

EV

ELECTRIC VEHICLES



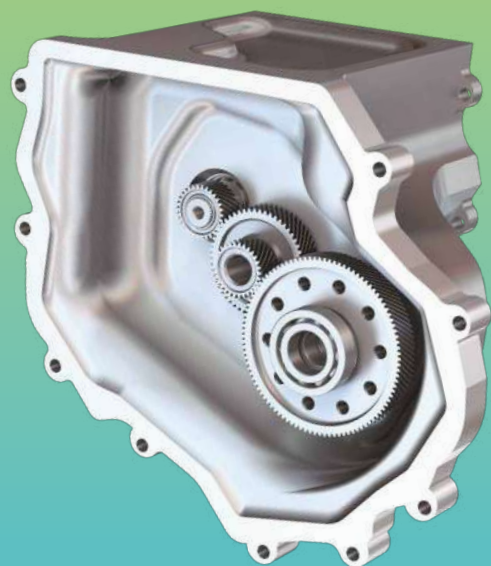
TaeguTec Industry Solutions



ELECTRIC VEHICLES

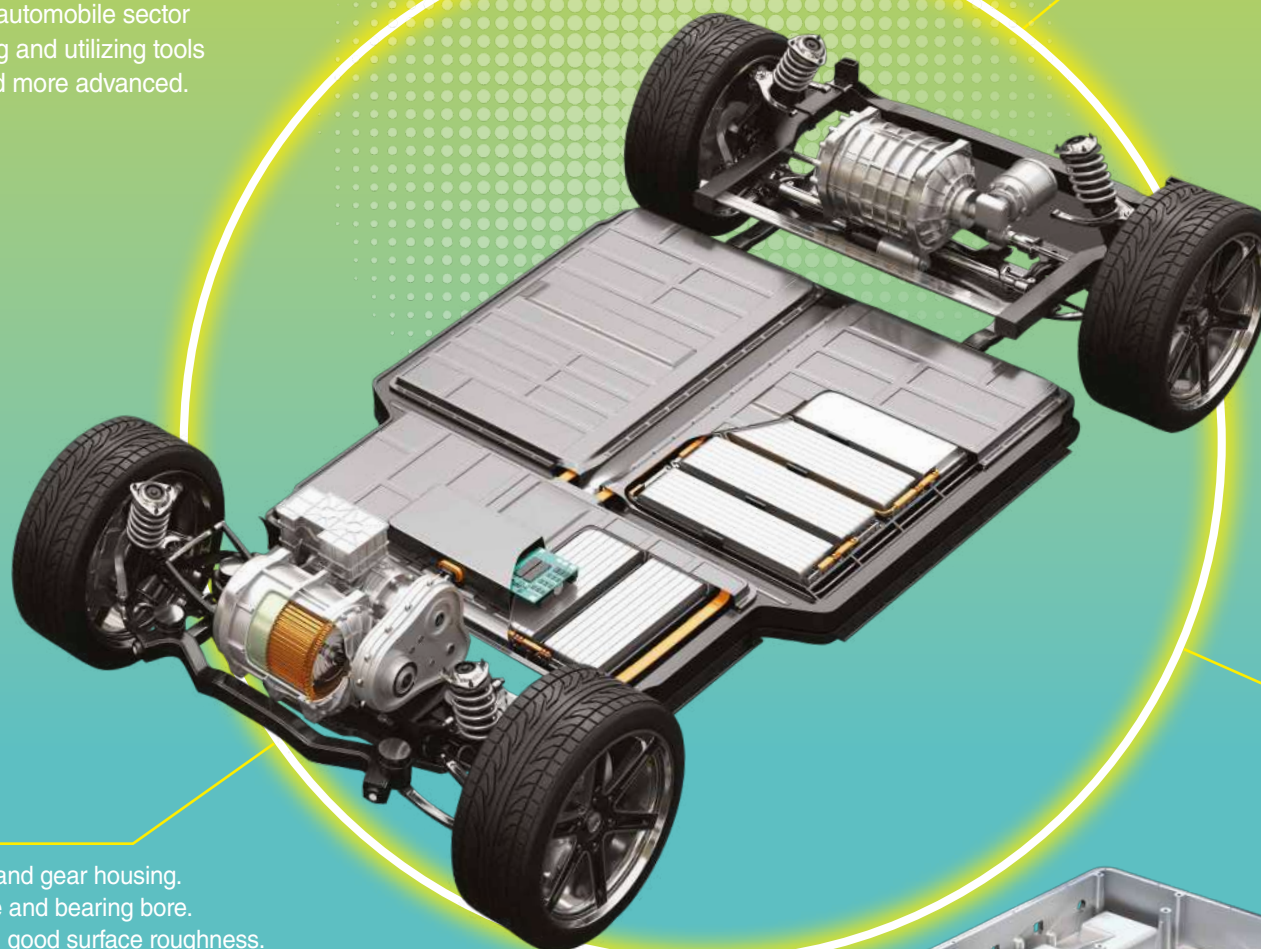


All countries are putting out emission-control regulations in accordance with eco-friendly policies. Various government support policies are being promoted to produce electric vehicles (EVs) rather than internal combustion engine vehicles (ICEVs). Thus, by encouraging the development of EVs, leading automakers are bringing their technology up to par with that of the 100-year-old internal combustion engine. As the automobile sector undergoes several changes, TaeguTec is creating and utilizing tools that are quicker, better suited to client needs, and more advanced.



MOTOR & GEAR HOUSING

One of the main components of EVs is the motor and gear housing. The main parts to be machined are the stator bore and bearing bore. These parts require tight geometry tolerances and good surface roughness. In particular, when it comes to stator bores, our use of specialized cutting tools and our significant knowledge of the condition of various types of machines and fittings are especially important. Sometimes we cannot use steel bodies due to the weight limitations of automatic tool changers (ATC). Thin walls and internal hollow structures of a weak workpiece shape cause vibrations and bad tolerance during machining. Hence, optimized cutting tool geometries and technical experience are essential for this part.



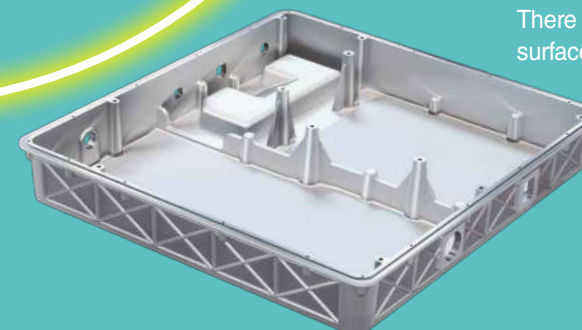
GEAR & DRIVE SHAFT

The drive shaft transfers torque and rotation to the transmission. Electric vehicles do not need a complex transmission system like ICEVs. Only a simple speed reduction system is sufficient. Important parts that need to be machined include gears, which are machined using indexable and solid-changeable type tools. We can machine both internal and external gears more efficiently thanks to power skiving tools. TaeguTec is developing the most innovative solutions for emerging gear machining trends.



BATTERY CASE

The demand for battery cases is dramatically increasing due to the production of EVs. Battery case sizes and models are varied according to the size of the vehicle. Because of this, the size of the machines, fixtures, and operations varies. There are fewer parts that have tight tolerances and good surfaces. The main part to be machined is the face seal, which has a lengthy working distance. Productivity could be impacted by how long this takes to process. Therefore, unique concepts and expertise are required to shorten cutting times and boost output.



