

Tungaloy

New

Products 2013

TURNLINE



DRILLLINE



MILLLINE

TOOLLINE



www.tungaloy.com

Company Overview

Providing Complete Tooling Solutions for the Metal Removal and Industrial Product Sectors

TUNGALOY is one of the world's leading manufacturers of carbide cutting tools. Nearly 80 years of experience in the engineering of cutting tools are reflected in the extensive product programs. Tungaloy manufactures products from carbide, cubic boron nitride (CBN), polycrystalline diamond (PCD), ceramics and cermets of the highest quality and performance levels.

TUNGALOY's innovative R & D department focuses its efforts upon creating state-of-the-art products for highly efficient and economic machining applications for the production needs of the 21st century. Tungaloy offers a wide range of turning, milling and drilling products of the highest quality, using new technologies that are aligned with customer demands.



- Subsidiary
- Production Facility
- Headquarters & Production



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PREMIUMTEC

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PremiumTec grades provide a substantial increase in insert tool life. This is due to an advanced coating technology that is combined with a special surface treatment.

PremiumTec features durable coatings that excel when machining all types of materials.

The newly designed process improves toughness and chipping resistance and reduces friction and built-up edges.

PremiumTec inserts are produced from tough substrates that provide optimal results and increased productivity.



CVD COATED

P T9100 SERIES
Steel

M T6100 SERIES
Stainless

K T5100 SERIES
Cast Iron



PVD COATED

M AH600 SERIES
Stainless

S AH905
Superalloys

T9100 SERIES

CVD COATED



The T9100 grade series incorporates columnar stabilization and adhesion reinforcement new coating technologies. This is combined with a special surface treatment that results in outstanding chipping and fracture resistance. The T9100 is a highly reliable grades series for steel turning.

T5100 SERIES

CVD COATED



The T5100 series grade is a combination of a fine grained Ti(C,N) crystallization layer and a strongly designed substrate. This generates an increased wear and fracture resistance providing stable tool life for a variety of cast iron turning, in continuous and interrupted operations.

T6100 SERIES

CVD COATED



The T6100 series grade with its newly developed substrate in combination with the new coating technology has a high resistance to adhesion, notch wear and plastic deformation. T6100 is an excellent solution for stainless steel machining, achieving a very stable tool life.

AH600 SERIES

PVD COATED



AH600 is a new stainless steel series of grades. Along with the newly developed Oxide PVD coating, this series also adopts a special substrate with advanced adhesion strength. This makes it ideal for machining of stainless steel at low to medium cutting speeds.

AH905

PVD COATED



The New AH905 is a combination of a newly developed (Al,Ti)N coating layered with a very high oxidation resistance along with the fine grain cemented carbide with a high impact resistance. This is the best solution for superalloys machining.

T-CBN

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BXM SERIES

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New coated CBN grades for hardened steel turning

The new BXM grades demonstrate remarkable tool life when finish machining hardened steel. This is due to a newly developed coating layer with significantly improved adhesion strength.

The new grades are suitable for high speed cutting as well as interrupted machining.

Two grades for a wide range of applications

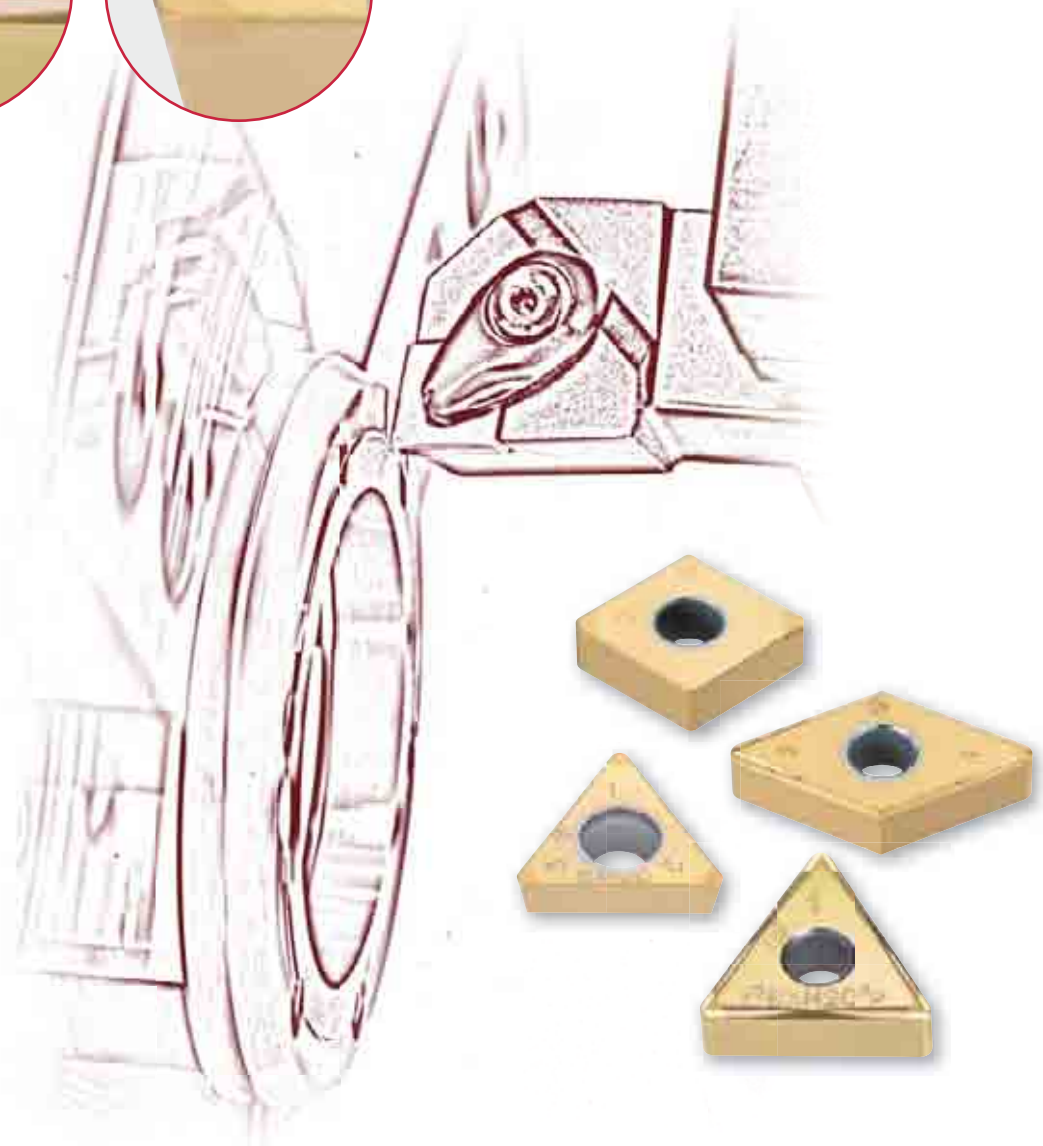
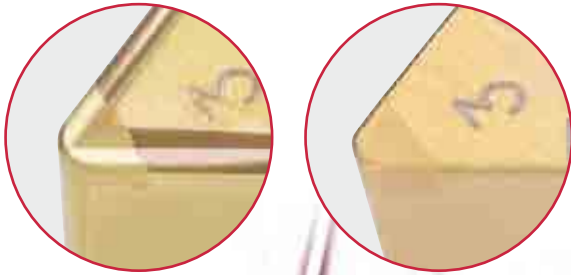
BXM10

