



ELECTRO MOBILITY

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

MOTOR CASE

MOTOR SHAFT

ROTOR

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TRANSMISSION

TRANSMISSION CASE

REDUCTION GEAR

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CHASSIS

BRAKE DISK

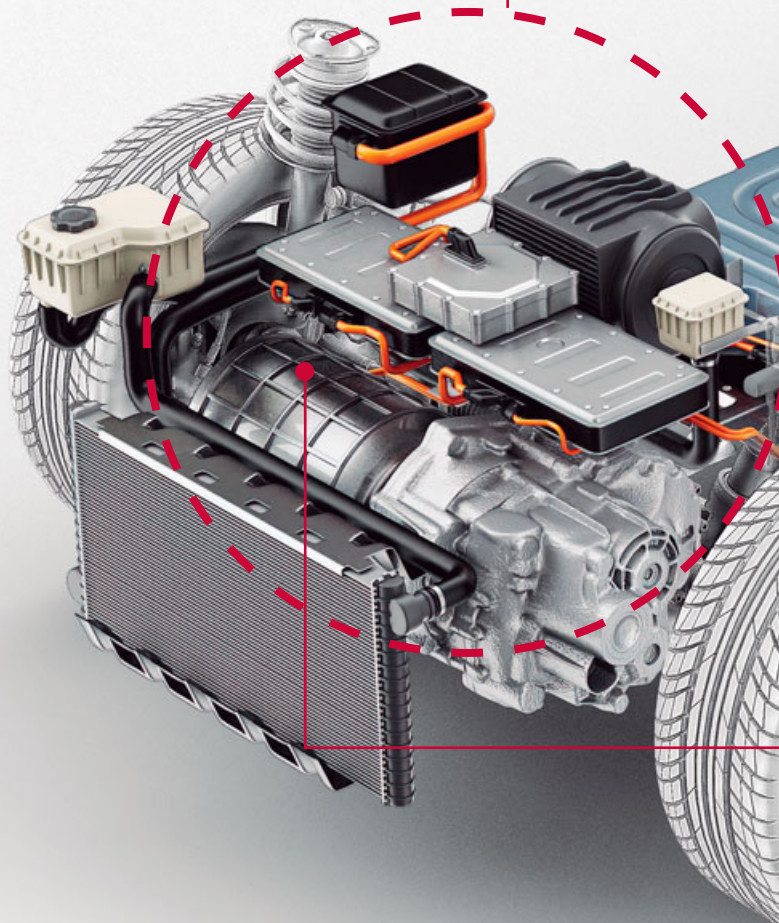
BRAKE CALIPER

WHEEL HUB

STEERING KNUCKLE

DIFFERENTIAL CASE

MOTOR
TRANSMISSION
AUXILIARY PARTS



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AUXILIARY PARTS

CONTROL VALVE

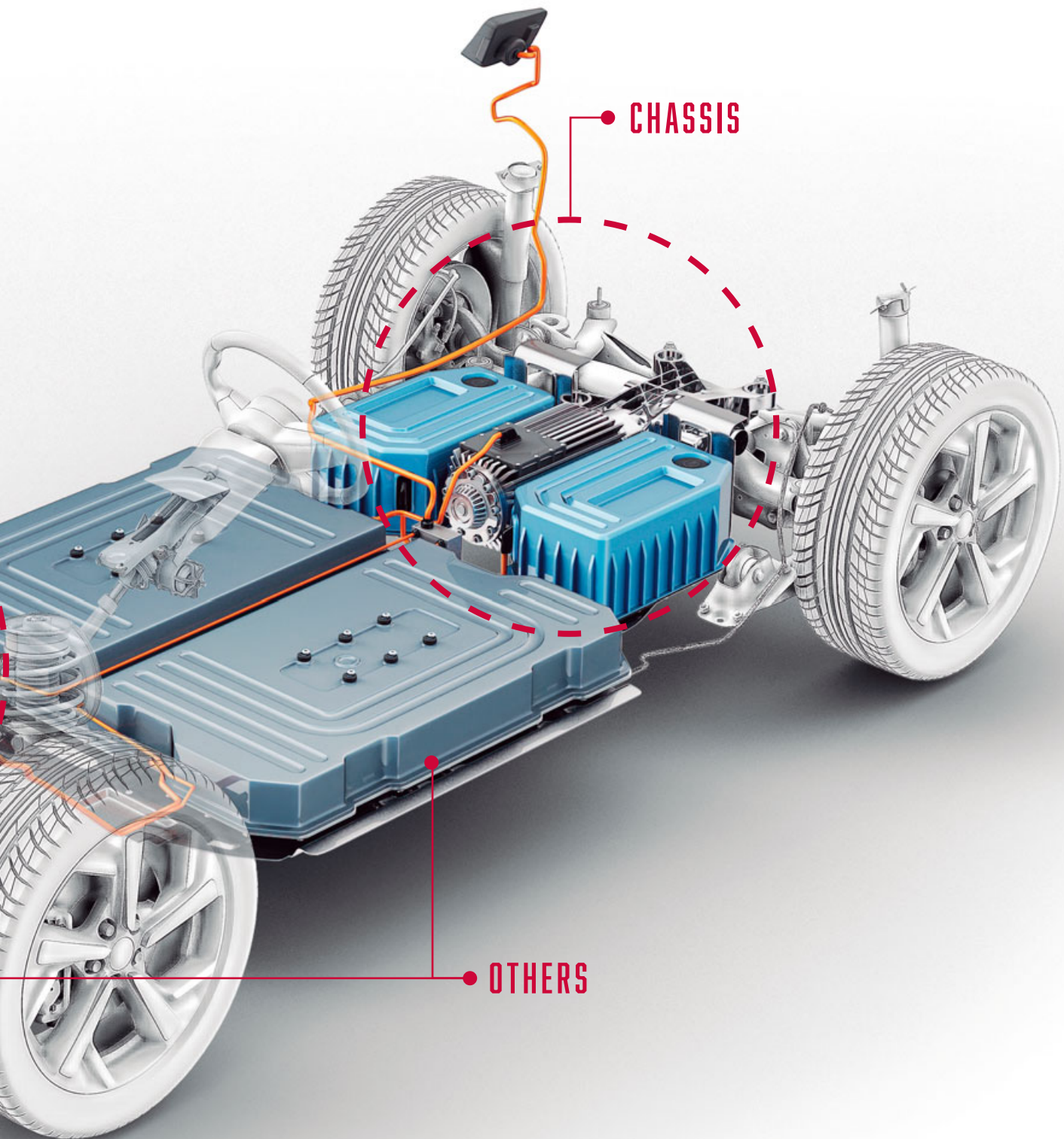