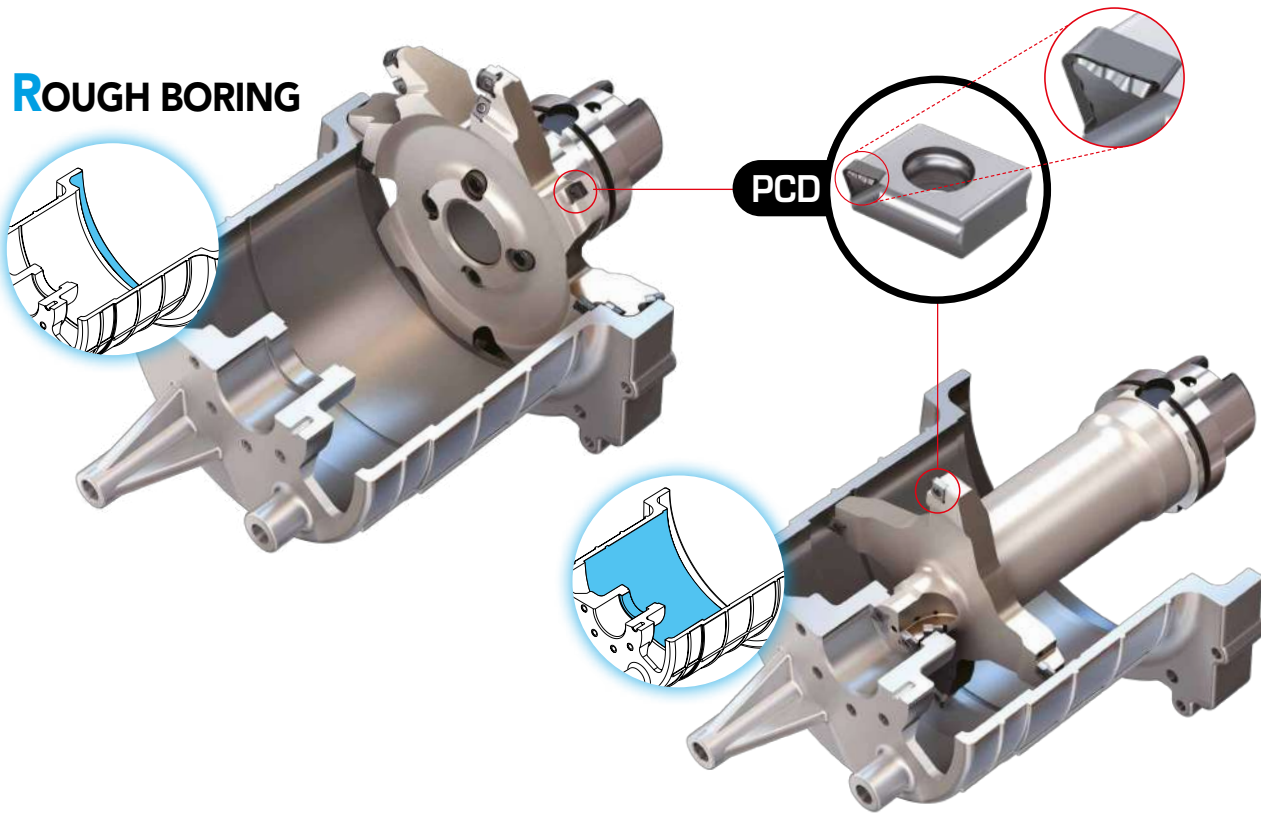


MOTOR & GEAR Housing

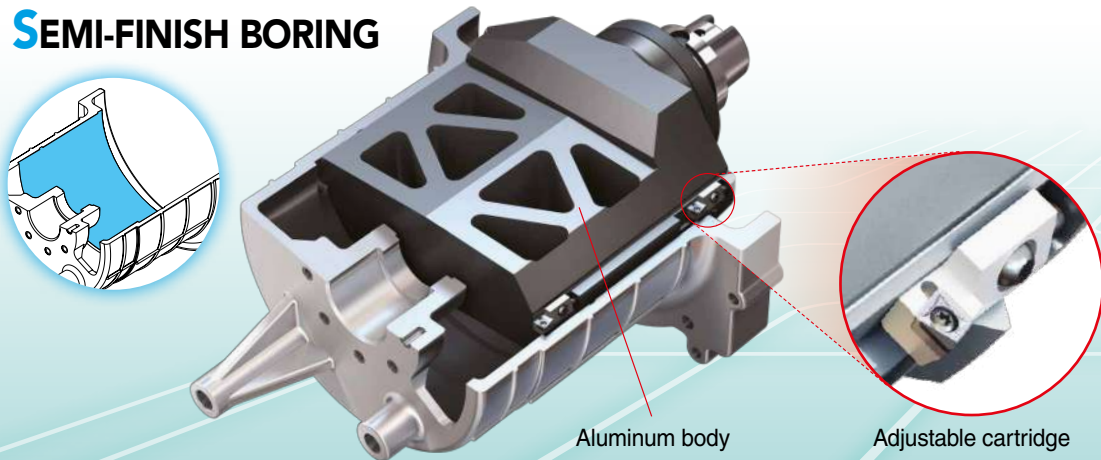
Stator bore hole machining

One of the main components of e-vehicles is the motor and gear housing. Particular consideration and a special approach must be given to these parts: light weight, durability, precision, surface finish, and geometrical tolerances. The secret to reliably addressing this crucial component is to combine the appropriate cutting geometries, cutting parameters, and tool technology.