Suitable for high speed machining due to the newly developed CBN substrate with excellent crater wear resistance.

BXM20

All-round CBN grade with extremely high chip-
ping resistance. Suitable for interrupted cutting
and turning carburized parts.

The new BXM grade series includes a wiper insert for excellent surface finish. Two chipbreaker options are also available for exceptional chip control in carburized materials.



T-CBN

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BX910

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Optimum solution for high speed machining of centrifugally cast iron

The BX910 grade is suitable for centrifugally cast iron machining at high cutting speeds, providing stable and long tool life.

Optimized content and dispersion of the CBN particles drastically improve the wear and chipping resistance in highly abrasive cast irons.

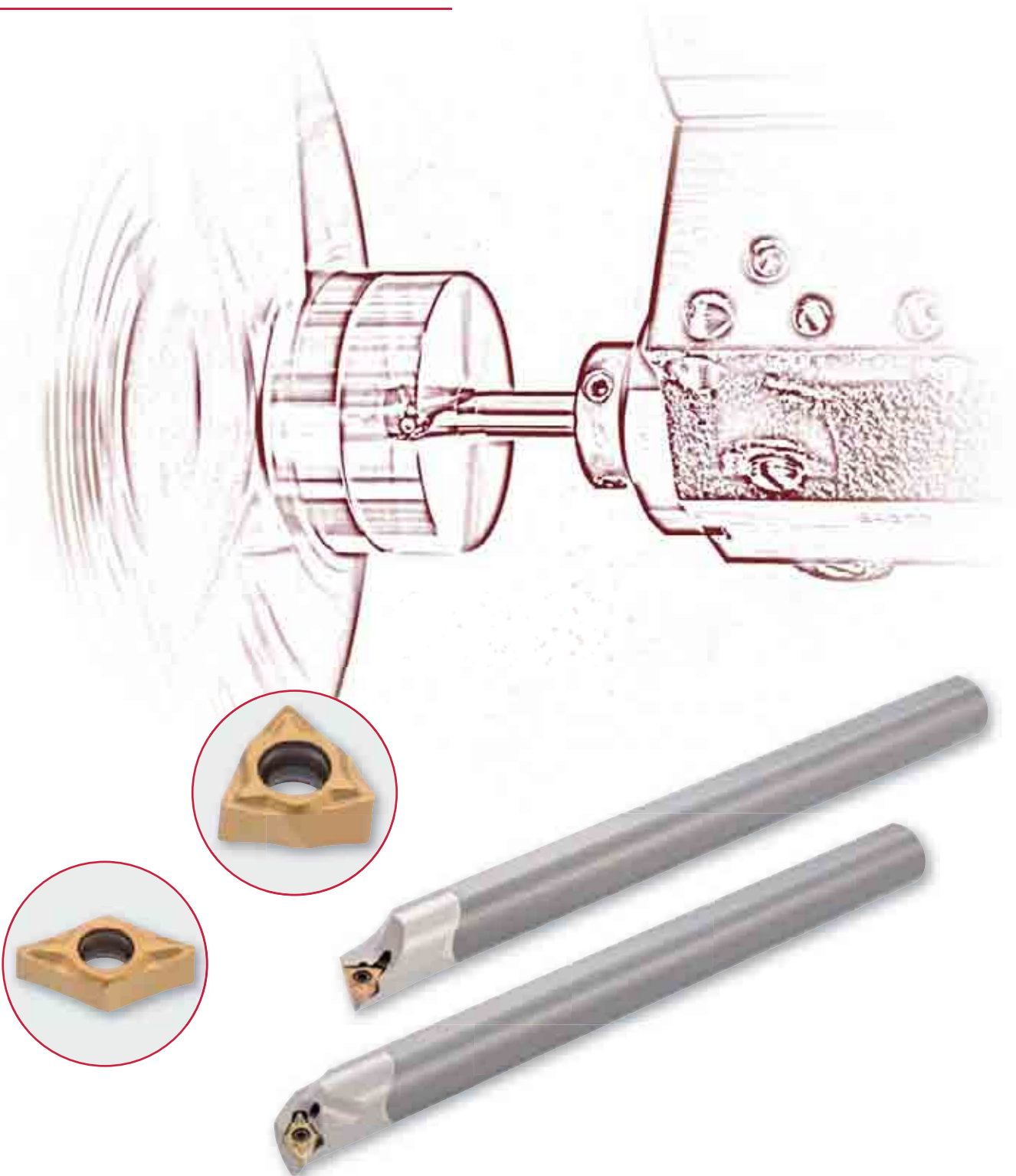
Newly developed binder with high heat resistance guarantees improved wear resistance when high speed machining.



Double sided inserts

A new economical double sided insert range for small diameter boring operations. Minimum diameter entry starts at 12mm. The combination of unique positive rake face and sharp cutting, reduces cutting forces preventing chattering.

The double sided inserts is offered in various grade choices ranging: AH725 a fine grained cemented coated carbide (Ti,Al)N, as well as Cermet GT530 coated Ti(C,N,O) and Cermet NS530 uncoated.