WATER PUMP FOR BATTERY COOLING

PAGE 24

OTHERS

INVERTER CASE

BATTERY CASE



MOTOR CASE

TUNG^{ORCE}FREC

Extremely versatile shoulder milling cutter with unique V shape inserts



AVGT-AJ



TUNG^{SPEED}MILL

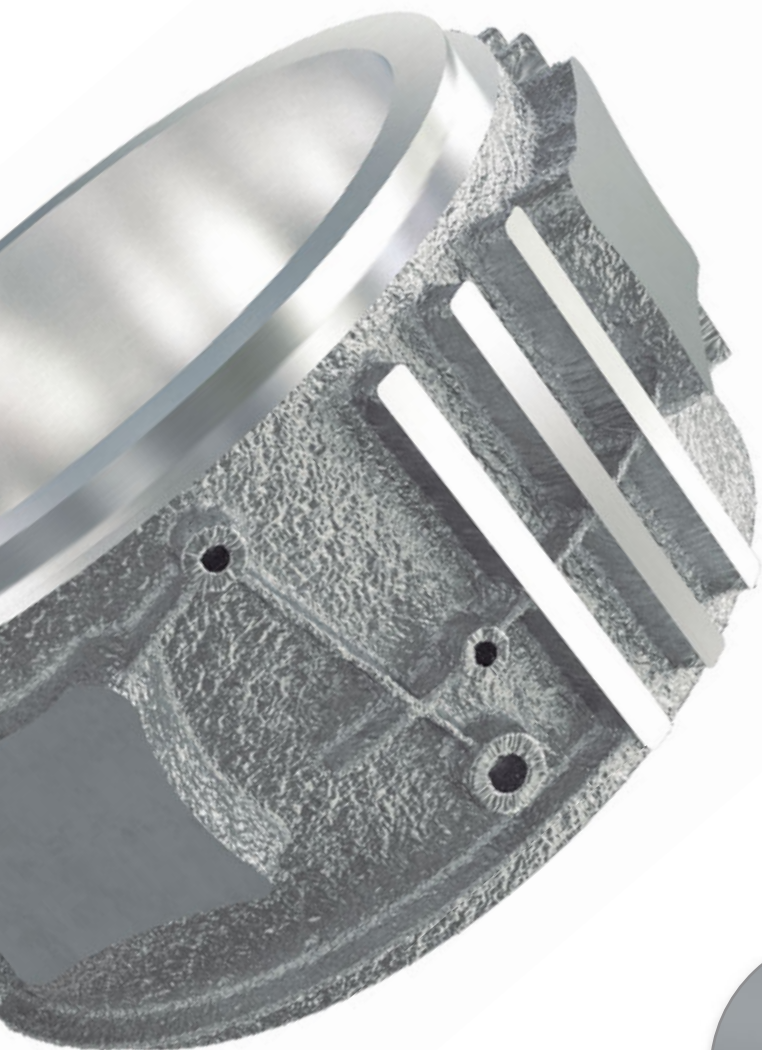
High-speed PCD cutter for finishing aluminum. Large number of cutting edges offer efficient machining. Use of deburring inserts in combination with standard inserts ensures excellent surface finish.



Adjustable runout

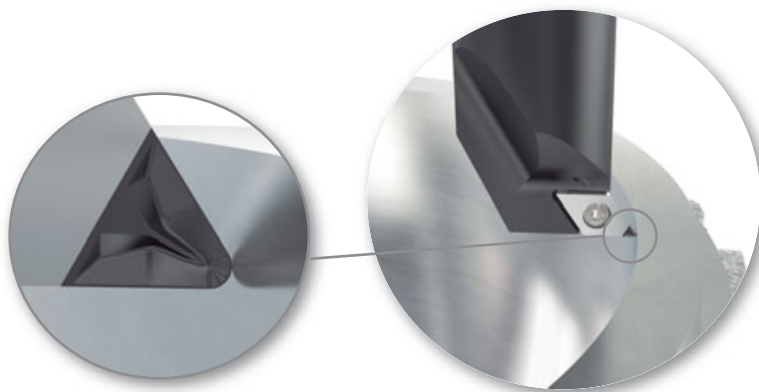
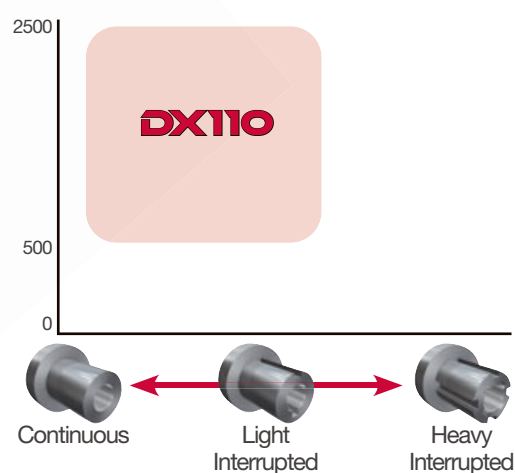