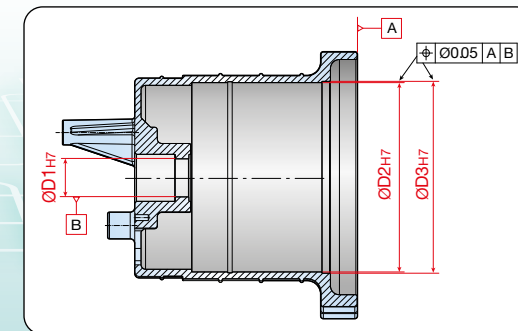
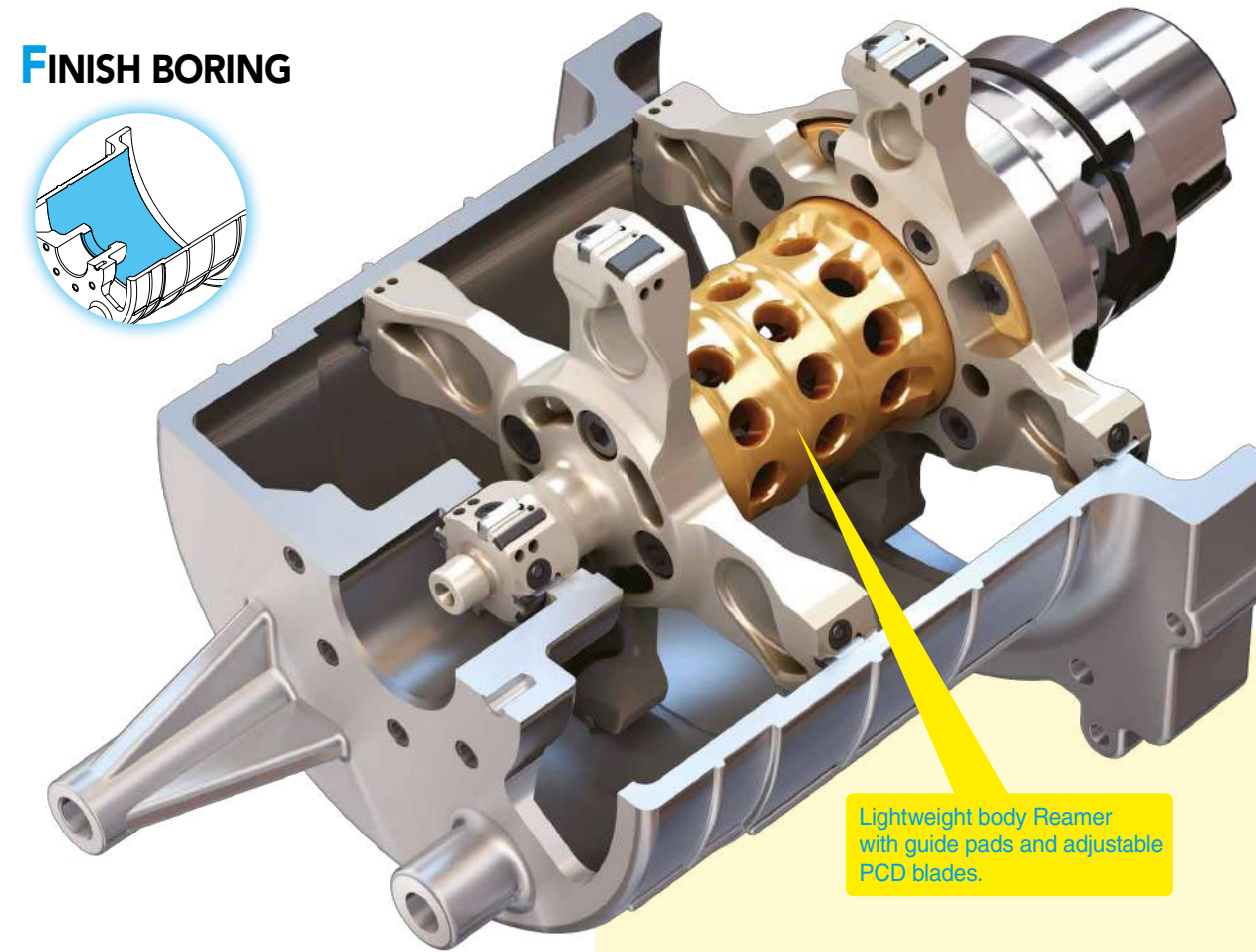
ROUGH BORING



SEMI-FINISH BORING



FINISH BORING



Optimized structure with FEA



A special combination of fine-tuning boring tools is needed to keep up with the tight tolerances of the main holes. For automatic tool changers, creative ideas are needed to design a big-diameter special boring tool. They should be light in weight, strong in strength, and analyzed before production. Titanium or composite fiber materials can be applied to the cutter body and shank for a lightweight and strong body.



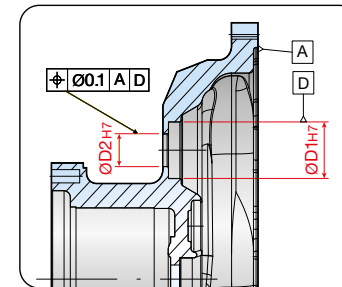
MOTOR & GEAR Housing

Milling and hole machining

MILLING

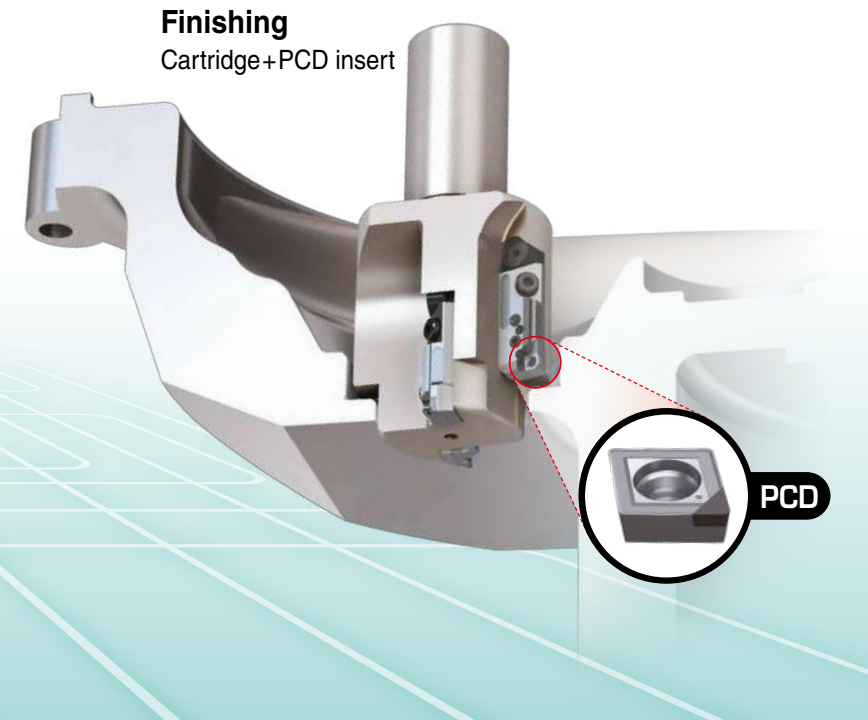
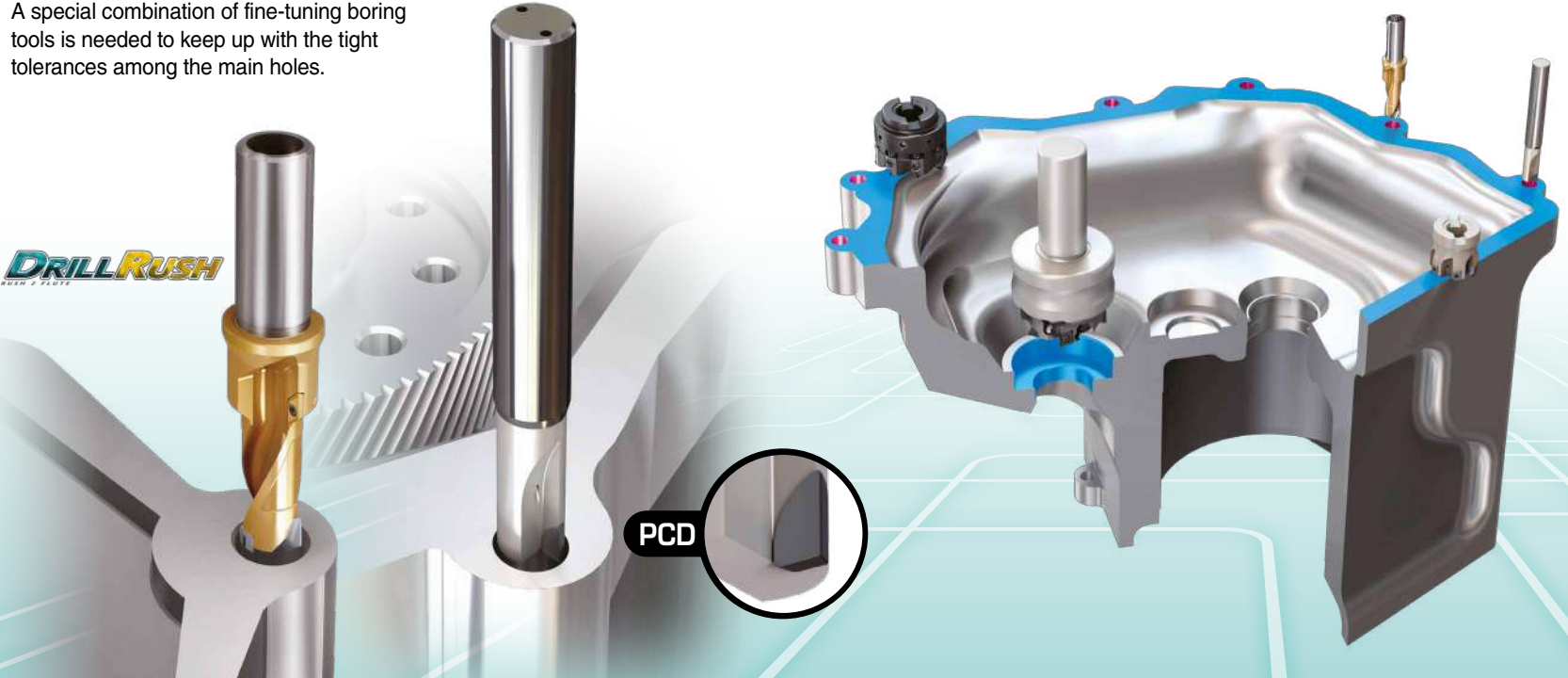


