



YG-1 CO., LTD.

HEAD OFFICE

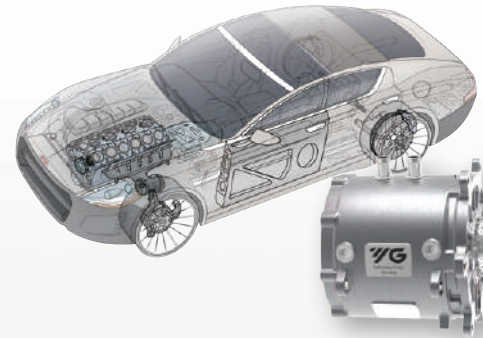
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Incheon 21984, South Korea

Notice YG-1 Global head office is relocated from December 2020 to a new address as above;

Phone: +82-32-526-0909

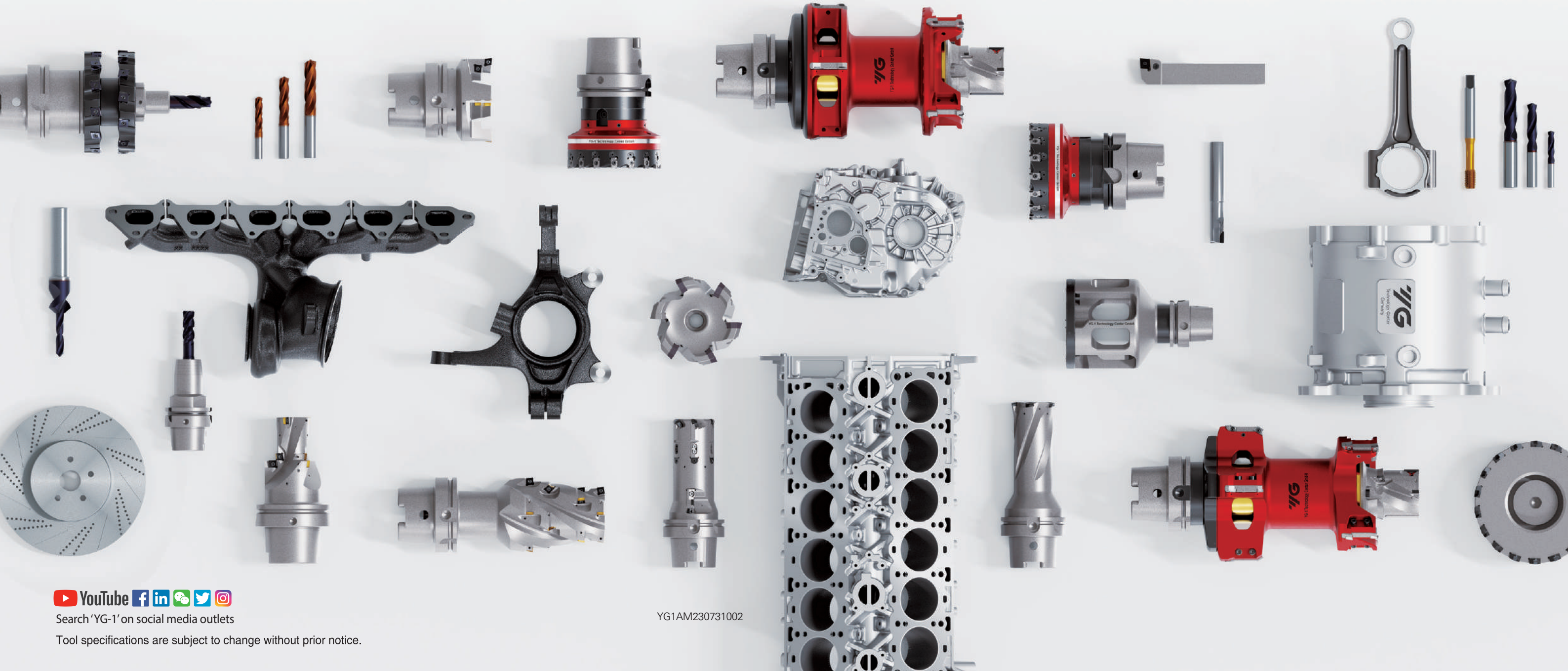
<https://www.yg1.kr> E-mail: yg1@yg1.kr

Note The information is provided for reference only. Tool specifications are subject to change without prior notice.
Although we endeavor to supply accurate and timely information, there can be no guarantee to cover every particular application.
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AUTOMOTIVE

TOOL SOLUTIONS FOR INDUSTRIES



Search 'YG-1' on social media outlets

Tool specifications are subject to change without prior notice.

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YG-1 AND THE AUTOMOTIVE INDUSTRY



The automotive industry is always presenting new challenges for the tool manufacturing industry. For example, advanced materials, such as carbon fiber reinforced composites, are machined in the production of today's electric automobiles and difficult to machine, heat-resistant cast steel turbochargers are produced and assembled to smaller engines for greater power and reduced emissions. Both applications place increased demands for advanced cutting tool material, geometries, and coatings.

YG-1, as a global leader in the manufacturing and application of cutting tools, brings you these innovations worldwide in the form of superior tooling, expert support and world class delivery.

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YG-1 has been operating in Germany for over 20 years with a distribution center in Frankfurt Eschborn and a production facility in Remscheid - all to service the European market.

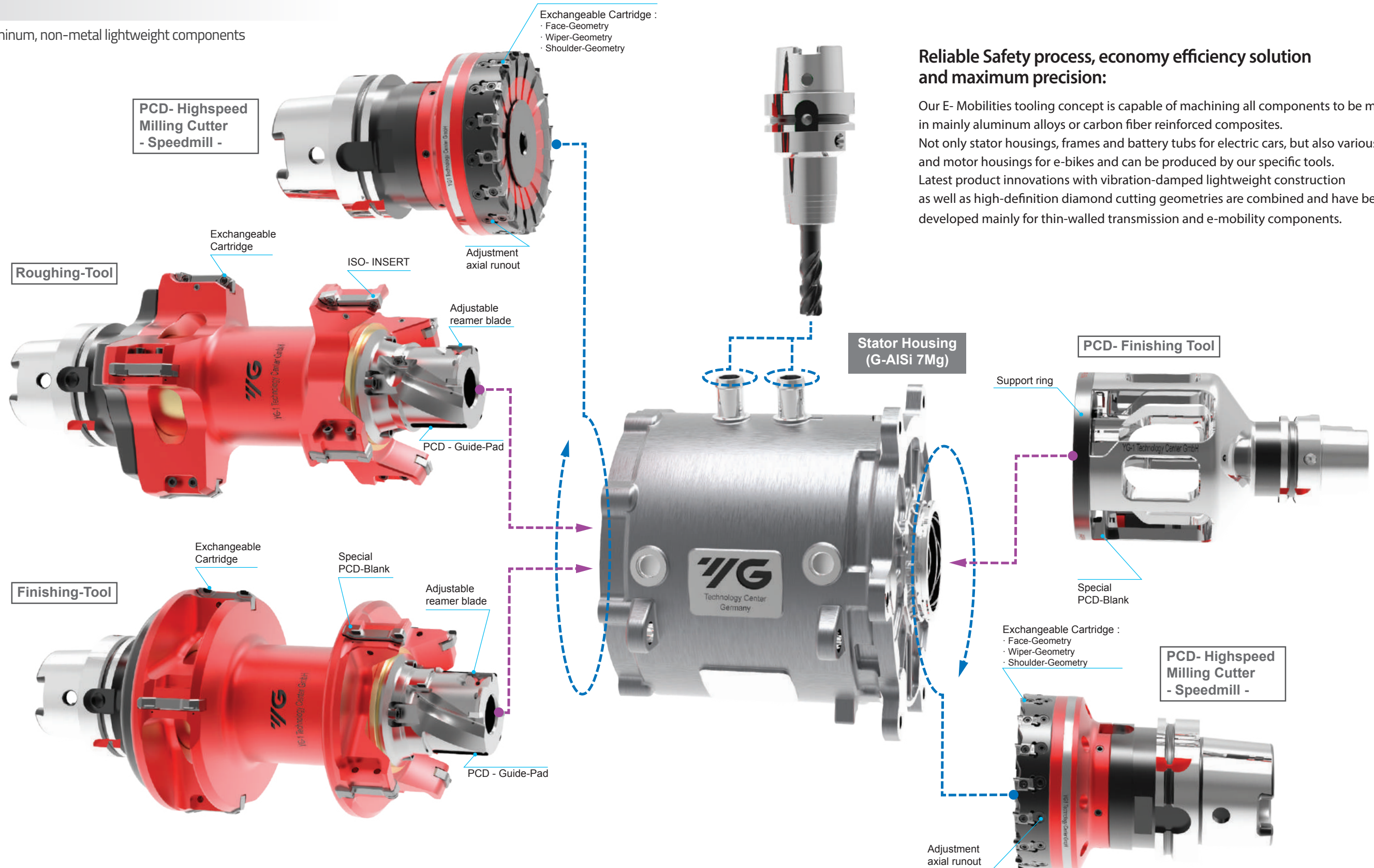
Today, YG-1 is increasing its presence in Europe with the German Technology Center in addition to Technology Centers located in South Korea, the USA, and India.