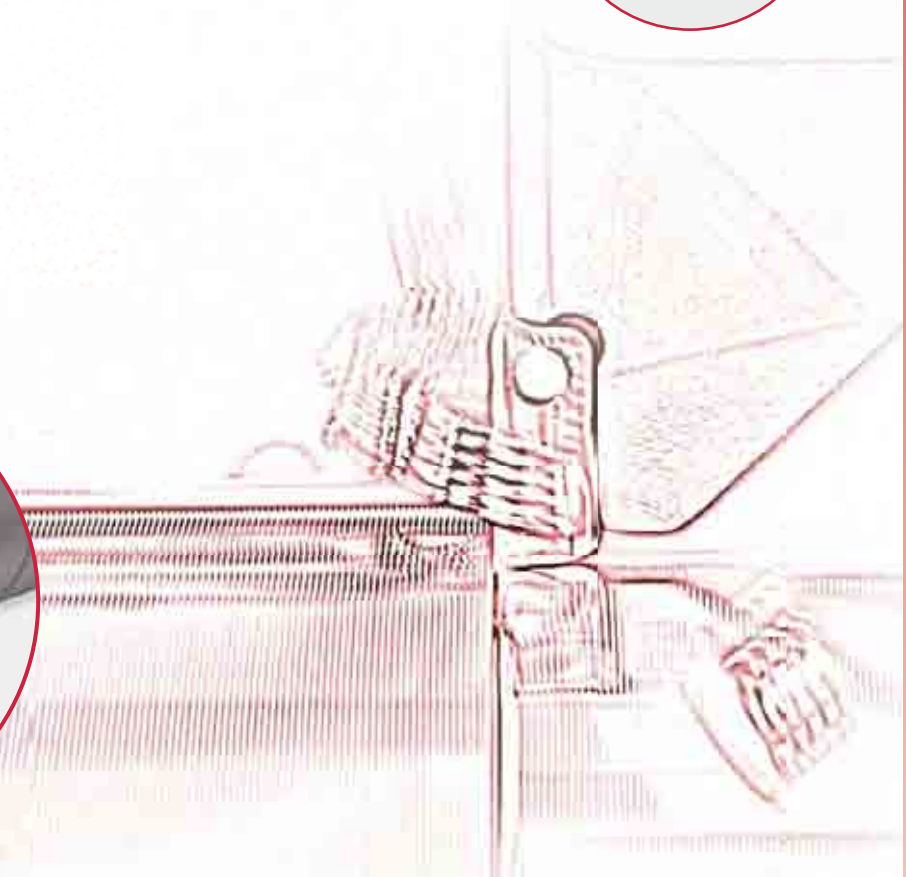
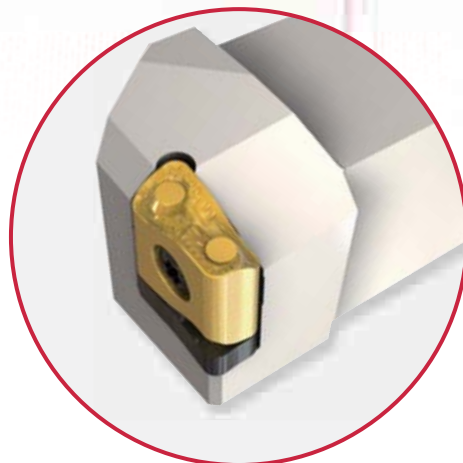
Tangential insert clamping with 4 helical cutting edges

The unique helical edge shape significantly reduces cutting forces which enhances its capability in turning large depth of cuts, at high feeds. Additionally, the upper rake face of the inserts is mounted at the same level as the holder body, this allows an open path for easy chip flow.

Turntec is the solution for high metal removal, external, internal and face turning applications.

TurnTec

Insert Size: 12, 16, 24



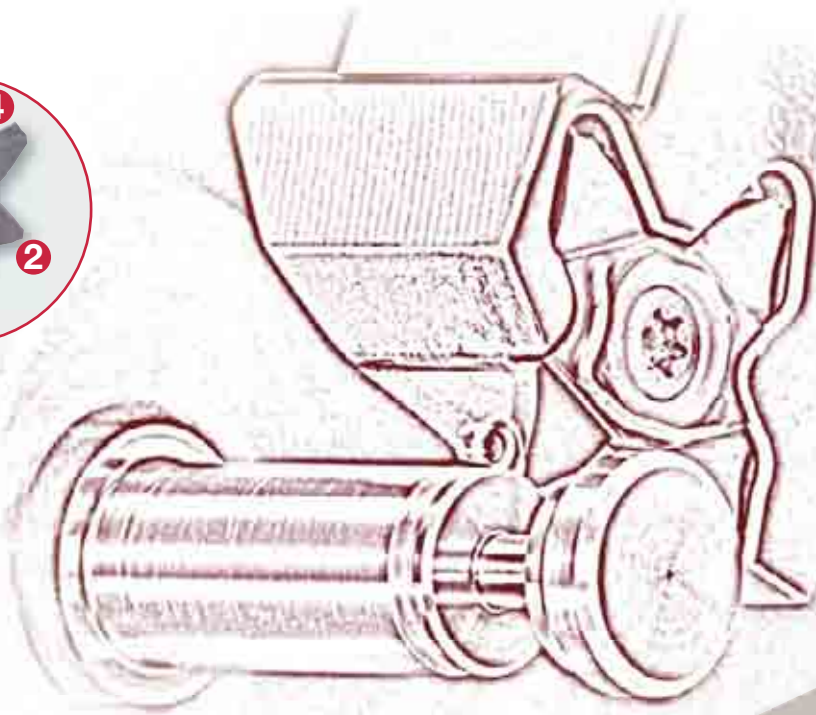
Newly developed insert with 4 edges for precision grooving and parting operations

The system combines a unique insert shape clamped into a well designed pocket providing high stability and index repeatability, assuring high accuracy in operation. Insert features 4 positive

sharp cutting edges and a chipbreaker that provides easy chip flow.

TetraCut

Grooving Width Range: 0.5 - 3.18 mm



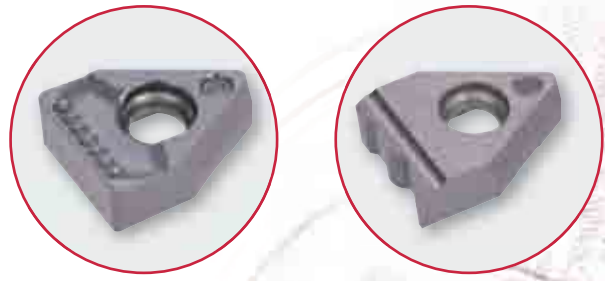
The TunGroove line is the solution for wide grooving operations, and for wide formed shape parts

The system features a dovetail insert clamped into the pocket by a lever lock that provides highest rigidity supporting heavy cutting operations.

Inserts are available with a chipbreaker for wide grooving operations, and special grinded inserts

applicable for special shapes per customer's requirement.