BEARING MOUNT BORE HOLE



DRILLING & REAMING

A special combination of fine-tuning boring tools is needed to keep up with the tight tolerances among the main holes.



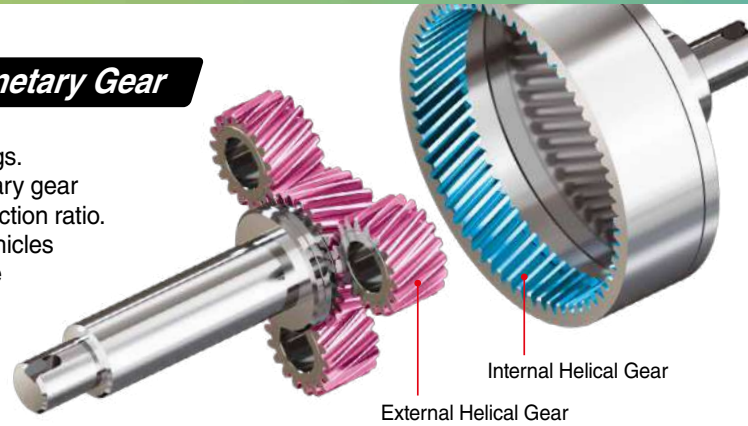


GEAR & DRIVE Shaft



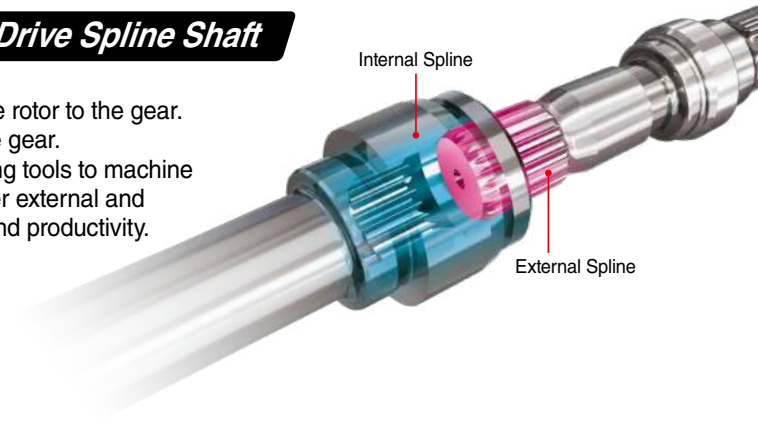
Planetary Gear

Planetary gears are not common for motor housings. Compared to standard reduction gears, the planetary gear has a smaller size and a considerably greater reduction ratio. Thus, this equipment will be widely used with e-vehicles in the future. TaeguTec Power Skiving Tools are the best solution for the new trend in the production of EV motor gears.

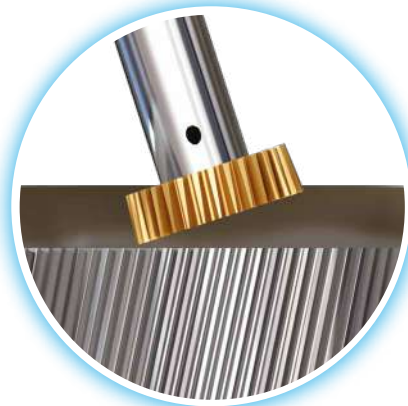


Drive Spline Shaft

The drive spline shaft transfers power from the rotor to the gear. It has an external spline and an internal spline gear. Traditionally, customers use rollers or broaching tools to machine them. TaeguTec Power Skiving Tools can cover external and internal gear solutions with higher precision and productivity.



INTERNAL HELICAL GEAR



Head-Changeable Type (M0.4 - M2.5)

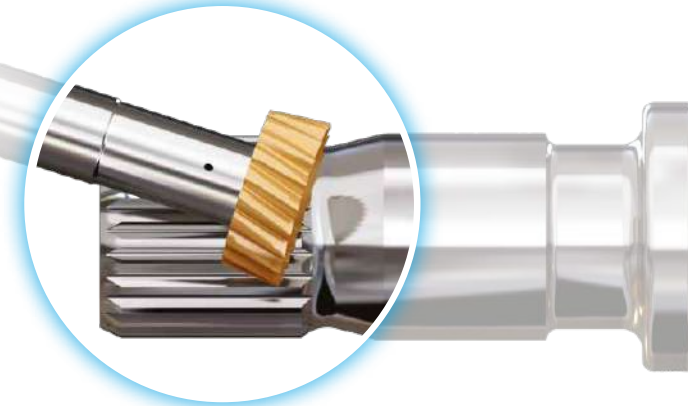


Indexable Type (M3.5 - M10)

EXTERNAL SPLINE SHAFT



Head-Changeable Type (M0.4 - M2.5)

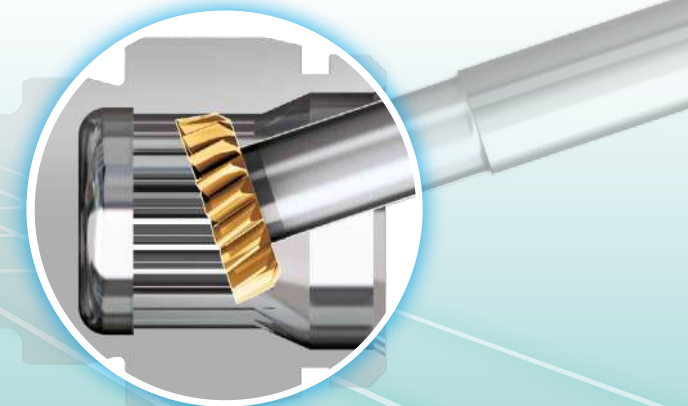


EXTERNAL HELICAL GEAR



Solid Carbide Type (M0.3 - M6)

