

# HOWEVER YOU ROLL THE DICE,

our Full Material Solutions  
will cover ALL your needs!



[tungaloy.com/us](http://tungaloy.com/us)  
[ntkcuttingtools.com/us](http://ntkcuttingtools.com/us)



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## *Welcome to the Powerhouse of Precision: Tungaloy + NTK Highlights!*

Unveil the epitome of innovation and expertise. Tungaloy and NTK, a dynamic alliance, form a powerhouse that goes beyond expectations. Together, we redefine the landscape as a comprehensive full material supplier, offering solutions tailored to every material type.

At the core of our excellence lies cutting-edge manufacturing for PVD, CVD, CBN, PCD, Ceramics, and Cermet inserts, covering all machining needs. This union is not just arithmetic; it's an equation where  $1+1>2$ , showcasing that the whole is truly greater than the sum of its parts.

*However you roll the dice,  
our full material solutions will  
cover all your needs!*



## GRADES - 6

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### **CVD grades**

T9200 series

T6200 series

T500 series

### **PVD grades**

AH6200 series

AH9130

AH3225

### **Miniature Machining**

AH7025

SH7025

NTK650

ST4

DM4/DT4

ZM3/TM4



### **CBN grades**

BXA10

BXA20

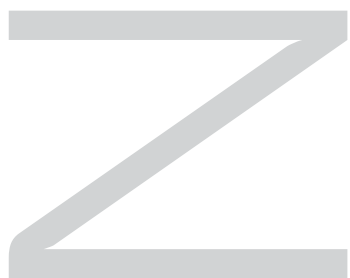
BR35F



### **PCD grades**

PD1/PD2

DX110 / DX160 / DX200



### **CERAMICS grades**

JX3/JX1

SX3/SX9/SX7

SX6/SP9

HC1/HC2/HC6



### **CERMET grades**

NS9530/GT9530/AT9530



## TURNING - 24

AddMultiTurn  
Y-axis Turning Solutions  
BoreMeister  
ModuMiniTurn  
MultiFunctional Tools  
TinyMini-Turn  
Thread Whirling  
ShaperDuo  
The Front Max  
TMV Chipbreaker  
ACH

## GROOVING - 46

AddForceCut  
AddInternalCut  
MiniVLockGroove  
DuoForceCut  
TinyInternalCut  
FaceMiniCut  
TungShortCut

## MILLING - 60

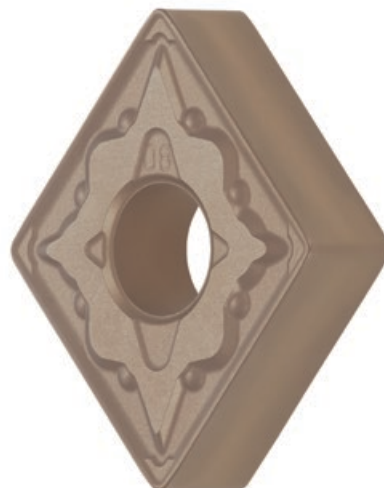
HighFeed Milling  
TungForce-Rec  
TungMeister  
DoMultiRec  
ExtendedForceMill  
JRF Cutter  
Ceramic

## HOLE MAKING - 74

Head Exchangeable drills  
Modular DrillMeister series  
DeepTriDrill  
ReamMeister



# CVD GRADES

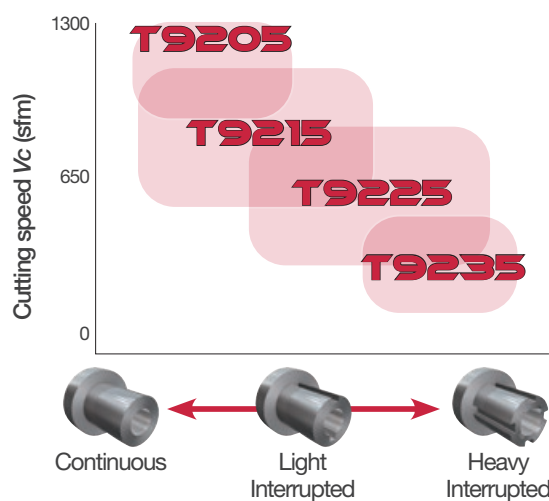


**T9200 P M K**

CVD grade series with outstanding productivity, especially for steel turning

Nearly unbreakable CVD series for improved machining efficiency

APPLICATION AREA **P**





## T6200 **M**

Highly reliable CVD grade **series** for high-speed stainless steel turning

Complete grade line up for stainless steel turning

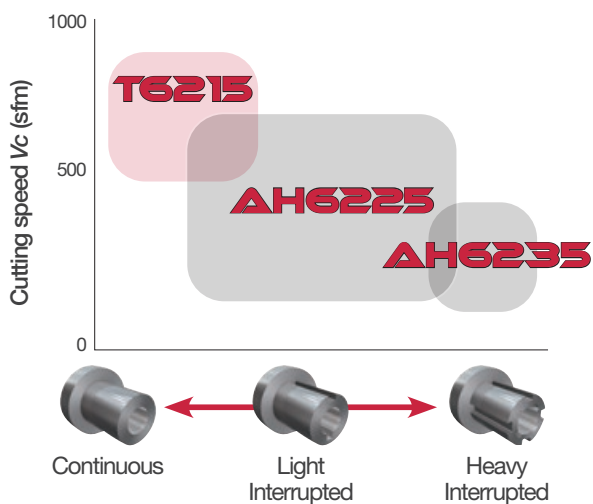


## T500 **K**

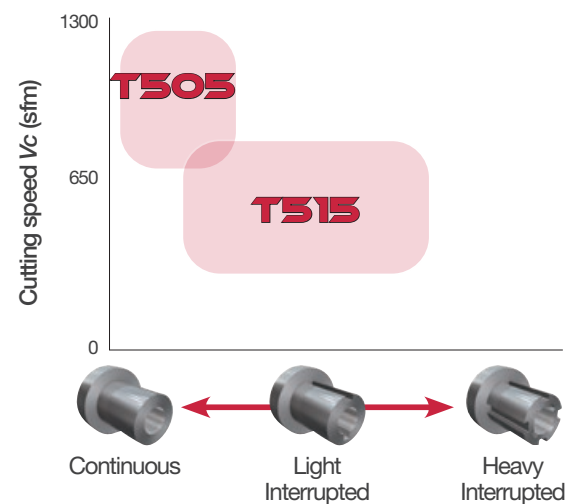
Most optimal CVD grade **series** for high speed machining of cast iron

The thickest coating layer of all Tungaloy's CVD grades ever

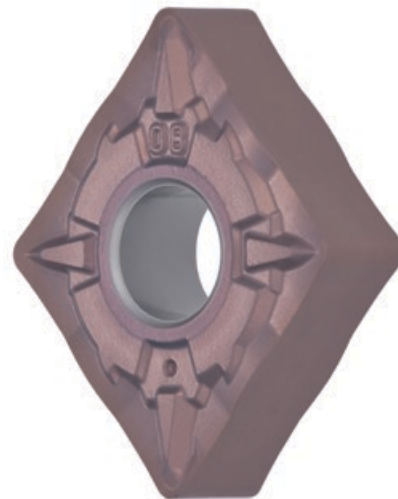
### APPLICATION AREA **M**



### APPLICATION AREA **K**



# PVD GRADES

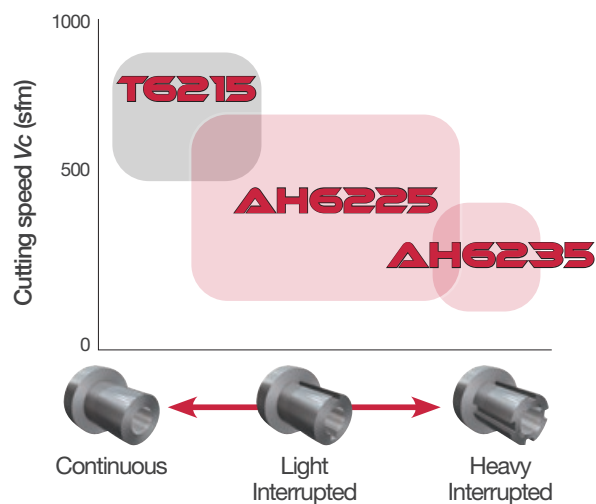


**AH6200** **M**

Highly reliable PVD grade **series** for light and heavy interrupted stainless steel turning

Complete grade lineup for stainless steel turning

APPLICATION AREA **M**







DMC drilling head for DrillMeister

# AH9130

The latest PVD grade developed specifically for hole making applications

A good combination of wear and fracture resistance enhances the grade's tool life and wear prediction.



LNMU insert for AddDoFeed

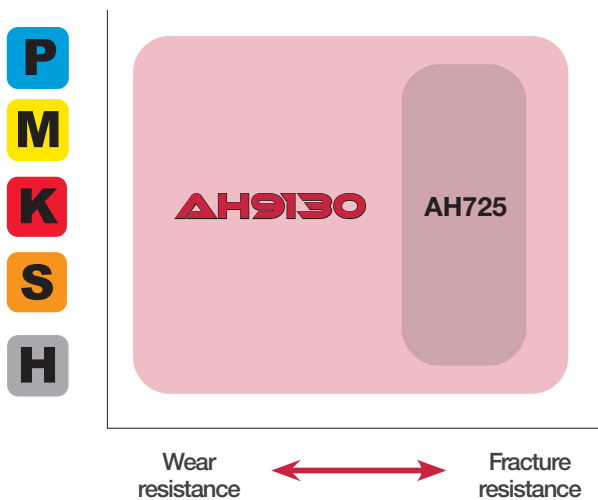
# AH3225

**P M**

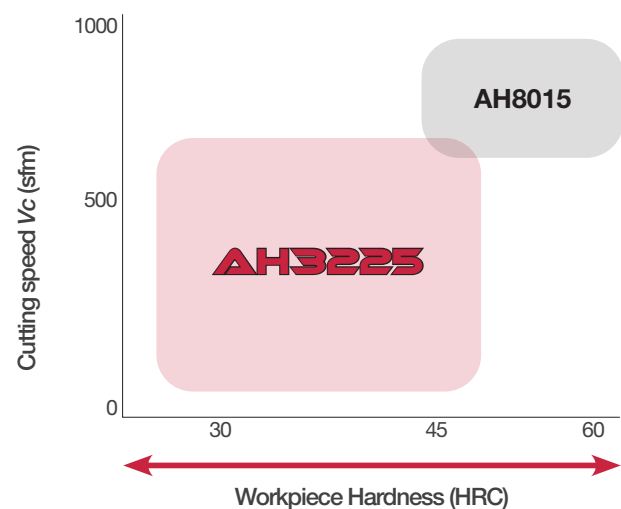
A highly reliable PVD grade for milling operations

Eliminates coating delamination and micro edge-chipping while impeding the progression of normal flank wear, providing long and predictable tool life in steel milling operations.

## APPLICATION AREA

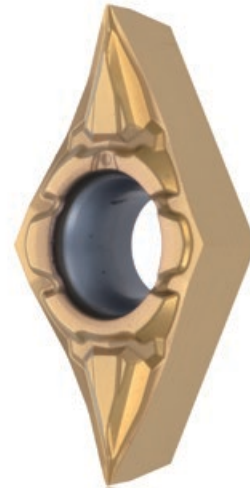


## APPLICATION AREA





# PVD GRADES MINIATURE



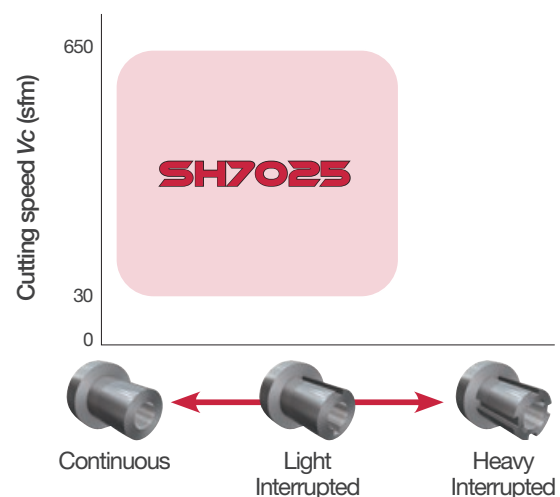
## SH7025

**P M**

Superior surface quality in small part machining is achieved with a unique columnar-structured TiCN coating and multilayered TiAlN coating

Superior surface quality and process security in small part machining

### APPLICATION AREA





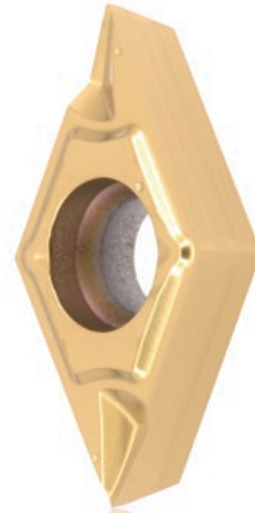
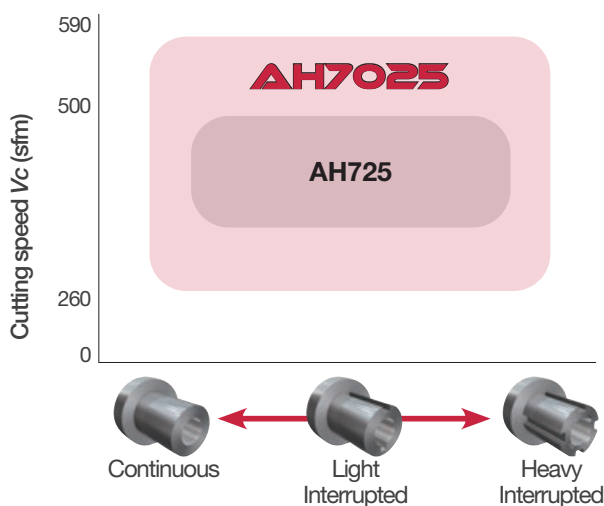
QGM / QGS inserts for AddForceCut

## AH7025 P M K S

Dedicated PVD grade for grooving applications featuring a good balance of wear and chipping resistance.

AH7025 uses the world's first coating technology of a nano-scale multi-layered AlTiN PVD coating with high Al content.

### APPLICATION AREA

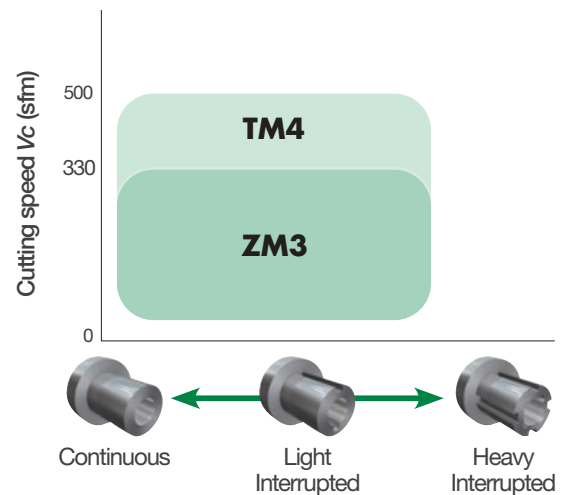


## ZM3/TM4 P M N

General-purpose PVD grades suitable for a wide range of machining applications on Swiss lathes

Featuring both excellent adhesion and wear resistance

### APPLICATION AREA



# PVD GRADES MINIATURE

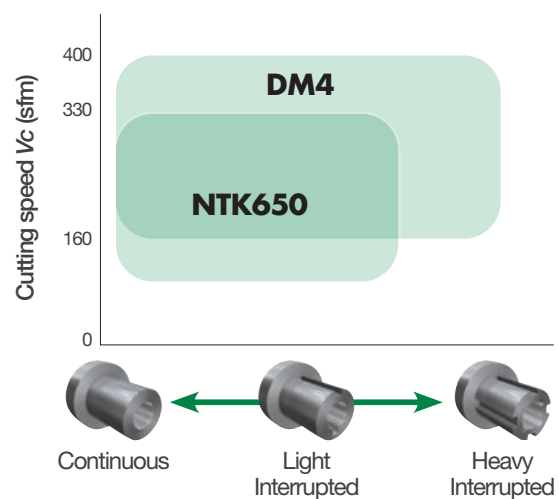


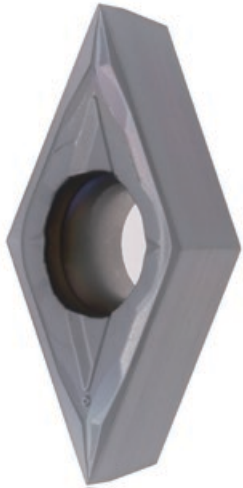
## NTK650 S

Outstanding productive PVD grades for machining Ni based components

Latest HiPIMS coating technology for Improvement of surface-smoothness and suppression of imperfections in film

## APPLICATION AREA S





## ST4 **M**

Dedicated PVD grade for stainless steel machining with high hardness and oxidation resistance

Outstanding tool life with efficient machining of difficult to cut stainless steels and steels

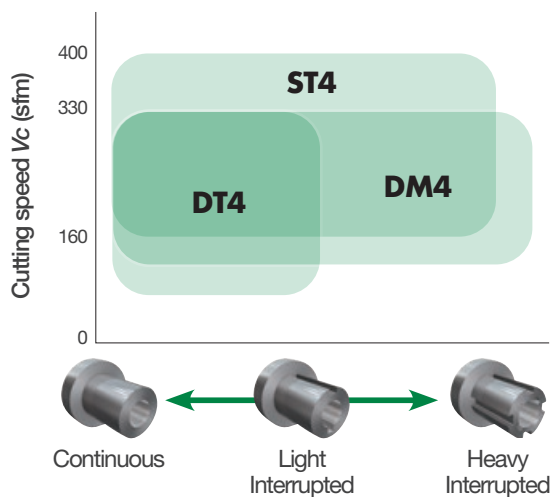


## DM4/DT4 **M** **S**

High productive PVD grades for heat resistant alloys and titanium alloys

Featuring an unparalleled stable machining even during high temperature machining conditions