TunGroove
Grooving Width Range: 10 - 25 mm



Solid boring bars applicable for min $\varnothing 0.6$ mm bore

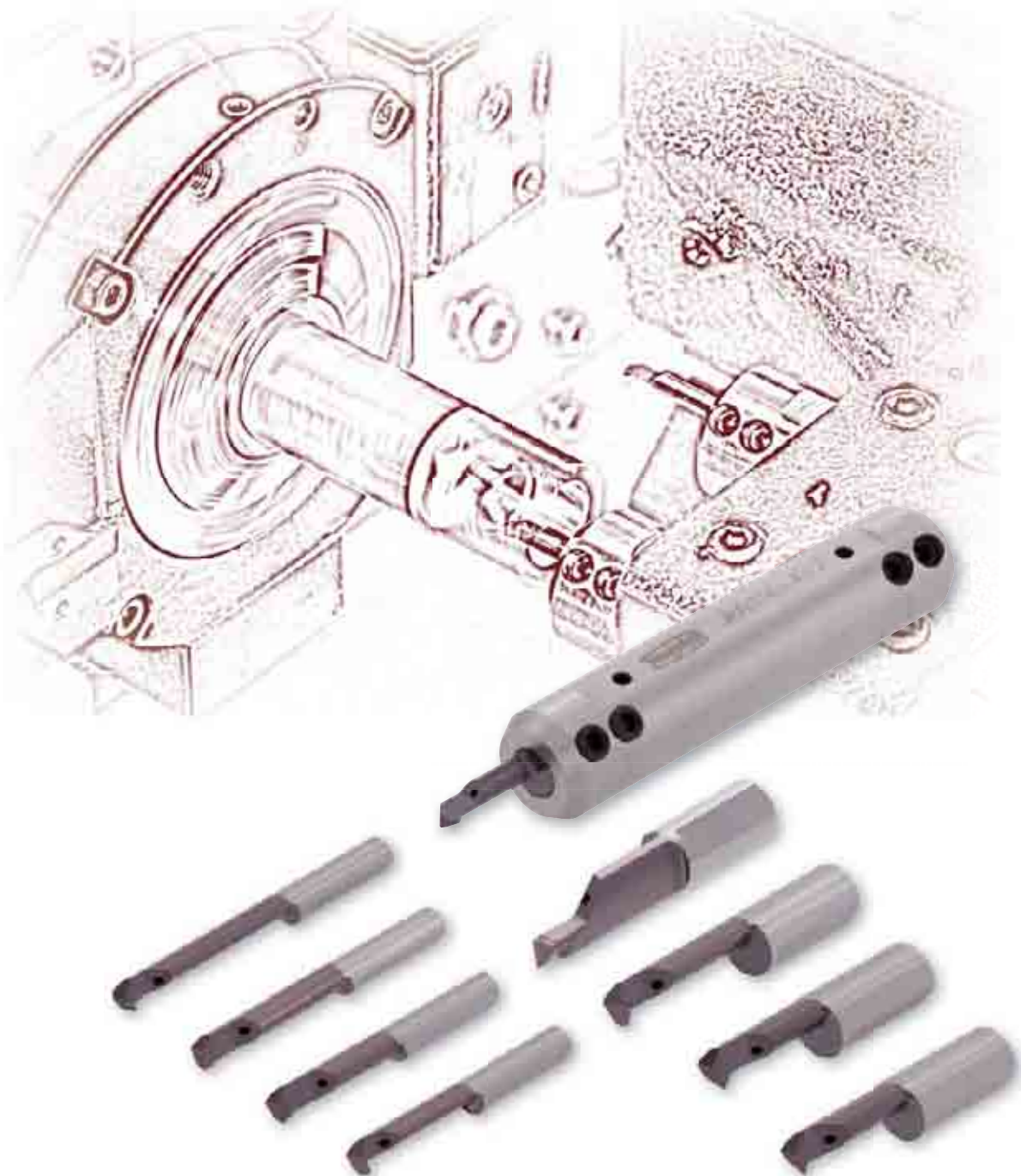
The Extremely sharp cutting edge offers high precision machining for a wide range of internal applications.

Sharp edges and smooth coating generates fine surface finishes and prevents edge chipping.

All boring bars have a through coolant hole to supply coolant directly to the cutting edge. This offers remarkable chip evacuation.

146 solid bar items are available in a wide range of geometries that can be applied to a variety of internal operations.