YDEN



DX110 N

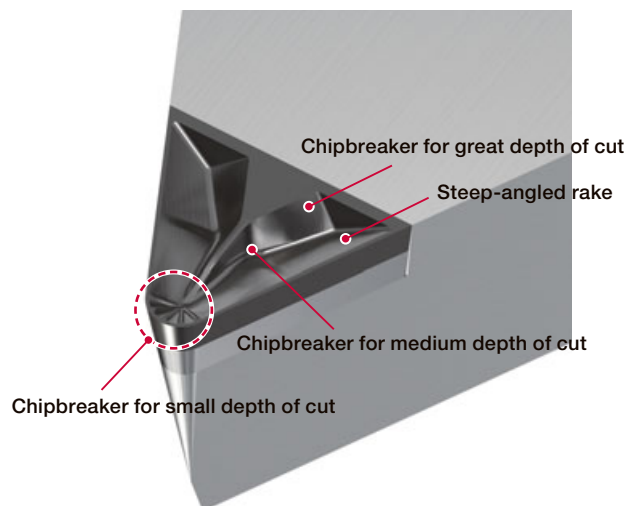
An extremely wear-resistant PCD grade, featuring strongly-bonded diamond grains that prevents the grains from breaking off during machining



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



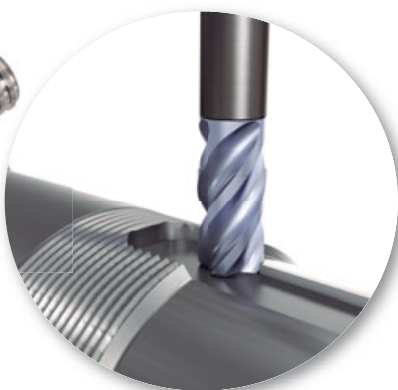
MOTOR SHAFT

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^{RI}DRILL

Indexable gun drill with
exceptional efficiency

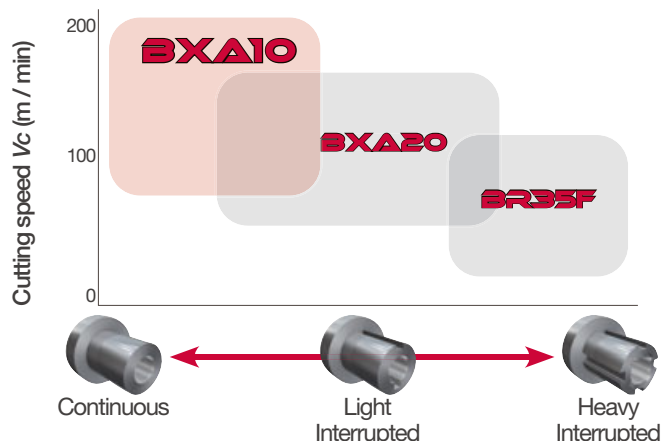
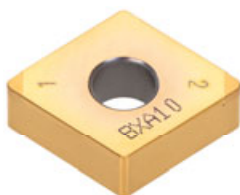


TOHT



BXA10 H

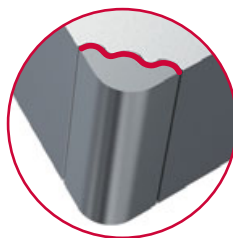
CBN coated grade for continuous hardened steel turning

**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.



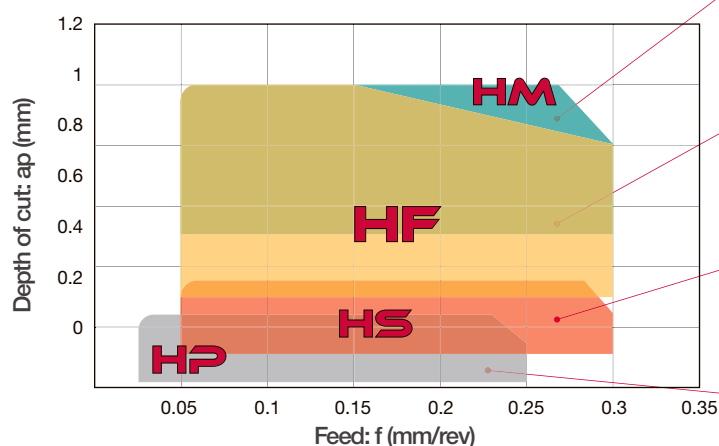
For large depth of cut in hard turning up to 0.8 mm

