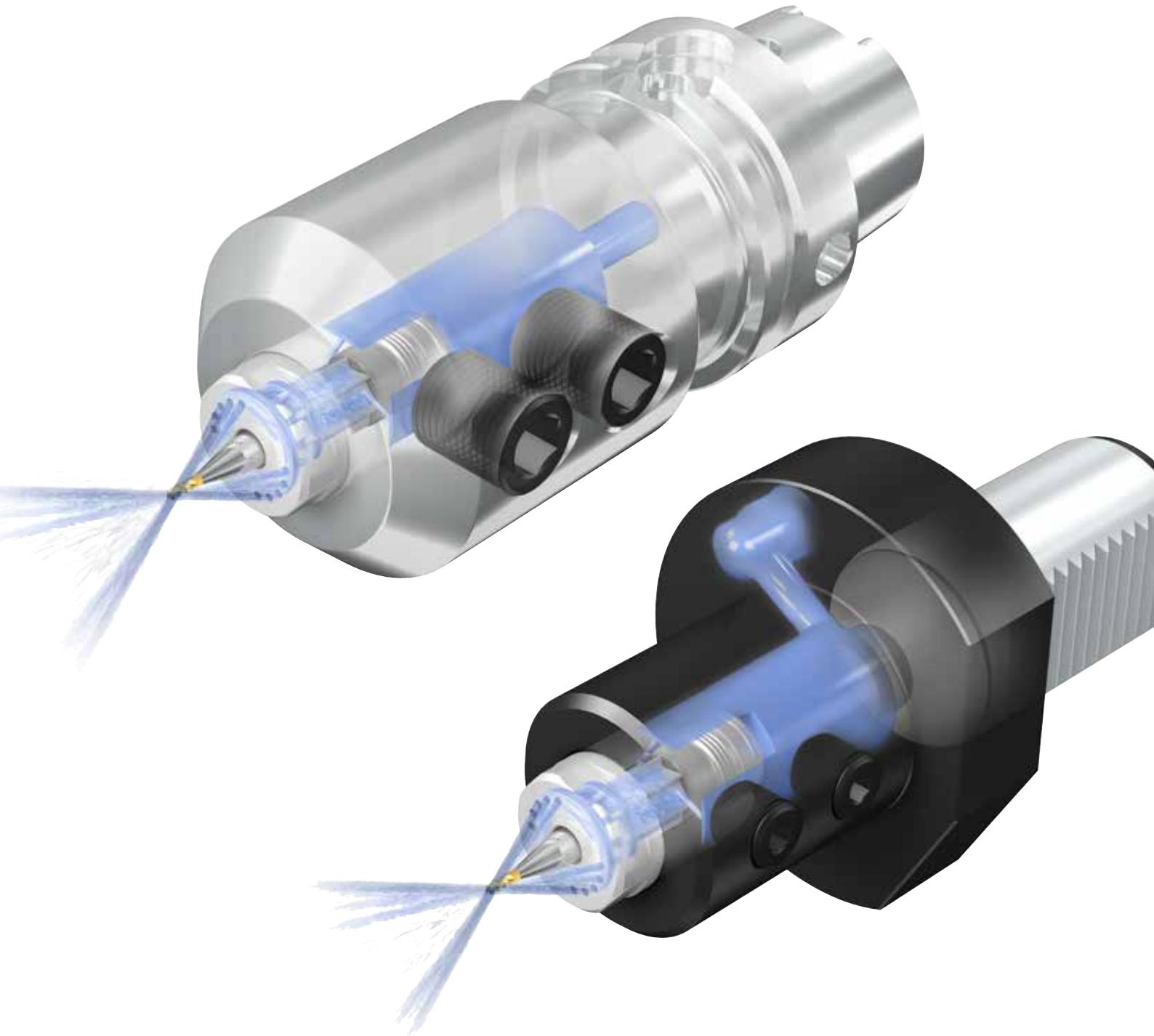
Besides the standard versions we are offering application specific driven tool holders to increase the productivity of your Swiss Type turning center:



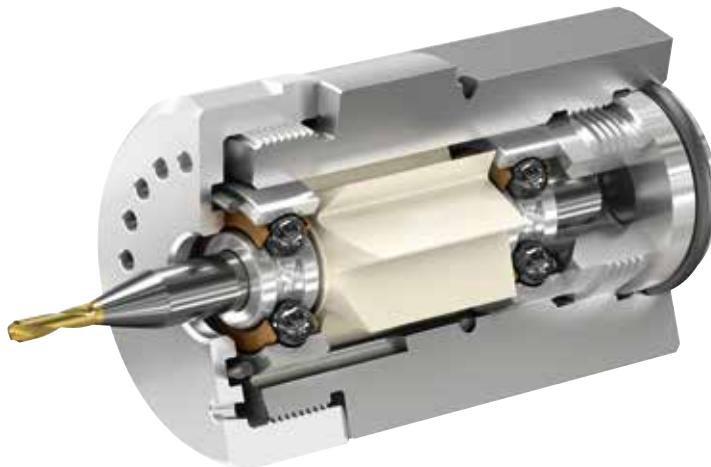
Thread whirling units, gear hobbing units, adjustable angle drill/milling units, high speed drill/milling units, deep hole drilling units up to 200 bar/2900 PSI coolant pressure and slitting saw units.

