



# ELECTRO MOBILITY

[www.tungaloy.com](http://www.tungaloy.com)







Since the 1890s, the automotive industry has remained a crucial global manufacturing sector, adapting to the integration of electronic technology.

As environmental concerns drive the rise of electronic vehicles, manufacturers are consolidating components and using more aluminum to reduce automobile weight.

**Tungaloy**, a pioneer in metal-cutting, has a longstanding history of developing tools for the automotive market. Leveraging close ties with major manufacturers, **Tungaloy** offers cutting-edge tools to enhance efficiency in the e-mobility sector, ensuring global competitiveness.

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MOTOR CASE

MOTOR SHAFT

ROTOR

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TRANSMISSION CASE

REDUCTION GEAR

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## **CHASSIS**

BRAKE DISK

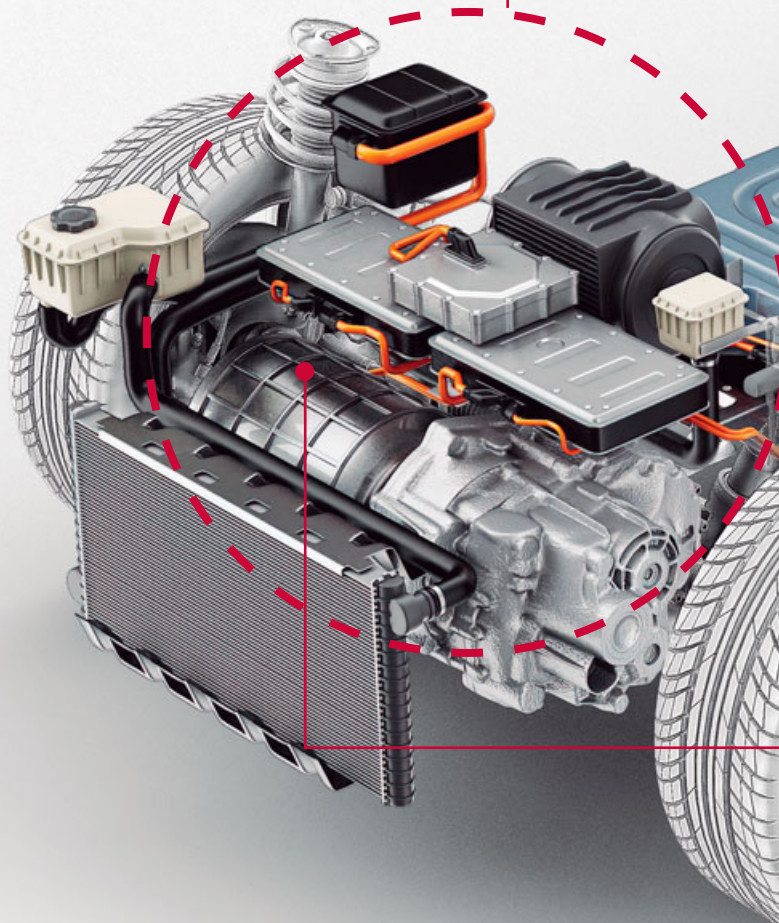
BRAKE CALIPER

WHEEL HUB

STEERING KNUCKLE

DIFFERENTIAL CASE

**MOTOR**  
**TRANSMISSION**  
**AUXILIARY PARTS**



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## AUXILIARY PARTS

CONTROL VALVE

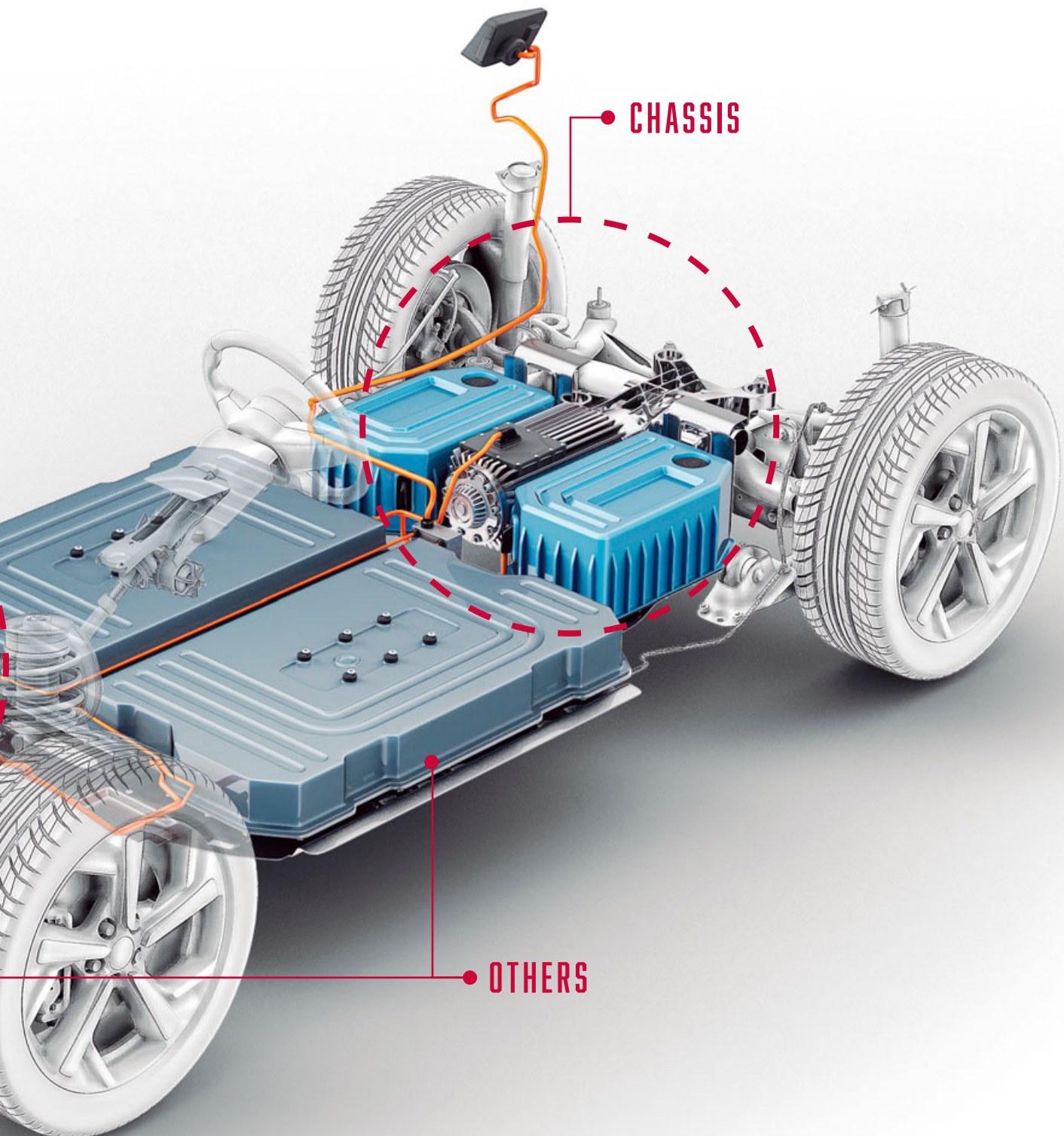
WATER PUMP FOR BATTERY COOLING

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## OTHERS

INVERTER CASE

BATTERY CASE





# MOTOR CASE

## TUNG<sup>ORCE</sup>FREC

Extremely versatile shoulder milling cutter with unique V shape inserts



**AVGT-AJ**



## TUNG<sup>SPEED</sup>MILL

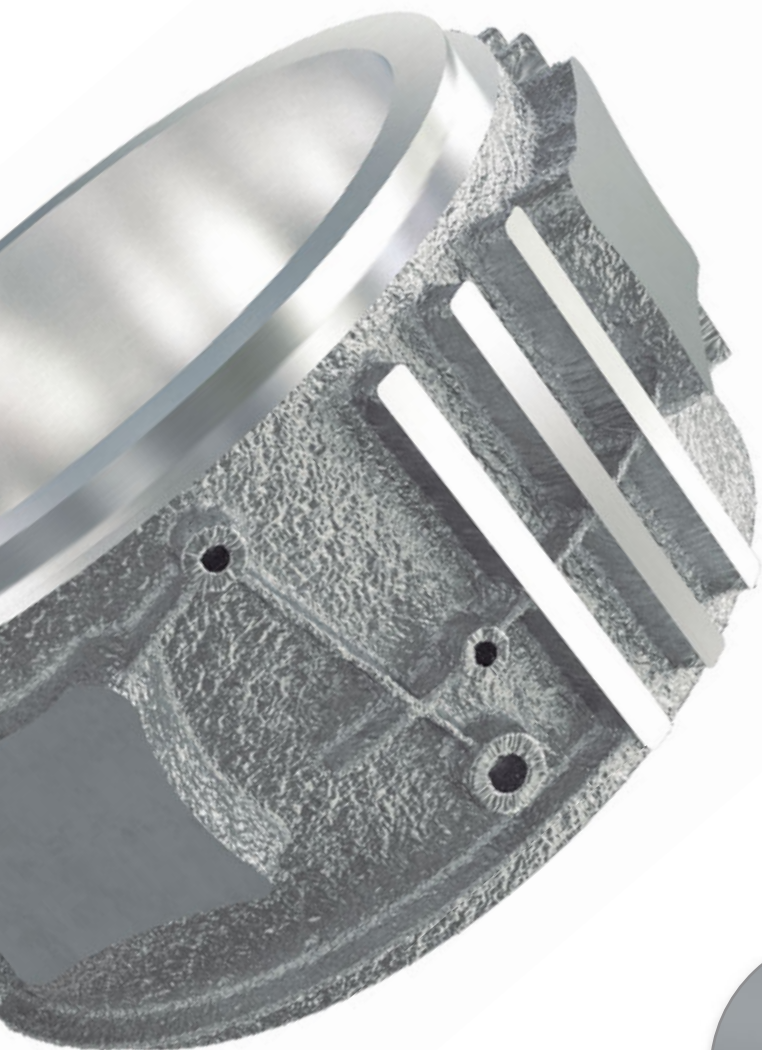
High-speed PCD cutter for finishing aluminum. Large number of cutting edges offer efficient machining. Use of deburring inserts in combination with standard inserts ensures excellent surface finish.



Adjustable runout

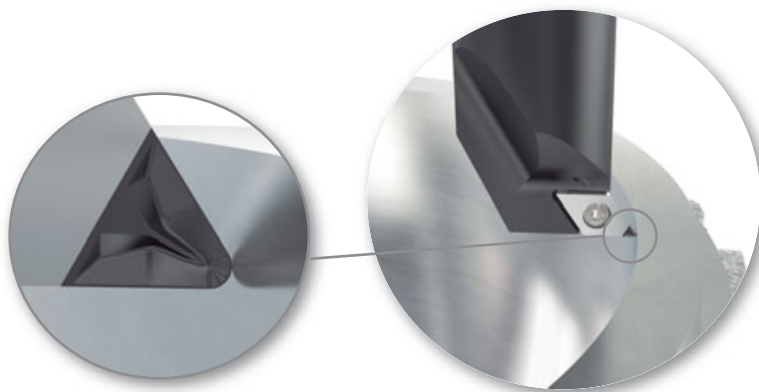
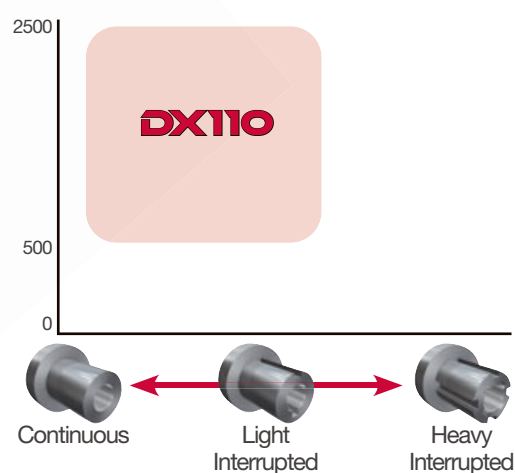