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



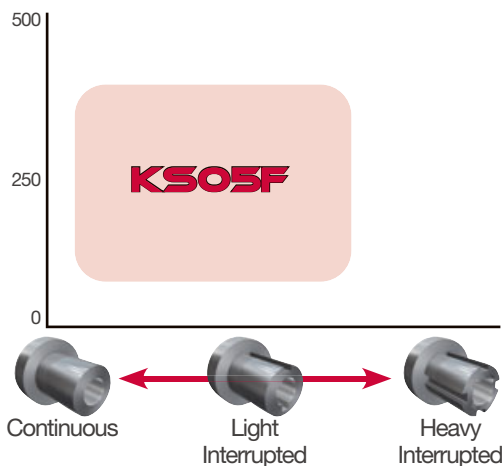
For precision finishing

Breaker shape suitable for precision finishing

ROTOR

KS05F N

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



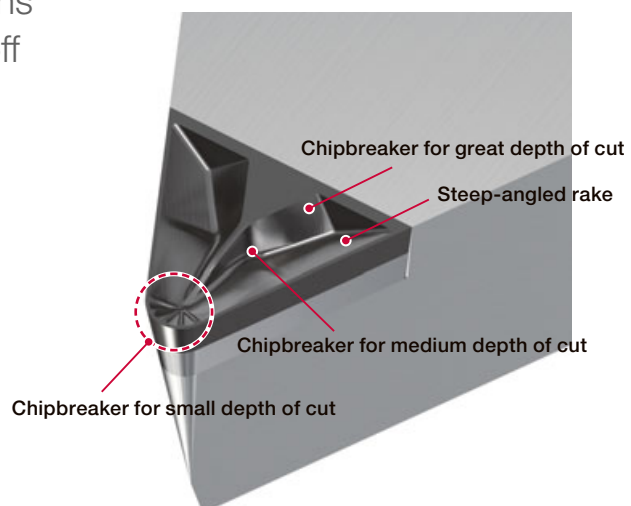
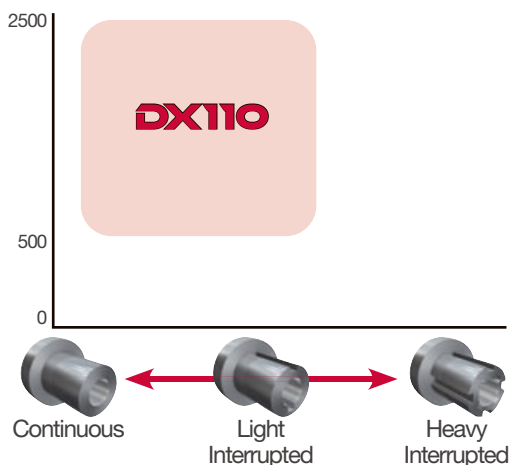
NS PCD inserts with 3D chipbreaker

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



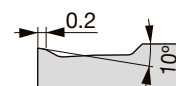
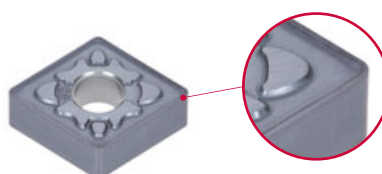
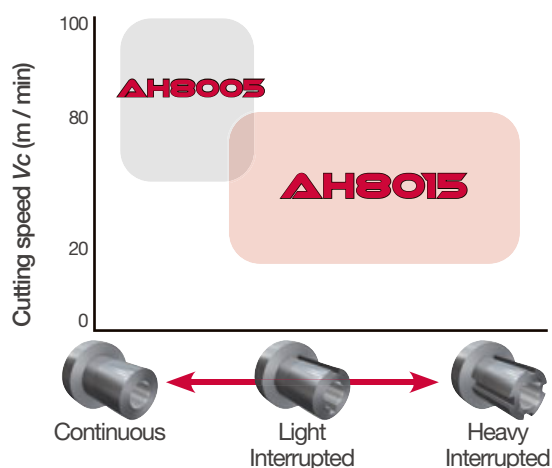
STATOR

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

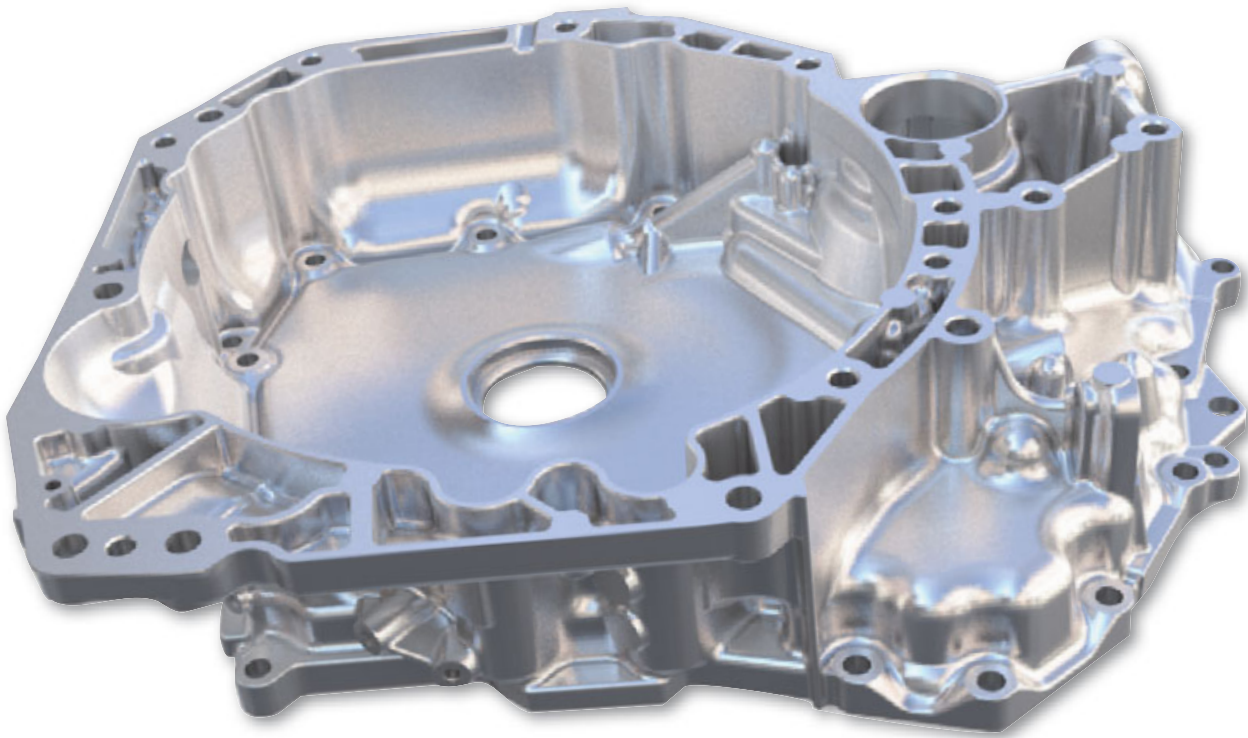
Exchangeable head drills for unparalleled tool life and machining performance