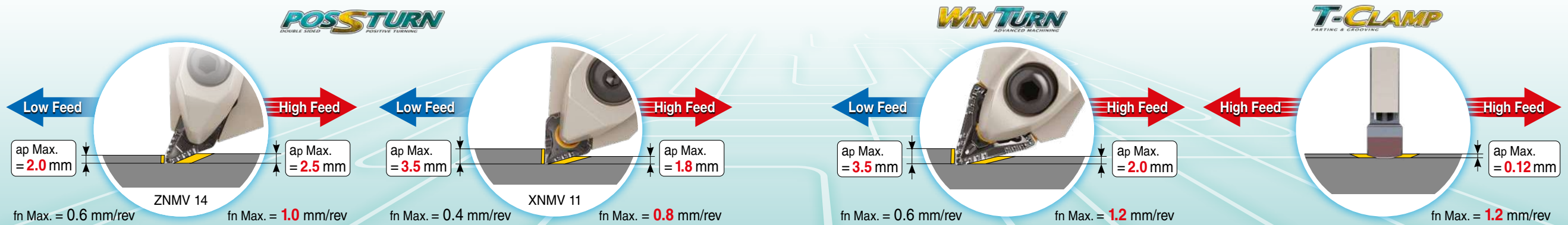
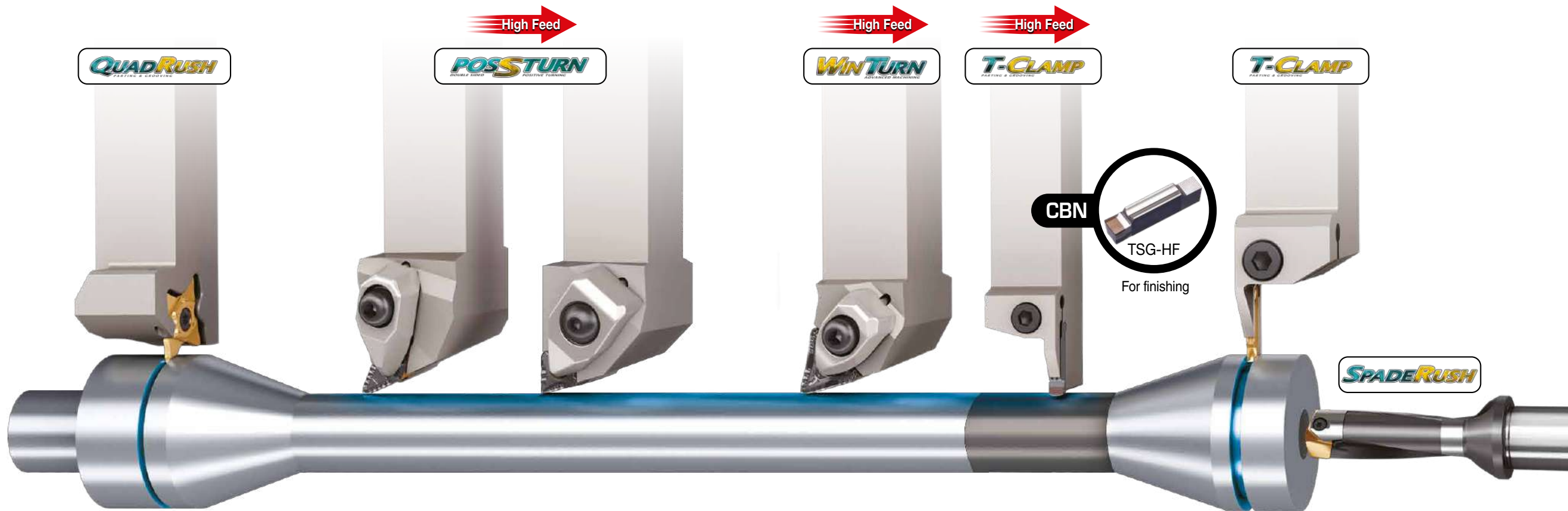
INTERNAL SPLINE SHAFT





ROTOR Shaft

The rotor shaft in an electric vehicle is a cylindrical component that protrudes from the housing. The purpose of the shaft is to convert the energy of the motor to an end-use application. TaeguTec offers optimal solutions through the utilization of high feed turning tools.