### APPLICATION AREA **M**





# CBN GRADES

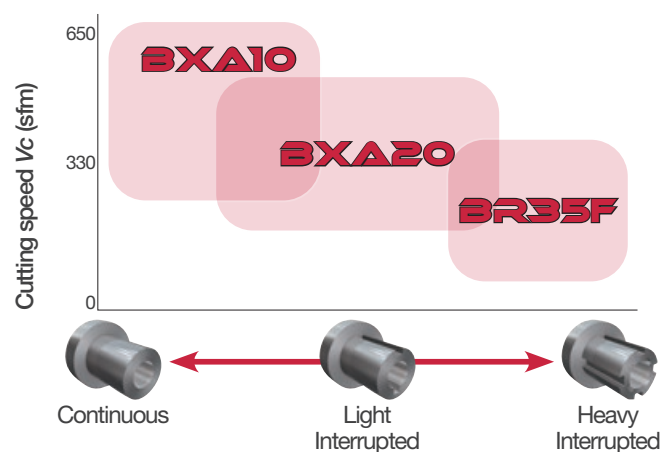


**BXA10** **H**

CBN Grade for continuous  
hardened steel turning

Incredible reliability with excellent wear resistance

APPLICATION AREA **H**



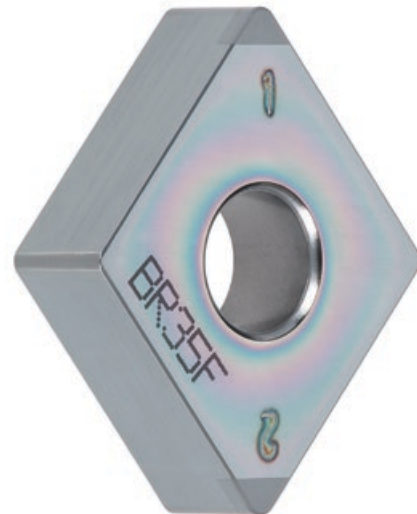




## BXA20 H

Versatile **CBN** grade for continuous to light interrupted hardened steel turning

Enables stable machining at low to medium cutting speed



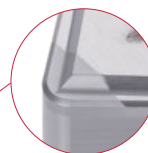
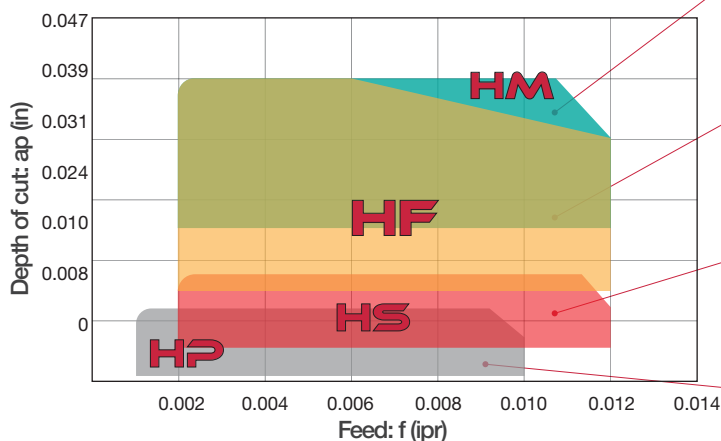
## BR35F H

Efficient **CBN** grade for heavy interrupted hardened steel turning

Incredible reliability with high fracture resistance

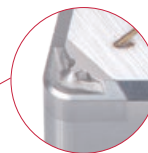
## HARDBREAKER SERIES

CBN chipbreaker series for hardened steel



### For removal of carburized layer

Breaker shape with excellent chipping resistance in deep cuts



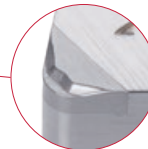
### For removal of carburized layer

- Reliable chip restraint over a wide cutting area
- Breaker shape for low cutting resistance and crater wear



### For high feed finishing

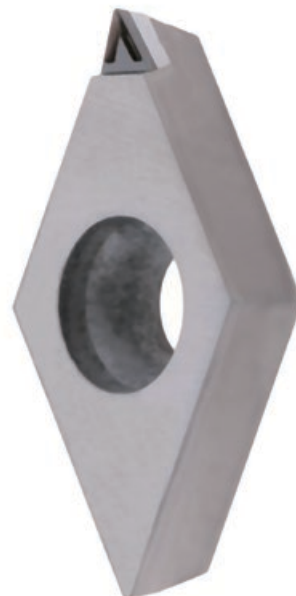
- Breaker shape for excellent chip control
- Edge prep to prevent catastrophic failure



### For precision finishing

Breaker shape suitable for precision finishing

# PCD GRADES

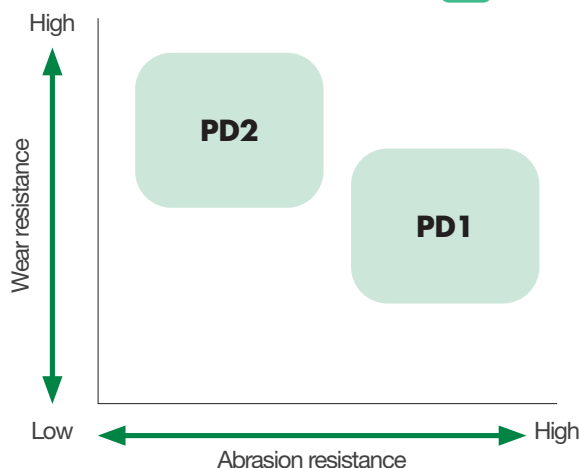


## PD1/PD2 **N**

Excellent durable **PCD** grades with sharp cutting edge and **increased chipping resistance** for higher performance

3D chipbreaker selection exhibiting increased sharpness and excellent adhesion resistance

### APPLICATION AREA **N**





## DX110 N

An extremely wear-resistant PCD grade, suitable for finishing aluminum and copper alloys

Featuring strongly-bonded diamond grains that prevents the grains from breaking off during machining

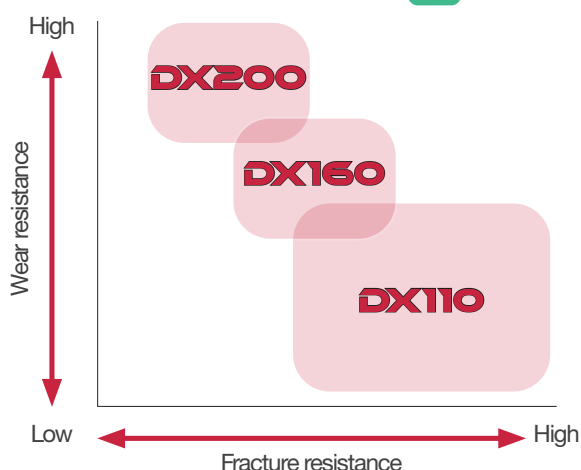


## DX200 N

100% diamond grade perfect for machining tungsten carbide and other superhard non-ferrous metals

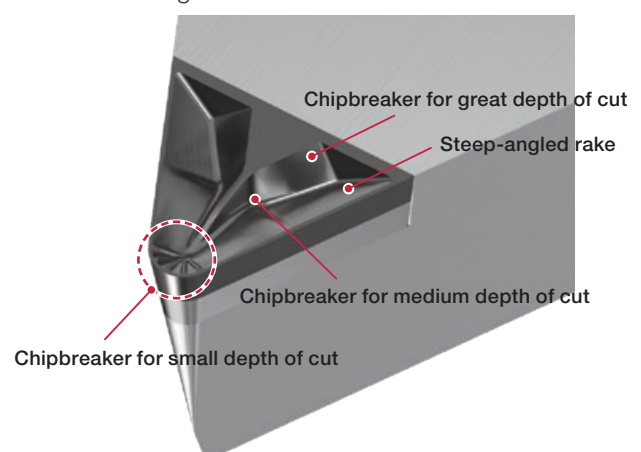
Featuring a sharp cutting edge that provides excellent surface finish

## APPLICATION AREA N



## NS Chipbreaker

PCD inserts with **3D chipbreaker** for excellent chip control, suitable for both roughing and finishing operations. Available for **DX110** and **DX160** grade series



# CERAMICS GRADES

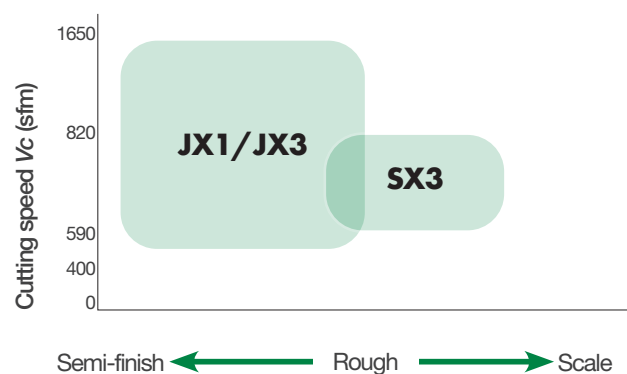
## JX1/JX3 **S**

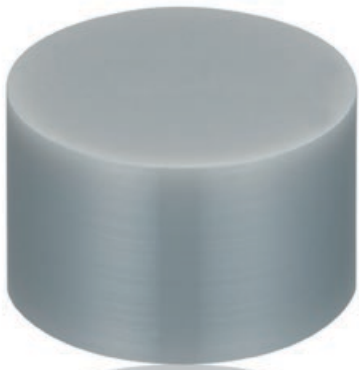
**BIDEMICS** Line a **NEW ERA** of turning for Heat resistant alloys with ultra-high productivity

The ultimate semi-finisher of heat resistant alloys with higher quality and longer tool life than whisker ceramics

## APPLICATION AREA **S**

TURNING - WET

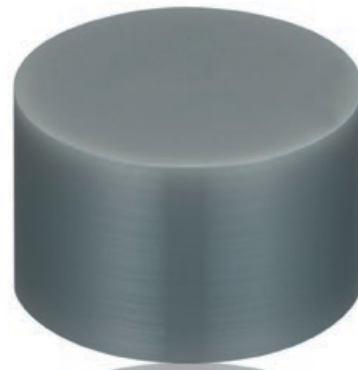




## SX3 S

First recommendation for heat resistant alloys machining for **high-speed turning and milling with stable performance**

Machines wide range of conditions in materials from the commonly used heat resistant alloys like Inconel 718 to the newer generation of materials like Rene



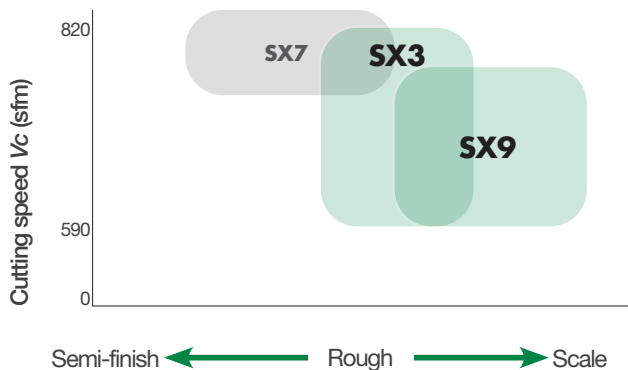
## SX9 S

Excellent Ceramic grade featuring **superb notch and flank wear resistant**

Best grade for roughing heat resistant alloys like Inconel 718 with scale

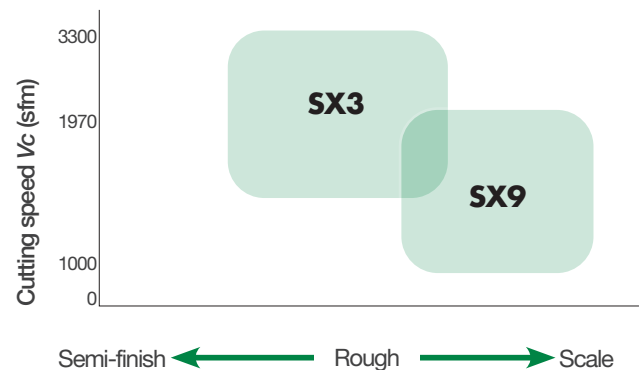
### APPLICATION AREA S

TURNING - WET



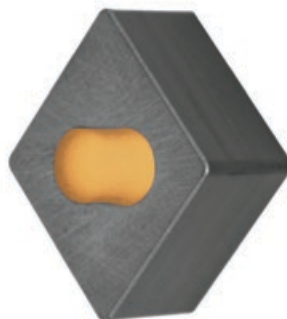
### APPLICATION AREA S

MILLING - DRY





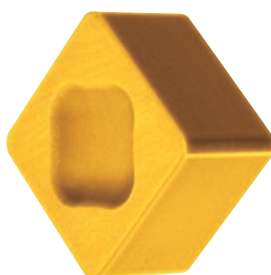
# CERAMICS GRADES



## SX6 K

First recommendation for **rough turning and milling cast iron**

Ceramic grades series with outstanding boundary wear resistance and thermal shock resistance



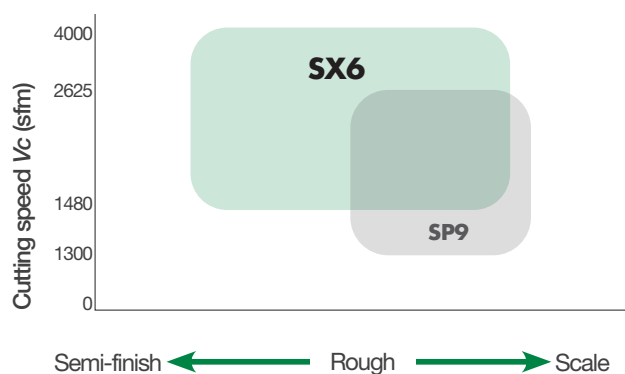
## SP9 K

Excellent Performance for **Ductile Cast Iron**

An extremely tough material and CVD coating combine to achieve excellent fracture and wear resistance

### APPLICATION AREA

K Cast Iron  
Ductile Cast Iron





## HC1/HW2 **K**

Unparalleled ceramic series for finishing gray cast iron

High-speed performance is achievable with the thermally and chemically stable alumina ceramic blend

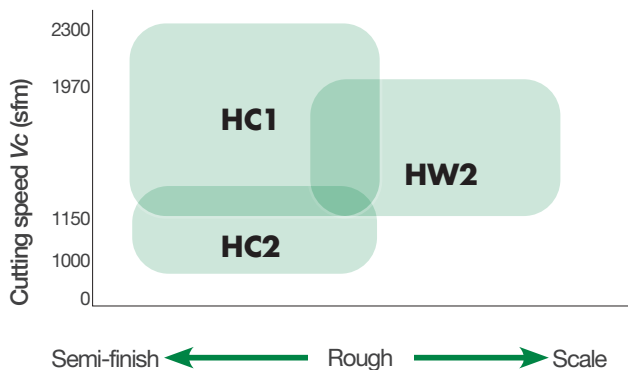


## HC2/HC6 **K**

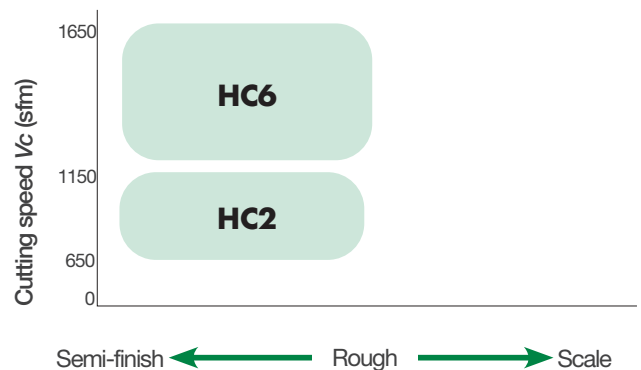
Extremely versatile grades, designed for machining various materials

HC2 excels in machining gray cast iron and ductile cast iron as well as roughing heat resistant alloys, while HC6 is our top-choice for finishing ductile cast iron.

### APPLICATION AREA **K** Cast Iron DRY



### APPLICATION AREA **K** Ductile Cast Iron WET



# CER MET GRADES

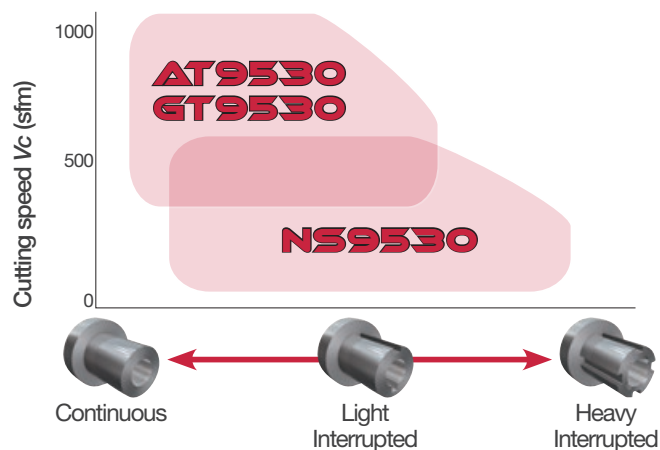


## NS9530 **P**

Versatile cermet grade with incredible fracture and wear resistance

Provides long tool life and excellent surface appearance in finishing to medium cutting of steels.

## APPLICATION AREA **P**





## GT9530 **P**

Coated cermet grade with **premium coating** demonstrates exceptional **wear resistance**

Provides remarkable performance in finishing of steels during high speed machining.