**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

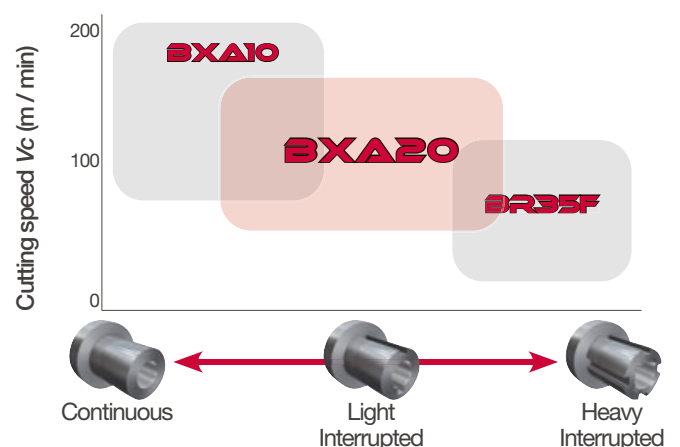


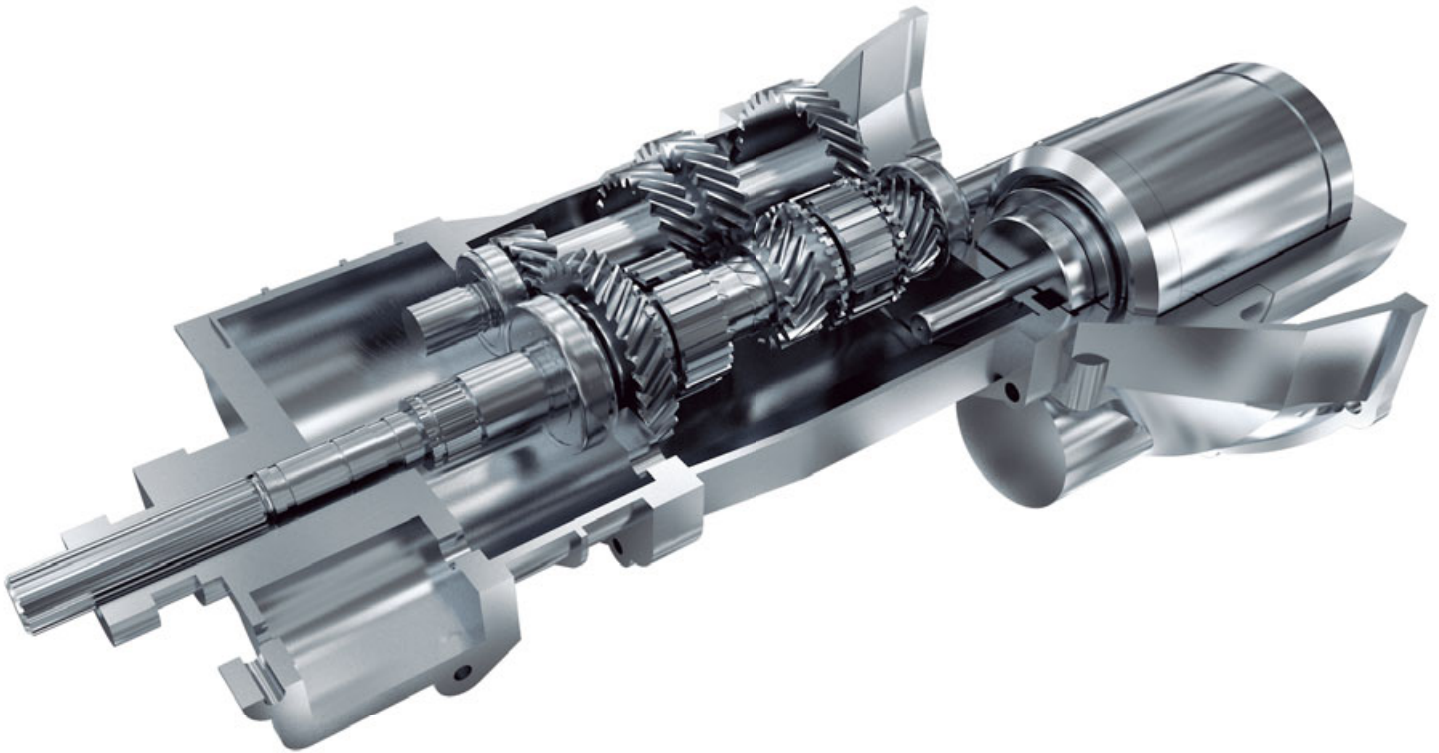
DTX



BXA20 H

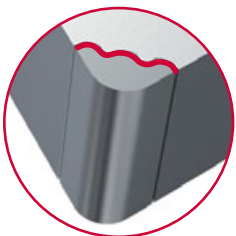
Versatile coated
CBN grade for
continuous to light
interrupted harde-
ned steel turning





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

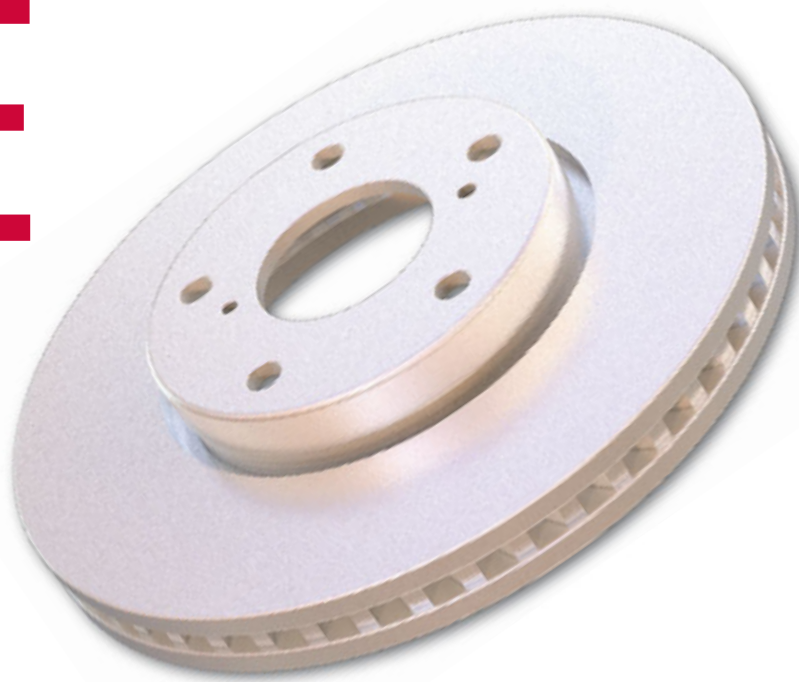
Brazing Area: 160% larger for enhanced brazing strength