YG-1 Technology Center GmbH is playing a significant role in using the latest technologies to innovate and manufacture cutting tools for the aerospace, energy, and automotive industries.



Engineering Solution for STATOR-HOUSING

Material: Aluminum, non-metal lightweight components



Reliable Safety process, economy efficiency solution and maximum precision:

Our E- Mobilities tooling concept is capable of machining all components to be machined in mainly aluminum alloys or carbon fiber reinforced composites. Not only stator housings, frames and battery tubs for electric cars, but also various electric drives and motor housings for e-bikes and can be produced by our specific tools. Latest product innovations with vibration-damped lightweight construction as well as high-definition diamond cutting geometries are combined and have been developed mainly for thin-walled transmission and e-mobility components.

Engineering Solution for

STATOR-HOUSING TOOL CONCEPT

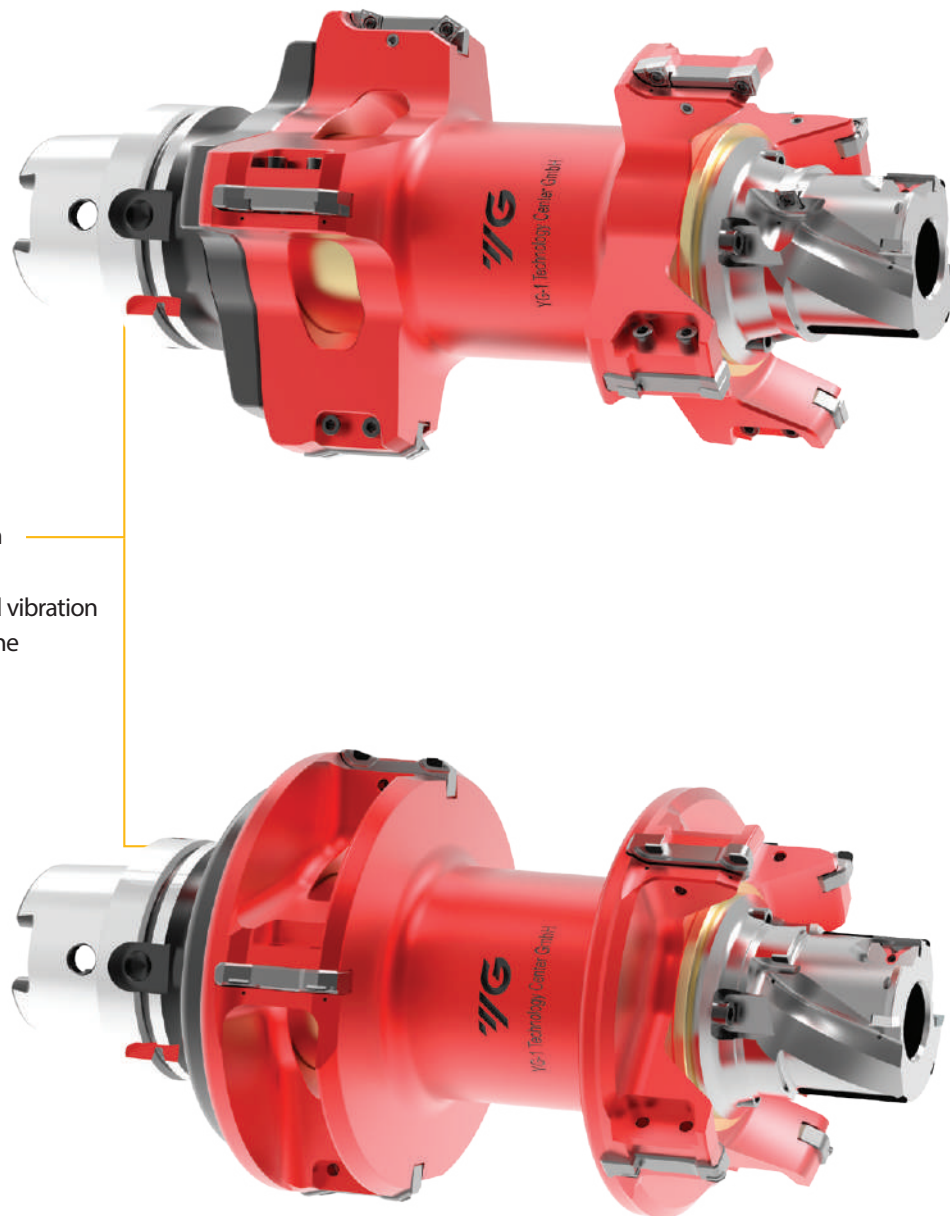
Roughing/Finishing

Special Boring tool

Material: Aluminum, lightweight component materials

Concept: fine adjustable and guide pad supported

Cutting material: PCD / indexable inserts



This modular designed tool has been integrated for highest stiffness, but also for extreme light weight and vibration damped component, which meets the highest demands, for roundness and precision in thin-walled materials.



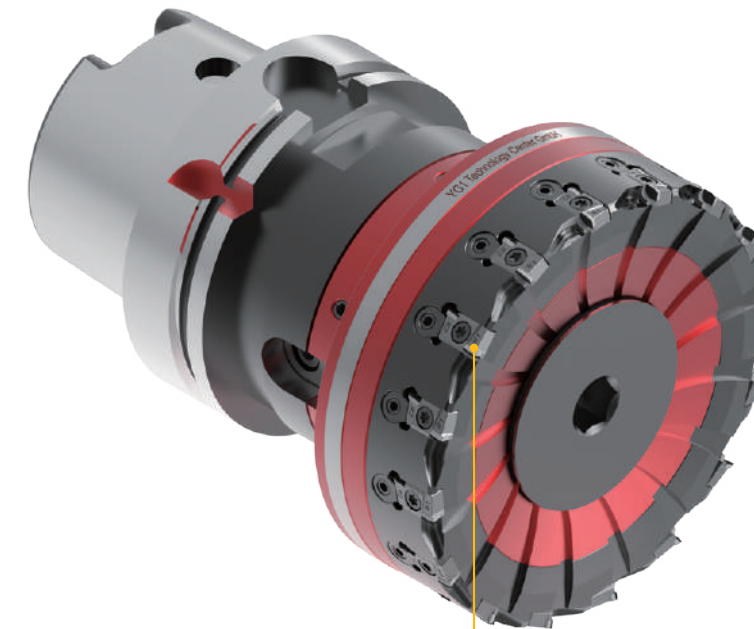
Monomill - R

Category: Face milling with heavy stock removal

Aluminum, lightweight component materials

Concept: brazed, lasered

Cutting material: PCD



Speedmill-Double

Category: Face milling

very efficient economic double-edged cutting system

Material : Aluminum,

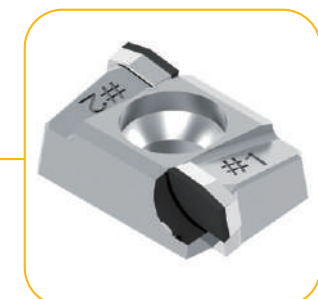
lightweight non-metal component materials