**YDEN**



## DX110 N

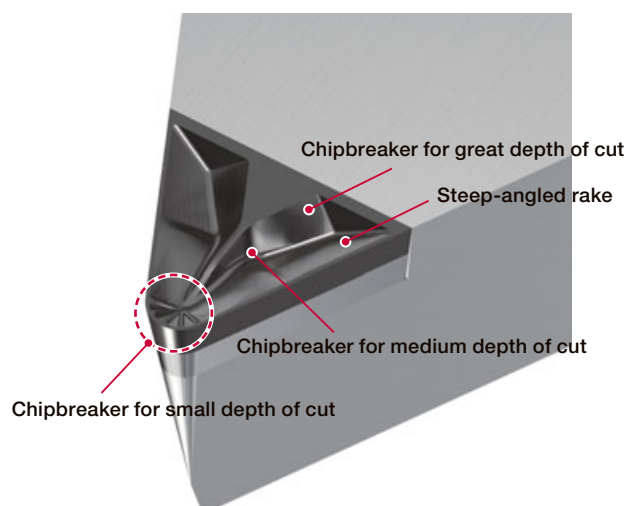
An extremely wear-resistant PCD grade, featuring strongly-bonded diamond grains that prevents the grains from breaking off during machining



## NS PCD inserts with 3D chipbreaker

Unique 3D chipbreaker

- Versatile geometry allows excellent chip control
- One insert handles from rough to finish operations
- Optimal rake angle design effectively directs chips to the redirector



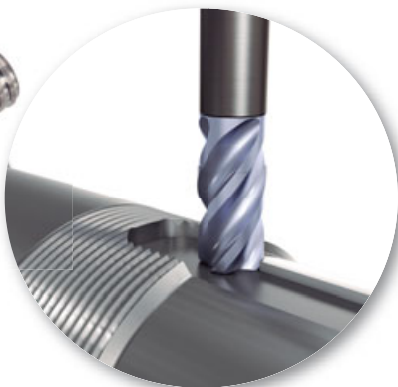
# MOTOR SHAFT

## TUNGMEISTER

Endmill with exchangeable heads  
for reduced time to change tools  
High repeatability and accuracy  
are maintained due to full  
contact of both taper and face



**VEH**



**VDS**



## DRILLMEISTER

Exchangeable head drills for  
unparalleled tool life and  
machining performance



**DMP**  
**AH9130**



## DEEPT<sup>RI</sup>DRILL

Indexable gun drill with  
exceptional efficiency



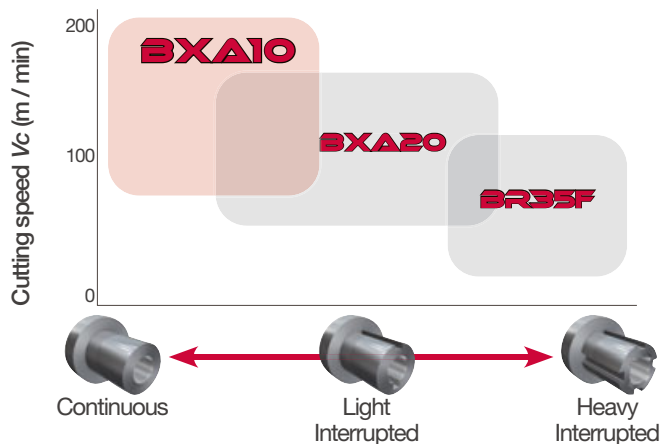
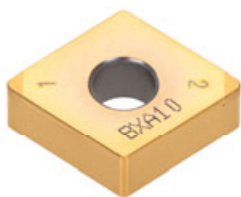
**TOHT**





**BXA10 H**

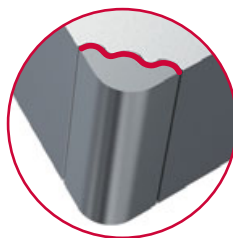
CBN coated grade for continuous hardened steel turning

**ADDMULTURN**

Double-sided insert with 6 cutting edges capable of front turning, back turning, profiling, and face turning

**WAVY JOINT**

The unique "wavy" contact surface enhances the brazing strength thus improves productivity with 1.6 times higher depth-of-cut compared to the conventional type.



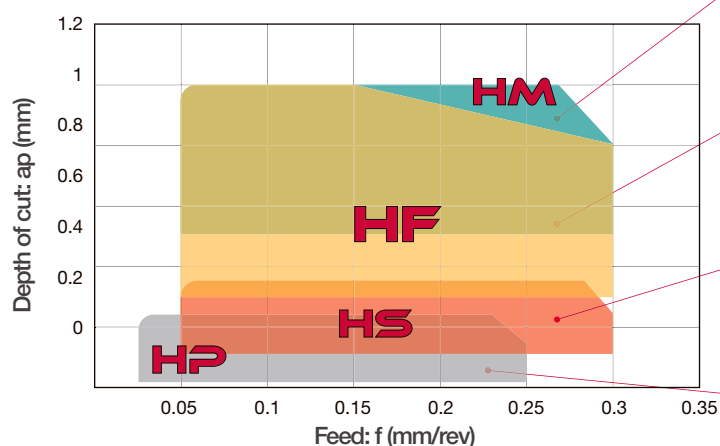
*For large depth of cut in hard turning up to 0.8 mm*

**CBN Tip Size:** 200% larger for improved wear control in the cutting zone

**Brazing Area:** 160% larger for enhanced brazing strength

**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



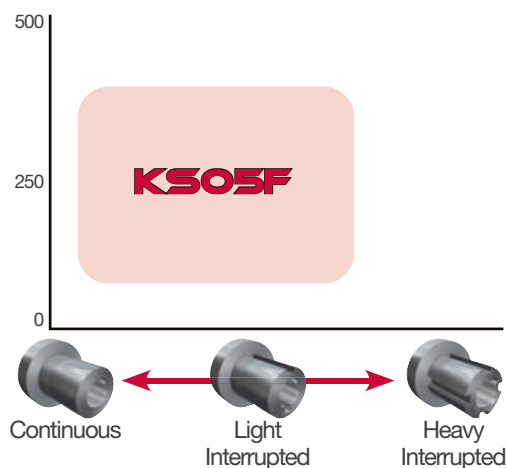
**For precision finishing**

Breaker shape suitable for precision finishing

# ROTOR

## KS05F N

Uncoated cemented carbide for non-ferrous applications. Excellent chipping resistance and cutting edge sharpness.