# CoolSpeed® mini

Affordable evolutionary high rotation speeds up to 75,000 RPM. Applications: Milling, Drilling, Grinding, Chamfering and Engraving.



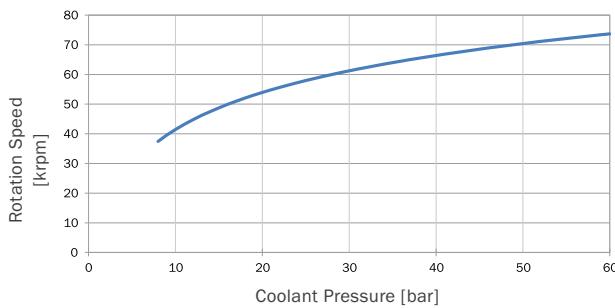
# WTO



Max. RPM	75,000
Supports tool shanks Ø	3 mm, 4 mm, 6 mm
Driven by	Coolant, oil, air
Coolant pressure	10-60 bar (145-870 PSI) for CoolSpeed® mini (EX)
Air pressure	3-7 bar (44-101 PSI) for CoolSpeed® mini Air

## CoolSpeed® mini (EX)

Rotation Speed/Coolant Pressure



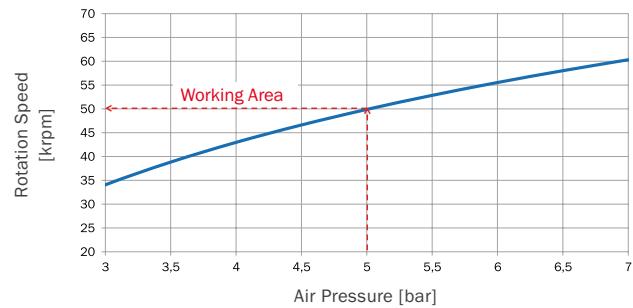
CoolSpeed® mini



CoolSpeed® mini 90

## CoolSpeed® mini Air

Rotation Speed/Air Pressure



CoolSpeed® mini Air



CoolSpeed® mini Air 90



CoolSpeed® mini (EX)



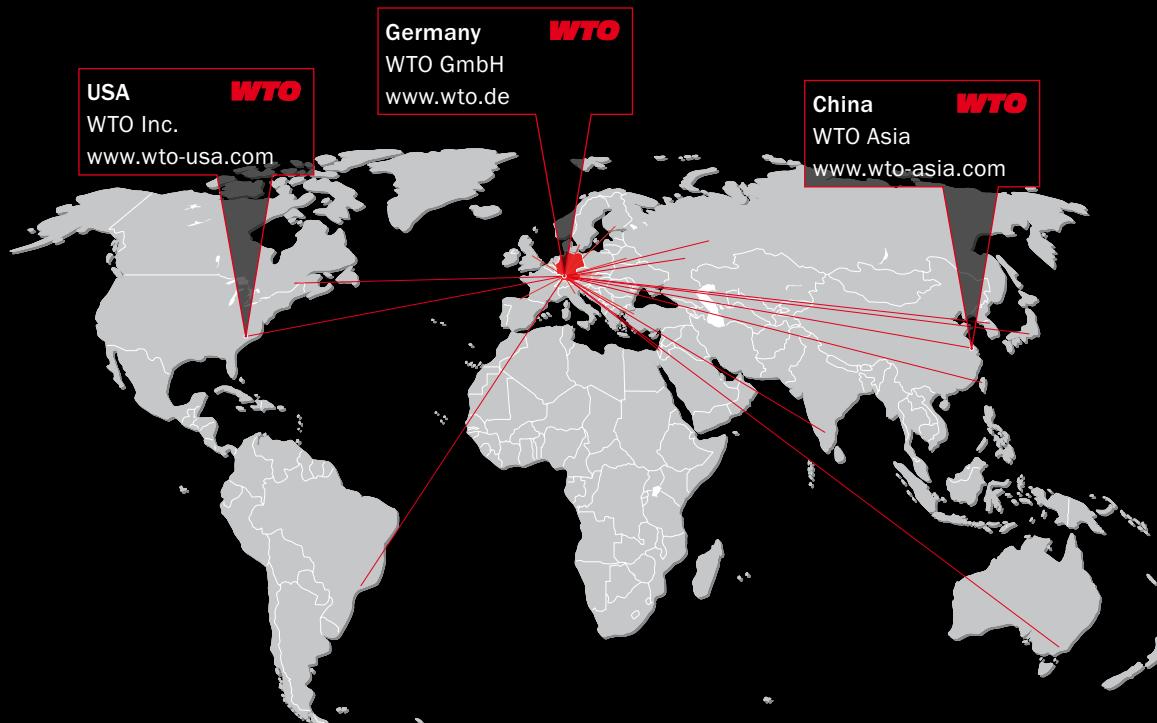
Set  
(2 bearings, 1 turbine)



Assembly Device

# WTO worldwide

# WTO



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South Lakes Drive  
Charlotte, NC 28273  
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WTO Asia  
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Songjiang District  
201615 Shanghai  
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