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

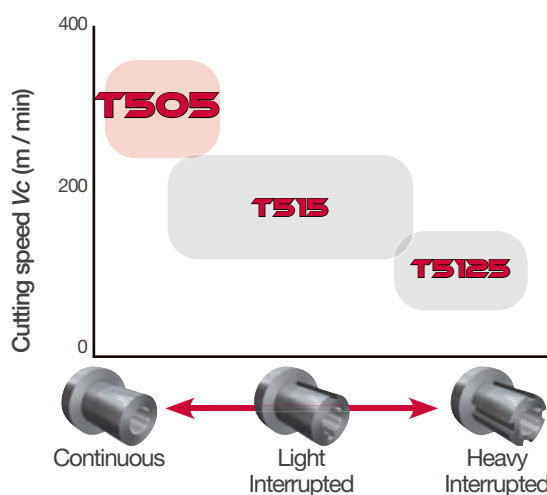
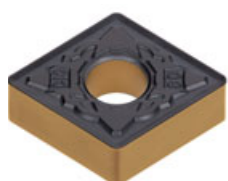
Exchangeable head drills for unparalleled tool life and machining performance



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^{ANGENTIAL}SLOT

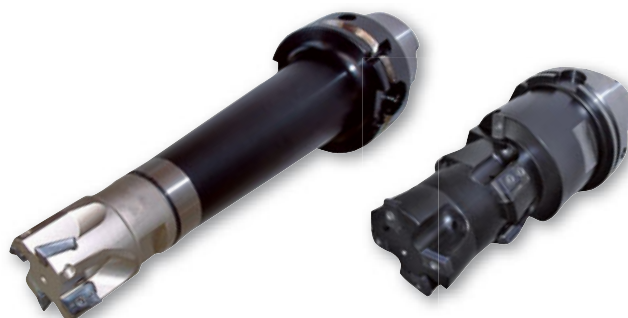
Optimized insert positioning for slotting with large cutting width.



LMEU

SPECIAL BORING TOOL

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



STEERING KNUCKLE

DRILLMEISTER

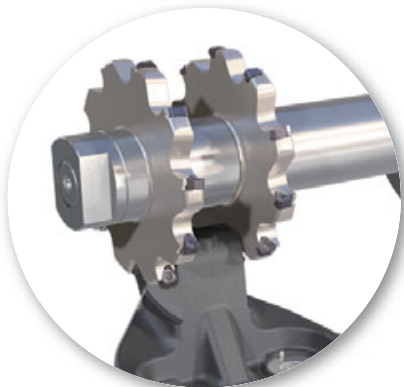
Exchangeable head drills for unparalleled tool life and machining performance



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.

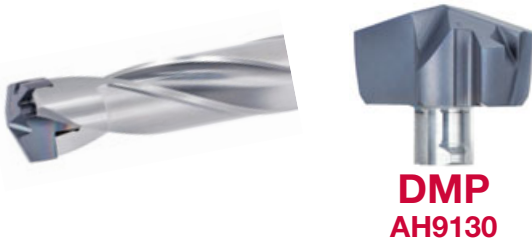


WHEEL HUB



DRILLMEISTER

Exchangeable head drills for unparalleled tool life and machining performance



DMP
AH9130

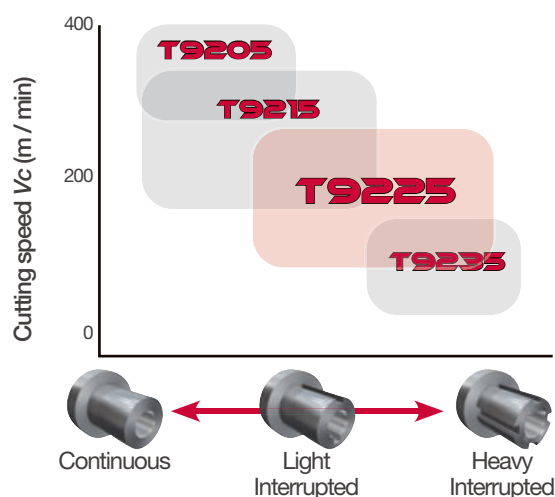
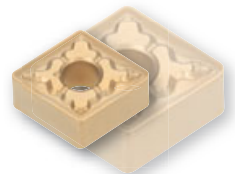
MINIFORCE TURN