Concept : exchangeable, fine adjustable,

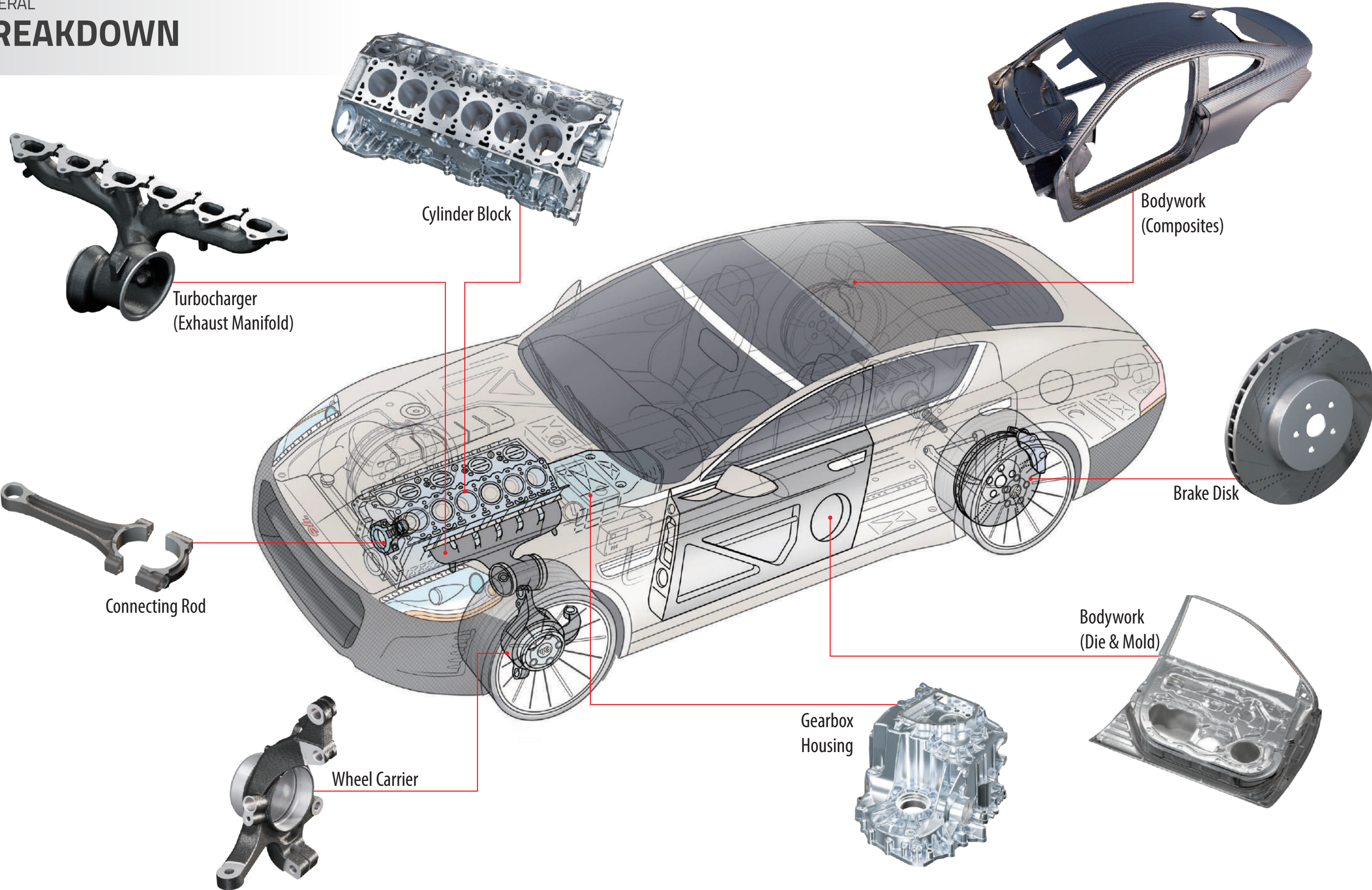
different variants of geometries

for all surface requirements

Cutting material: PCD



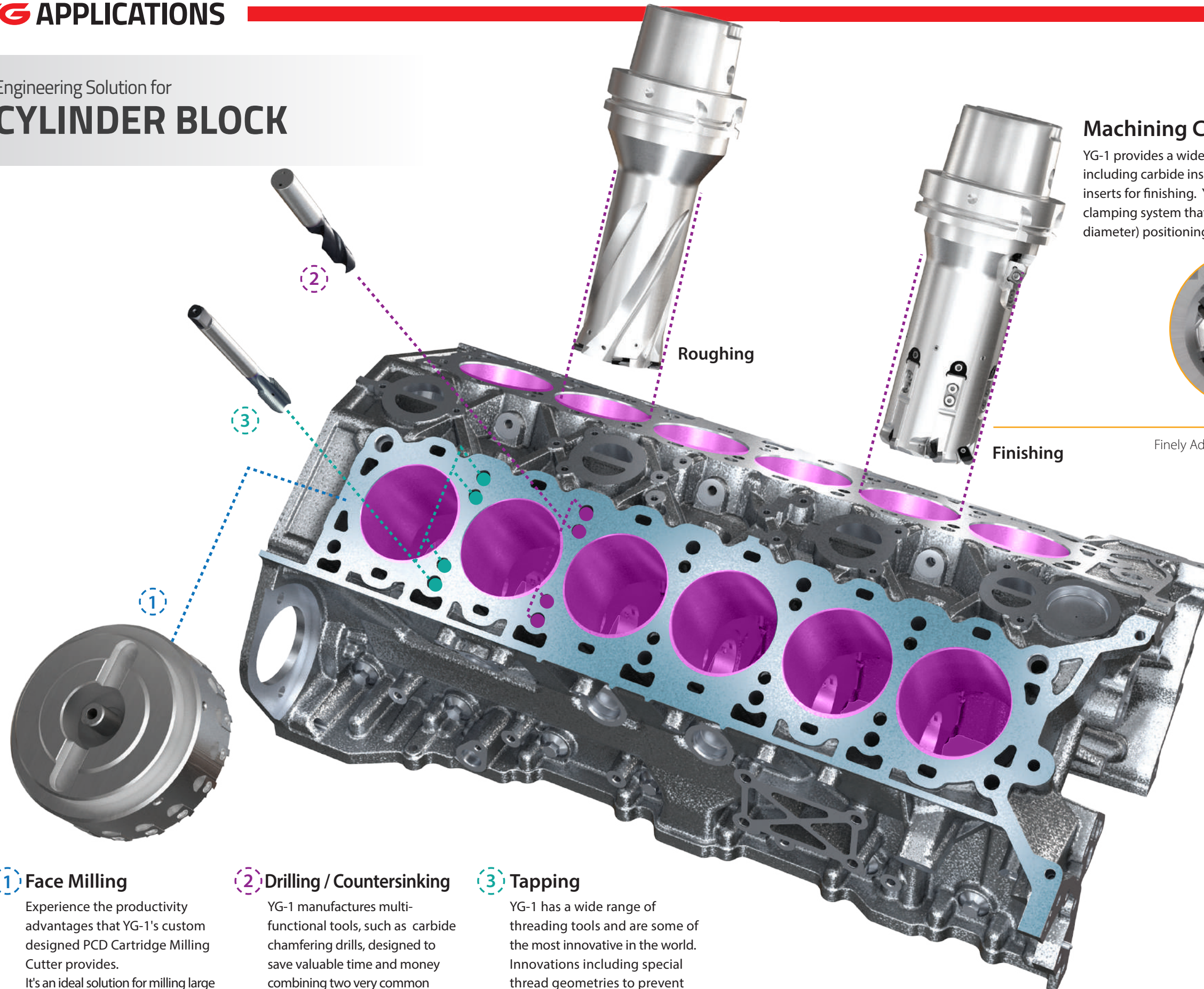
GENERAL
BREAKDOWN



Engineering Solution for

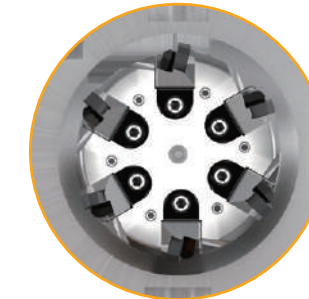
CYLINDER BLOCK

■ Milling ■ Drilling ■ Threading



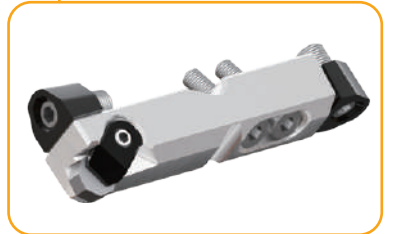
Machining Cylinder Bores

YG-1 provides a wide range of Indexable Tools for precise boring of cylinder bores - including carbide inserts for roughing and CBN (for higher cutting speed) or carbide inserts for finishing. YG-1 finishing tools feature an advanced cartridge adjustment clamping system that allows for axial adjustment along with lateral (boring diameter) positioning of the CBN insert to meet exact tolerance requirements.



Finely Adjustable Boring Diameter

Adjustable Cartridge Type B



Please refer to page 29 for explanation about the special cartridge system

① Face Milling

Experience the productivity advantages that YG-1's custom designed PCD Cartridge Milling Cutter provides. It's an ideal solution for milling large surfaces to precise requirements - such as the cylinder block to cylinder head interface.

② Drilling / Countersinking

YG-1 manufactures multi-functional tools, such as carbide chamfering drills, designed to save valuable time and money combining two very common operations into one advanced tool.

③ Tapping

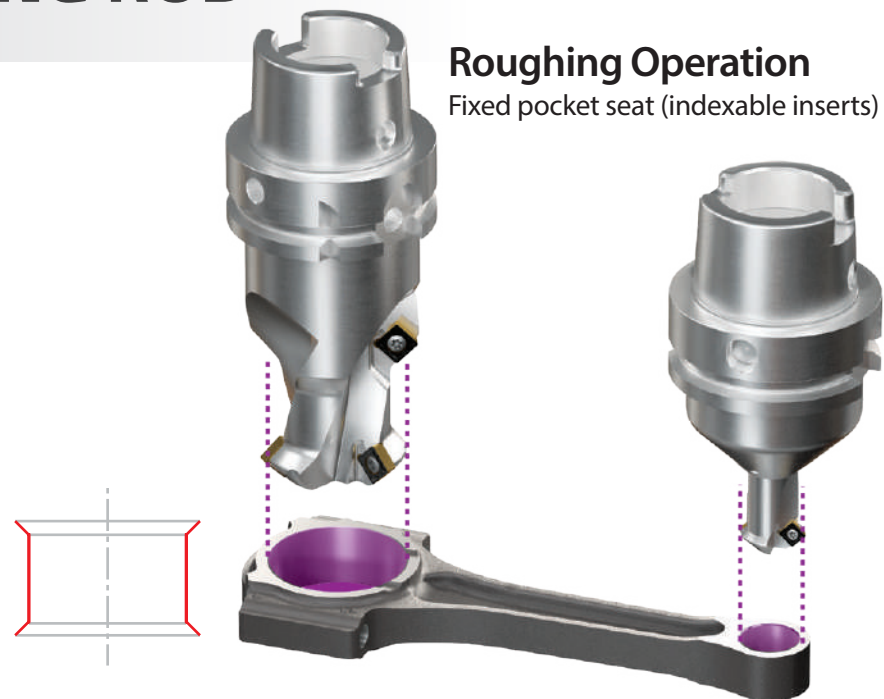
YG-1 has a wide range of threading tools and are some of the most innovative in the world. Innovations including special thread geometries to prevent over feeding and multipurpose taps designed to thread a range of materials, including cast aluminum and cast iron, are engineered for use in engine manufacturing.