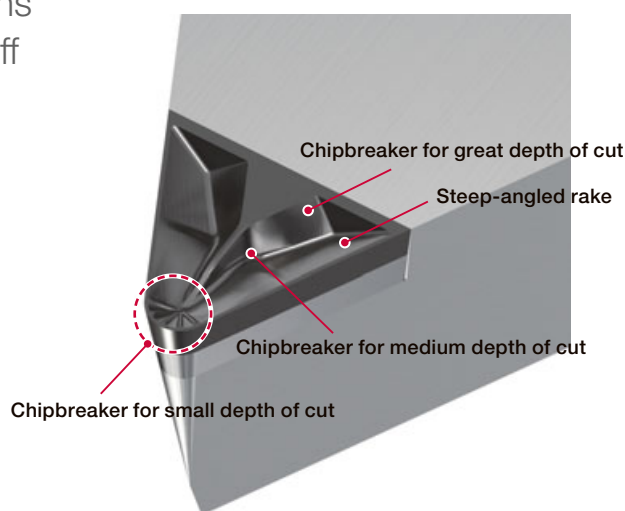
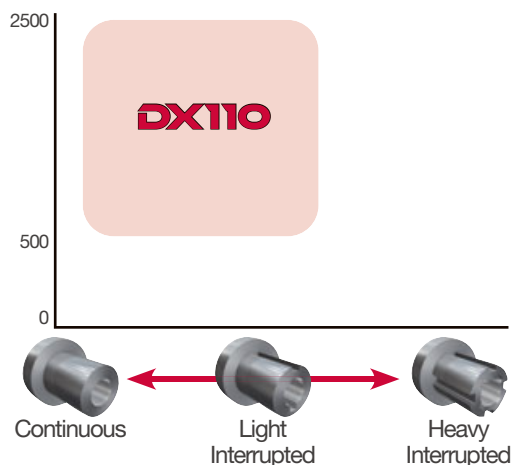
## NS PCD inserts with 3D chipbreaker

Unique 3D chipbreaker

- Versatile geometry allows excellent chip control
- One insert handles from rough to finish operations
- Optimal rake angle design effectively directs chips to the redirector

## DX110 N

An extremely wear-resistant PCD grade, featuring strongly-bonded diamond grains that prevents the grains from breaking off during machining



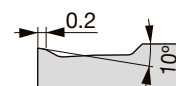
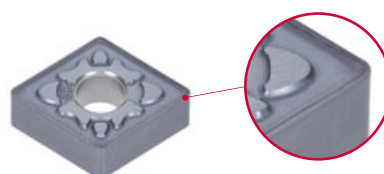
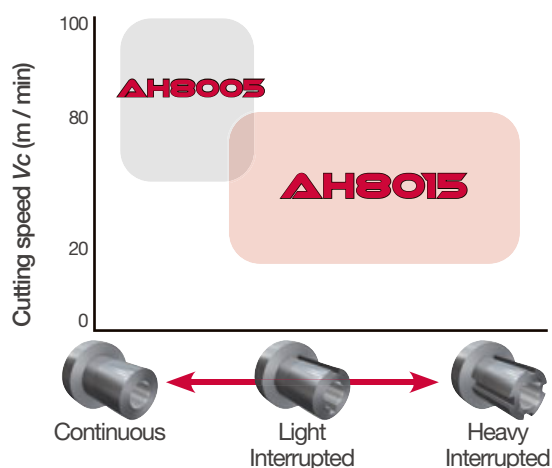
# STATOR

## AH8015 S

The 1st recommendation for turning heat-resistant alloys. Versatile **PVD** carbide grade with high wear and fracture resistance.

## SDM chipbreaker

SDM chipbreaker features a unique cutting edge design: a combination of T-land with variable widths and large rake angle minimizes wear mode progression typical in heat-resistant super alloy applications.





# TRANSMISSION CASE

## TUNG-ALUMILL

Shoulder mill that enables high speed machining of aluminum and non-ferrous materials



**XVCT-AM**

## TUNGSMILL

High-speed PCD cutter for finishing aluminum. Large number of cutting edges offer efficient machining. Use of deburring inserts in combination with standard inserts ensures excellent surface finish.



**YDEN**

Adjustable runout



## DRILLMEISTER

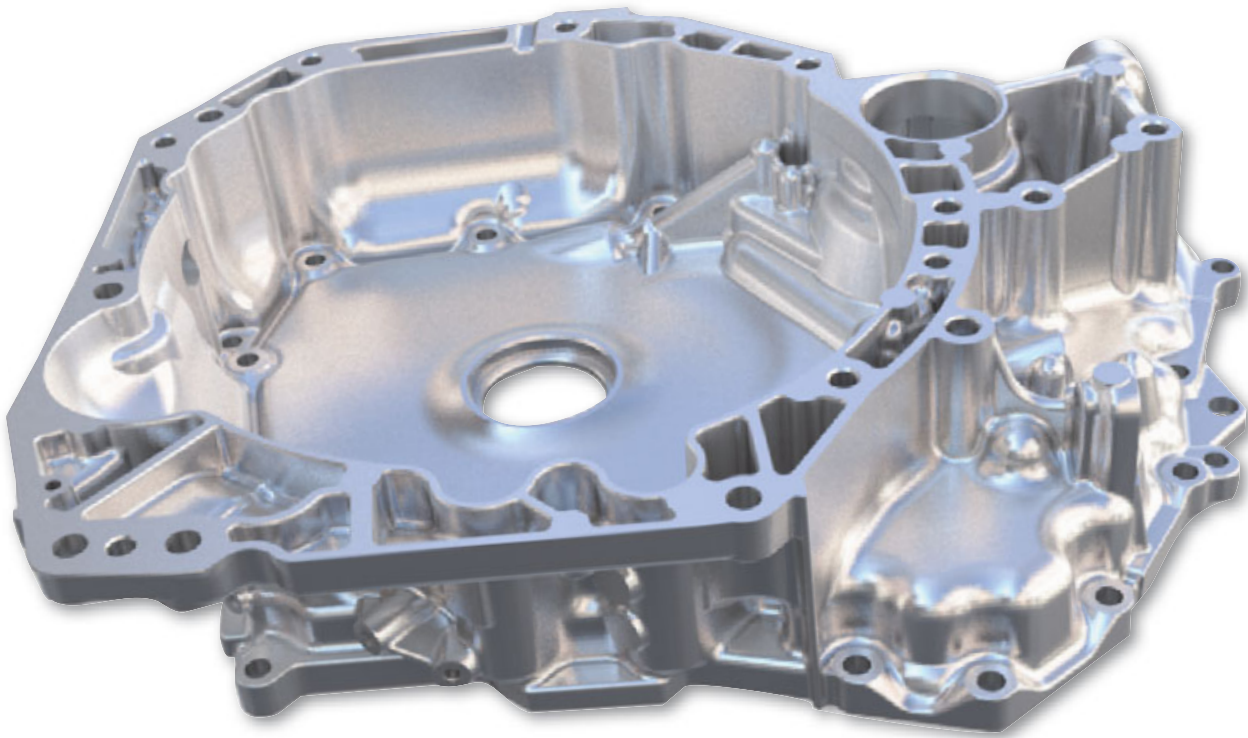
Exchangeable head drills for unparalleled tool life and machining performance