Minimum Bore Diameter = $\varnothing 0.6$ mm

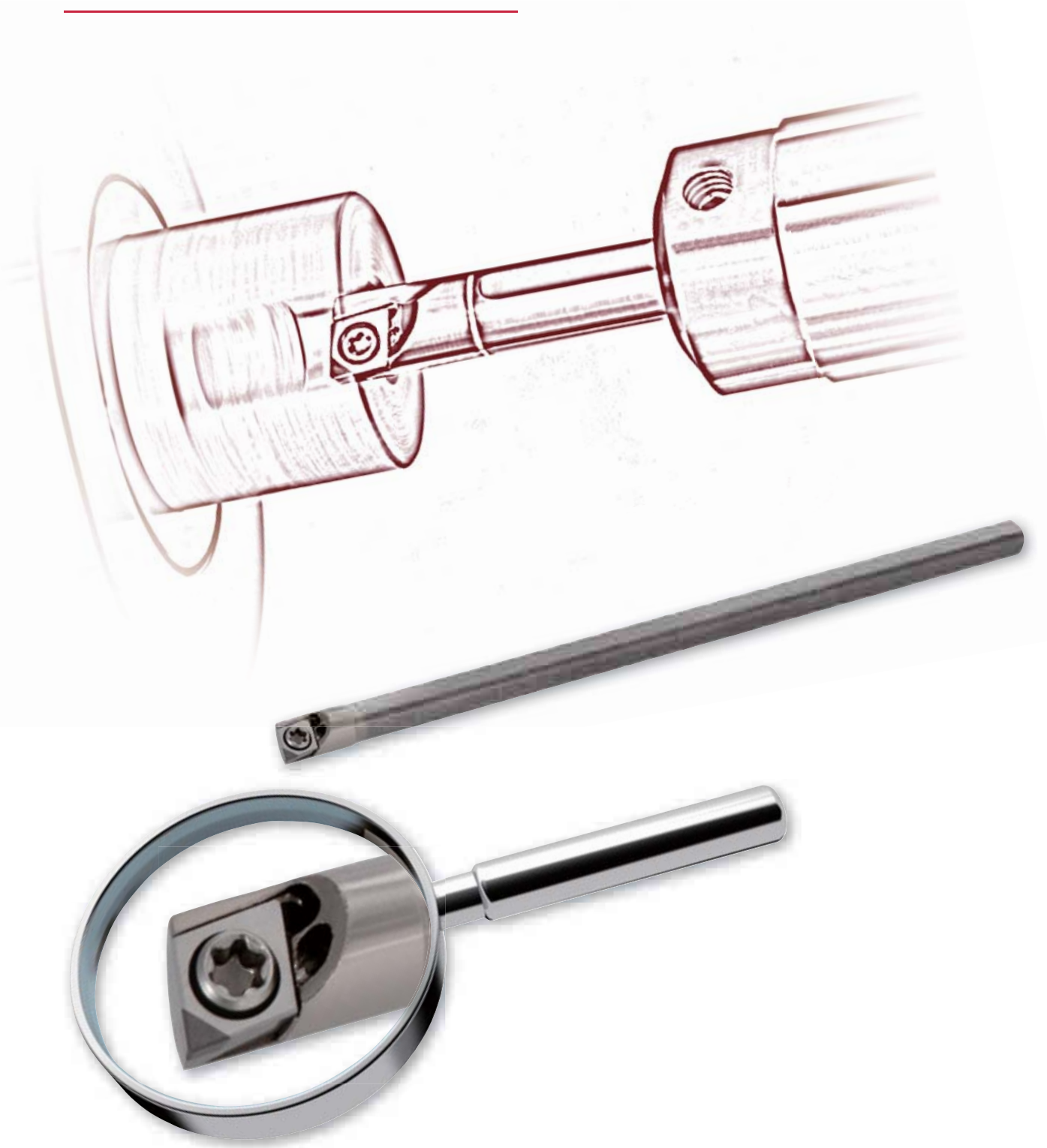


The smallest indexable CBN inserts in the world

The world's smallest indexable boring bar for machining hardened steels features a $\varnothing 4.5$ mm minimum bore size.

When compared to conventional brazed tools, the Mini T-CBN series offers:

- Higher cutting edge repeatability
- Reduced tool change time
- Longer tool life even at low cutting speeds



Incredibly secure system for slot milling

The TecSlot series is the most reliable slot milling cutters available with tangentially clamped inserts. Cutter bodies have an optimum designed insert gullet for excellent chip evacuation.

TecSlot has a range of edge widths from 16 to 25 mm. The TecSlot offers two types of mounting, an axial and radial drive.

Right and Left hand edges are set in one insert, so only one type of insert is required for the cutter body.

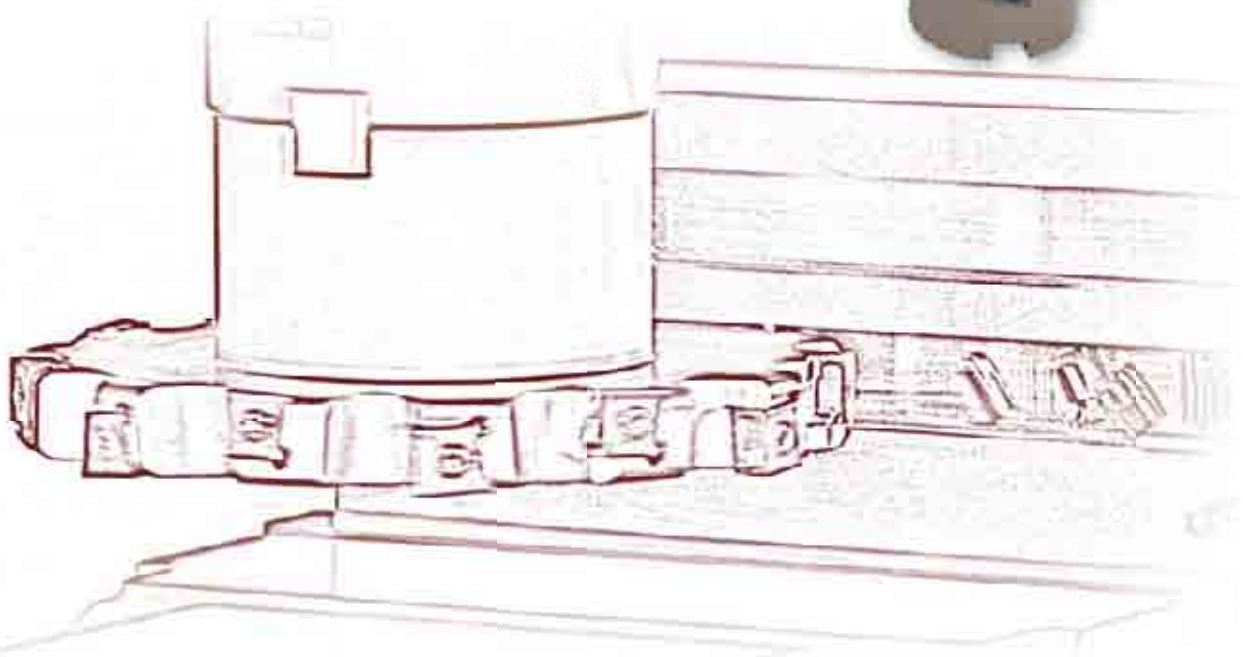
TecSlot

Axial drive

Mill Diameter Range: \varnothing 100 - 250 mm

Radial drive

Mill Diameter Range: \varnothing 100 - 250 mm



The new slot milling cutter utilizes unique inserts with 6 cutting edges

The TungSlot inserts have 3 right and 3 left hand edges. This gives the TungSlot 6 cutting edges, a significant economic advantage.

The combination of an optimally designed chip gullet and ideal cutting edge geometry provide excellent chip control and evacuation.

TungSlot covers a range of edge widths from 6 - 16 mm with 5 types of insert..