* This workpiece machined using custom tools, that are tailor-made to the needs of a specific customer. Please contact YG-1 dealer for more information

Engineering Solution for

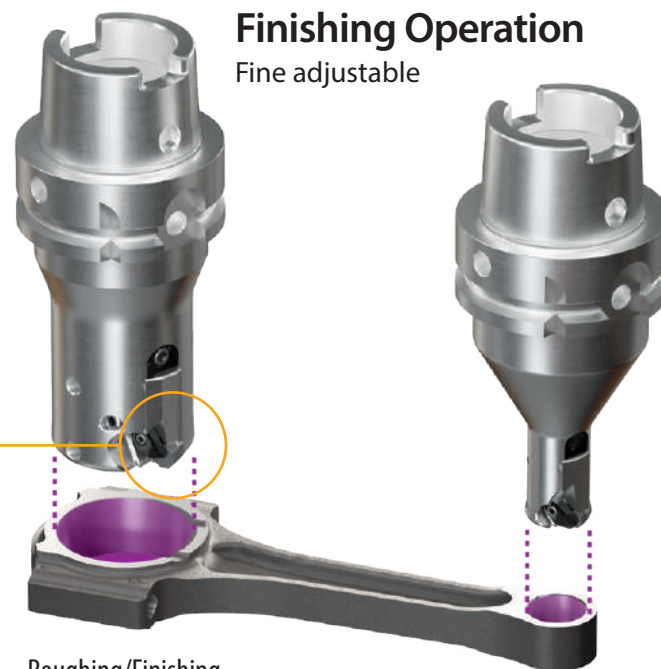
CONNECTING ROD

■ Milling ■ Drilling ■ Threading



Roughing Operation

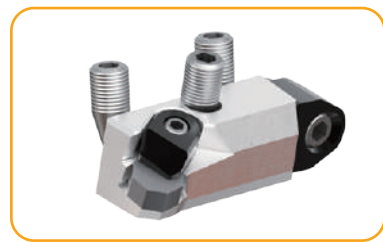
Fixed pocket seat (indexable inserts)



Finishing Operation

Fine adjustable

Adjustable Cartridge Type A



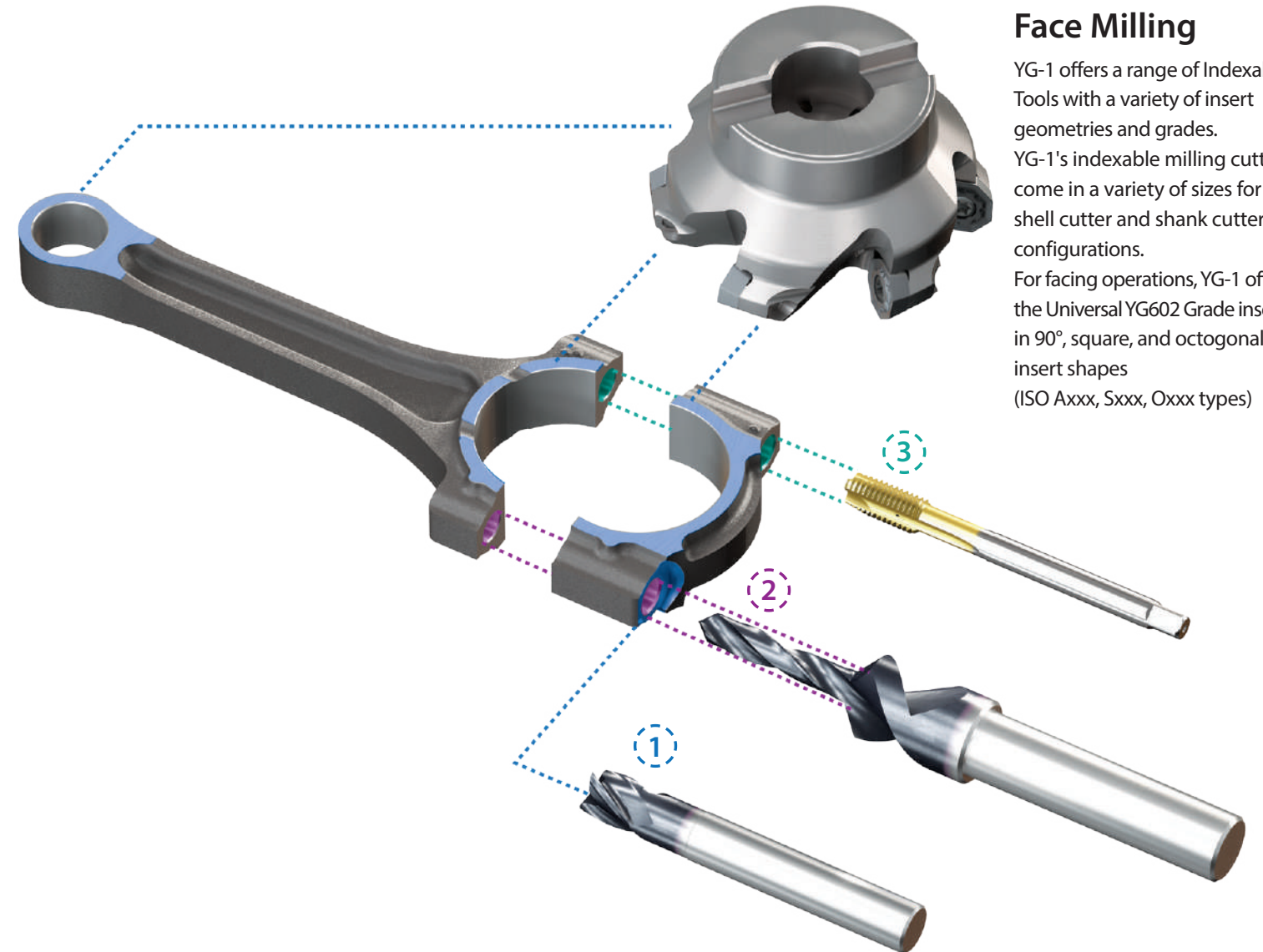
Please refer to page 28 for explanation about the special cartridge system

Roughing/Finishing

Boring Tools

YG-1 provides a wide range of Indexable Tools for precise boring of connecting rod openings - including carbide inserts for roughing and CBN inserts for finishing.

YG-1 finishing tools feature an advanced cartridge adjustment clamping system that allows for axial and lateral adjustment for precise size control.



Face Milling

YG-1 offers a range of Indexable Tools with a variety of insert geometries and grades. YG-1's indexable milling cutters come in a variety of sizes for shell cutter and shank cutter configurations. For facing operations, YG-1 offers the Universal YG602 Grade inserts in 90°, square, and octagonal insert shapes (ISO Axxx, Sxxx, Oxxx types)

① Solid Milling

YG-1s' End mills are recognized worldwide as the best. 4G Mill and V7 Plus End mills offer a variety of flutes and geometries that address the demands of a wide range of applications.

② Drilling / Countersinking

YG-1 manufactures multi-functional tools, such as carbide chamfering drills, designed to save valuable time and money combining two very common operations into one advanced tool.