**DMN  
KS15F**

Drill dia.:  $\varnothing 10$  -  $\varnothing 19.5$  mm

Drill head with sharp edges for non-ferrous materials



## SPECIAL TOOLS

Exclusively designed tools with PCD cutting edges for highly productive machining. Available in PCD-brazed type or PCD blade type.



Reaming +  
Chamfer



Slitting



Formed Tool



Boring + Counter



Blade Reamers with  
guide-pads

# REDUCTION GEAR

## TETRAMCUT

Grooving tools with 4 cutting-edge insert.  
Ground insert clamps into unique insert pocket and provides high rigidity as well as repeatability



**TCL18**



## TUNG CUT

Multi-functional system for diverse grooving needs

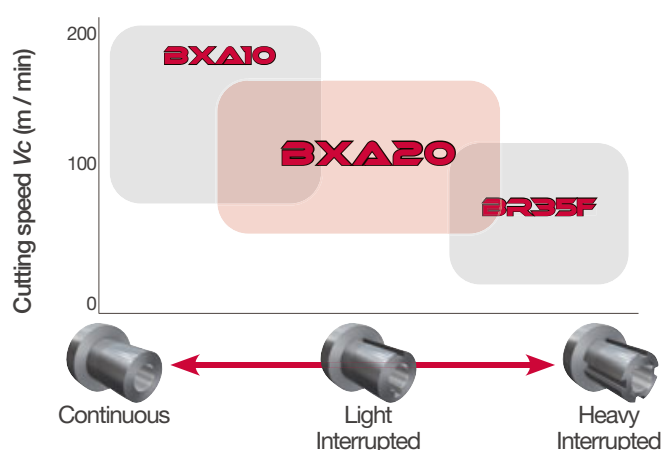


**DTX**

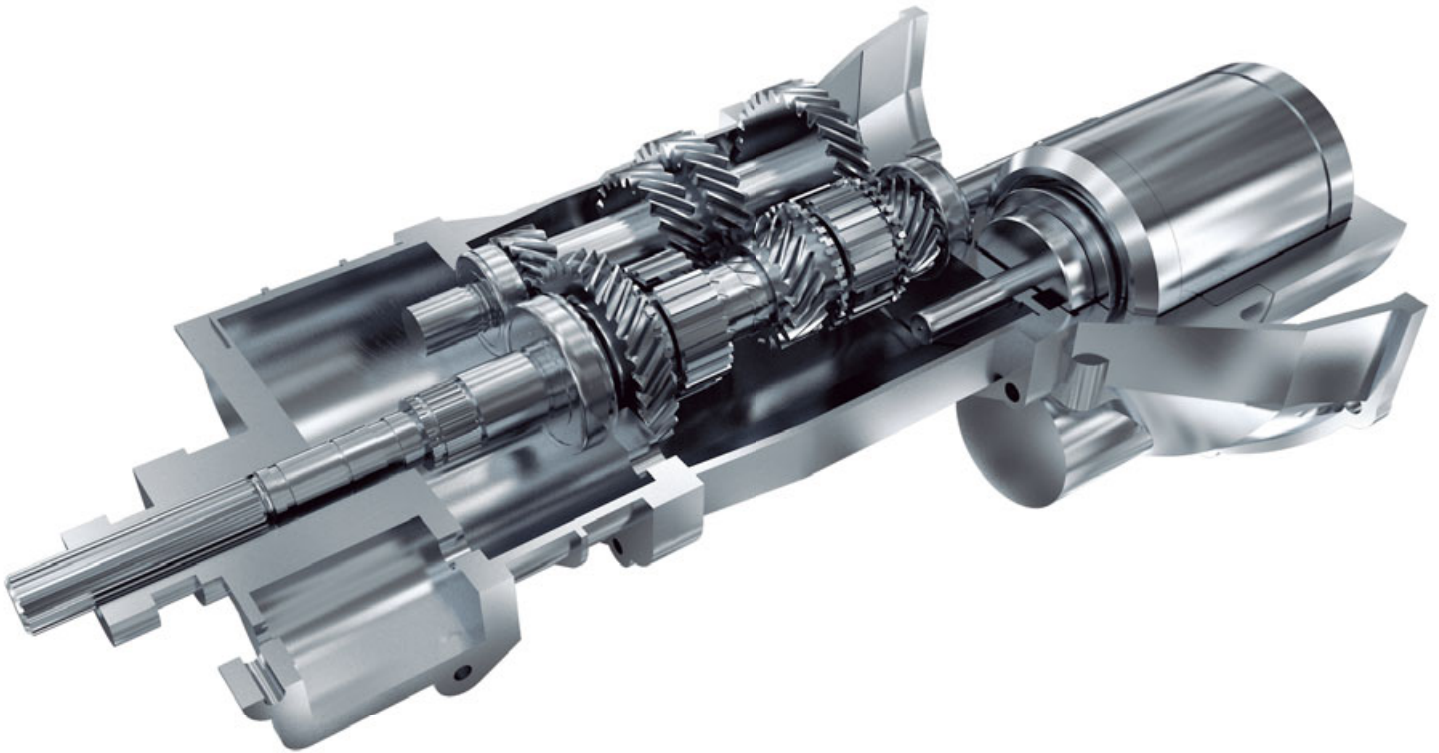


## BXA20 H

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

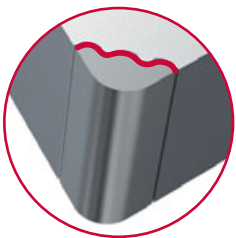






## WAVY JOINT

The unique "wavy" contact surface enhances the brazing strength thus improves productivity with 1.6 times higher depth-of-cut compared to the conventional type.