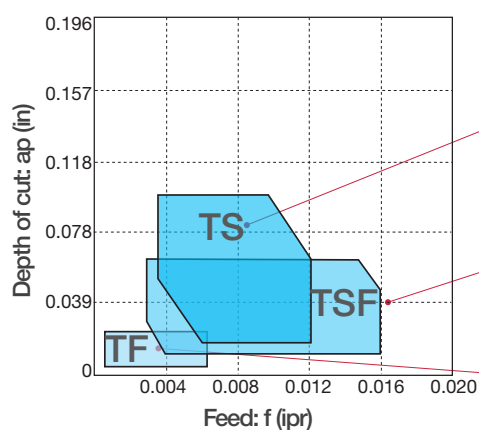
## AT9530 **P**

Coated cermet grade with **excellent wear resistance** in high-speed finishing

The 1st recommendation for machining alloy steel due to its outstanding wear resistance.

### Cermet basic chipbreaker series for steel

#### NEGATIVE TYPE INSERTS



#### For precision finishing

The sharp cutting edge and raised projection near the corner contribute to excellent chip control at very small depths of cut and low feeds.



#### For finishing

The dimple structure decreases the contact area between the insert surface and chips, resulting in significant reduction of heat occurrence.



#### For finishing to medium cutting

The sharp cutting edge allows excellent chip control when machining shaft type components.

ADD<sup>ULTI</sup>M<sup>TURN</sup>

# THE ULTIMATE TOOL FOR MULTIPLICITY



*Front Turning, Back Turning, Profiling,  
and Face Turning, with **ONE SINGLE TOOL***



## 6C-TOMG 80° NEGATIVE INSERT 6 CUTTING EDGES

Unique concave-convex shape on the bottom of the insert provides outstanding clamping rigidity and securely locks the insert in place ensuring tool reliability when turning in any direction.

Cutting edge with a low approach angle allows high feed machining.

Also effective for removing burrs.

The positive triangular insert features 86° nose angle for enhanced cutting edge robustness.

The positive triangular insert has integrated wipers, which provide high surface finish quality at significantly increased feed rate.

Two types of double-sided negative inserts are available with 80° or 35° nose angles.

**AddMultiTurn** can combine multiple processes in a single operation, maximizing machine utilization and productivity.

## 6V-TOMG 35° NEGATIVE INSERT 6 CUTTING EDGES

## 3C-TCMT 86° POSITIVE INSERT 3 CUTTING EDGES

video

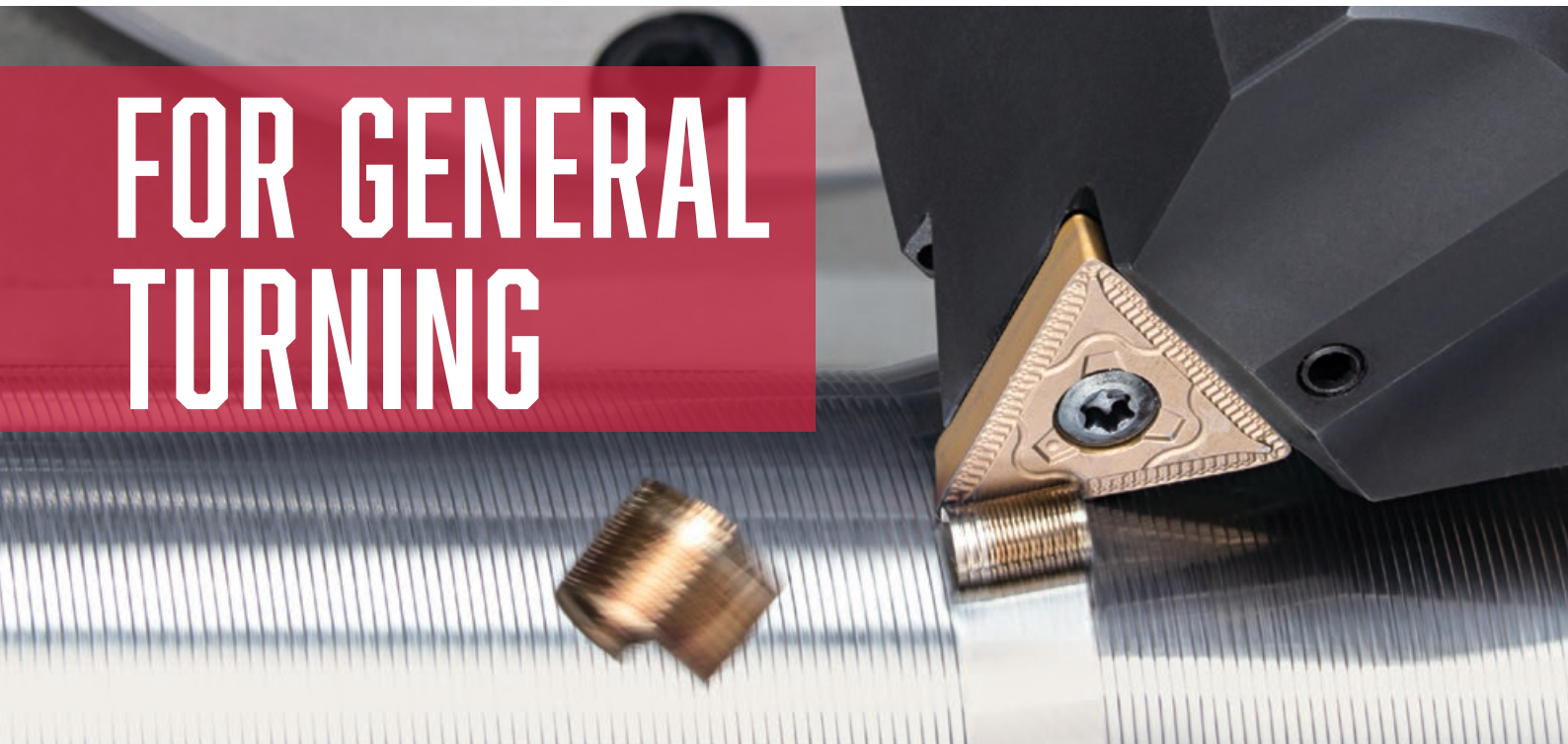


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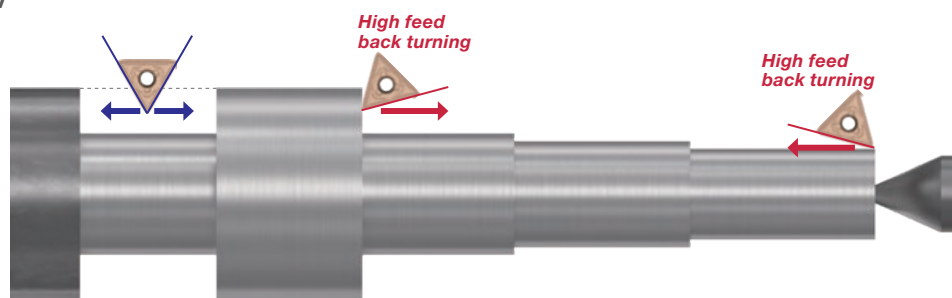
# ADDY<sup>AXIS</sup>TURN

## FOR GENERAL TURNING



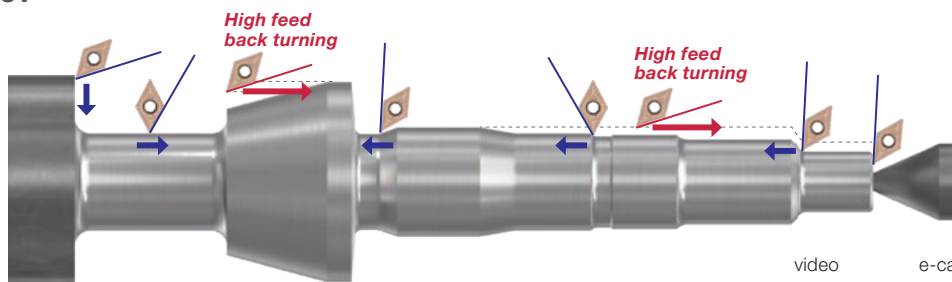
### TCMT type

Single sided, 3 cutting edges  
Max feed rate: 2 mm/rev



### DCMT type

Single sided, 2 cutting edges  
Max feed rate: 1.2 mm/rev



video



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# Y-AXIS TOOL HOLDER SERIES

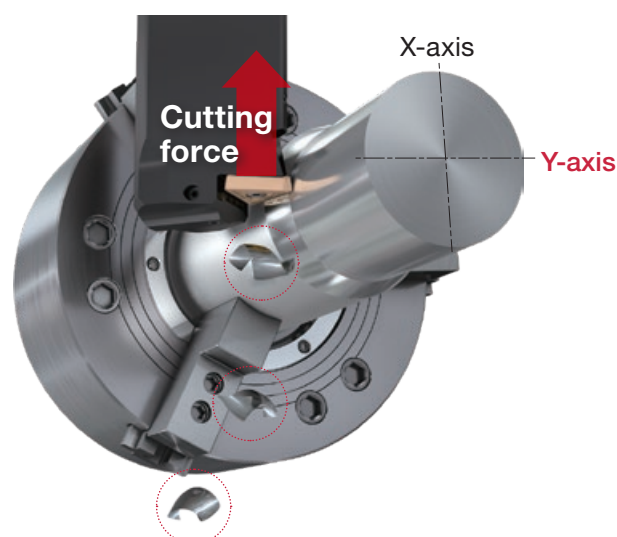
## FOR SWISS TYPE MACHINES

*A turning point to increase your productivity*

By using the Y-axis instead of the conventional X-axis the tool can direct the cutting force in the longitudinal axis of the holder, the strongest part of the tool. This provides more security during the cutting process.

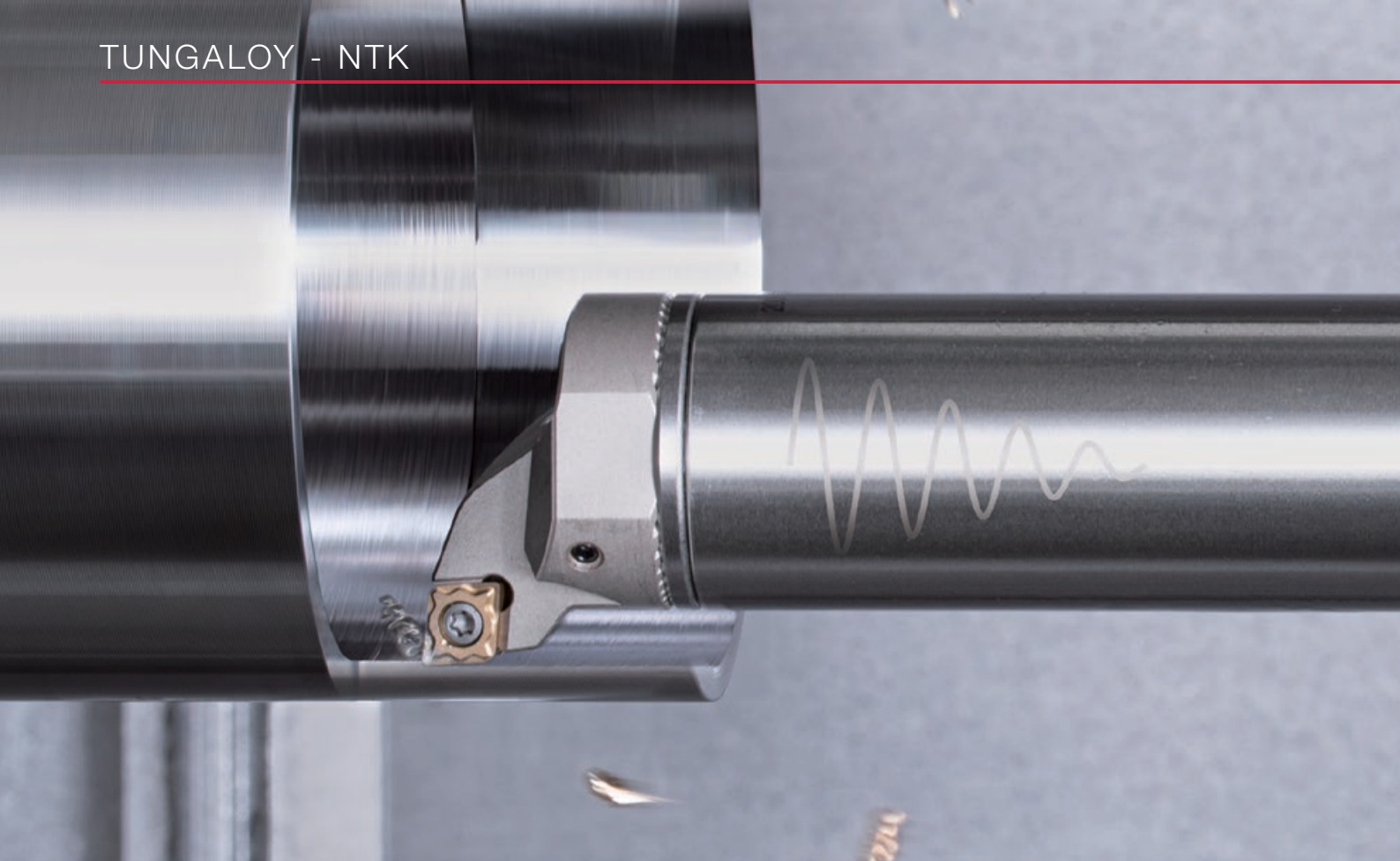
By simply rotating the tool along the axis, the cutting edge angle can be set to an optimum angle that enables the most effective entry into the cut.

The same tool can be used when turning either from the end of the part towards the chuck or turning away from the chuck to the end of the part.

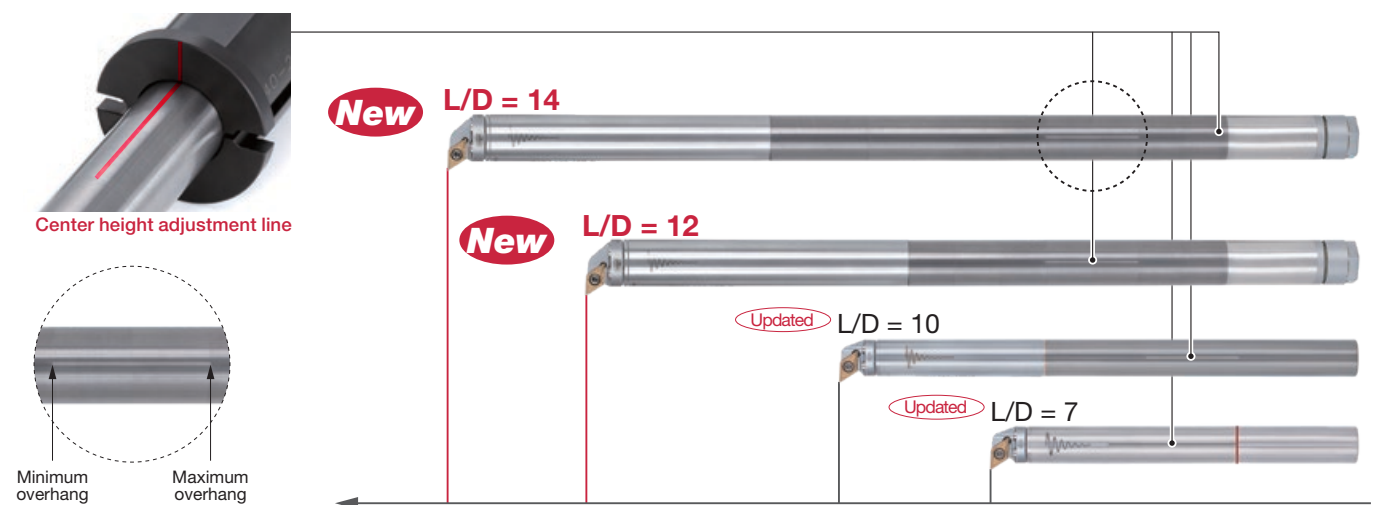


more info

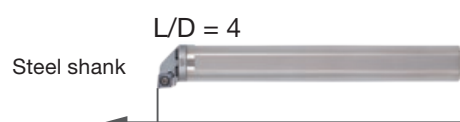




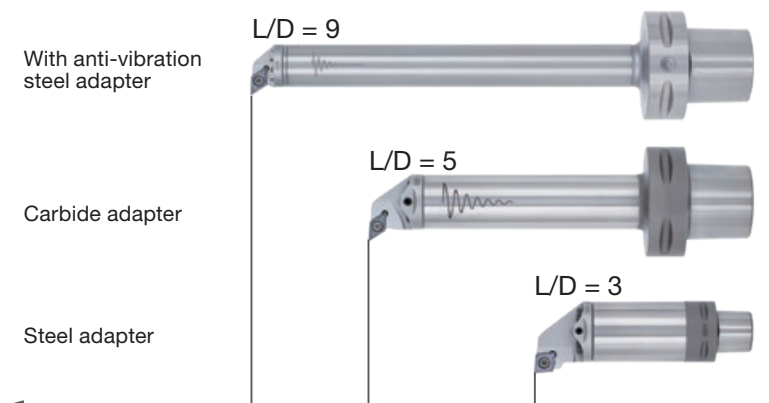
## Anti-vibration bars



## Steel shank



## PSC adapters





**BOREMEISTER**

# VIBRATION-FREE SOLUTION FOR DEEP HOLE BORING

*High-stability and precision*

Ultimate solution to conquer tool overhang challenges, chattering, noise and short tool life of up to 10xD.

Exchangeable head boring tool system with serrated interfaces for high precision and high rigidity indexing.

Through-coolant capability allows smooth chip evacuation in deep boring operations of up to 10xD.

PSC holders are also available, allowing coupling with a range of machine tools.