TungSlot

TSV / ASV type

Edge Width Range: : 6 - 8 mm

Tool Diameter Range:

TSV type (Radial drive): $\phi 100 - 160$ mm

ASV type (Axial drive): $\phi 80 - 200$ mm

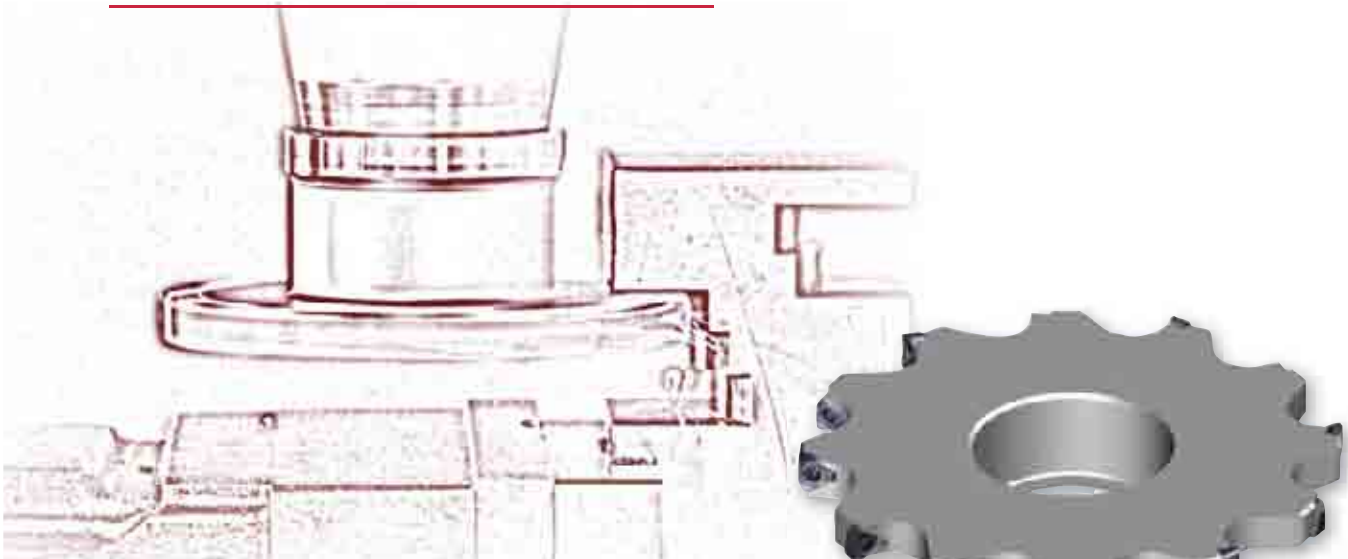
TSW / ASW type

Edge Width Range: 10 - 16 mm

Tool Diameter Range:

TSW type (Radial drive): $\phi 100 - 160$ mm

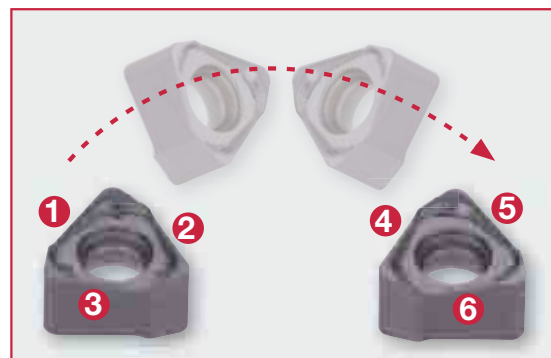
ASW type (Axial drive): $\phi 80 - 160$ mm



**ASV type
(Axial drive)**



**TSW type
(Radial drive)**



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DOFEEDMINI
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Super high feed cutters with 4 cornered insert for high material removal

DoFeed milling tool series is the new generation high feed milling series having uniquely designed inserts with 4 edges and cutter body with high density insert pockets.

Inserts geometry with large inclination and positive rake angle drastically reduces the cutting forces, providing high productivity in rough machining of steels, heat resistant alloys and titanium alloys.

Variety of chipbreakers in inserts, shank and bore type offering in cutters covers wide application range suitable for different types of machines and work piece clamping rigidity.

Tool Diameter Range

DoFeedMini:

Shank type: $\varnothing 16 \sim 32$ mm

DoFeed:

Bore type: $\varnothing 50 \sim 80$ mm

Shank type: $\varnothing 32 \sim 40$ mm



LNMU03 type

LNMU06 type

DOFEEDMINI

DOFEED

Double sided insert with 8 cutting edges

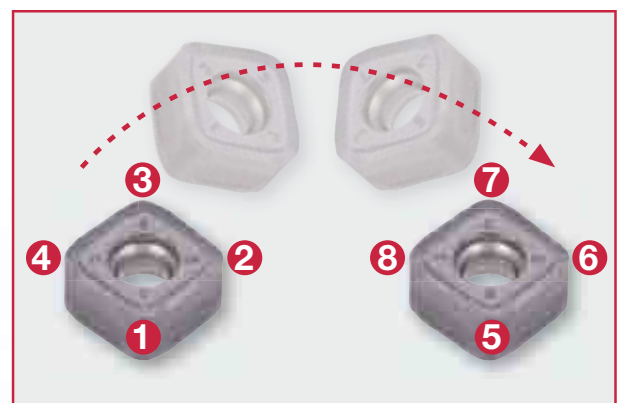
The high feed milling DoFeedQuad delivers incredible productivity and economical advantages with its double sided square inserts.

DoFeedQuad delivers super high feed face milling with its rigid clamping. This clamping system has a uniquely designed "Dove tail" structure that enables the clamping strength to increase with one screw.

Four kinds of insert grades are available. This

expands the application to a wide range of work materials such as steels, stainless steels and cast irons.

DoFeedQuad
Face Mill Diameter Range:
ø50 - 125 mm



Incredible productivity for roughing operations

3 types of cutter are available for a wide range of rough milling applications

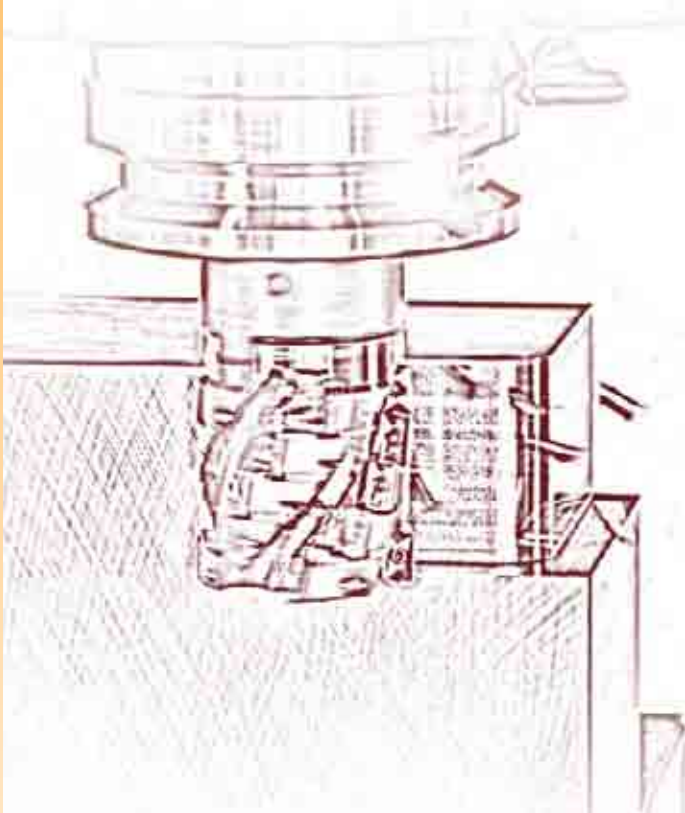
TUNGQUAD

Suitable for small machine tools

This small diameter roughing cutter uses a 5.09 mm I.C. SDMT05 insert.