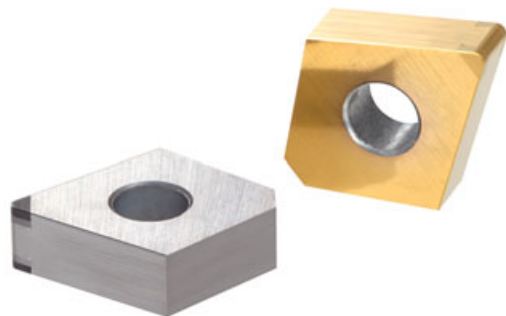
*For large depth of cut in hard turning up to 0.8 mm*

**CBN Tip Size:** 200% larger for improved wear control in the cutting zone

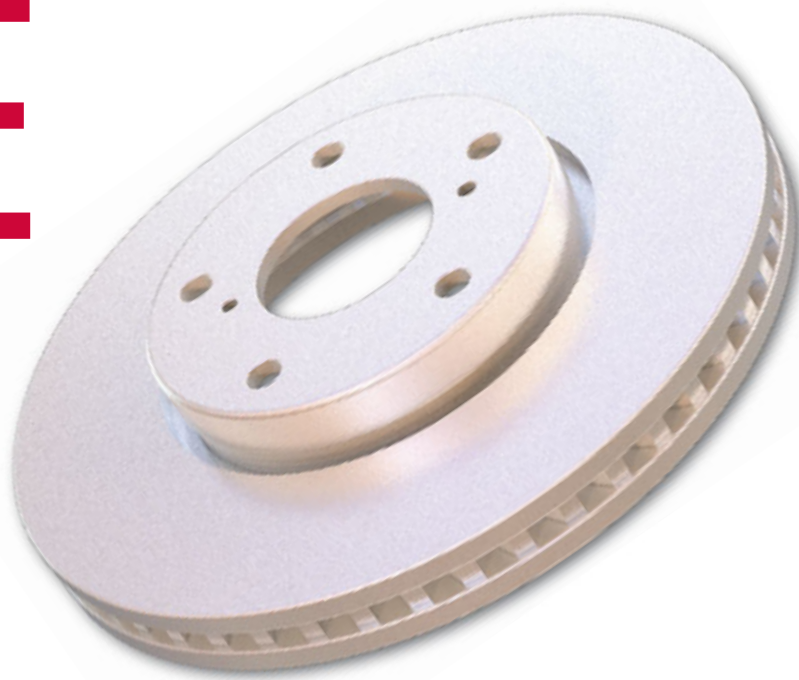
**Brazing Area:** 160% larger for enhanced brazing strength

## GNGA - type

A 70° corner angle creates a larger clearance between the insert and workpiece, reducing cutting forces and minimizing wear on the cutting edge. Additionally, it facilitates smooth chip flow, helping to prevent scratches on the machined surface caused by chips.



# BRAKE DISC



## DRILLMEISTER

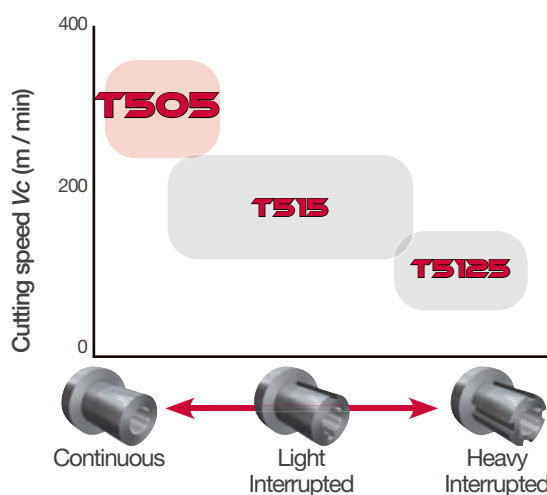
Exchangeable head drills for unparalleled tool life and machining performance



**DMP**  
**AH9130**

## T505 **K**

A unique and optimal **CVD** grade dedicated for high speed turning of cast iron resulting excellent wear resistance and tool life



# BRAKE CALIPER



## DRILLMEISTER

Exchangeable head drills for unparalleled tool life and machining performance



**DMP**  
**AH9130**



## TEC<sup>ANGENTIAL</sup>SLOT

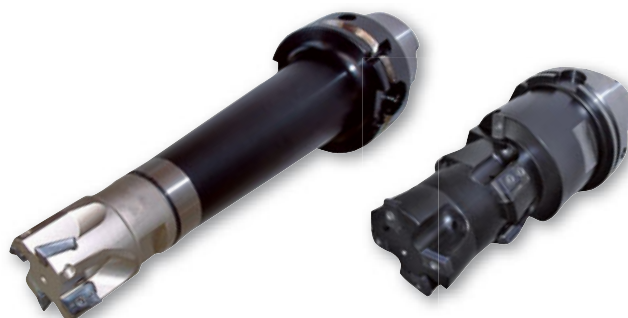
Optimized insert positioning for slotting with large cutting width.



**LMEU**

## SPECIAL BORING TOOL

Tailored tool for boring and counter-sincking with long damped adaptors for reducing vibration.





# STEERING KNUCKLE

## DRILLMEISTER

Exchangeable head drills for unparalleled tool life and machining performance



**DMP**  
**AH9130**

## TUNGUSLOT

Specially designed cutter with economical 6-cornered insert for milling two faces in one operation.



**WNGU**

## SPECIAL BORING & CHAMGERING TOOL

Specially designed tools for boring with steps and chamfering in one operation.