③ Tapping

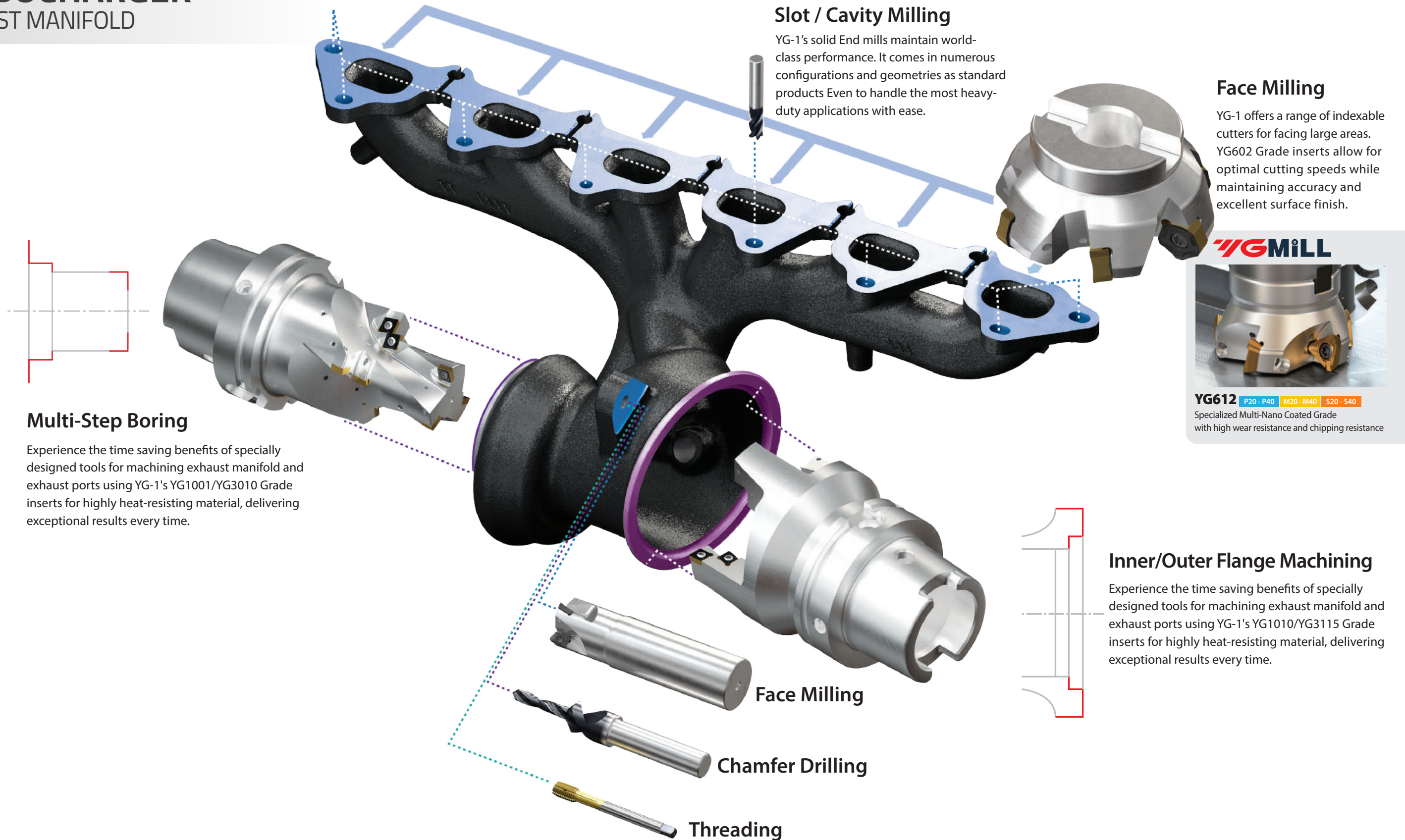
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Engineering Solution for

TURBOCHARGER EXHAUST MANIFOLD

■ Milling ■ Drilling ■ Threading



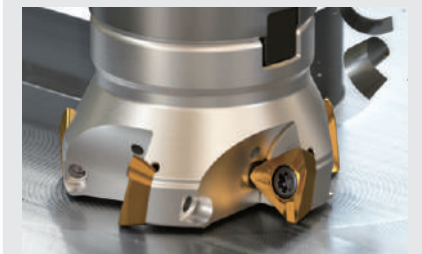
Slot / Cavity Milling

YG-1's solid End mills maintain world-class performance. It comes in numerous configurations and geometries as standard products Even to handle the most heavy-duty applications with ease.

Face Milling

YG-1 offers a range of indexable cutters for facing large areas. YG602 Grade inserts allow for optimal cutting speeds while maintaining accuracy and excellent surface finish.

YG MILL



YG612 P20 - P40 M20 - M40 S20 - S40
Specialized Multi-Nano Coated Grade with high wear resistance and chipping resistance

Multi-Step Boring

Experience the time saving benefits of specially designed tools for machining exhaust manifold and exhaust ports using YG-1's YG1001/YG3010 Grade inserts for highly heat-resisting material, delivering exceptional results every time.

Inner/Outer Flange Machining

Experience the time saving benefits of specially designed tools for machining exhaust manifold and exhaust ports using YG-1's YG1010/YG3115 Grade inserts for highly heat-resisting material, delivering exceptional results every time.

Face Milling

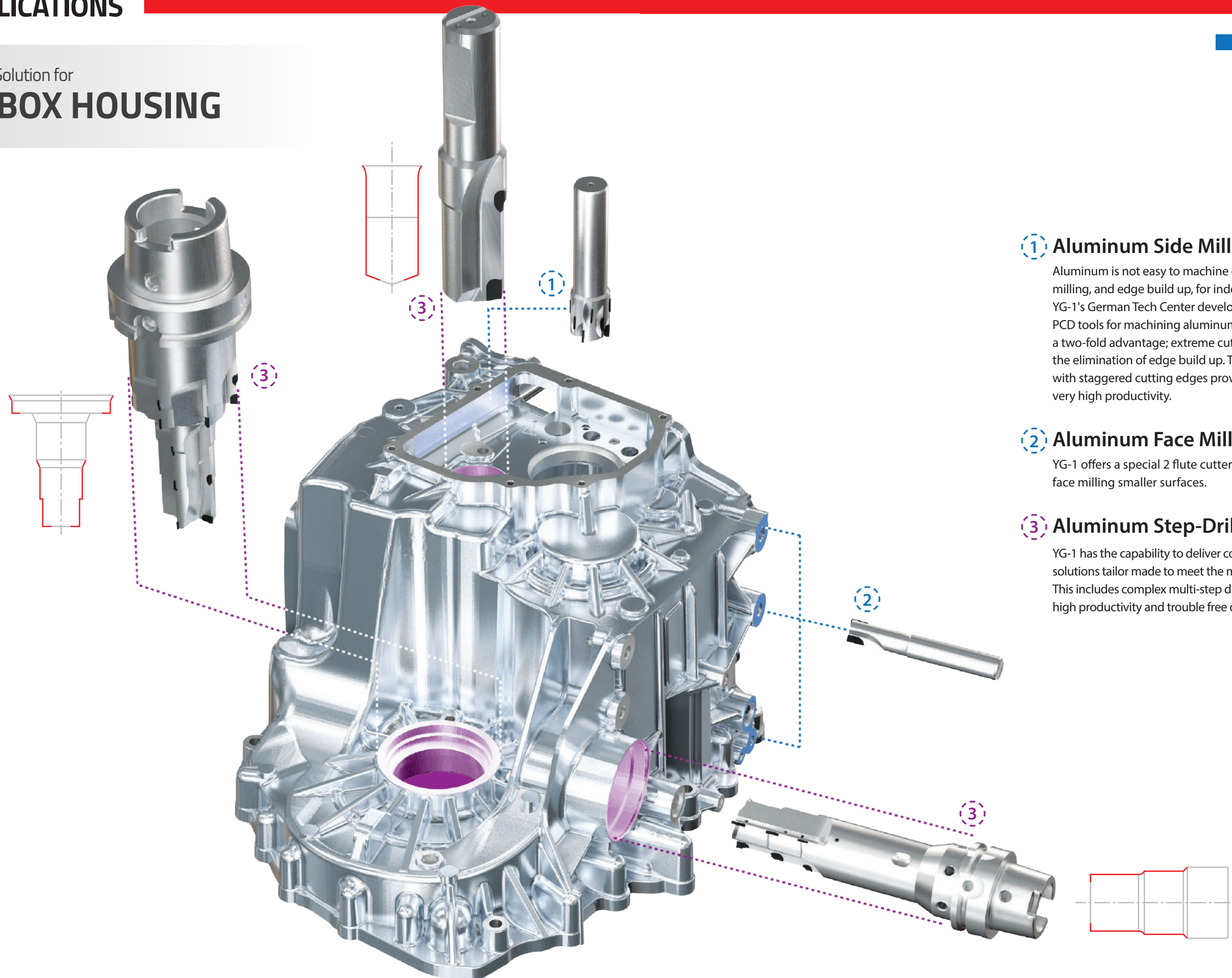
Chamfer Drilling

Threading

* This workpiece machined using custom tools, that are tailor-made to the needs of a specific customer. Please contact YG-1 dealer for more information

Engineering Solution for **GEARBOX HOUSING**

■ Milling ■ Drilling



① Aluminum Side Milling

Aluminum is not easy to machine due to long chips, for solid milling, and edge build up, for indexable milling. YG-1's German Tech Center developed a range of custom PCD tools for machining aluminum. These PCD tools provide a two-fold advantage; extreme cutting speed and the elimination of edge build up. These side milling cutters with staggered cutting edges provide a smooth finish and very high productivity.

② Aluminum Face Milling

YG-1 offers a special 2 flute cutter with PCD inlays for fast face milling smaller surfaces.

③ Aluminum Step-Drilling

YG-1 has the capability to deliver complete machining solutions tailor made to meet the most challenging demands. This includes complex multi-step drills with PCD inlays for high productivity and trouble free operation.

* This workpiece machined using custom tools, that are tailor-made to the needs of a specific customer. Please contact YG-1 dealer for more information

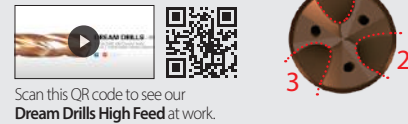
Engineering Solution for STEERING KNUCKLE

Drilling

YG-1 is known world wide as a premier round tool manufacturer and offers multiple series of carbide drills for use in a variety of materials including cast iron.

SOLID CARBIDE DRILLING DREAM DRILLS HIGH FEED

H- Coated 3 Flute Solid Carbide Drills with Coolant Holes for Faster Drilling on Steels and Cast Iron



Scan this QR code to see our Dream Drills High Feed at work.