Suitable for machining on small to medium size machines.

Tool Diameter: $\varnothing 20, \varnothing 25$ mm



TUNGREC

Extremely Versatile Cutters

Medium size cutters for a diverse range of applications incorporate a 11.6 mm I.C. ASMT11 insert.

3 types of chip breaker are available for a wide range of milling applications.

Tool Diameter: $\varnothing 25, 32, 40, 50$ mm

TECMILL

Heavy duty cutters

Heavy duty cutter with tangential insert and tough cutting edges.

TecMill provides incredible productivity on large machine tools.

Tool Diameter: $\varnothing 50, 63$ mm



TECMILL



TUNGREC

High productivity solution for rough milling of turbine blades and die & mold

This new cutter features a unique insert clamping with a fixed 6 index location. The locator in the pocket fits the insert's bottom star shape preventing the insert from rotating while machining, and ensures 6 indexes for maximum use.

The MJ chipbreaker is suitable for general machining, while the ML chipbreaker is ideal for applications where low cutting forces are required.

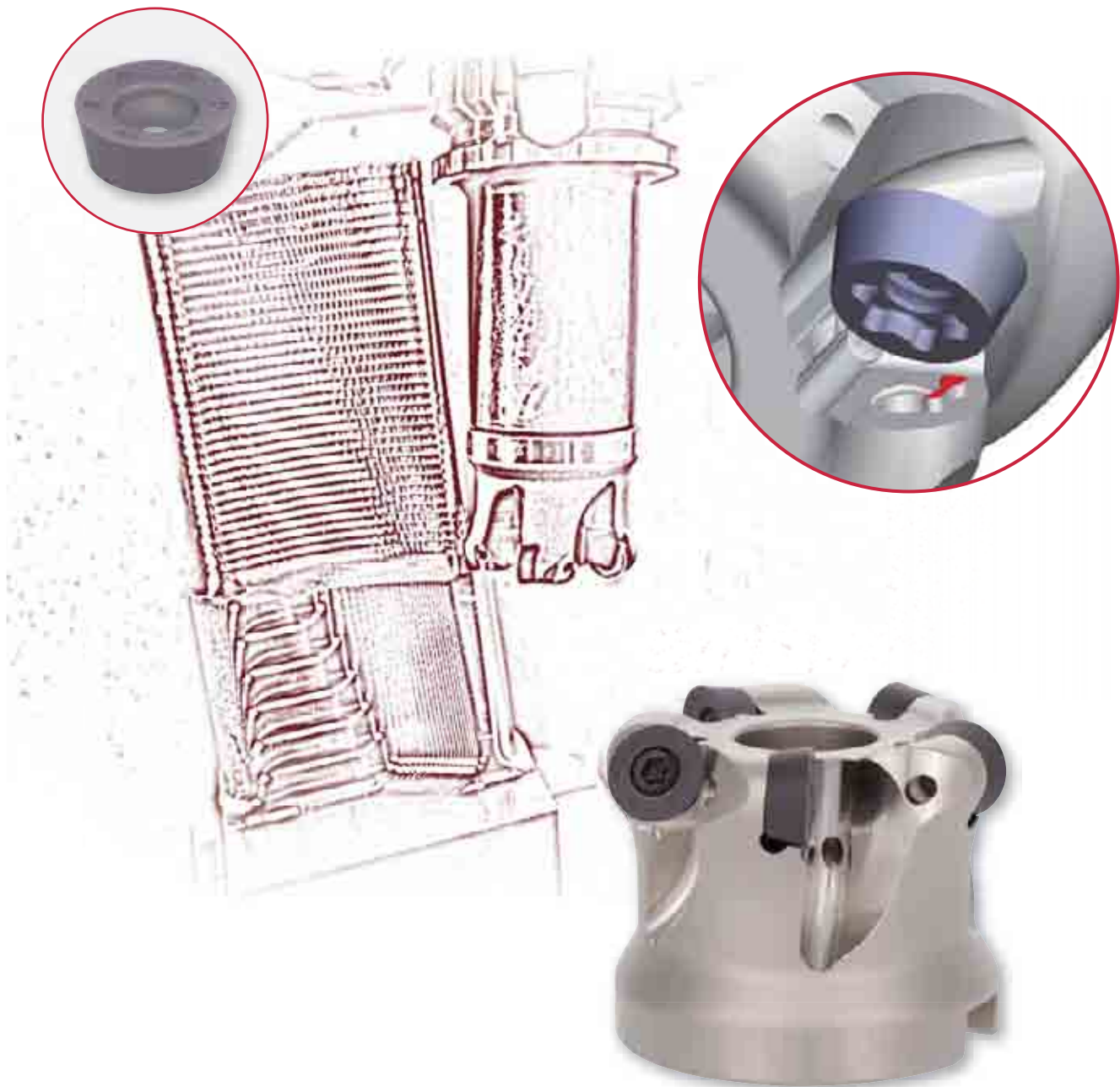
FixRMill

Shank type

Tool Diameter Range: $\varnothing 32 - 40$ mm

Bore type

Tool Diameter Range: $\varnothing 50 - 66$ mm



The most economical drilling solution available

TungSix-Drill is the world's first indexable drill with double sided inserts. An obtuse angle relief on the corner of the central-edge improves fracture resistance.