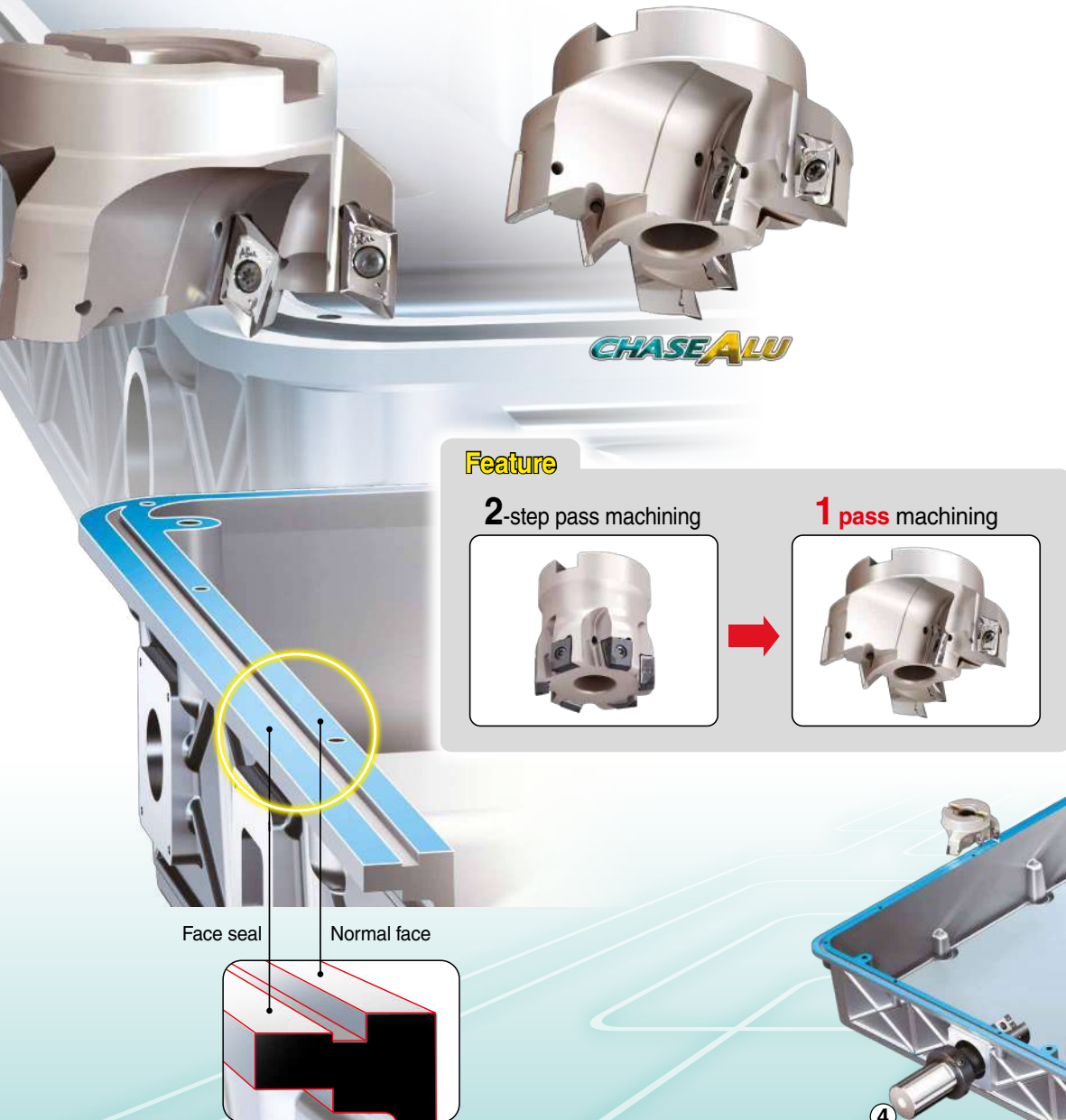




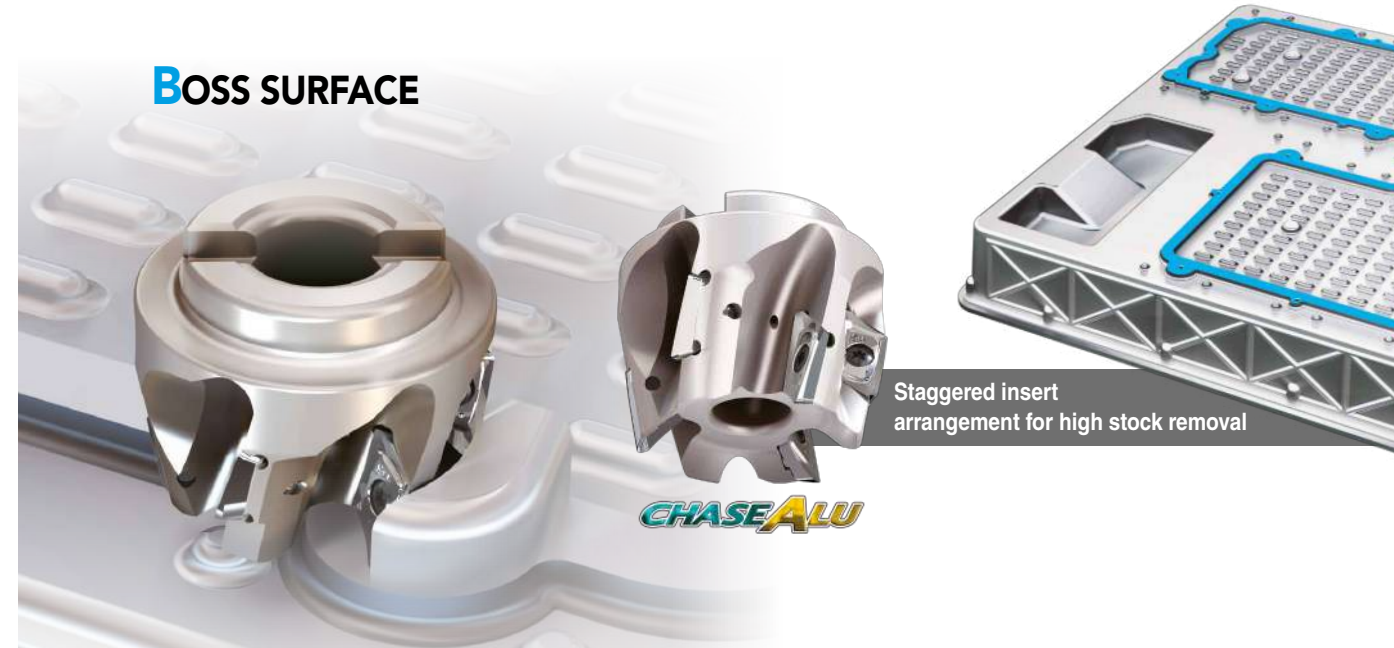
BATTERY Case

The battery case protects the EV battery from external moisture and impact while also protecting passengers from fires and explosions. Due to its large size, aluminum material is used to reduce the weight of battery cases. For optimal efficiency, TaeguTec employs a variety of technologies and solutions that use cam software tooling.