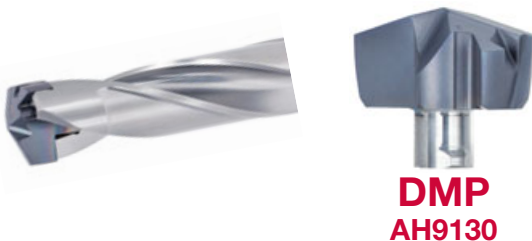


# WHEEL HUB



## DRILLMEISTER

Exchangeable head drills for unparalleled tool life and machining performance



**DMP**  
**AH9130**

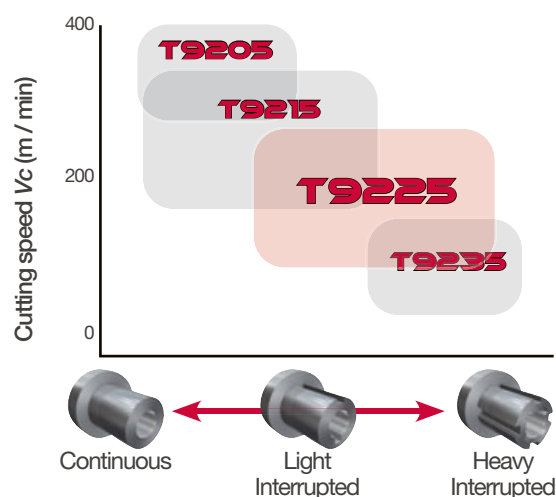
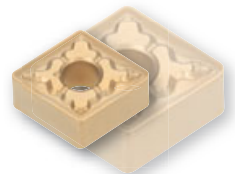
## MINI<sup>FORCE</sup>TURN

Double-sided insert with positive cutting edges provides economic advantages in boring.



## ECOTURN T9225 P

Small ECO insert in grade of T9225 with PremiumTec. Nearly unbreakable CVD series for improved machining efficiency



# DIFFERENTIAL CASE

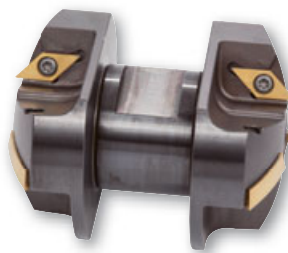
## **T505 K**

A unique and optimal **CVD** grade dedicated for high speed turning of cast iron resulting excellent wear resistance and tool life



## **SPECIAL INTERNAL MILLING TOOL**

Exclusively designed spherical cutter used on dedicated machines for milling of differential case.



## **DRILLMEISTER**

Exchangeable head drills for unparalleled tool life and machining performance



**DMH  
AH9130**

## **REAMMEISTER**

Highly precise reaming operation for H7 hole-tolerance  
Uncoated head dedicated for machining aluminum



### **Type BL**

Reaming heads with left hand flute for through holes



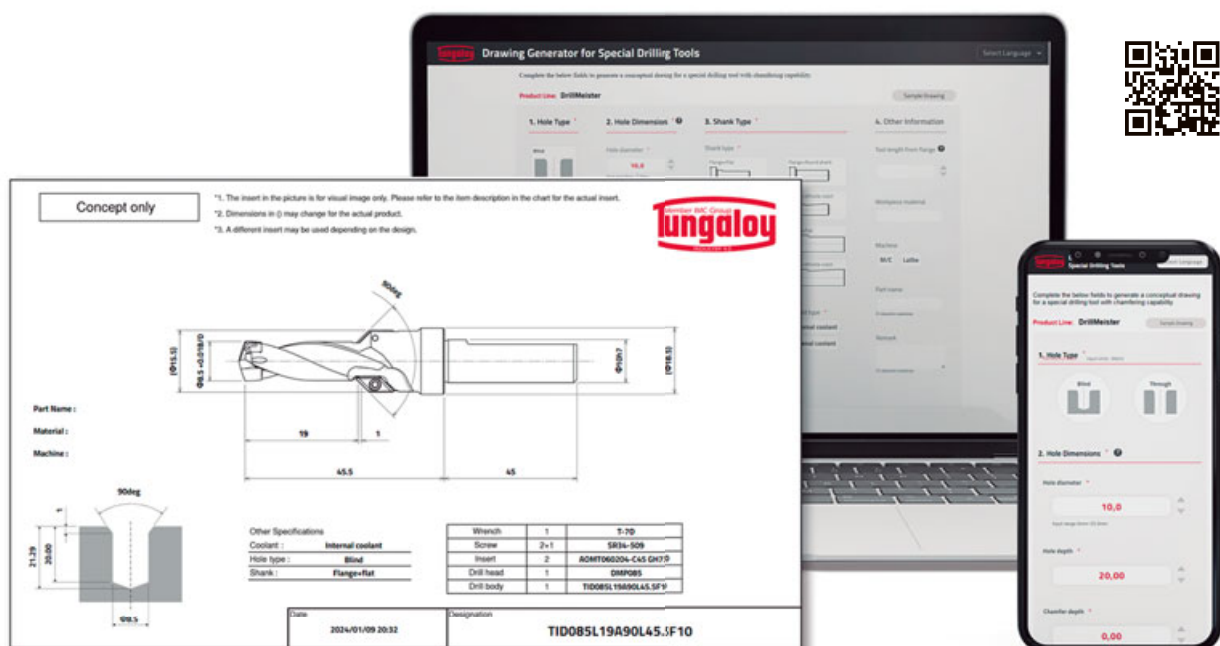


# INTRODUCING SPECIAL DRILLING TOOLS AND THEIR DRAWING SYSTEM

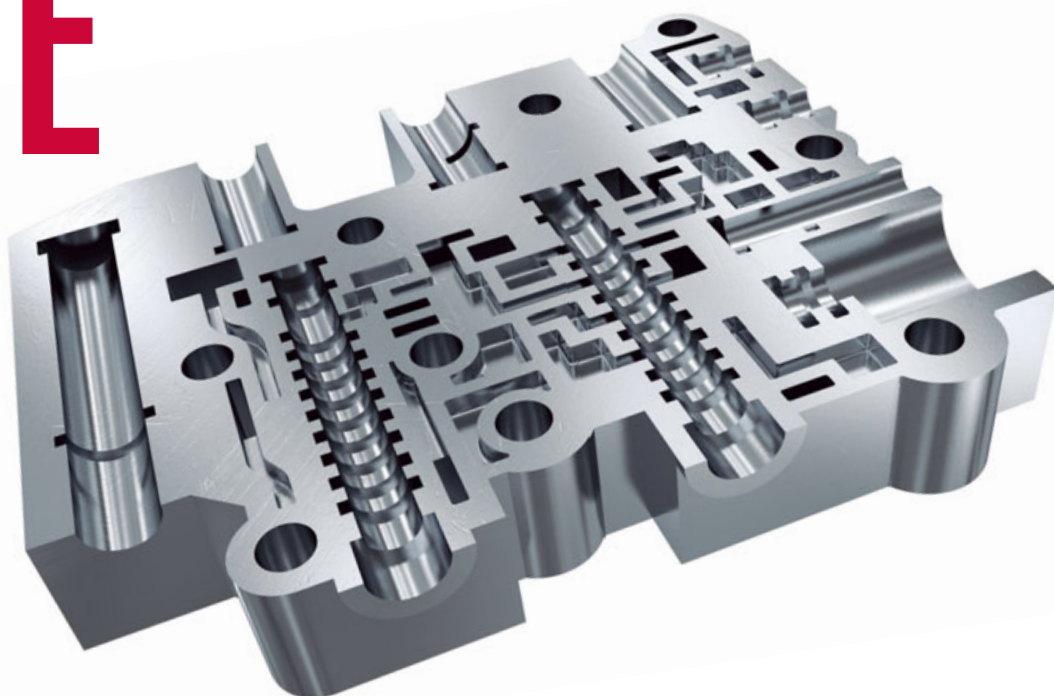
Introducing an innovative solution for creating drawings of specialized drilling tools, which was previously a time-consuming process.