Dedicated setting device allows quick and accurate center height settings of the boring bar.

*A wide range of boring heads are available, providing high parts quality in various boring operations*

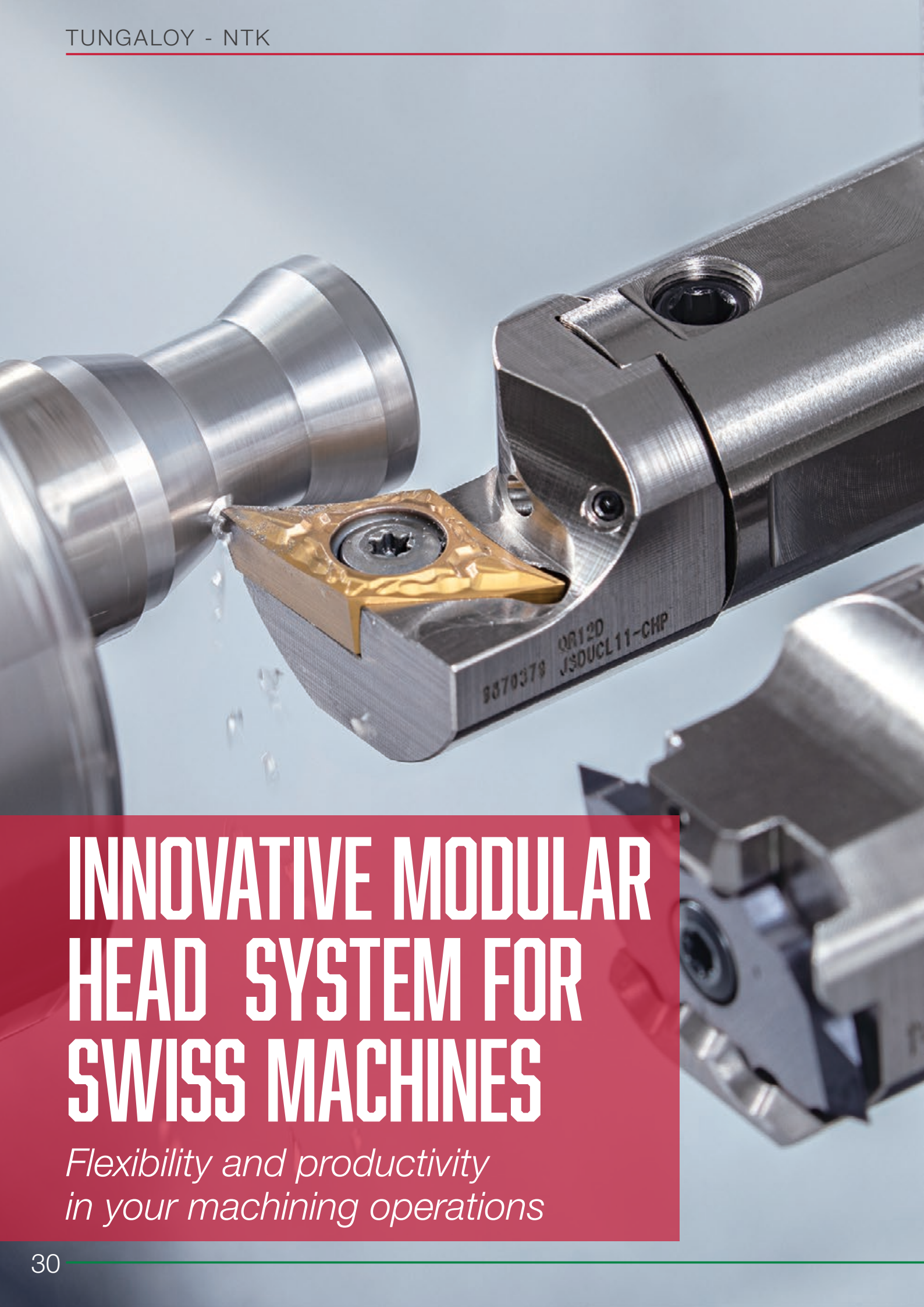


**AddInternalCut, TungCut, and AddForceCut heads**



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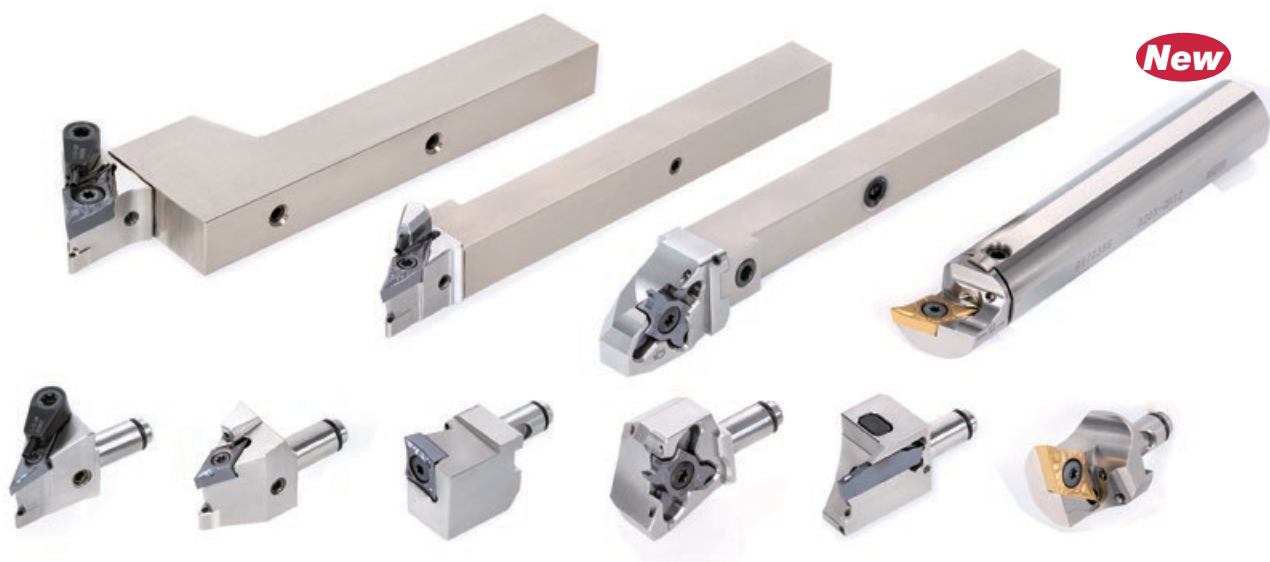


# INNOVATIVE MODULAR HEAD SYSTEM FOR SWISS MACHINES

*Flexibility and productivity  
in your machining operations*

# MODUM<sup>INI</sup>TURN

*Modularity and productivity with a wide selection of turning, grooving and threading heads*



Quick tool change and setup is possible with simple exchanges of turning heads.

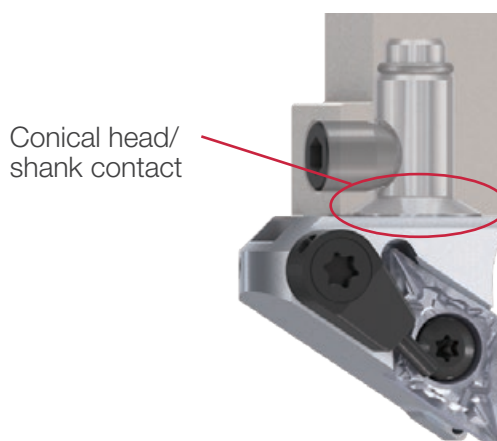
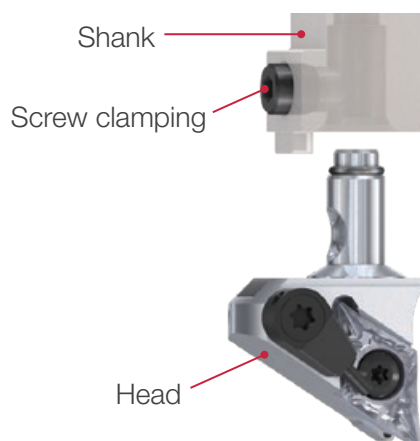
Unique coupling method provides stable head-shank connection and secure insert edge position for good repeatability and accuracy.

Positioning accuracy for the same insert:  $\pm 5 \mu\text{m}$

**New round shank toolholders** for back machining

**QC10, QC12 & QC16** type series

**ModuMiniTurn** offers precision internal coolant delivery, which improves chip control and tool life.



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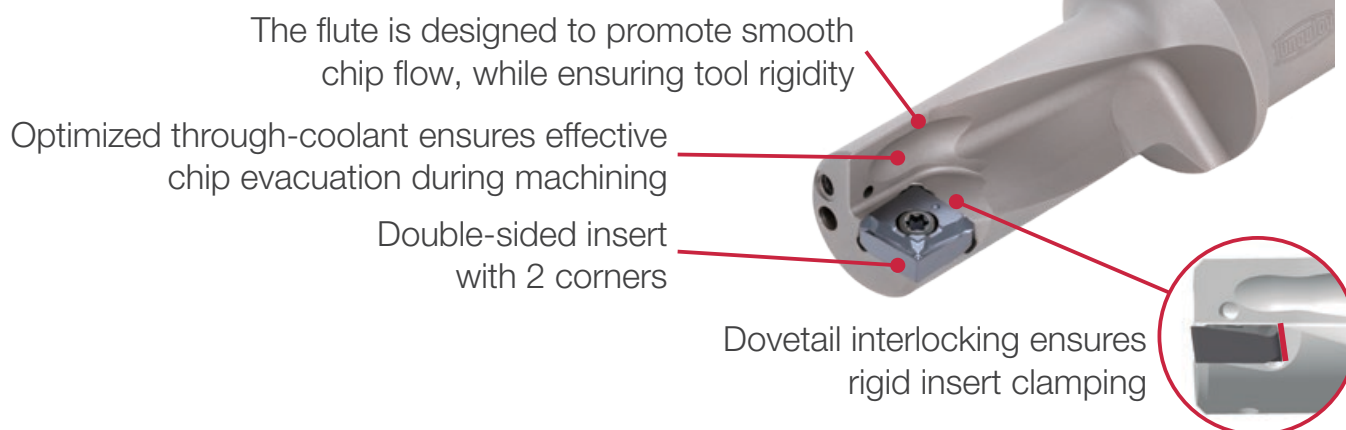
# MULTIFUNCTIONAL TOOLS FOR DRILLING AND TURNING

*Reduced machine downtime thanks to eliminating the need for tool changes.*

Minimum bore diameter: DMIN (mm)

TINY <sup>INI</sup> TURNMULTI					TUNG <sup>ORE</sup> B <sup>RE</sup> MINI							
ø3	ø4	ø5	ø6	ø7	ø10	ø12	ø14	ø16	ø18	ø20	ø25	ø32
Solid carbide boring bar					Indexable							

## TUNG<sup>ORE</sup>B<sup>RE</sup>MINI



## TINY<sup>INI</sup>MTURNMULTI

### TBMFR07...

From drilling to internal, external, and face turning  
L/D = 2 & 3



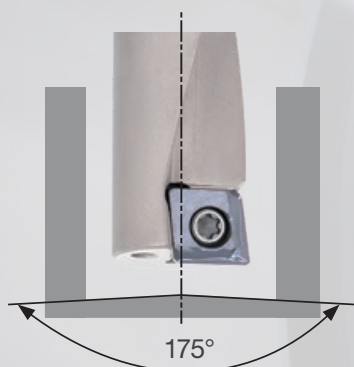
Three strategically positioned coolant grooves ensure effective chip evacuation and control.





**XOMU-PS**

Optimized chipbreaker design enables effective chip control in all applications



Creates a near-flat hole bottom



Creates a flat hole bottom with excellent chip control, thanks to its unique chipbreaker

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TINY<sup>INI</sup>MTURN

# MINIATURE SOLID BORING TOOLS FOR HIGH ACCURACY

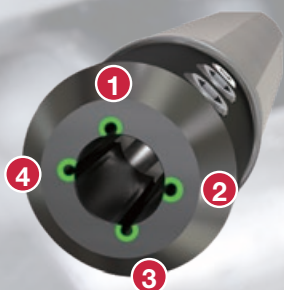
*Efficiency and profitability to your small boring operations as small as  $\varnothing 0.6$  mm*

New **SH725** insert grade provides a good combination of wear and fracture resistance, ensuring long tool life and wear prediction.

Expanded indexable type holders, and inserts with 3D chip breaker for better chip control.

Ideal for machining extremely small diameter bores in a wide range of materials.

Ingenious through-coolant sleeve design optimally directs 4 streams of coolant jets close to the cutting zone, providing long tool life, controlled chips formation and evacuation for better part quality.





*Available with a wide selection of heads  
for boring, profiling, chamfering,  
threading and grooving*



*Additionally offered with CBN **BX310**  
uncoated grade, suitable for bore  
diameters as small as 2.8 mm.*

Available in three minimum bore diameters (DMIN): 2.8,  
4 and 5 mm, and in 2xD and 3xD tool lengths



video



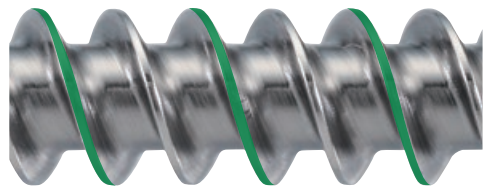
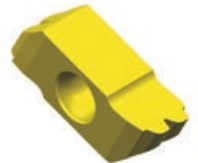
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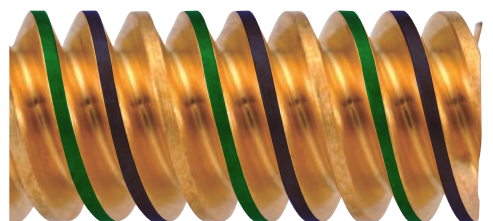
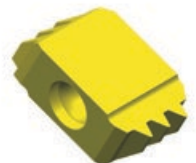
# MAXIMIZE EFFICIENCY: ONE SINGLE PASS, MULTI-LEAD THREADS MACHINING!

Ideal for increasingly complex medical screw thread forms, NTK's single-pass thread forming technology reduces cycle time.

**Double lead thread**



**Triple lead thread**



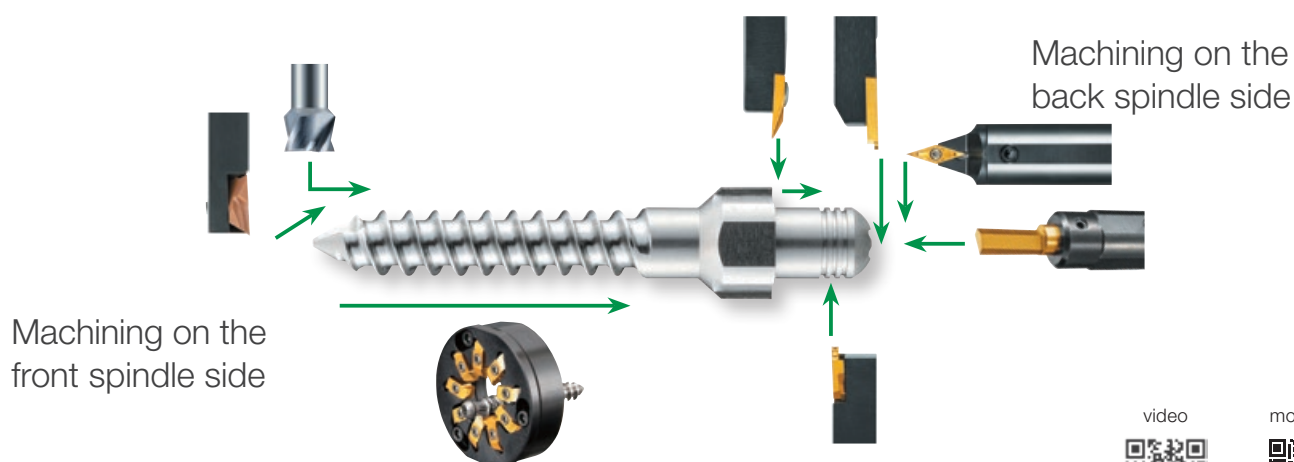


# Thread Whirling

*Cutting-edge system for unparalleled productivity in screw manufacturing, such as dental implant and bone screws*