Chamfer Drilling

YG-1 manufactures multi-functional tools, such as carbide chamfering drills, designed to save valuable time and money combining two very common operations into one advanced tool.

T03 - Tandem Face Milling and Chamfer Drilling

YG-1 offers customized tools to meet the challenges of automotive manufacturing. This includes custom tooling such as ganged indexable milling cutters with tangential carbide inserts coupled with a chamfer drill for a single solution to reduce cycle time.

T01 - One-Shot Inner Boring/Profiling

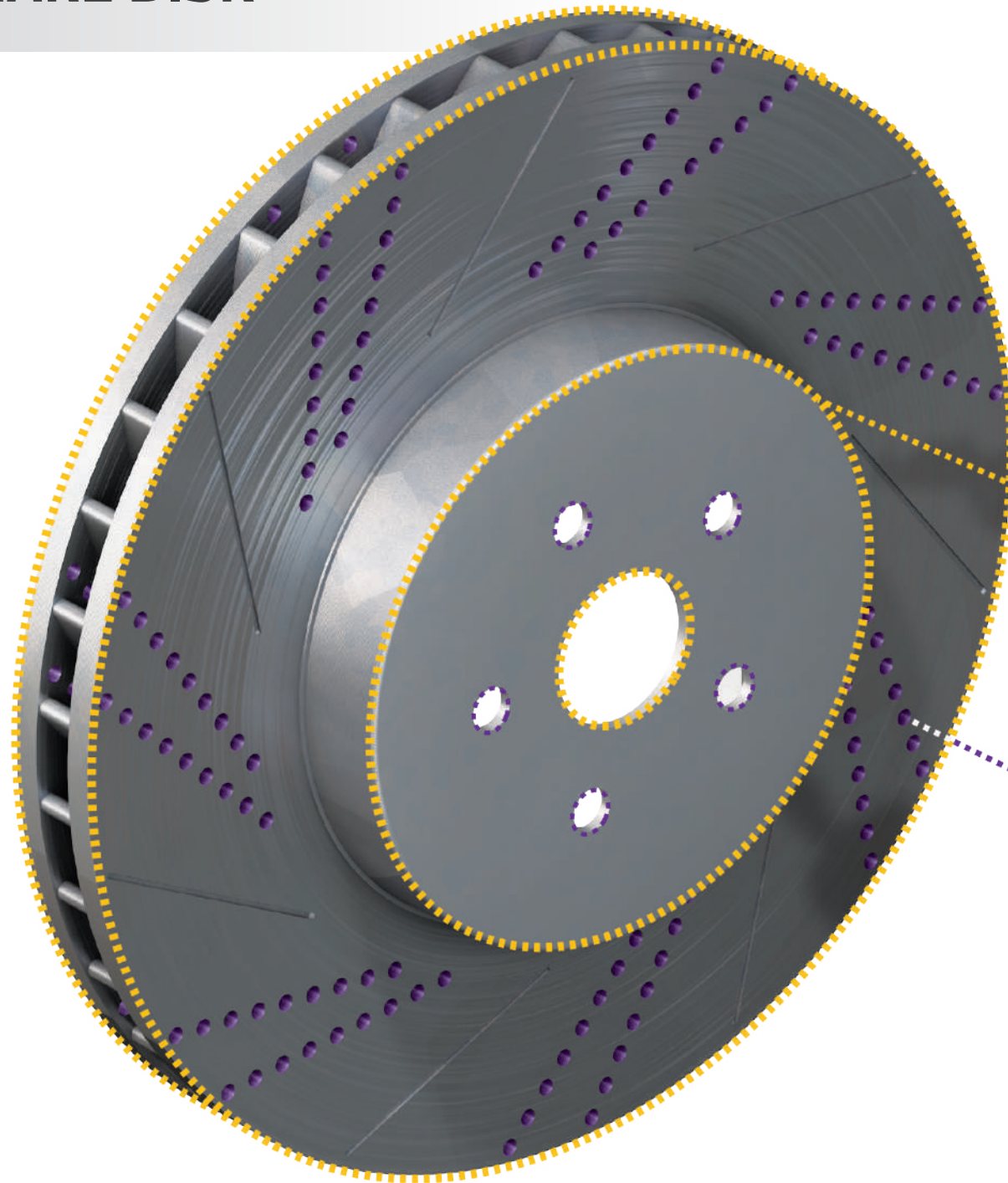
Experience the time saving benefits of YG-1's specially designed tools for machining steering knuckles. Use YG1010/YG3115 Grade inserts for cast iron to deliver exceptional results every time.

T02 - Bore Finishing

For finishing the inner bore of a wheel carrier to a precise surface finish that meets the rigorous standards of the automotive industry, YG-1 engineers developed a bore finishing tool with PCD inlays customized to meet the end user's specifications.

Engineering Solution for
BRAKE DISK

Turning Drilling

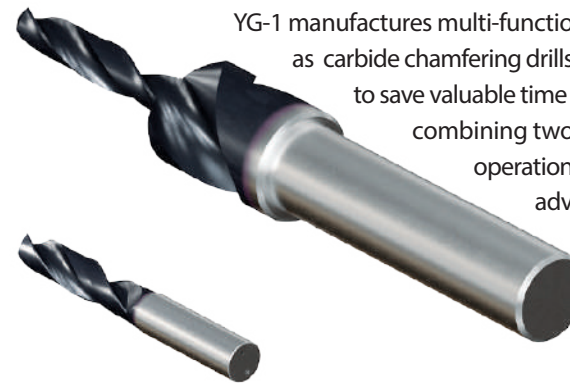


Turning

YG-1 offers a large variety of indexable turning tools and carbide inserts with multiple grades including YG3020 Grade specifically engineered for steel applications. Visit YG-1 online and download the Indexable Cutting Tools catalog, or contact one of many local sales representative to learn more about other options YG-1 can provide.

Chamfer Drilling

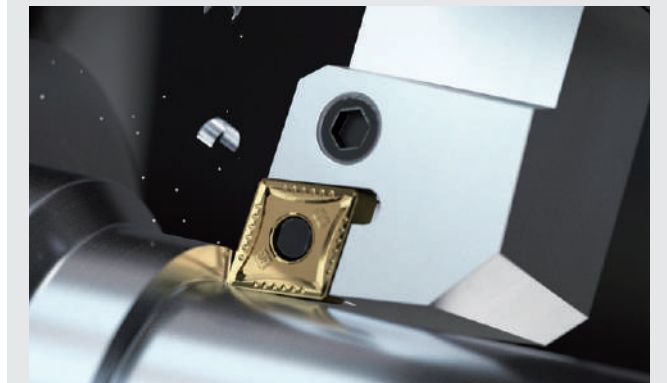
YG-1 manufactures multi-functional tools, such as carbide chamfering drills, designed to save valuable time and money combining two very common operations into one advanced tool.



Drilling

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YGTURN



YG1010 K05 - K15

First Choice for Cast Iron

- Effective coating structure enables high speed machining
- Special post treatment for improved chipping resistance