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

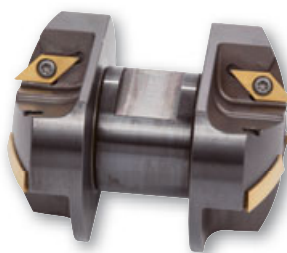
T505 K

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

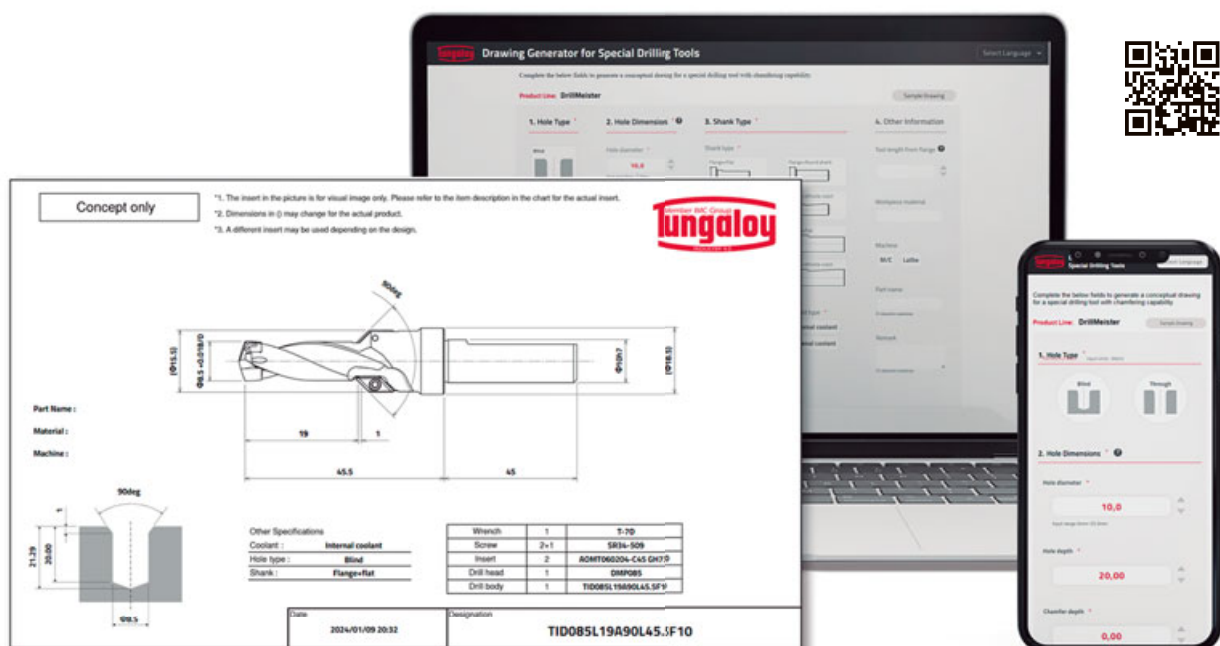


INTRODUCING SPECIAL DRILLING TOOLS AND THEIR DRAWING SYSTEM

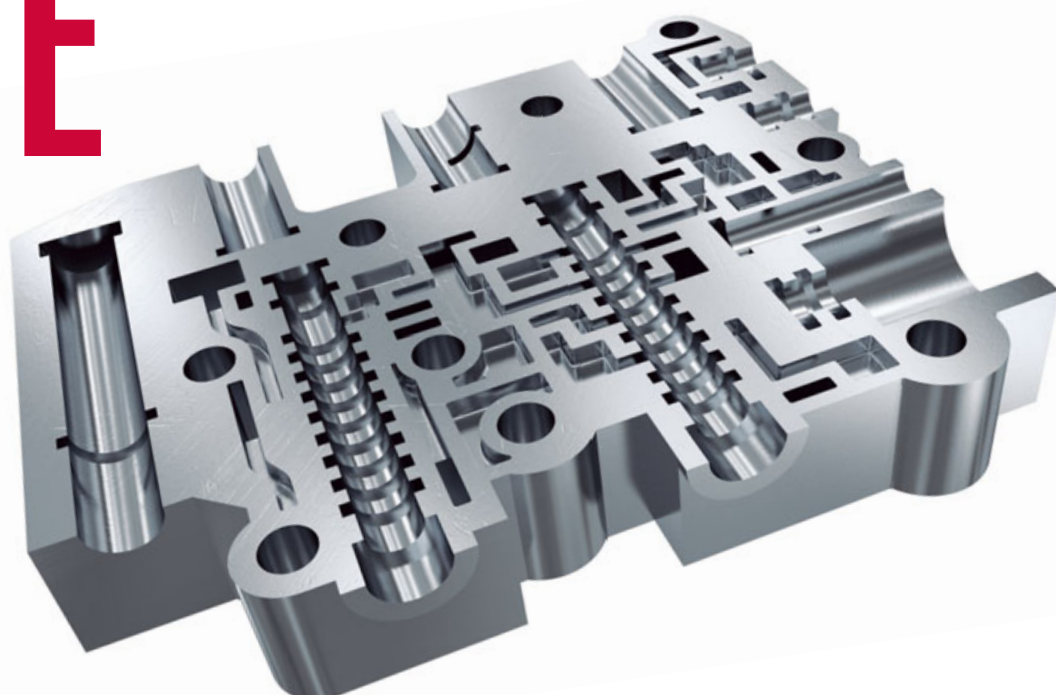
Introducing an innovative solution for creating drawings of specialized drilling tools, which was previously a time-consuming process.

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.

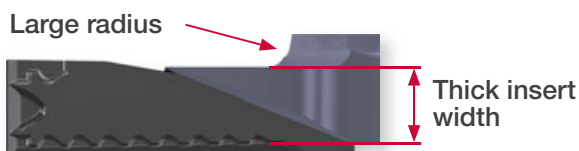
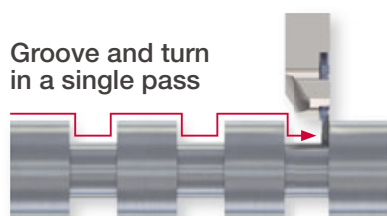


CONTROL VALVE



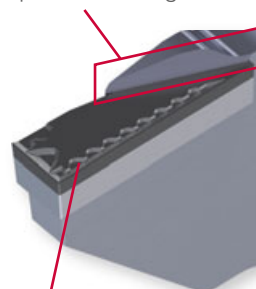
DUO^{UST}CUT

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.