## Tooling layout

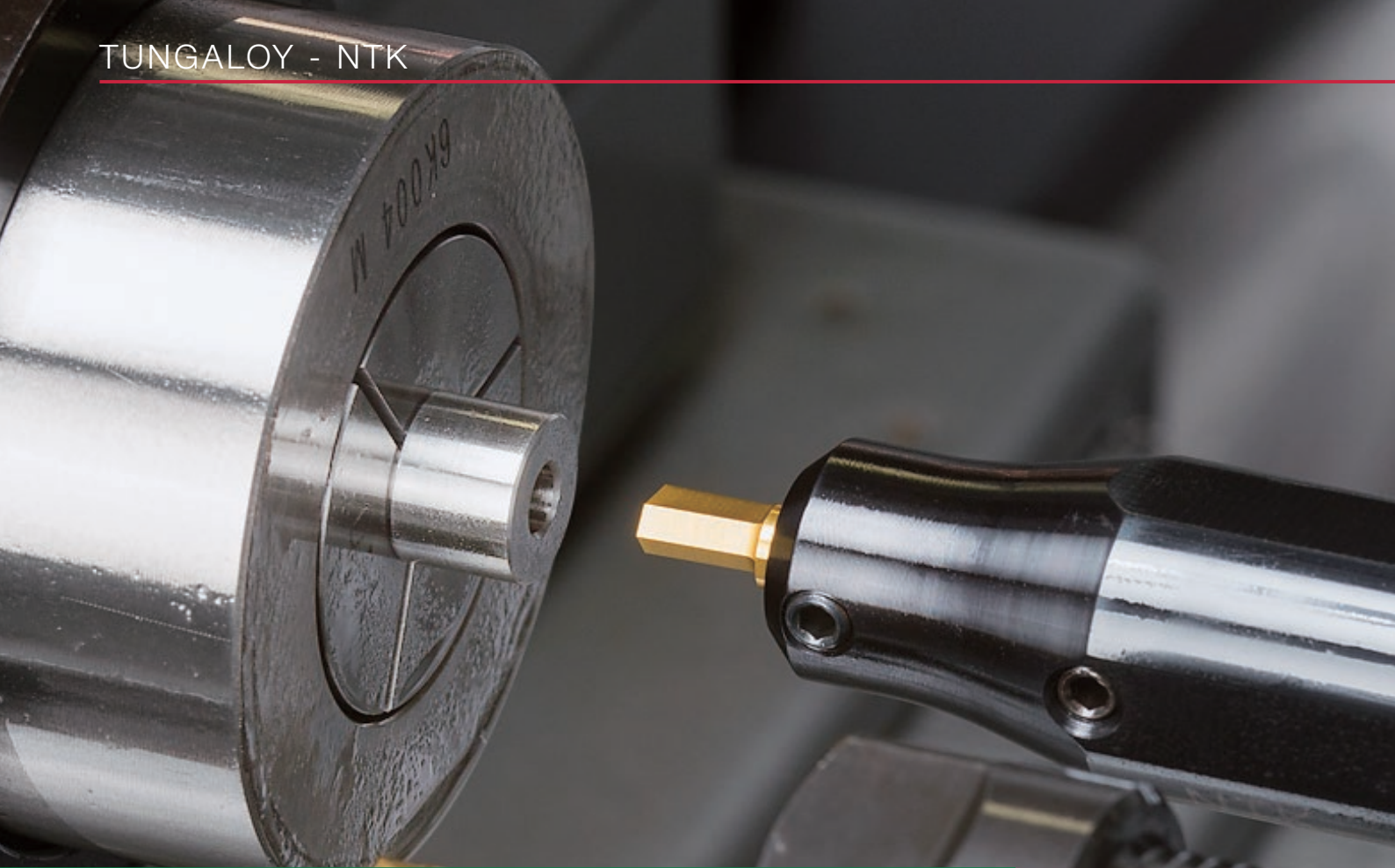


video



more info





# OPTIMIZING SOCKET HOLE MACHINING

# SHAPER DUO

*Hexalobular (6-lobe)*



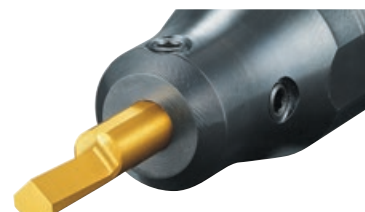
T6-T30

*Hexagon*



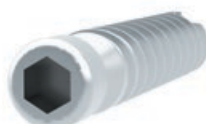
HEX 1.0 - 8.0

*Square*



AF 2.0 - 8.0

*Ideal for a variety of applications*



## Hexagon & Square socket process comparison

	Tool pressure	Cycle time	Flexibility	Tool cost	
Shaper Duo					Less tool pressure, especially good for small diameter parts. One insert can machine a range of socket sizes
Broach	-		-	-	You need a tool for each socket size

## Hexalobular (6-lobe) socket process comparison

	Tool pressure	Cycle time	Tool Cost	High speed spindle	Program	
Shaper Duo				Not necessary	Simple	No need for a high speed spindle
Milling			-	Necessary	Complicated	Requires high speed spindle

**New** Hexagon socket : AF 1.0mm - 1.4mm  
For Abutment screws

more info







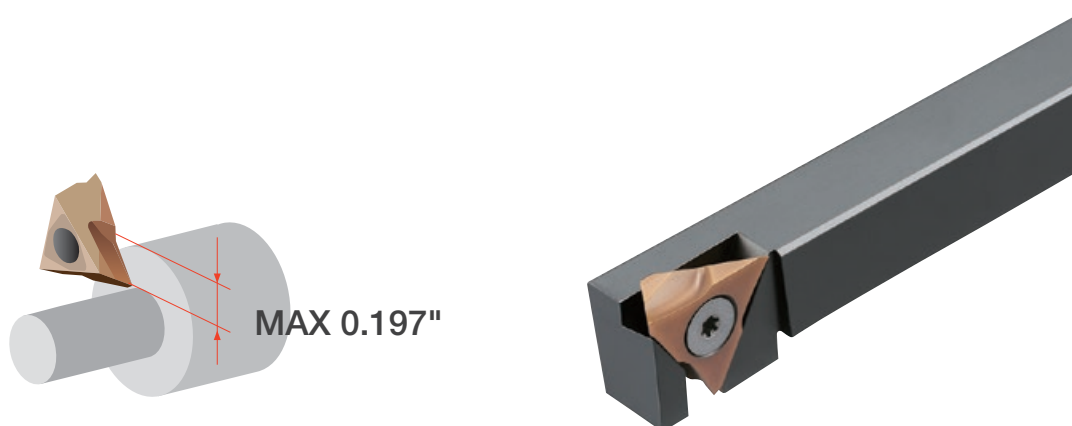
# EFFICIENT SINGLE-PASS TURNING WITH DEPTHS OF CUT UP TO **0.197"**

*Reduce Cycle Time, Minimize Insert Wear,  
and Extend Tool Life*

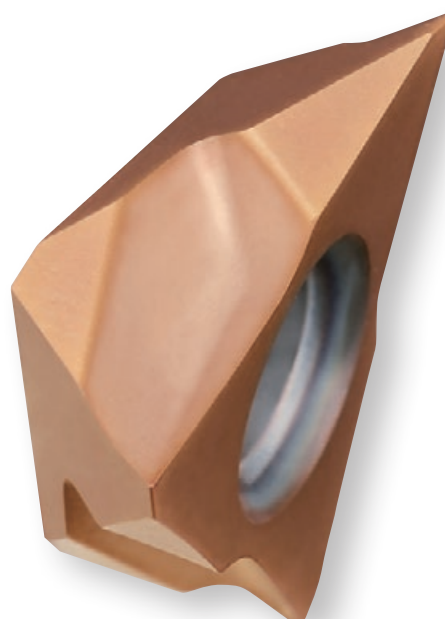
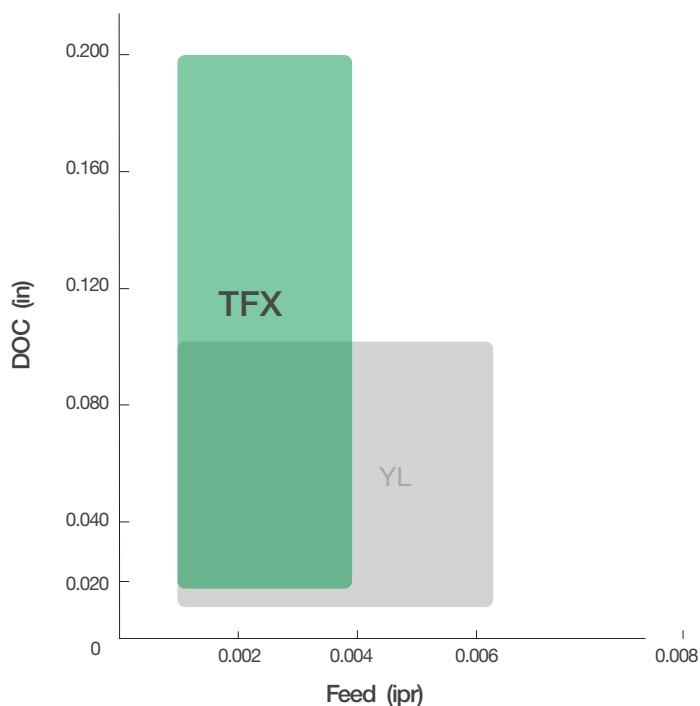


# The Front Max

*Revolutionary Chipbreaker Design  
Delivers Superior Chip Control  
and Surface Finish*



## APPLICATION RANGE



video



more info



Specialized for



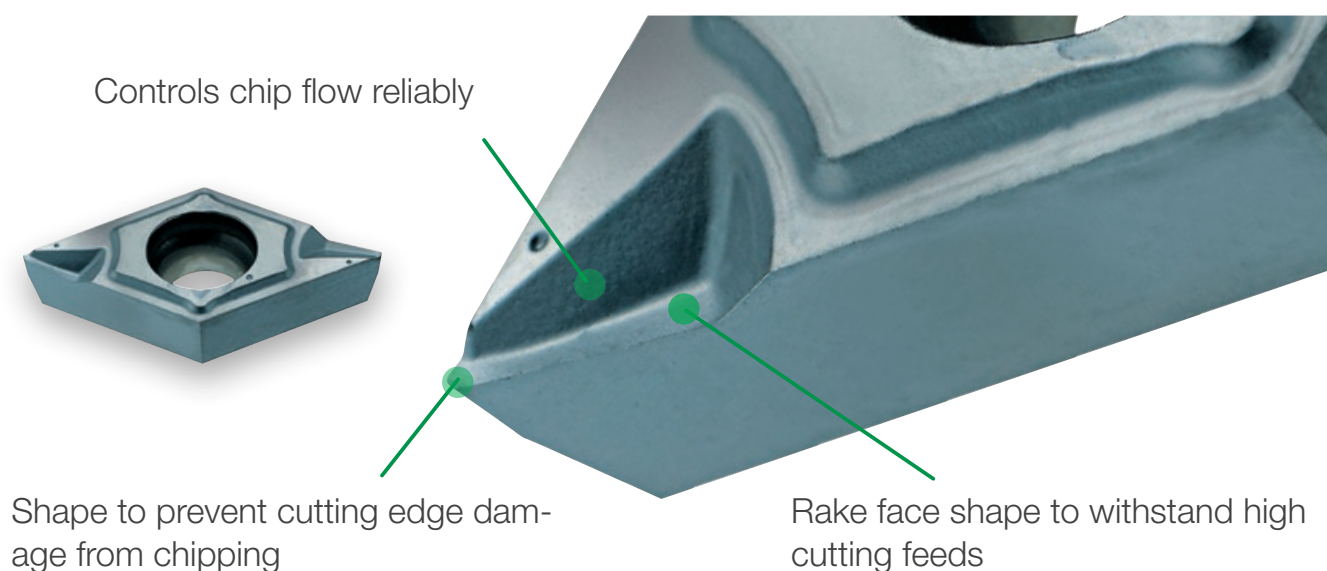
\* LFV is a registered trademark of Citizen Watch Co., Ltd.

# VIBRATION MACHINING: THE UNARGUABLY PREMIER CHIPBREAKER SOLUTION

# TMV Chipbreaker

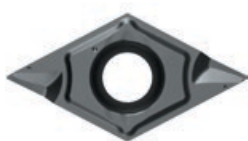
*Outstanding chipbreaker for vibration machining, ensuring long tool life and stable chip evacuation even in the most challenging scenarios*

Featuring reduced cutting edge wear and stable chip formation throughout the process, achieving high performance.



## Available Geometries

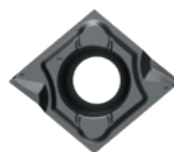
DCGT



TNGG



CCGT



VCGT



video



more info



# SPECIAL HOLDER SERIES DESIGNED FOR PRECISE Y-AXIS CUTTING EDGE ADJUSTMENT

For machines without Y-2 Axis capabilities





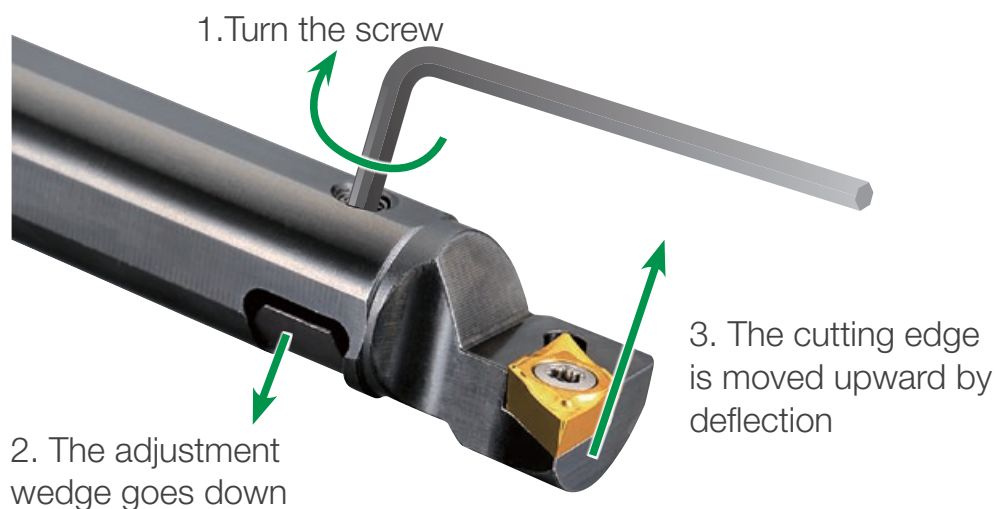
# DS-ACH holder series

*Wedge mechanism adjusts centerline height of the cutting edge by turning a set screw with a wrench*

Range of centerline adjustment: 0 - 0.008"

Height adjustment of the cutting edge is done by turning a screw and bending the tip of the holder with a wedge mechanism.

Patented holder design improves rigidity, compared to conventional holders, to eliminate vibration



Angle of rotation	Cutting edge height Increase
180°	0.002
360°	0.004
540°	0.008
720°	0.012

more info





*Newly designed insert profile ensures unobstructed chip flow and consistent chip evacuation.*

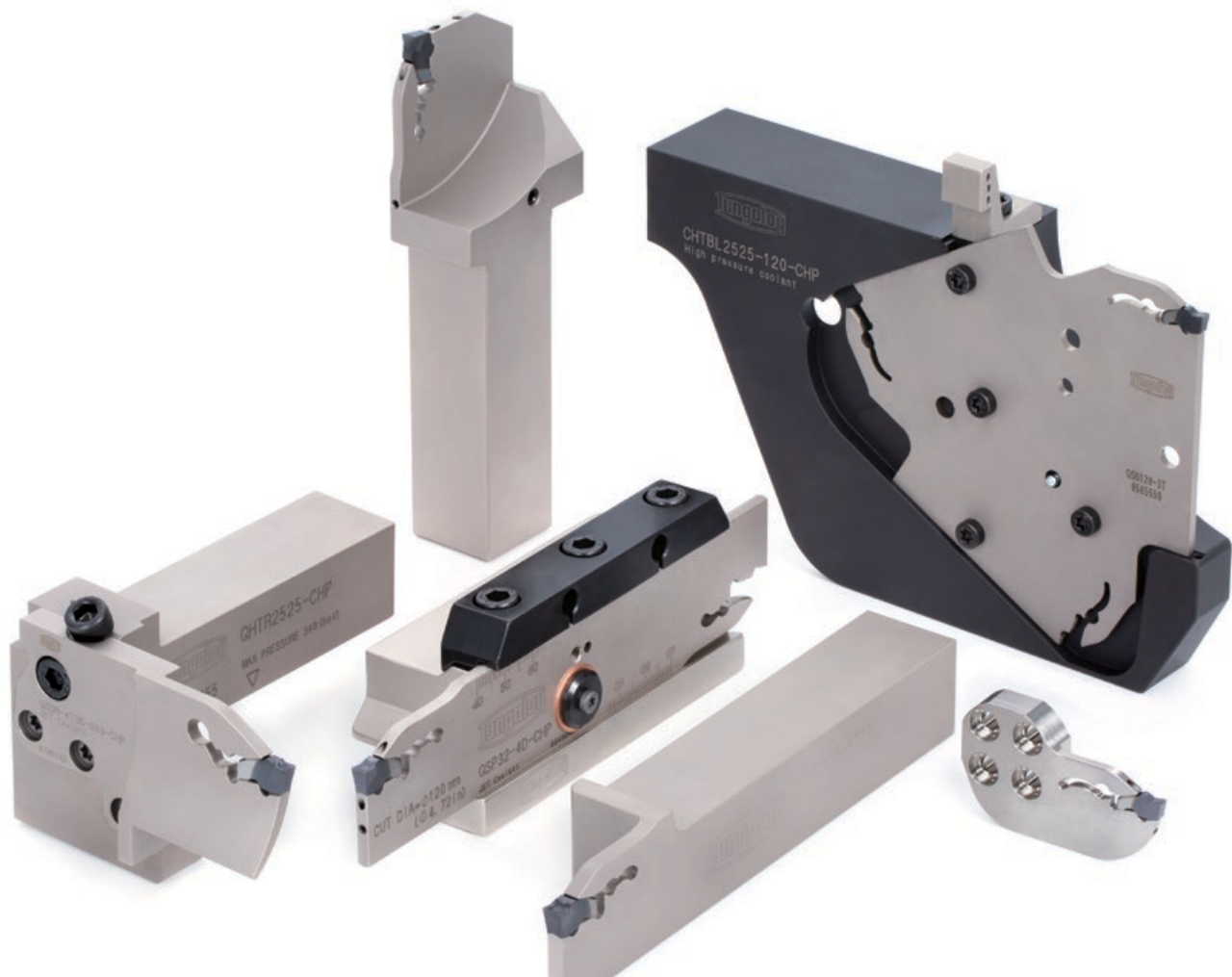
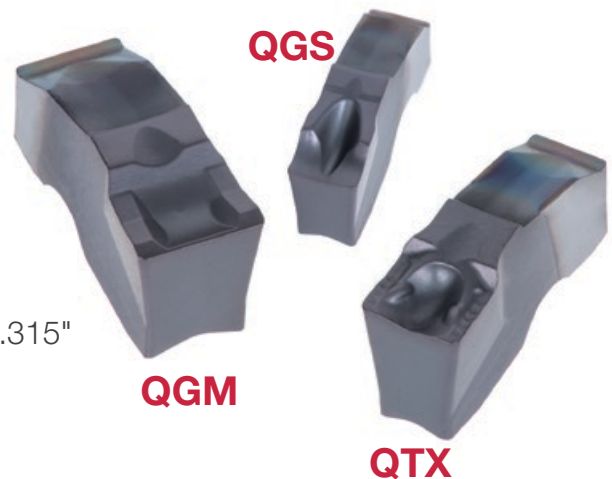
The insert is locked in three positions with the use of an insert stopper in the pocket. This design provides extremely rigid insert clamping.