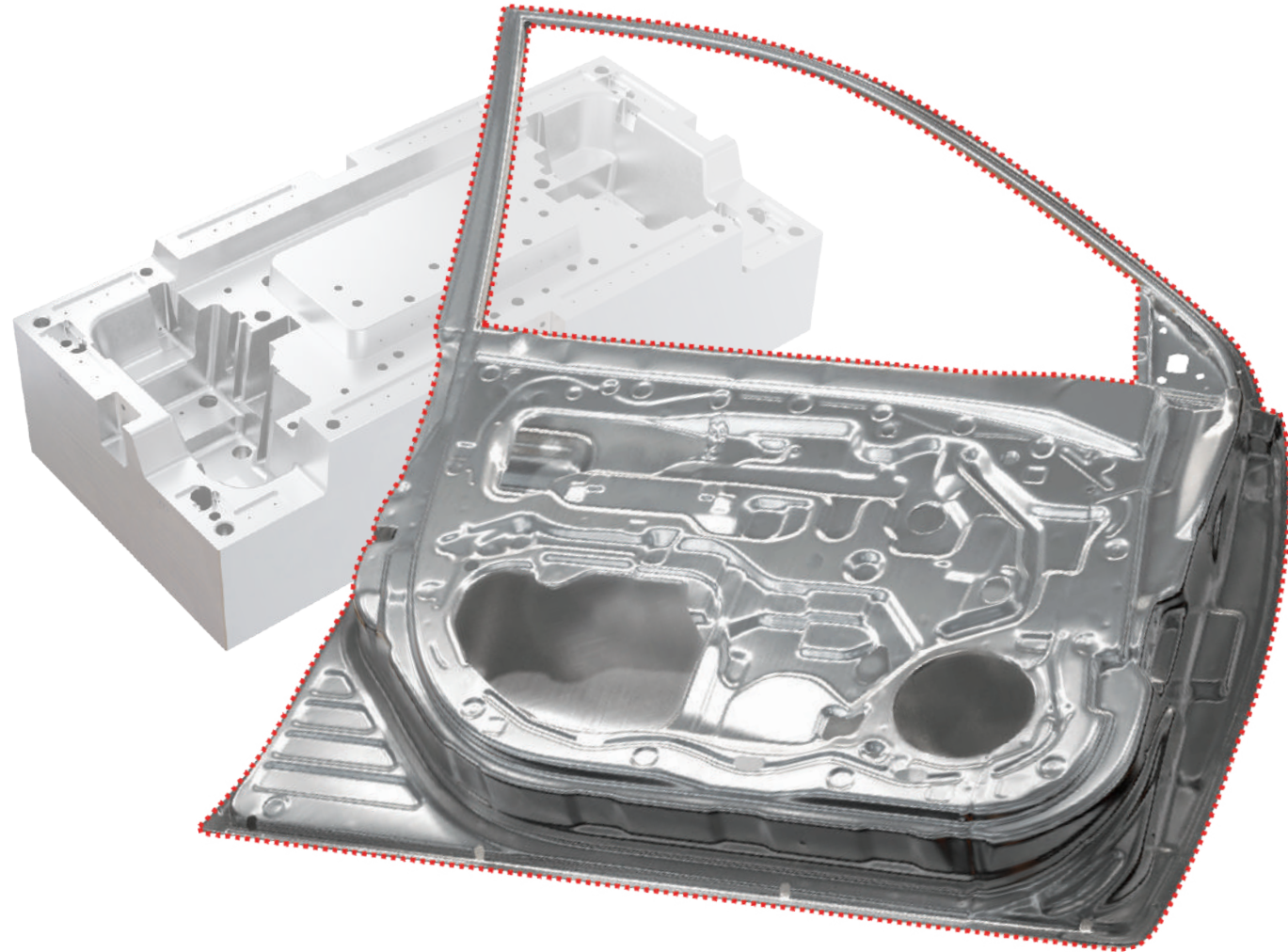
YG3115 P15 - P30

First choice grade for high cutting speed in Steels

- Suitable for mass production due to stable and predictable tool life
- Minimizing built up edge due to new post surface treatment in mild steels, low carbon steel and low carbon alloy steel.
- Best choice for both continuous as well as interrupted cuts

* This workpiece machined using custom tools, that are tailor-made to the needs of a specific customer. Please contact YG-1 dealer for more information

Engineering Solution for
BODYWORK - DIE & MOLD

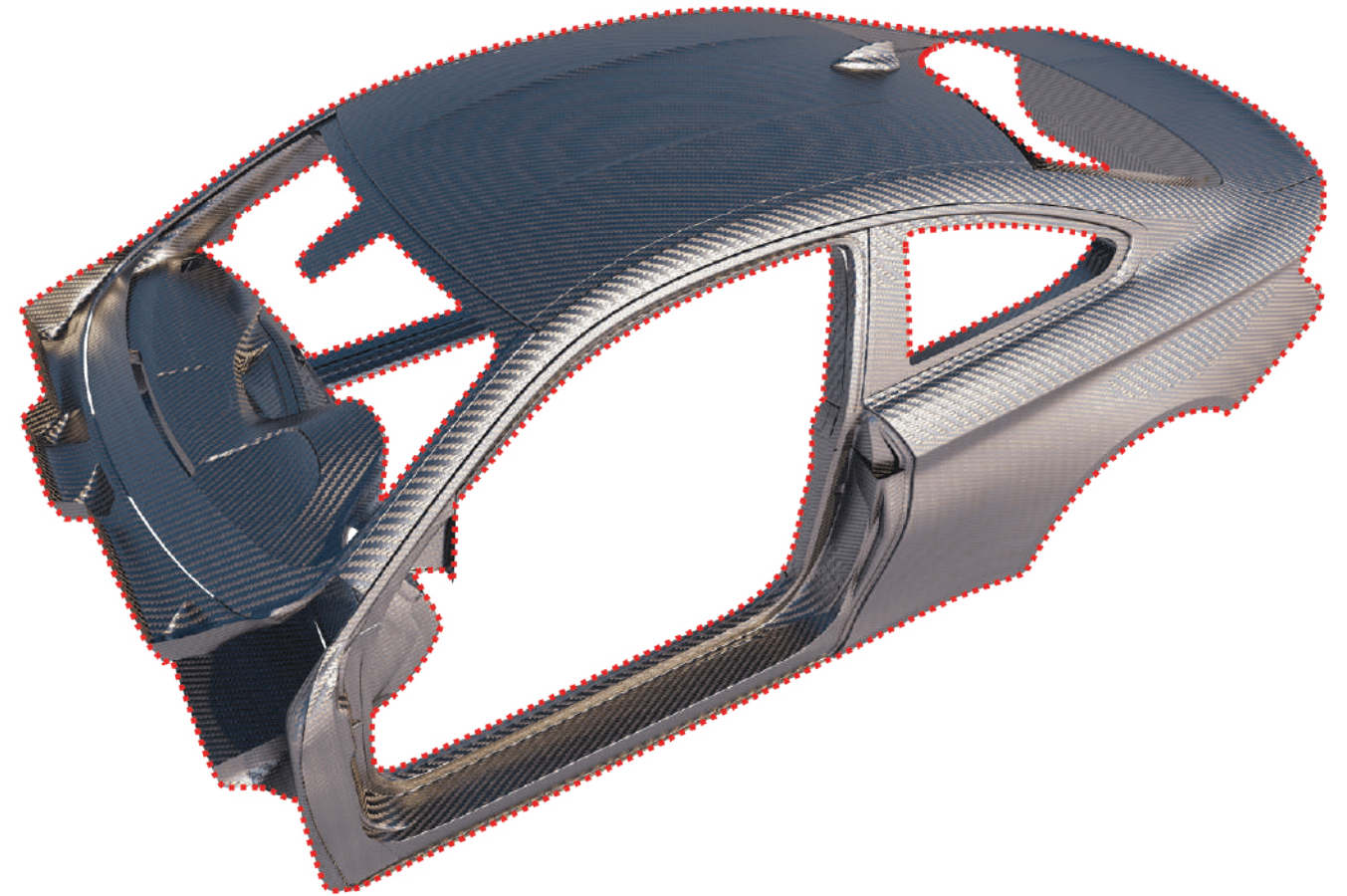


Die & Mold

Modern vehicle body parts such as doors, hoods, and fenders are manufactured with sophisticated dies and molds.

YG-1 offers comprehensive solutions for machining Die & Mold sets used for the production of automotive body parts and many other applications. Scan the provided QR code to access our Die & Mold Solutions brochure.

Engineering Solution for
BODYWORK - COMPOSITES



Composites

More and more, composite materials are becoming increasingly prevalent across the entire manufacturing sector. There is an ever growing trend in the automotive industry to make use of the advanced properties of CFRP (Carbon Fiber Reinforced Plastics), GFRP (Glass Fiber Reinforced Plastics) and other such materials once only the domain of advanced aerospace projects. Prime example of composite materials used outside of aerospace are the various body components for the automotive industry.

In keeping pace with the most cutting-edge technologies and trends, YG-1 has developed a wide range of diamond-coated and PCD cutting tools for a wide variety of composite materials. Scan the provided QR code to access our Composites Materials - Tools Solutions for Industries brochure.

K Cast Iron

INDEXABLE FACE MILLING AND ROUGHING
YG MILL [General & -TR Chipbreaker]



EXCHANGEABLE HEAD SOLID CARBIDE MILLING
i-SMART



REAMING
CARBIDE REAMERS



SOLID CARBIDE MILLING
4G MILL



EXCHANGEABLE HEAD MILLING
i-Xmill



EXCHANGEABLE HEAD DRILLING
SPADE DRILLS



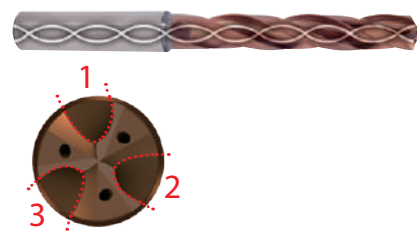
THREADING
PRIME TAPS | THREAD MILLS
COMBO TAPS | SYNCHRO TAPS



INDEXABLE DRILLING
YG DRILL [universal line]



SOLID CARBIDE DRILLING
DREAM DRILLS HIGH FEED



N Non Ferrous Metals (Aluminum)

SOLID CARBIDE ALUMINUM MILLING
ALU-POWER

SOLID CARBIDE ALUMINUM HIGH PRODUCTIVITY MILLING
ALU-POWER HPC



SOLID CARBIDE ALUMINUM DRILLING
DREAM DRILLS ALU



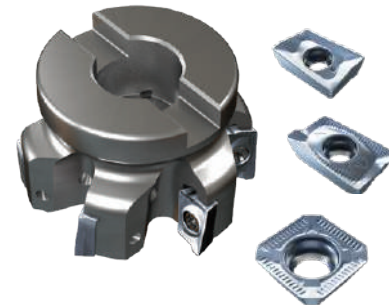
THREADING
THREAD MILLS
SYNCHRO TAPS



REAMING
CARBIDE REAMERS



INDEXABLE FACE AND PROFILE MILLING
YG MILL [-AL Chipbreaker]