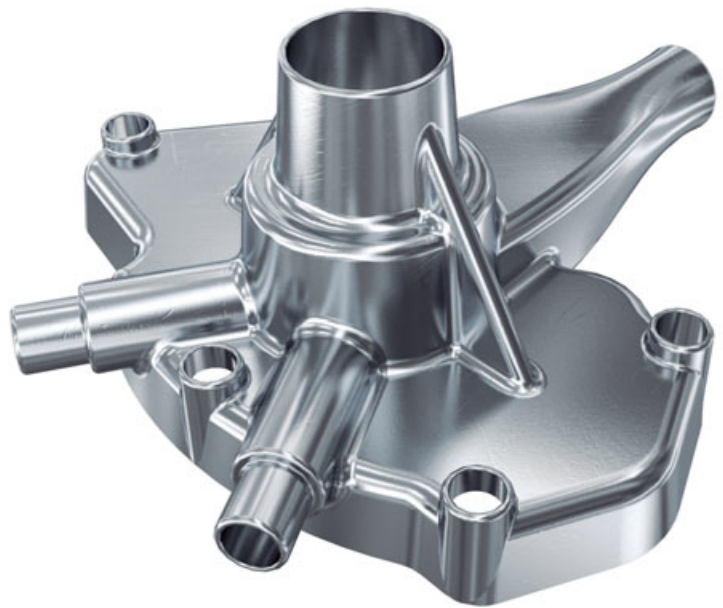
WATER PUMP FOR BATTERY COOLING

TUNG-ALUMILL

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



XVCT-AM



TUNG^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.



Adjustable runout



YDEN

BATTERY CASE

TUNG^{ORCE}FREC

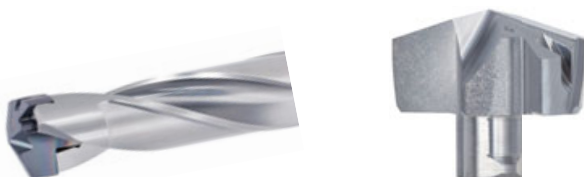
Extremely versatile shoulder milling cutter with unique V shape inserts



AVGT-AJ

DRILL^{MEISTER}

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

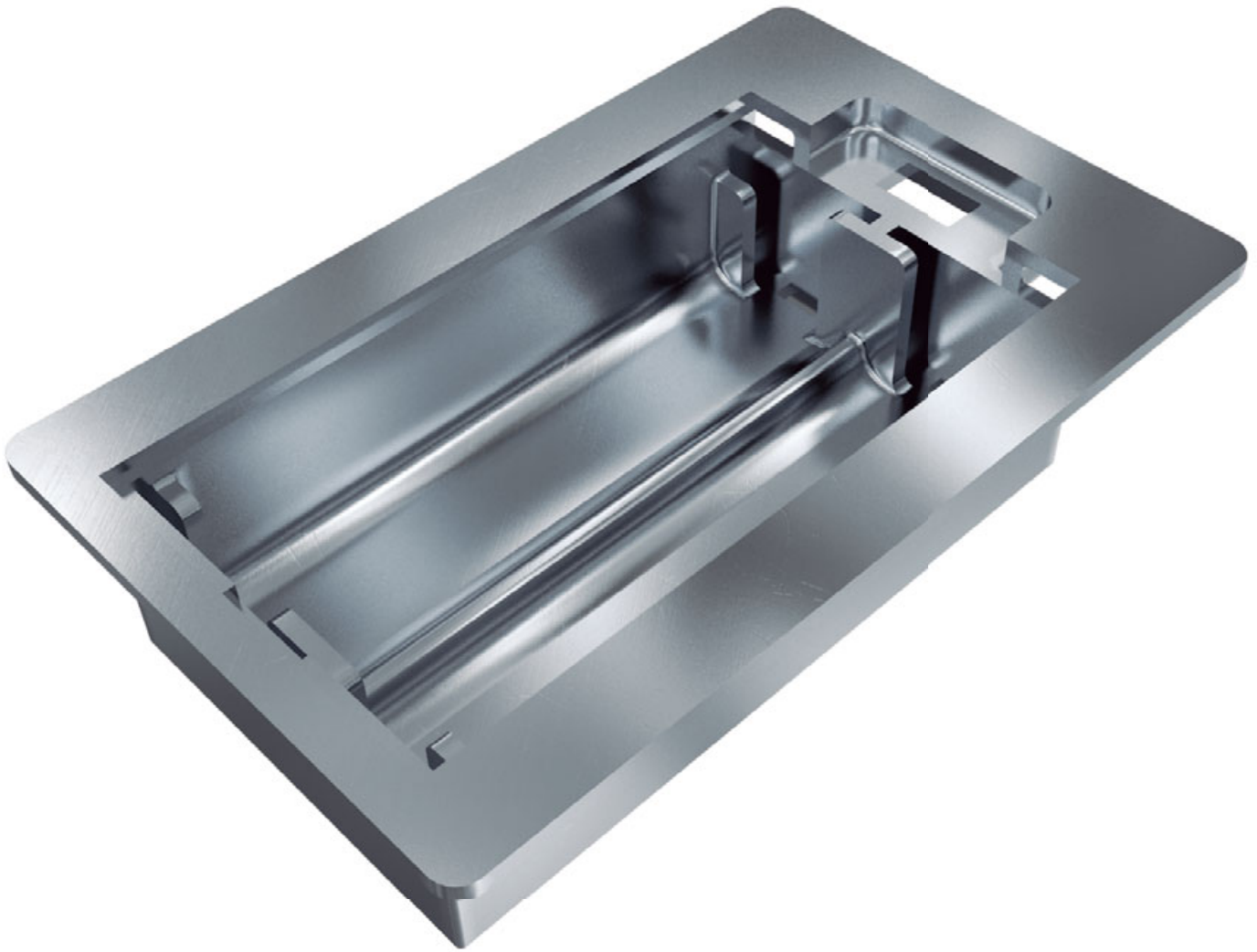
TUNG^{SPED}SMILL

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

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Type AS

Reaming heads with straight flute for blind holes



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Reaming heads with left hand flute for through holes



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