Our newly developed service enables effortless creation of simple diagrams anytime, anywhere.

Explore the “Drawing System for Special Drilling Tools”! By inputting essential tool details, you can swiftly generate straightforward diagrams illustrating special drilling tools with chamfering functions.

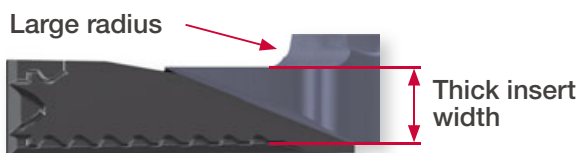
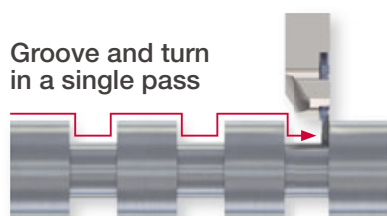


# CONTROL VALVE



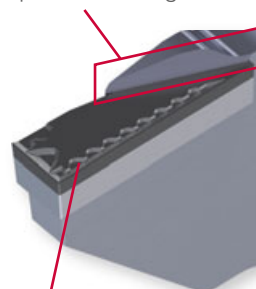
## DUO<sup>UST</sup>CUT

PCD insert with 3D laser-etched chipbreaker for huge improvement of aluminium spool machining



## JXDX

Wall chipbreaker  
For chip control at high D.O.C.



3D chipbreaker  
For chip control at low D.O.C.

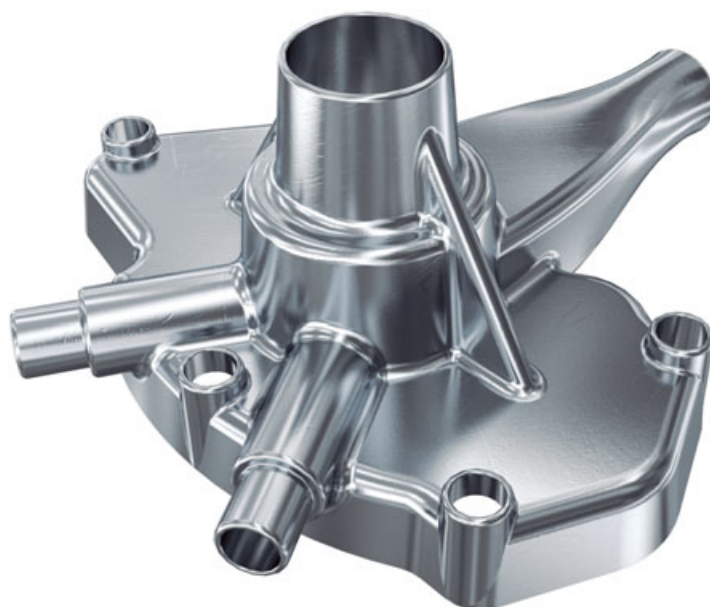
# WATER PUMP FOR BATTERY COOLING

## TUNG-ALUMILL

Shoulder mill that enables high speed machining of aluminum and non-ferrous materials



**XVCT-AM**



## TUNG<sup>SP</sup>MILL

High-speed PCD cutter for finishing aluminum. Large number of cutting edges offer efficient machining. Use of deburring inserts in combination with standard inserts ensures excellent surface finish.



Adjustable runout



**YDEN**



# BATTERY CASE

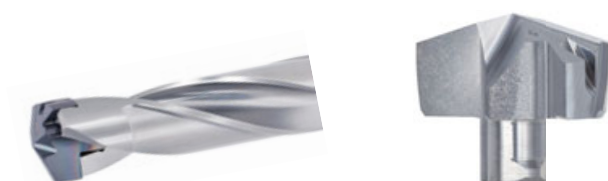
## TUNG<sup>FORCE</sup>FREC

Extremely versatile shoulder milling cutter with unique V shape inserts



## DRILL<sup>MEISTER</sup>

Exchangeable head drills for unparalleled tool life and machining performance



### DMN KS15F

Drill dia.:  $\varnothing 10$  -  $\varnothing 19.5$  mm  
Drill head with sharp edges for non-ferrous materials

## TUNG<sup>SP</sup>SMILL

High-speed PCD cutter for finishing aluminum. Large number of cutting edges offer efficient machining  
Use of deburring inserts in combination with standard inserts ensures excellent surface finish



### YDEN

Adjustable runout



## REAMMEISTER

Highly precise reaming operation  
for H7 hole-tolerance

Uncoated head dedicated for  
machining aluminum



### Type AS

Reaming heads  
with straight flute for  
blind holes



### Type BL

Reaming heads  
with left hand flute  
for through holes

## TUNGMEISTER

Endmill with exchangeable heads  
for reduced time to change tools

High repeatability and accuracy  
are maintained due to full  
contact of both taper and face



### VEE-A02/03

# INVERTER CASE

## TUNG-ALUMILL

Shoulder mill that enables high speed machining of aluminum and non-ferrous materials



**XVCT-AM**

## TUNGSMILL

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**YDEN**

Adjustable runout



## DRILLMEISTER

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## REAMMEISTER

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Uncoated head dedicated for machining aluminum



### Type AS

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Reaming heads with left hand flute for through holes



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