**QGM, QGS and QTX** inserts

**CW** = 0.079", 0.118", 0.157", 0.197", 0.236" and 0.315"

Max. grooving depths (for monoblock shanks):

**CDX** = 1.299"





Holders featuring pin-pointed high pressure coolant to the cutting edge

# EXCEL IN WIDE APPLICATIONS OF DEEP GROOVING AND PARTING-OFF

video



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# UNIQUE 4-EDGED INSERT FOR SMALL INTERNAL GROOVING OPERATIONS

*Stability and repeatability in small  
internal grooving operations with the  
unique insert clamping system*



**TCIG10...** and **TCIG12...**

**CW** = from 0.020" to 0.118"

Max. insert cutting depth:

**CDX** = 0.118"

Min grooving dia:

**DMIN** =  $\varnothing 0.413$ "





**ADD<sup>INTERNAL</sup>CUT**

*The innovative clamping system eliminates insert movement caused by cutting forces.*

Through-coolant holder delivers coolant from the outlet located near the insert, promoting effective chip evacuation from the cutting area.

Neutral designed insert can be mounted on either right- or left-handed holder.

video



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# HIGH PRECISION GROOVING AND THREADING TOOL SERIES FOR CNC AUTOMATIC LATHES

*A unique insert clamping system for  
extra tool rigidity*





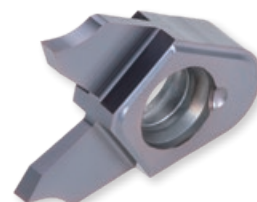
## MINI **V**<sup>LOCK</sup> GROOVE

*Perfect for grooving and threading bar stocks of 0.472" (12 mm) or smaller*

Available in 8x8, 10x10, and 12x12 mm square shanks with high-pressure coolant

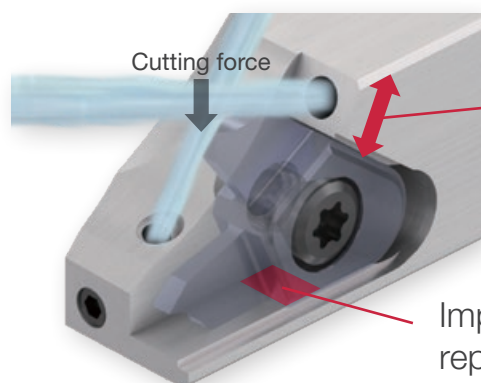
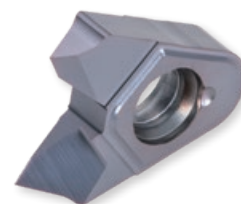
### **VGP08... and VGP10**

for Grooving  
2 corner insert  
**CW** = 0.013" - 0.039"



### **VGT10F...**

for Threading  
2 corner insert  
**Pitch** = 0.4 - 2 mm  
**Cutting edge angle** = 55°, 60°



A thick support restricts the insert movements during machining

Improves the cutting edge repeatability

video



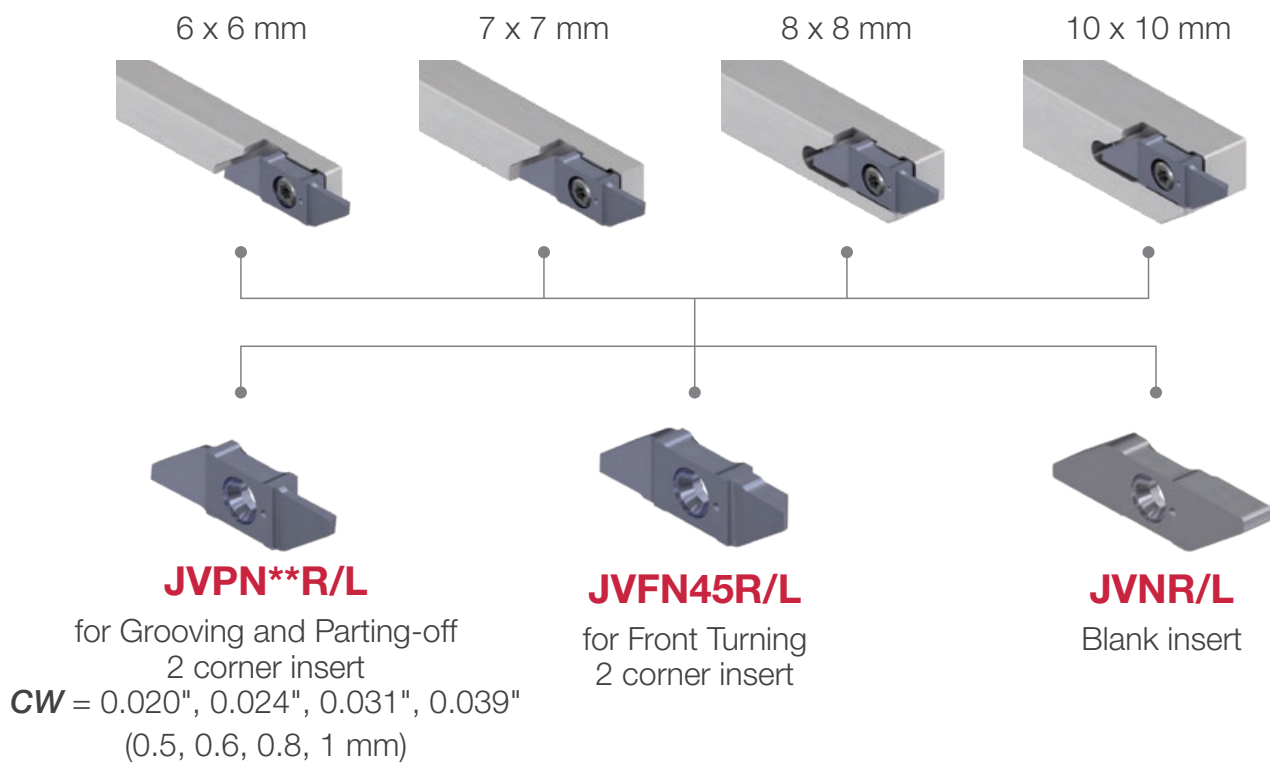
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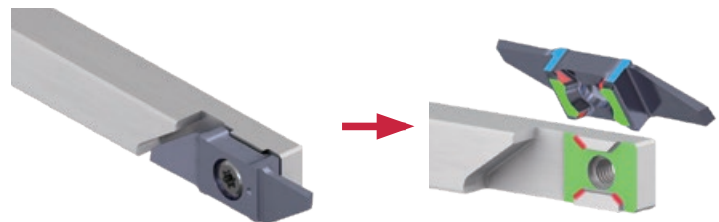
# DUO<sup>FORCE</sup>CUT

*New flexible tool series with unique insert clamping system.  
Ideal for machining small parts with 0.472" (12 mm) or smaller diameters.*

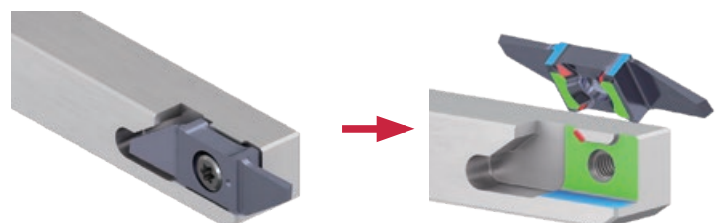


6 x 6 to 10 x 10 mm shanks are available as standard.  
Innovative insert clamping allows the use of the same insert with all toolholders of different sizes.

6 x 6 and 7 x 7 mm shanks



8 x 8 and 10 x 10 mm shanks



# A STEP FORWARD FOR TURNING AND GROOVING MINIATURE OPERATIONS

*Flexibility and a wide  
range of operations with  
the new turning tool series  
for CNC automatic lathes  
and cam-driven lathes*

video



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# INDEXABLE TOOLING SOLUTION FOR INTERNAL MACHINING OF SMALL DIAMETER BORES



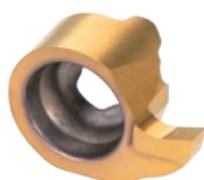


# TINY<sup>INTERNAL</sup>CUT

## *Internal grooving and thread turning tool series for bores as small as $\varnothing 5$ mm ( $\varnothing 0.197$ " )*

Tool body with through coolant technology.  
It offers unmatched precision and edge repeatability,  
thanks to its unique clamping system for rigid stability.

Featuring the latest PVD insert grade, **SH7025**, for superior  
surface quality and process security.



**MGR**  
Grooving



**MGR**  
Profiling (Full R)



**MTR**  
Threading

video



e-catalog



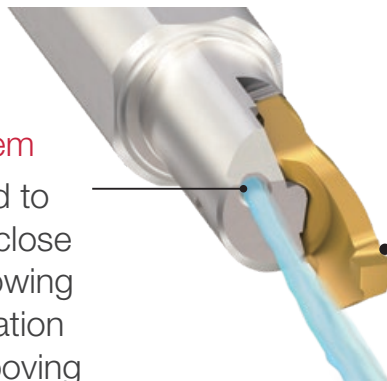


## FACE<sup>INI</sup>CUT

*Deep face grooving of up to 10 mm (0.393") DAXN and up to 9 mm (0.354") groove depth is possible*

### Internal coolant system

Coolants are directed to the optimal position close to the cutting tip, allowing excellent chip evacuation during deep face grooving



### Effective chip redirector

Optimized geometry that effectively redirects chips out of the groove and to the side.

Eliminates bird nesting of chips during machining

Effectively removes chips out of the cutting area and eliminates bird nesting.

Extremely rigid insert clamping ensures tool stability during deep face grooving operations.

Sharp cutting edge, combined with **SH7025**, the latest PVD grade, provides long tool life and superior surface quality.



**MFGR10**

# SUPERB DEEP FACE GROOVING TOOL SERIES

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# SAME PERFORMANCE SMALLER SIZE

## TUNG<sup>HORT</sup>SCUT

*New double-ended small-size internal grooving inserts with exceptional features*

Enhanced chatter resistance is achieved through optimized screw placement, which strengthens the insert clamping capability.

Larger pockets facilitate more effective and smooth chip evacuation.

Toolholder series featuring an internal coolant system ensure optimal performance.



### DGS\*S

Lower cutting force and superior sharpness

**CW** = 0.079" - 0.118"



### DTR\*S

Full radius type

**CW** = 0.079" - 0.118"

### CTIR\*\*S

(Toolholder that accommodates downsized internal grooving insert)



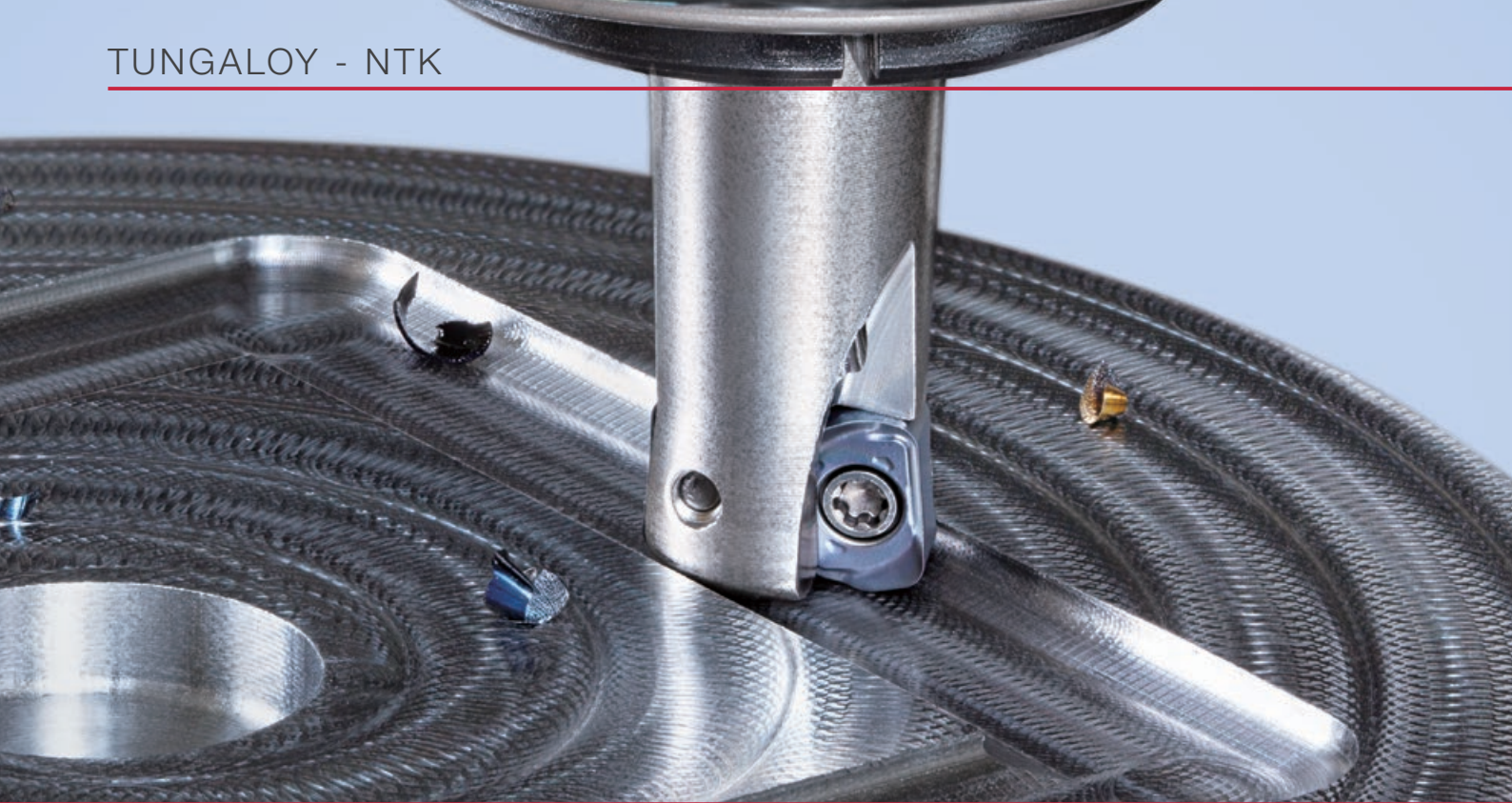
video



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# HIGH-FEED MILLING CUTTERS

## ADD<sup>D</sup>FEED

*Small diameter high-feed milling cutter for expanded application coverage, featuring cutter bodies as small as  $\varnothing 0.375$ "*

### Cutter bodies:

Shank type: **EXN02R...** (Short type)  
**EXN02R\*\*L** (Long type)  
DCX =  $\varnothing 0.375$ " -  $\varnothing 1.000$ "

Modular type: **HXN02R...**  
DCX =  $\varnothing 0.375$ " -  $\varnothing 0.750$ "



### LNMU02-MM

Double-sided,  
4-edged insert  
APMX = 0.020"



video



e-catalog





# FOR MAXIMUM PERFORMANCE

## DO<sup>FEED</sup>TRI

*The cutter's small entry angle ensures smooth material access, perfect for long reach applications*

### Cutter bodies:

Bore type: **TXWX03** DCX =  $\varnothing 1.500'' - \varnothing 2.000''$

Shank type: **EXWX03** DCX =  $\varnothing 0.625'' - \varnothing 1.250''$

Modular type: **HXWX03** DCX =  $\varnothing 16 - \varnothing 32$  mm



### WXMU03-MM

Double-sided,  
6-edged insert  
APMX = 0.039"



video



e-catalog





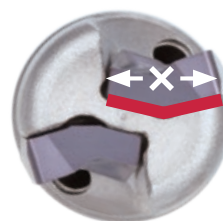
# ADVANCED SHOULDER MILLING CUTTER

*Unmatched  
stability across  
all materials, with  
an innovative  
clamping system*

# TUNG<sup>ORCE</sup>FREC



*Extremely secure insert clamping, V shape design prevents insert movement during machining.*



## AV\*T12

Max. depth of cut:  
0.453" (11.5 mm)

### Cutter bodies:

Shank type:

#### EPAV12

DC =  $\varnothing 0.625$ " -  $\varnothing 1.250$ "  
 $\varnothing 12$  -  $\varnothing 32$  mm

Modular type:

#### HPAV12-M

DC =  $\varnothing 16$  -  $\varnothing 40$  mm

Bore type:

#### TPAV12

DC =  $\varnothing 1.500$ " -  $\varnothing 2.000$ "  
 $\varnothing 50$  -  $\varnothing 63$  mm



## AV\*T06

Max. depth of cut:  
0.236" (6 mm)

### Cutter bodies:

Shank type:

#### EPAV06

DC =  $\varnothing 0.313$ " -  $\varnothing 1.000$ "  
 $\varnothing 8$  -  $\varnothing 32$  mm

Modular type:

#### HPAV06-M/S

DC =  $\varnothing 10$  -  $\varnothing 16$  mm

Bore type:

#### TPAV06

DC =  $\varnothing 40$  mm



## AV\*T04

Max. depth of cut: 4 mm

### Cutter bodies:

Shank type:

#### EPAV04

DC =  $\varnothing 6$  -  $\varnothing 16$  mm

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# TUNGMEISTER

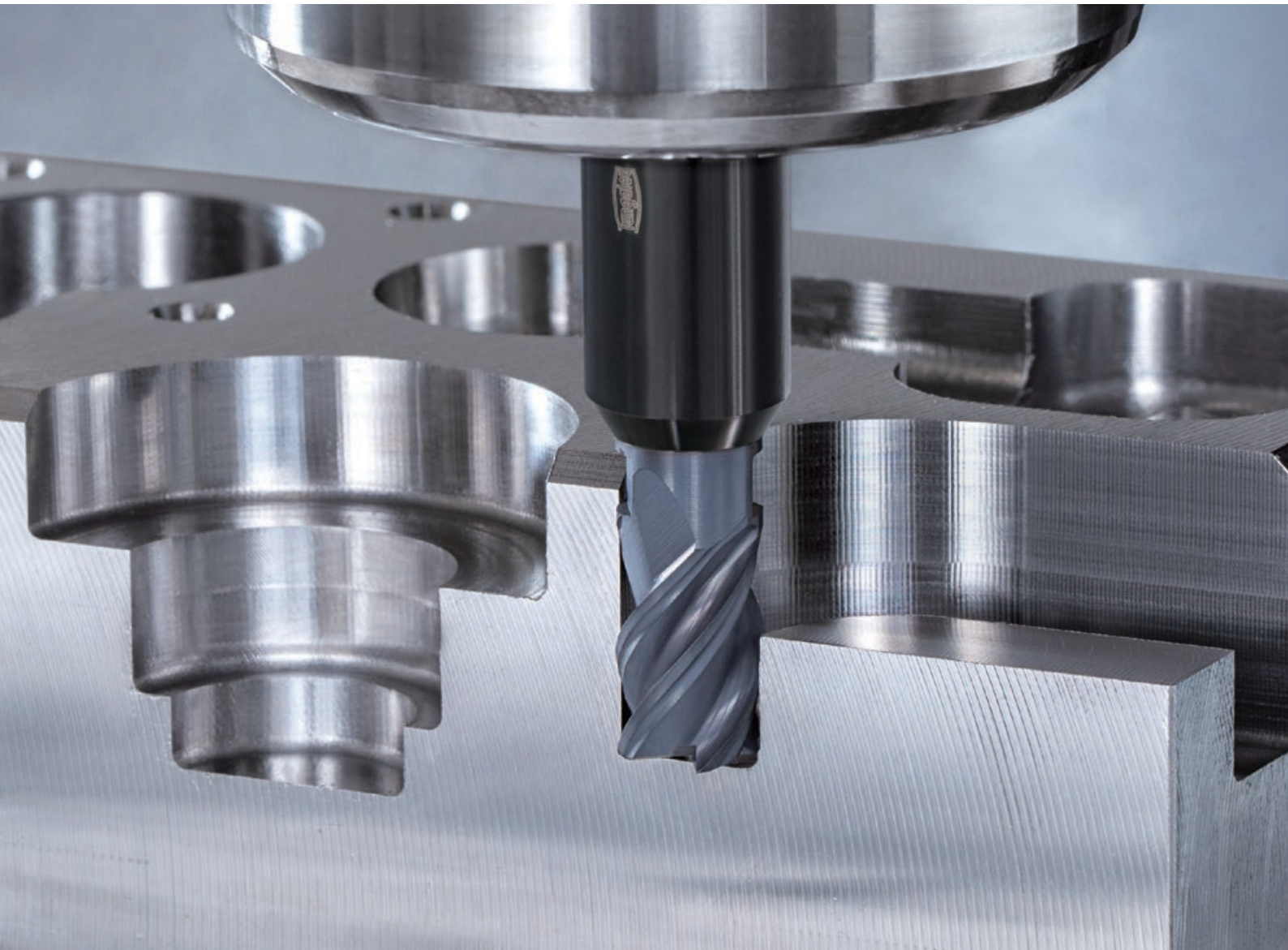


## MORE THAN 13,000 POSSIBLE COMBINATIONS

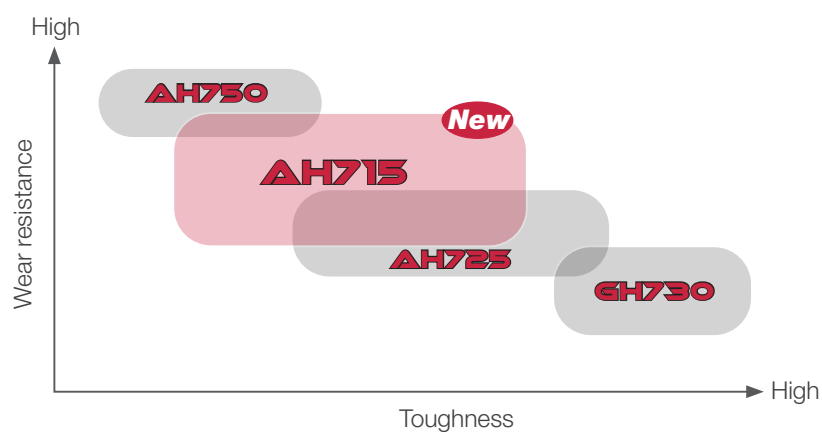
*Easy and accurate head-holder coupling  
provides reduced tool change time and  
high accuracy of cutting point repeatability*

Offers milling solutions for square shoulder milling, high feed milling, ball nose milling, chamfering, hole making, and slotting.

A flexible mix of heads and holders allows for an optimum tool assembly in all end milling applications.



*Boost performance with the latest **AH715** PVD grade, featuring improved tool life in a wide group of materials.*



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# VERSATILITY MEETS EFFICIENCY

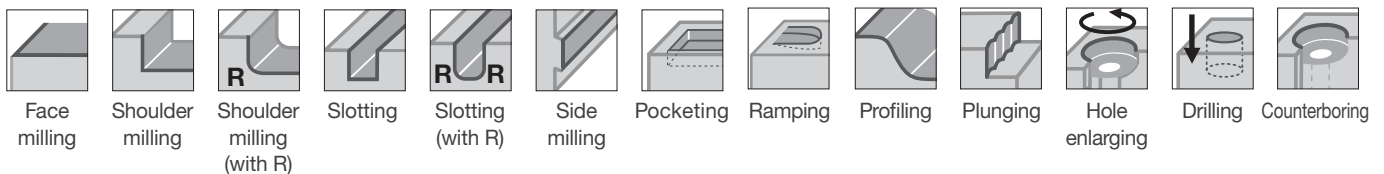
*More operations with a single  
tool, from shoulder milling to  
hole making*





*Innovative four-edged inserts provide ultimate machining flexibility and economy. All-round cutter with center cutting capability provides ultimate machining versatility*

### Applications capabilities



### Cutter bodies:

Shank type: **EVLX06/08/10/12/16/19...** (Short type) DC =  $\varnothing 0.500'' - \varnothing 1.500''$ ,  $\varnothing 12 - \varnothing 40\text{mm}$

**EVLX06/08/10/12/16/19\*\*L** (Long type) DC =  $\varnothing 0.500'' - \varnothing 1.500''$ ,  $\varnothing 12 - \varnothing 40\text{mm}$

Modular type: **HVLX06/08/10/12/16...** DC =  $\varnothing 12 - \varnothing 33\text{mm}$

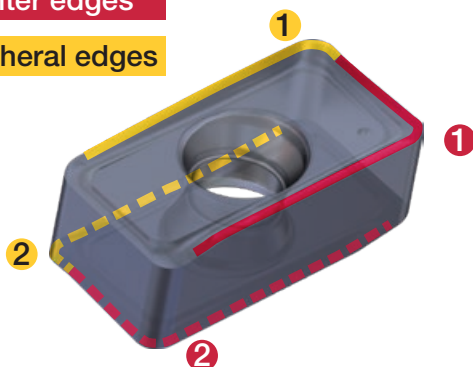
### LXMMU-MM



Tool dia. DC	$\varnothing 0.500''$ $\varnothing 12\text{mm}, \varnothing 13\text{mm}$	$\varnothing 0.625''$ $\varnothing 16\text{mm}, \varnothing 17\text{mm}$	$\varnothing 0.787''$ $\varnothing 20\text{mm}, \varnothing 21\text{mm}$	$\varnothing 1.000''$ $\varnothing 25\text{mm}, \varnothing 26\text{mm}$	$\varnothing 1.250''$ $\varnothing 32\text{mm}, \varnothing 33\text{mm}$	$\varnothing 1.500''$ $\varnothing 40\text{mm}$
APMX (in)	0.197"	0.276"	0.354"	0.433"	0.571"	0.709"
Insert size	06	08	10	12	16	19

Two center edges

Two peripheral edges



A single insert can be used either for center edge or peripheral edge and can be used twice in each position – **four cutting edges for highest insert economy.**

video



e-catalog



# EXTENDED<sup>FORCE</sup>MILL

*Extended-flute rough milling cutter with indexable double-sided inserts with exceptional reliability for machining titanium alloys and cast iron*



**SXHU...**



Peripheral insert  
8 cutting edges

**AXHU...**



Bottom insert  
4 cutting edges



## Cutter bodies:

Bore type: **LPSX10...**

DC =  $\varnothing 2.00''$ ,  $\varnothing 2.50''$ ,  $\varnothing 3.00''$ ,  
 $\varnothing 50$  mm,  $\varnothing 54$  mm,  $\varnothing 66$  mm

APMX =  $\varnothing 2.125''$ ,  $\varnothing 3.011''$

Bore type (TungCap type): **LPSX10...C**

DC =  $\varnothing 54$ , and  $\varnothing 66$  mm

APMX = 54 mm

Coolant jet is directed precisely to the cutting point through the fixed coolant nozzle, exerting maximum cooling effect for the cutting edge and workpiece.





# IGNITE HIGH METAL REMOVAL POTENTIAL!

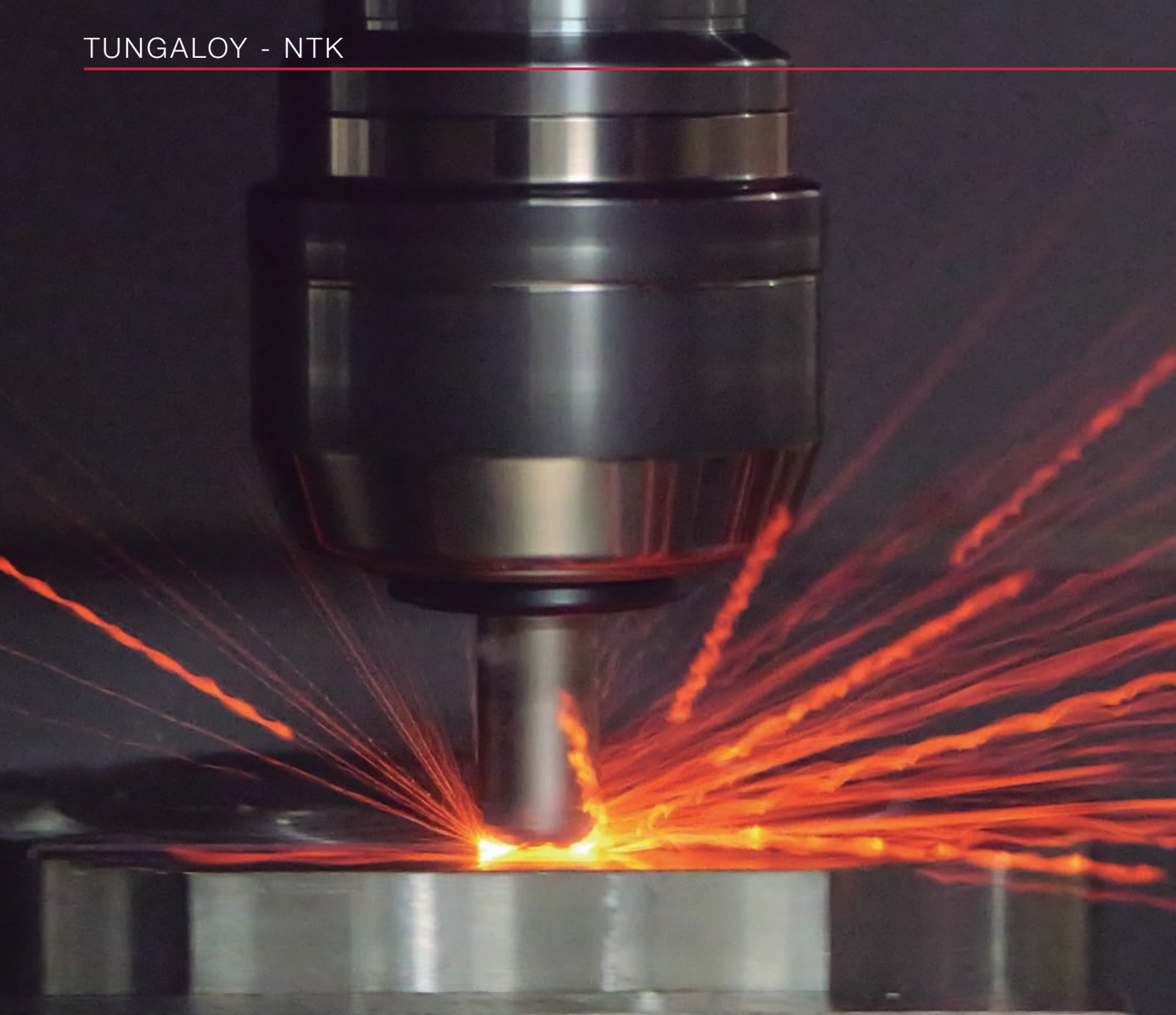
*Maximum productivity and cost efficiency  
for roughing operations of titanium  
alloy and cast iron parts*



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**UNBEATABLE CERAMIC  
CUTTER: AS SMALL AS  
Ø0.630" FEATURING  
3 INDEXABLE INSERTS**



## JRF CUTTER

*Enhanced clamping system prevents insert movements and ensures high stability during machining*

Unique step chipbreaker: reduces flaking by lowering the cutting edge from the clamping surface of conventional tools (positive inserts)

### Cutter bodies:

Shank type: **JRF...**

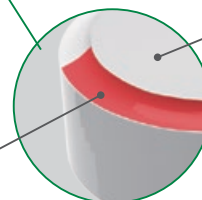
DCX =  $\varnothing 0.625"$ ,  $\varnothing 0.750"$ ,  $\varnothing 1.000"$  and  $\varnothing 1.250"$



### RNGF-HNF

Double-sided  
APMX = 0.039"  
Available with **SX3** and  
**SX9** Ceramic grades

Step chipbreaker



Clamping surface

more info





## CERAMATIC

*Productive, High Speed Ceramic Endmills series achieves rough milling operations in nickel-based alloys up to 10 times faster than carbide tools*

For machines with a spindle capacity of at least 18,000 RPM  
(Ex. 1/2" endmill running approximately 2,000 surface feet)

### **RCE-H4 (SX9)**

4 Flutes

DC =  $\varnothing 0.315"$  -  $\varnothing 0.500"$

APMX = 0.020" - 0.375"

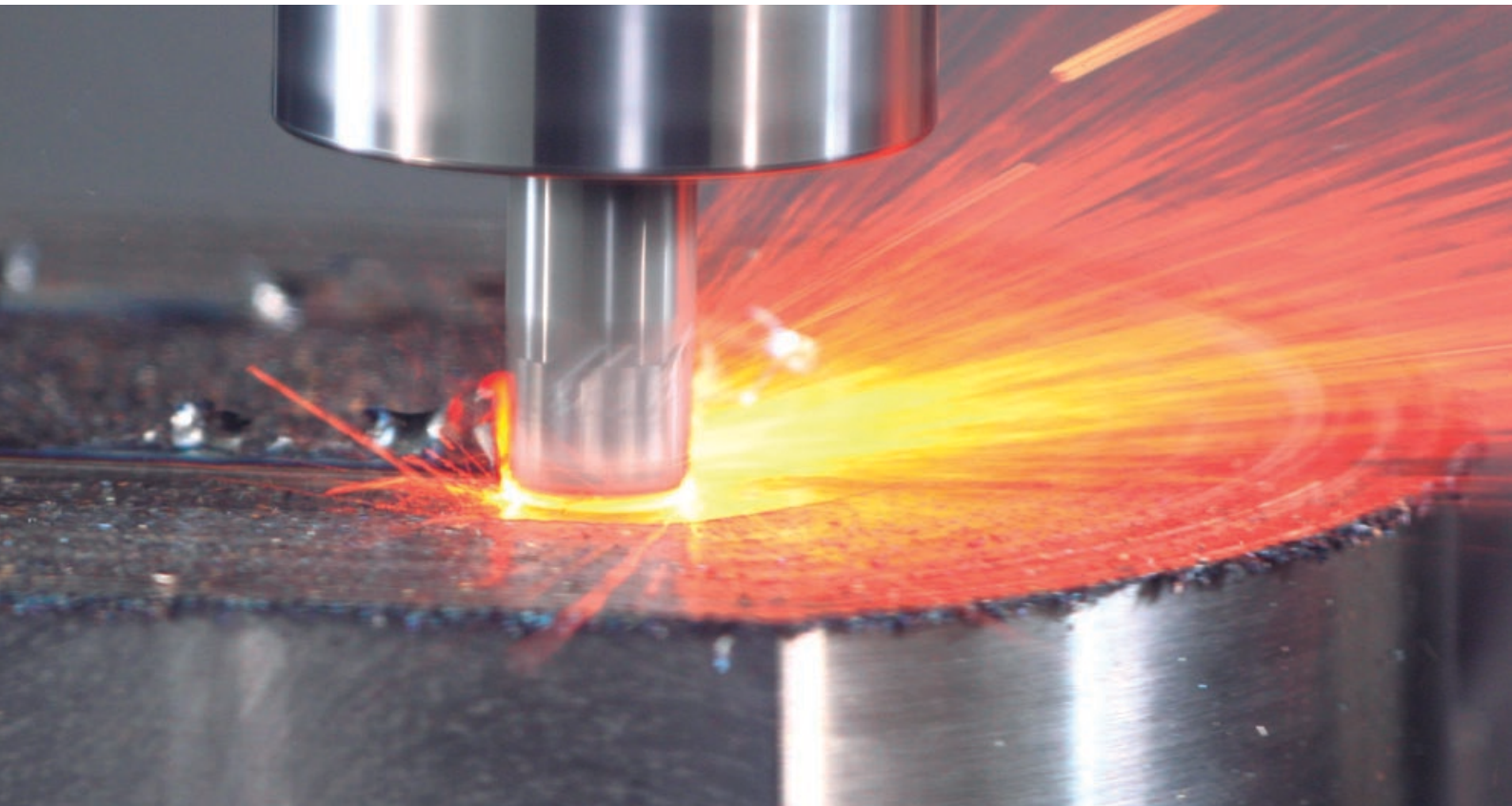
### **RCE-J6 (SX9)**

6 Flutes

DC =  $\varnothing 0.315"$  -  $\varnothing 0.500"$

APMX = 0.020" - 0.375"