P Steel

INDEXABLE FACE MILLING AND ROUGHING
YG MILL [General & -TR Chipbreaker]



SOLID CARBIDE HEAVY-CUT MILLING
V7 PLUS



REAMING
CARBIDE REAMERS



THREADING
PRIME TAPS | THREAD MILLS
COMBO TAPS | SYNCHRO TAPS



EXCHANGEABLE HEAD SOLID CARBIDE MILLING
i-SMART



SOLID CARBIDE MILLING
4G MILL



INDEXABLE DRILLING
YG DRILL [universal line]



EXCHANGEABLE HEAD DRILLING
i-ONE DRILLS



EXCHANGEABLE HEAD MILLING
i-Xmill



SOLID CARBIDE DRILLING
DREAM DRILLS PRO



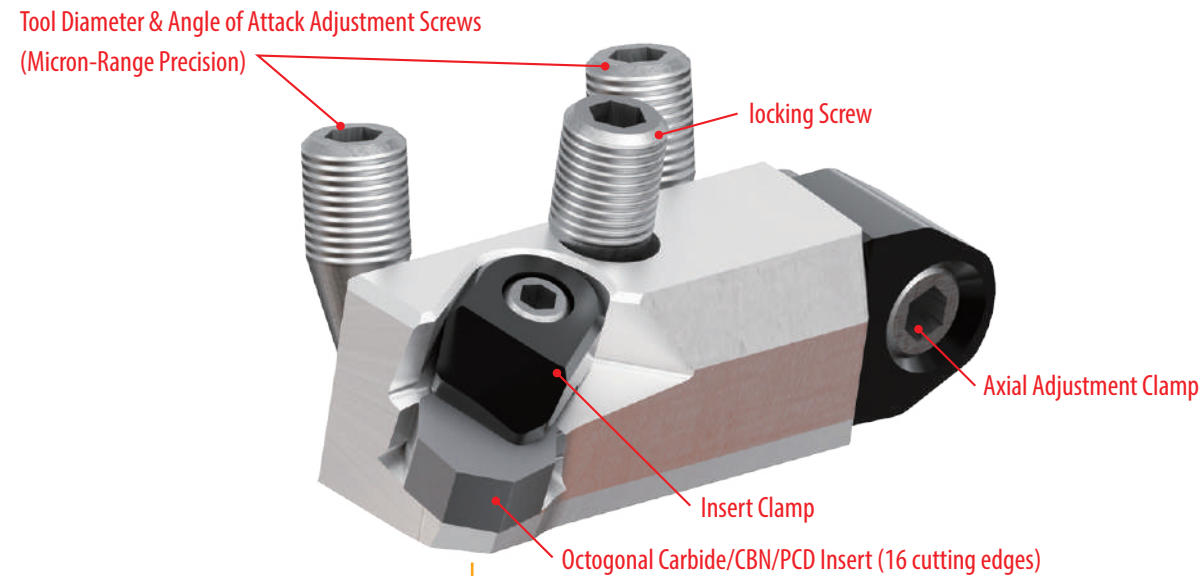
SOLID CARBIDE DRILLING
DREAM DRILLS FLAT BOTTOM



SOLID CARBIDE DEEP DRILLING
DREAM DRILLS MQL



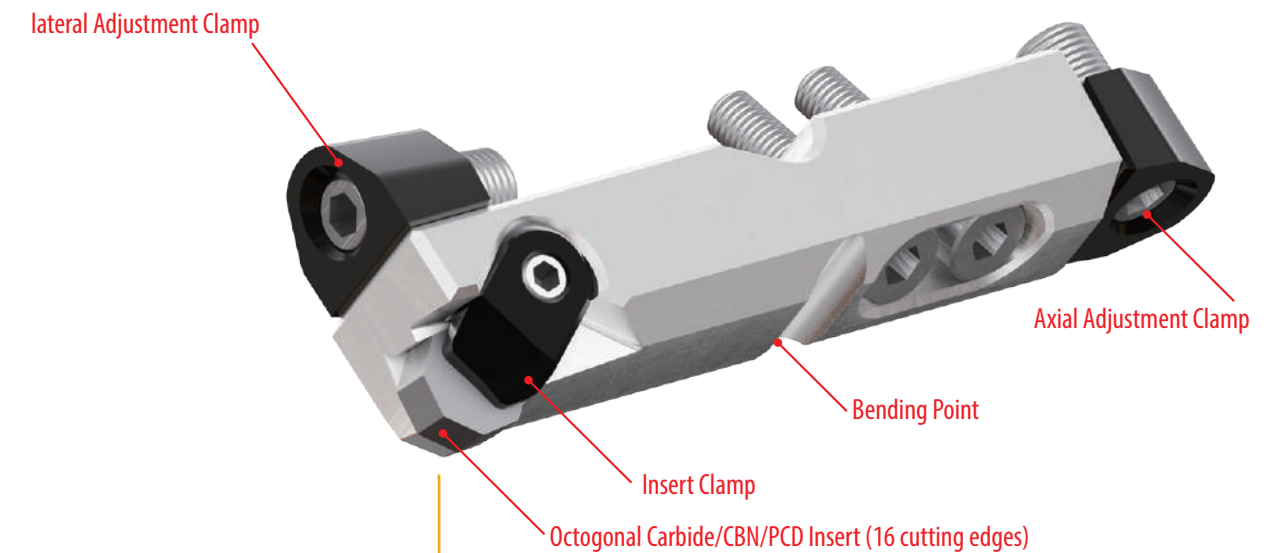
CARTRIDGES



Adjustable CBN Insert Cartridge Type A

Pivoting Type

Specially developed for YG-1 precision bore finishing tools. The cartridge carries a replaceable Carbide/CBN/PCD insert and it can be precisely adjusted axially as well as laterally by loosening the locking screw and adjusting the Tool Diameter & Angle of Attack adjustment screws and axial clamp. This system allows for fine-tuned adjustments to satisfy the most demanding requirements for tight tolerances and exact bore dimensions.



Adjustable CBN Insert Cartridge Type B

Bending Type

YG-1's new cartridge with indexable carbide, CBN, or PCD inserts mounted and secured by a robust clamping system, offers greater lateral adjustment due to the incorporated bending point. This cartridge features double locking screws to insure precision while also allowing for additional axial movement. As with previous versions, this cartridge can be axially and laterally adjusted with the corresponding clamps.

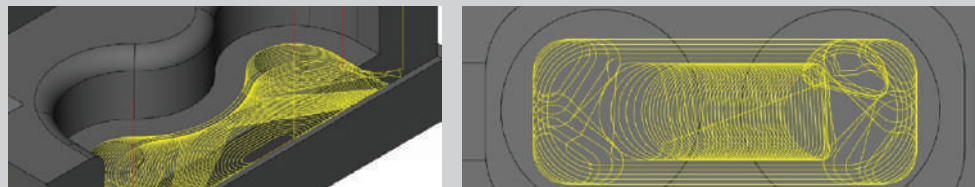
GLOBALLY POSITIONED TECHNOLOGY CENTERS

YG-1 has met the challenges and developed the newest cutting materials and coatings for years. In addition, it offers the best technical support and expert support directly to the end customer with globally positioned technology centers.



DESIGN, SIMULATE, PRODUCE AND TEST IN THE INDUSTRY'S MOST ADVANCED FACILITIES

INTRODUCING THE ULTIMATE SOLUTION IN TOOL-MAKING TECHNOLOGY



DESIGN

- Advanced CAD/CAM assisted application simulation to assure precise design integrity.
- On-site R & D specialists for advanced high-production solutions.
- Expertise & problem solving for the Automotive industry as well as other industries.
- Designing our products to meet the needs of the client each time.

SIMULATE

- Computer aided simulation to assure cost-effective manufacturing.
- Machining solutions for steel, stainless steel, hard metals and non-ferrous materials.
- We can help you optimize paths for your YG-1 tools, with the help of our experts, insuring that you can get the best productivity.

PRODUCE

- 5-axis CNC grinding machines for rapid production.
- World-class sub micron carbide blanks to assure increased tool life.
- Latest generation in PVD and CVD coatings for enhanced wear resistance and edge protection.



HIGH QUALITY PRODUCTS and ON TIME DELIVERY for WORLD-WIDE CUSTOMERS

Since 1982, YG-1 has been committed to quality, innovation and the unique customer experience. Our performance and experience have granted YG-1 the global impression of one of the leading manufacturers of high quality cutting tool solutions. This global footprint expands over 75 countries, with international logistic centers, pledging to our customers to give the best service available today - and tomorrow.

EUROPE

| | | | | | |
|----------------|------------------------|-----------|-------------|----------------|-----------------|
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| CROATIA | FRANCE | LITHUANIA | ROMANIA | SPAIN | TÜRKIYE |
| CZECH REPUBLIC | GERMANY | NORWAY | SWEDEN | UNITED KINGDOM | DENMARK |
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AFRICA

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| EGYPT | SOUTH AFRICA |
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YG-1 CO., LTD.

* For the more information on sales network, please contact the head office as below;

HEAD OFFICE

13-40, Songdogwahak-ro 16beon-gil, Yeonsu-gu, Incheon 21984, South Korea
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