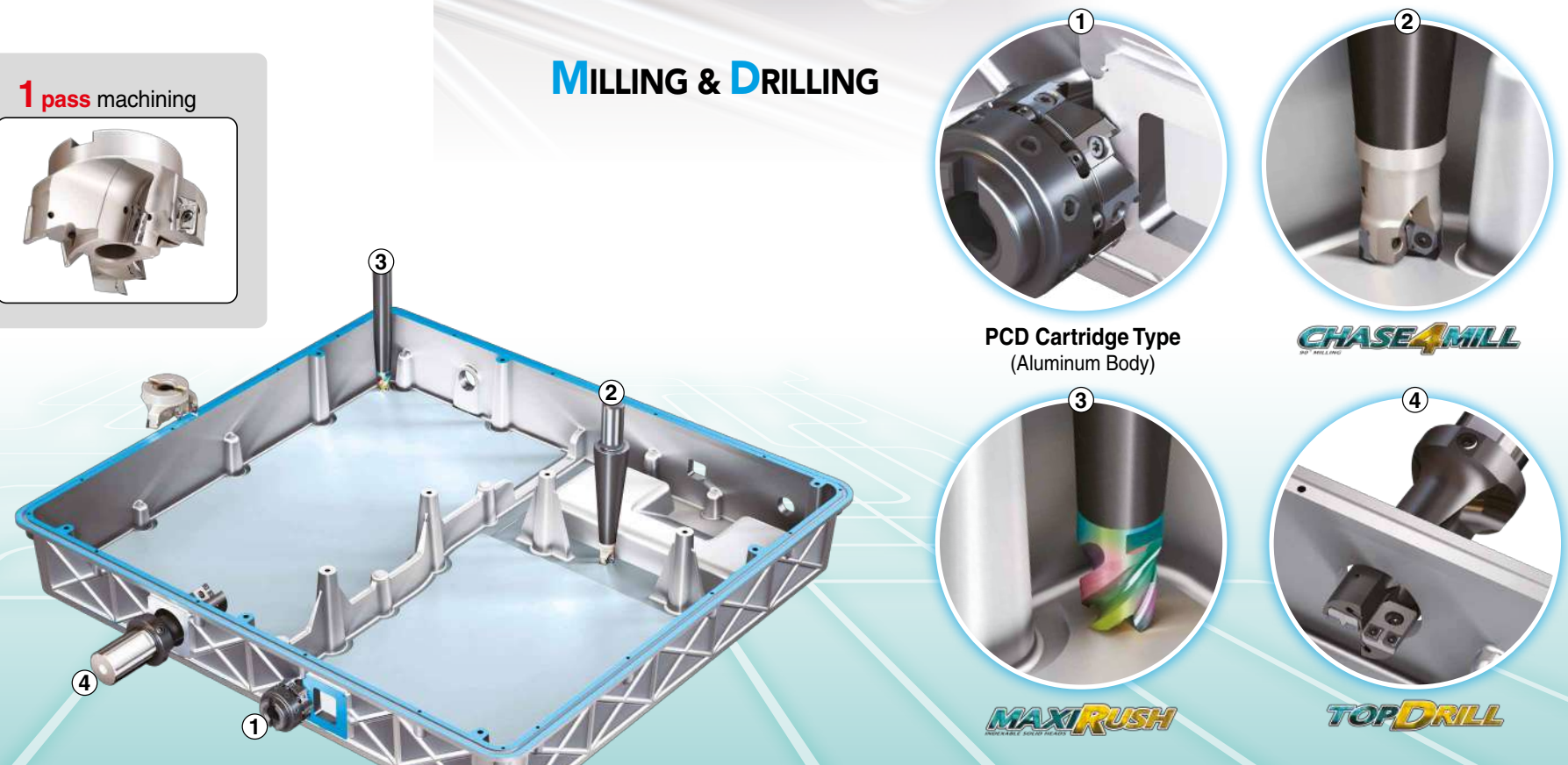
SEALING SURFACE



BOSS SURFACE



MILLING & DRILLING



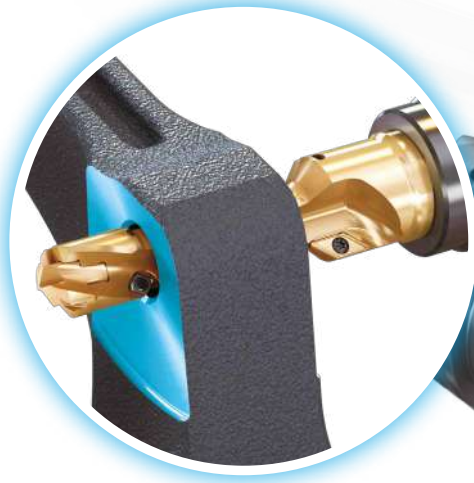


Knuckle



The steering knuckle is a steering component that transmits the movement of the steering wheel to the front wheels. Products come in a variety of shapes and sizes, and TaeguTec provides the optimal solution to suit all requirements. The latest processing method is to minimize processing time by applying complex tools.

Damper hole drill, chamfer, back chamfer +
Both side milling



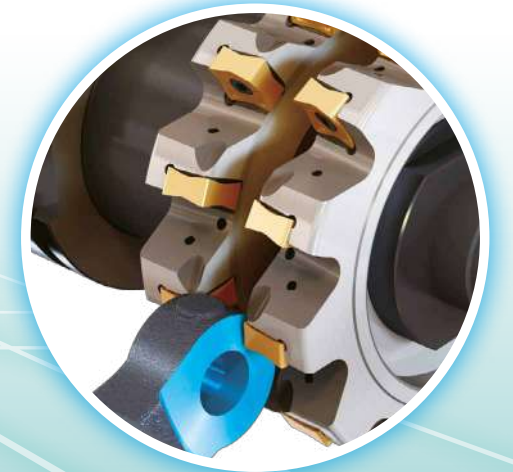
Main bore boring
: boring, counter boring, back facing, chamfer, bolt seat facing



Both side milling +
Slitting + **D**rilling, chamfer



Both side milling +
Tie-rod taper reaming



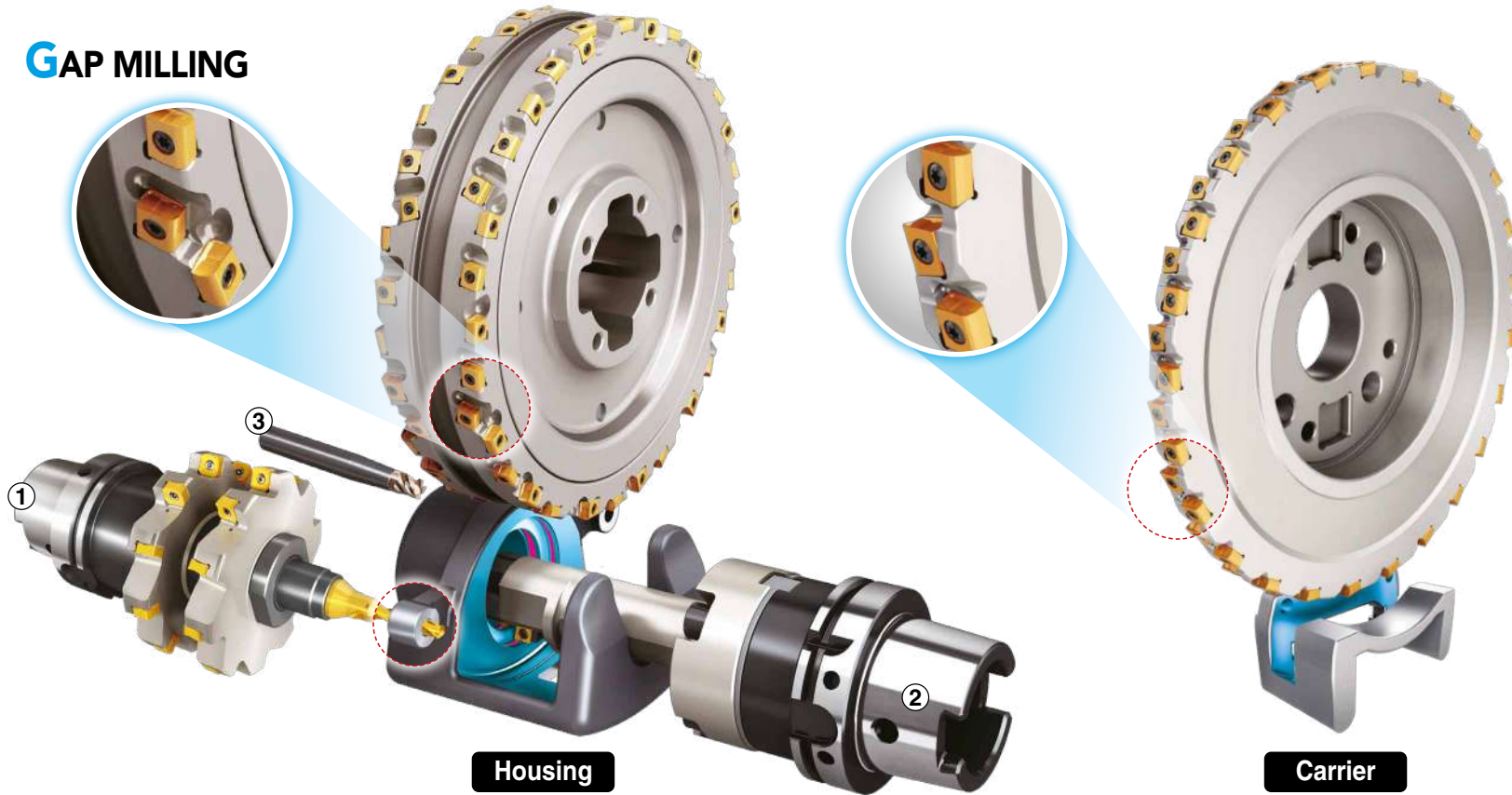


BRAKE Caliper



A brake caliper is a housing for the brake pads that also converts hydraulic pressure into mechanical force in order to slow or stop the vehicle. TaeguTec offers a total solution for the machining of calipers while providing the best performance and tool life for gap milling cutters. A lightweight, user-friendly quick-change system is another way we provide our customers with the highest performing equipment.