# UNLEASHING PRODUCTIVITY AND EFFICIENCY, A REFERENT IN CERAMIC ENDMILLS





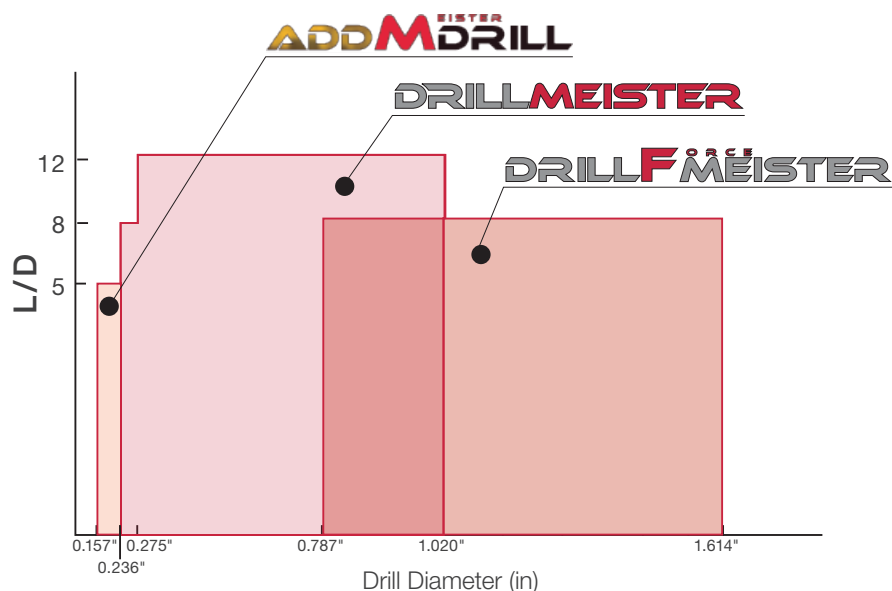
# OUTSTANDING RANGE OF HEAD EXCHANGEABLE DRILLS

*Exchangeable head drill systems for superior drilling performance and long tool life*

Quick drill tip change for reduced machine downtime.

Tool inventory and management costs are significantly reduced as there is no need for regrinding.

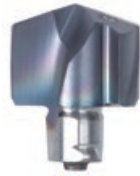
Drill bodies are offered in a wide range of sizes and styles, allowing optimal tool assembly for secure and productive drilling.



**ADDMEISTER**  
**DRILL**

video

e-catalog

**DMP**

Drill dia.:  
 $\varnothing 0.157'' - \varnothing 0.232''$   
 $\varnothing 4 - \varnothing 5.9 \text{ mm}$

General purpose drilling head ideal for various drilling applications

**DMC**

Drill dia.:  
 $\varnothing 0.157'' - \varnothing 0.232''$   
 $\varnothing 4 - \varnothing 5.9 \text{ mm}$

High precision drilling head with self-centering chisel edge

video

e-catalog


**DRILLMEISTER**
**DMP**

Drill dia.:  
 $\varnothing 0.236'' - \varnothing 1.020''$   
 $\varnothing 6 - \varnothing 25.9 \text{ mm}$

General purpose drilling head ideal for various drilling applications

**DMC**

Drill dia.:  
 $\varnothing 0.236'' - \varnothing 1.020''$   
 $\varnothing 6 - \varnothing 25.9 \text{ mm}$

High precision drilling head with double-margined drill periphery and self-centering chisel edge

**DMF**

Drill dia.:  
 $\varnothing 0.236'' - \varnothing 1.020''$   
 $\varnothing 6 - \varnothing 25.9 \text{ mm}$

180° flat edges for counterboring and flat bottoms

**DMH**

Drill dia.:  
 $\varnothing 0.236'' - \varnothing 1.020''$   
 $\varnothing 6 - \varnothing 25.9 \text{ mm}$

General purpose head with enhanced cutting edge

**DMN**

Drill dia.:  
 $\varnothing 0.268'' - \varnothing 0.768''$   
 $\varnothing 6.8 - \varnothing 19.5 \text{ mm}$

Drill head with sharp edges for non-ferrous materials

video

e-catalog


**DRILLFORCE**  
**MEISTER**
**SMC**

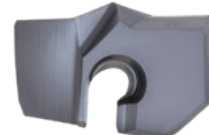
Drill dia.:  
 $\varnothing 1.024'' - \varnothing 1.299''$   
 $\varnothing 26 - \varnothing 33 \text{ mm}$

High precision drilling head with self-centering chisel edge

**SMP**

Drill dia.:  
 $\varnothing 0.787'' - \varnothing 1.614''$   
 $\varnothing 20 - \varnothing 41 \text{ mm}$

General purpose drilling head ideal for various drilling applications

**SMF**

Drill dia.:  
 $\varnothing 0.787'' - \varnothing 1.614''$   
 $\varnothing 20 - \varnothing 41 \text{ mm}$

For efficient drilling of flat-bottom holes



# ON THE EDGE OF STABLE DRILL EFFICIENCY

*Modular drill series featuring superb stability and high-rigidity during drilling, even in setups with long tool overhangs. While minimizing machine downtime through their quick tool change capability*



**TID-M**

Drill dia.:  
 $\varnothing 6 - \varnothing 18.9$  mm  
 2xD and 3xD  
 TungFlex connection

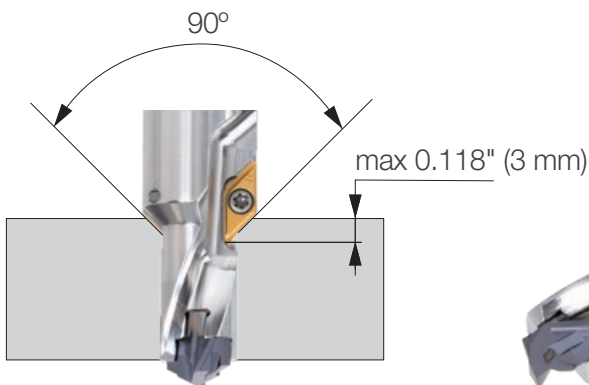
**TID-S**

Drill dia.:  
 $\varnothing 6.5 - \varnothing 10.9$  mm  
 2xD  
 TungMeister connection

video



Stable chamfering capability with less chattering due to dedicate insert design for chamfering  
 Dedicated line up for pre-thread drilling of metric and UNF threads

**TID-L-A-M**

Drill dia.:  
 $\varnothing 6.5 - \varnothing 16.9$  mm  
 TungFlex connection  
 Drilling+Chamfering /  
 pre-thread Drilling

video



## INTRODUCING SPECIAL DRILLING TOOLS AND THEIR DRAWING SYSTEM

Discover Tungaloy's platform for creating simple diagrams instantly, anywhere. Explore the 'Drawing System for Special Drilling Tools'! Enter tool details to swiftly generate diagrams illustrating special drilling tools with chamfering or boring functions.

more info



video

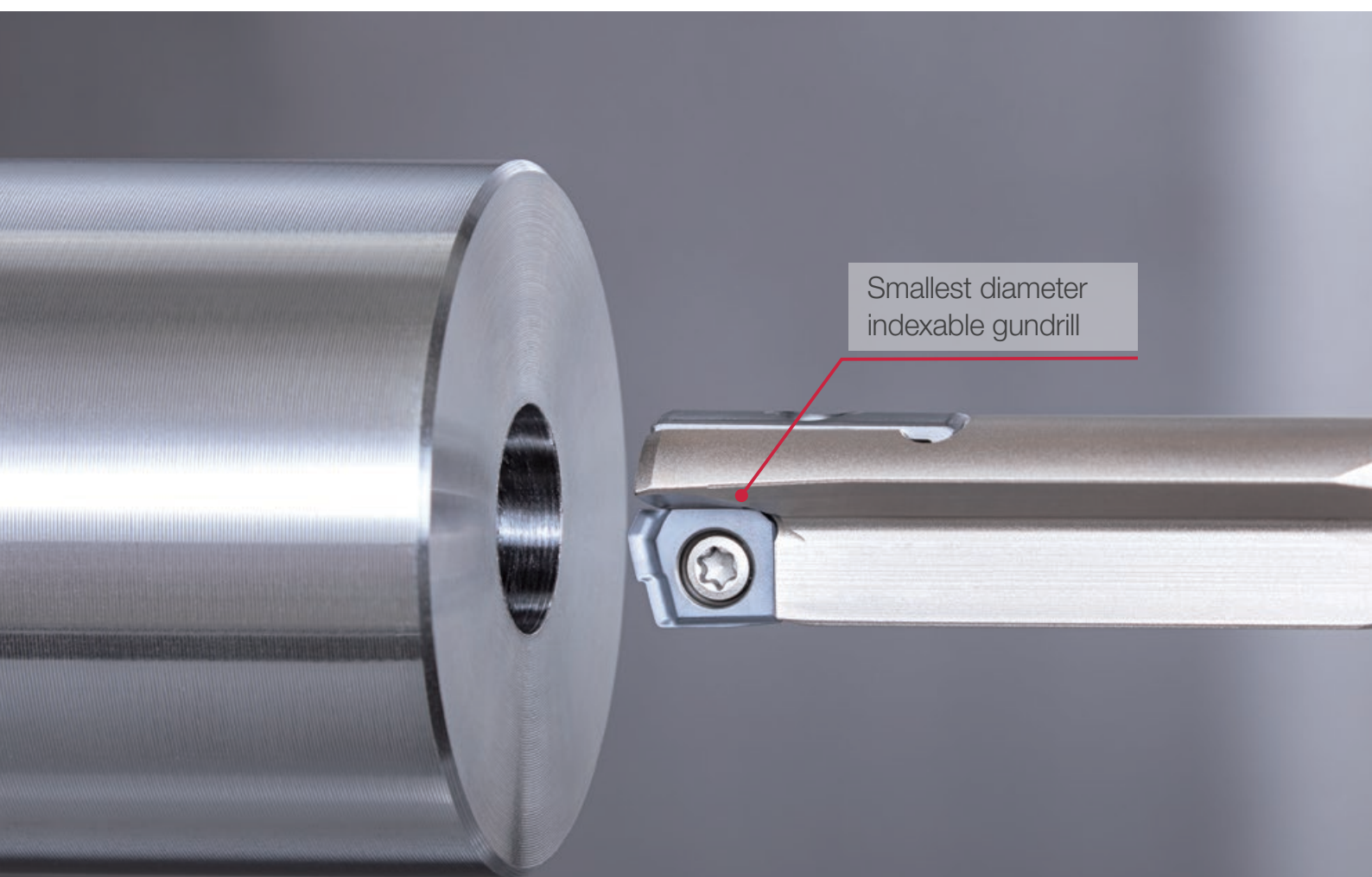




DEEPT<sup>RI</sup>DRILL

# THE SMALLEST AND DEEPEST HOLES WITH AN INDEXABLE GUNDRILL

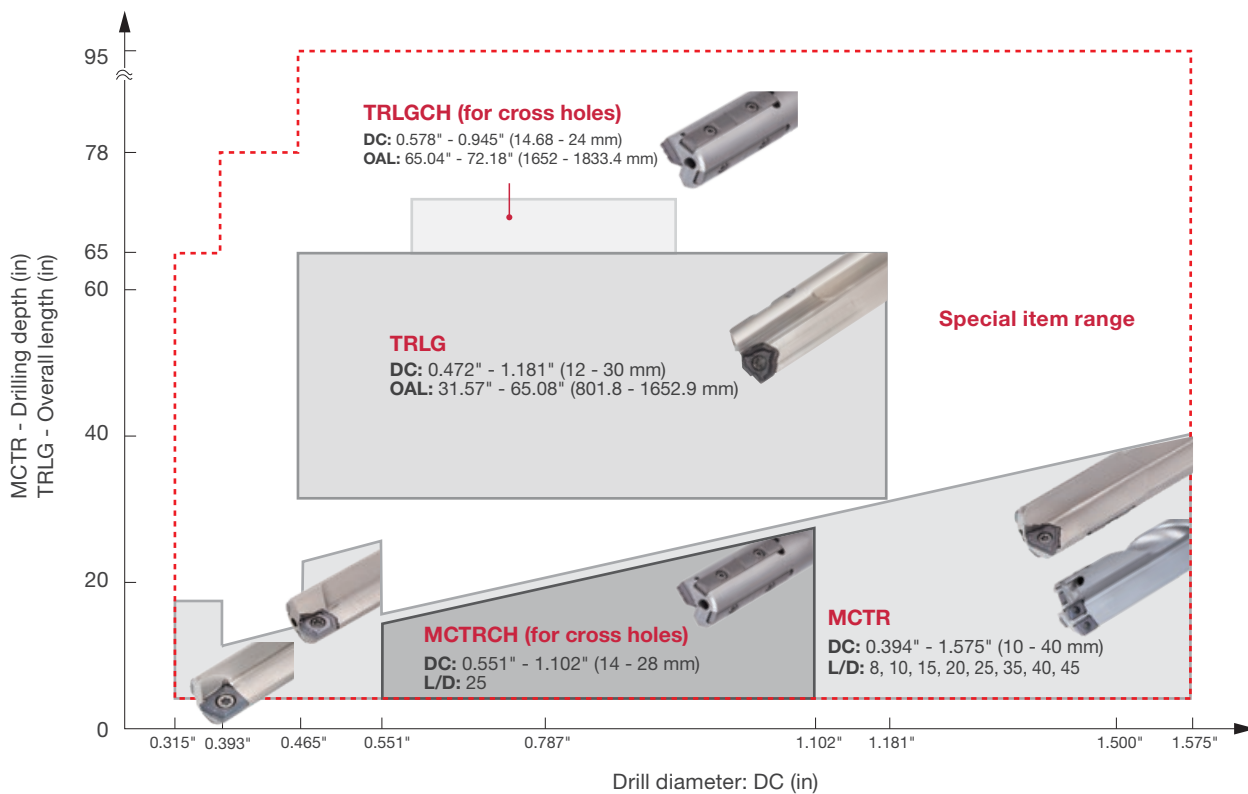
*Wide range of indexable deep drilling solutions  
to your machining needs*


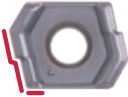




Smallest diameter  
indexable gundrill



*Remarkable deep drilling solutions for gundrill machines, lathe and CNC machining centers to cover applications from 8 mm to 40 mm*



ZSGT	LOGT	TOHT	FBM...-I/C/ FBH
			
Drill dia.: ø0.315" - ø0.4646" ø8 - ø11.8 mm	Drill dia.: ø0.4650" - ø0.5508" ø11.8 - ø13.99 mm	Drill dia.: ø0.5512" - ø1.1024" ø14 - ø28 mm	Drill dia.: ø1.1028" - ø1.575" ø28.01 - ø40 mm
1 cutting edge chip splitter	2 cutting edges chip splitter	3 cutting edges chip splitter	2 cutting edges

video

e-catalog



# REAMMEISTER

## *Exchangeable head reamer for H7 hole accuracy in ø10 - 32 mm and 1.5xD - 8xD*

A quick-change twist lock mechanism allows for swift tool changes.

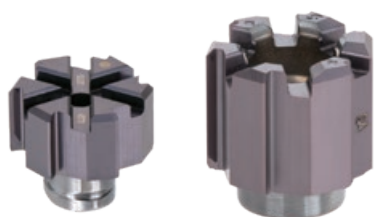
Increased productivity thanks to high speed machining.

Minimizes costs by avoiding the needs for regrinding and re-coating.

Eliminates unstable part quality and tool life due to inconsistent re-coating quality.



### Head Geometries



#### **AS type**

Tool dia.:

ø10 - ø32 mm

for blind holes applications



#### **BL type**

Tool dia.:

ø10 - ø32 mm

for through holes applications

### Tools

Self-clamp system

Tool diameter: ø10 - ø11.499 mm

L/D: 3 and 5



Screw clamp system

Tool diameter: ø11.5 - ø32 mm

L/D: 1.5, 3, 5 and 8





# NEW GENERATION REAMER FOR FINISHING HOLE OPERATION

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# Worldwide Network

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### Iwaki Plant

Products: Cutting Tools

### Nagoya Plant

Products: Cutting Tools

### Kyushu Plant

Products: PCBN  
PCD Tools  
Deep Hole Drills

### Nirasaki Plant

Products: Cutting Tools  
Friction Materials (TungFric)  
Wear Resistant Tools  
Civil Engineering Tools

## NTK

Head Office & Production  
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