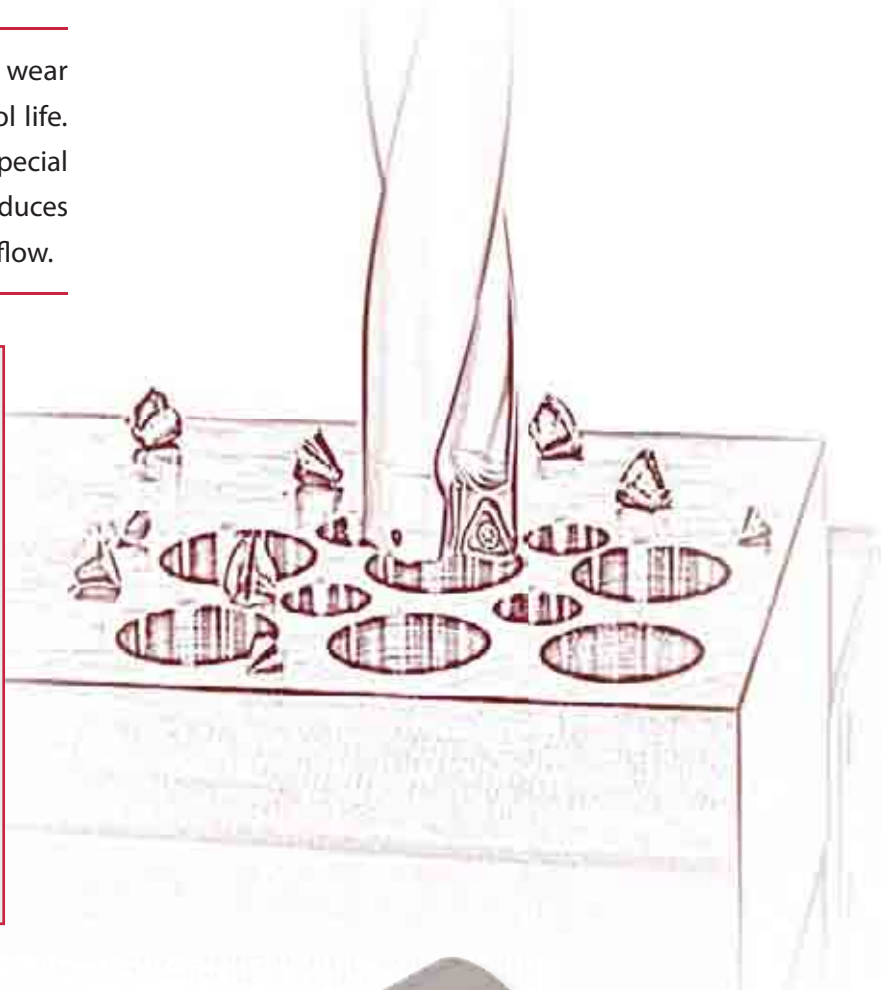
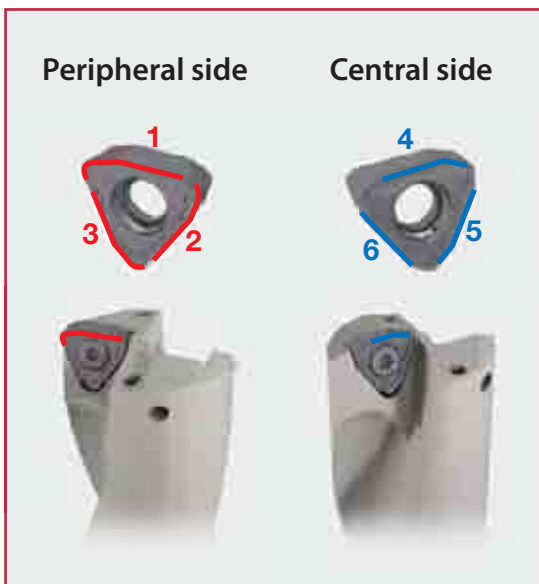
The new AH9030 grade offers exceptional wear resistance that leads to stable and long tool life. Utilizing Tungaloy's exclusive "PremiumTec" special surface technology, the AH9030 drastically reduces chip adhesion to generate the smooth chip flow.

Ideally designed flute geometry delivers perfect chip evacuation when machining all types of materials.

TungSix-Drill

Diameter Range: $\varnothing 28 - 54$ mm

Hole depth: $L/D = 2, 3$



TUNGDRILLBIG

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TUNGDRILLTWISTED

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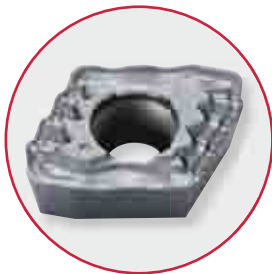
A versatile series for a wide application range

Suitable for all drilling applications

The TungdrillTwisted and TungdrillBig are both highly versatile drilling series for machining a wide range of materials while using the same inserts. With four types of chipbreakers and four grade types, these new products cover all types of drilling applications.

The DG type chipbreaker offers amazing chip control on gummy steels

The DG type chipbreaker is most suitable for the machining of low carbon steels and gummy steels at low cutting speeds.



DG type

Excellent chip evacuation

TungdrillTwisted has 2 twisted coolant holes, this drastically improves the chip evacuation leading to the prevention of body damage.

Suitable for large diameter drilling

TungDrillBig covers a diameter range from $\varnothing 55$ to $\varnothing 80$ mm with only five types of drill body. It features replaceable cartridges so the diameter can be adjusted with "Setting plates".

TungdrillTwisted

Diameter Range: $\varnothing 12.5 - 54$ mm

Hole depth: L/D = 2, 3, 4, 5

TungDrillBig

Diameter Range: $\varnothing 55 - 80$ mm

Hole depth: L/D = 2.5

TUNGDRILLTWISTED



TUNGDRILLBIG

New clamping system enables easy, secure and accurate head indexes

DrillMeister is the newly innovative replaceable-head drill series that delivers the productivity of a solid drill with the economical advantages of conventional indexable drills. This reduces set up times, increases metal removal rates and gives the user ease of operation when indexing.

The exclusive chamfering adapter for the DrillMeister provides stable chamfering. With 3 insert designations with different chamfering angles available. This combination adapts to many

part types to reduce processing times.

The DrillMeister series provides the most productive and profitable solution for holemaking processes.

DrillMeister

Diameter Range: $\varnothing 10.3 - 19.5$ mm

Hole depth: L/D = 3, 5



The TungHold family of toolholding systems provide maximum accuracy and compactness that has now been extended with the new TungCap quick change system.

TungCap is the new quick change tooling system with a polygonal taper. It is a highly accurate system for flexible machine tools and CNC lathes.

TungCap features an extremely rigid clamping system with high repeatability.

TungCap can be applied to Turning A external toolholders as well as Tungaloy's TungCut series to provide various grooving operations.





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