GAP MILLING



Housing

Carrier

① **DRILLING, BOTH CHAMFERING & LUG MILLING**

② **BOOT & SEAL GROOVING TOOL**

③ **END MILLING**

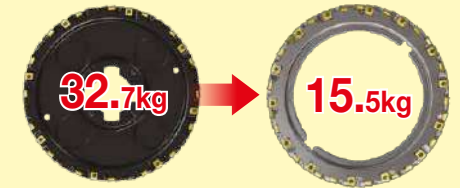


MAXIRUSH

Quick Change System

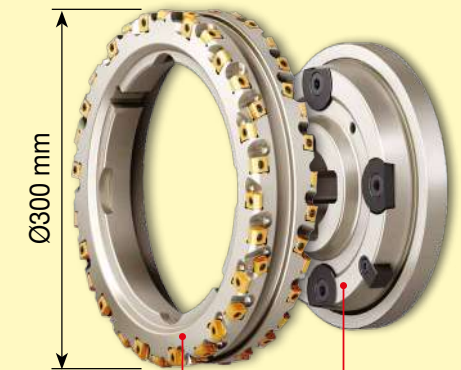
Lighter

Less than half the weight



Quicker

Simple & user-friendly clamping system



Cutter

Adapter

Safer

Lighter cutter protects users



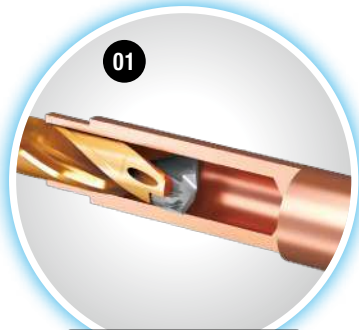
Work Safety



MINIATURE PE Contact



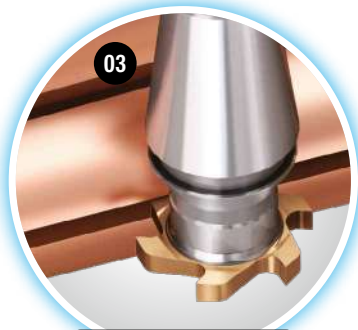
DRILLING & SLOTTING



DRILLRUSH
WINDRILL
ADVANCED MACHINING

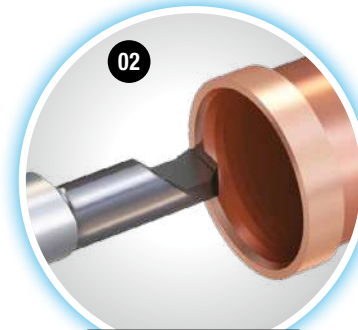


HDRILL

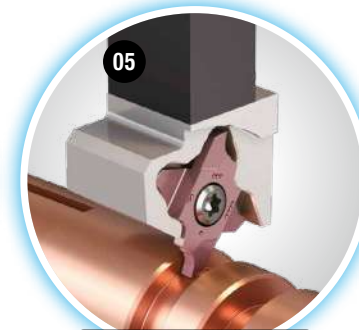


MAXIRUSH

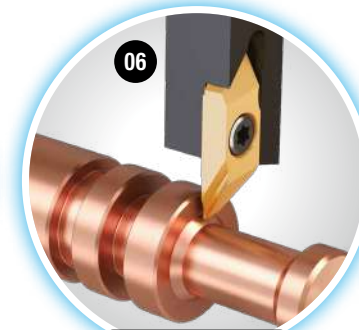
PARTING & GROOVING



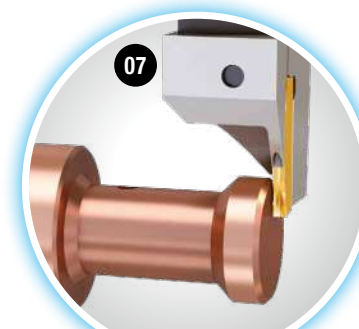
TOPMICRO



QUADRUSH
WINSWISS

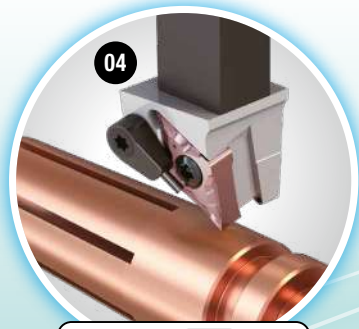


TOPCUT



T-CLAMP
WINSWISS

TURNING



RHINOTURN
WINSWISS

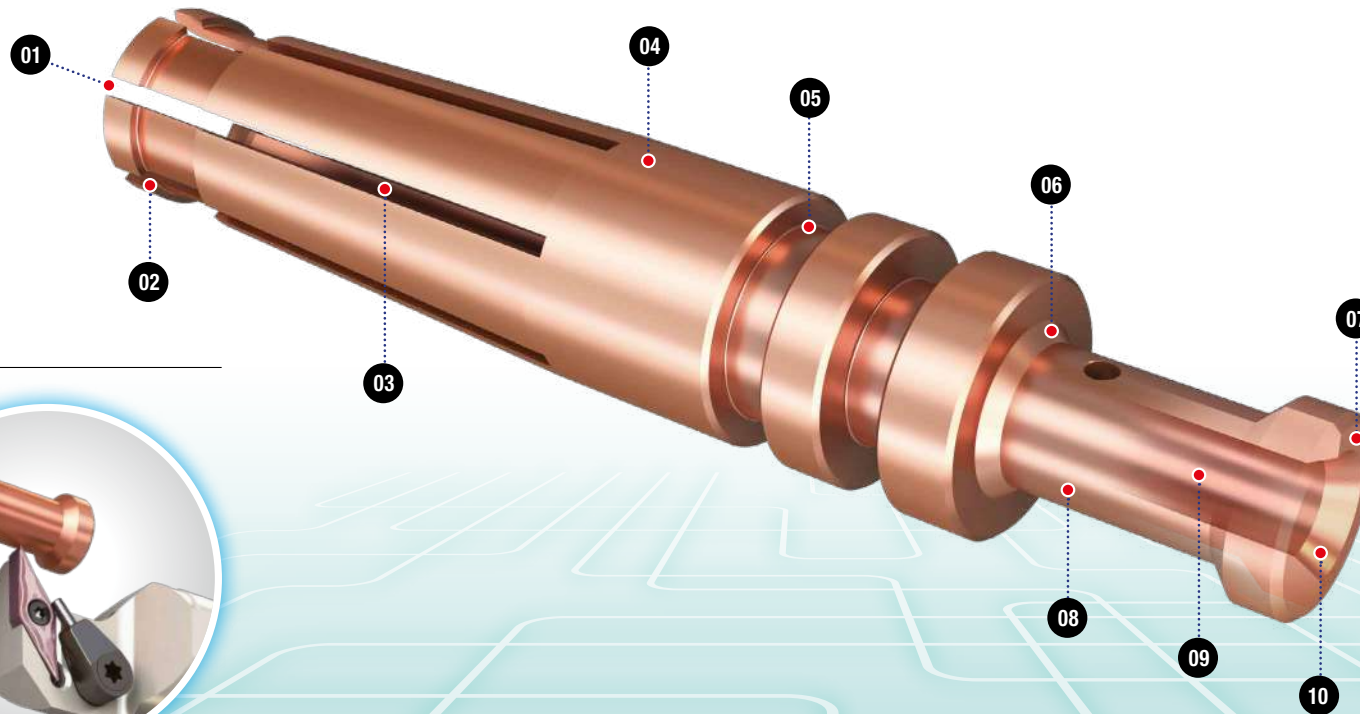


TOPMINI

MILLING



MAXIRUSH



TaeguTec Electric Vehicle Industry Solutions



Tool CutZZ

Your Knowledge Machining Link!



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