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AEROSPACE
SOLUTIONS

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Note The new address above has currently been updated to the new Korean postal standard valid since 2014.
Notice that the physical Head Office location did NOT change.

YouTube
Search 'YG-1' on social media outlets

Tool specifications are subject to change without prior notice.

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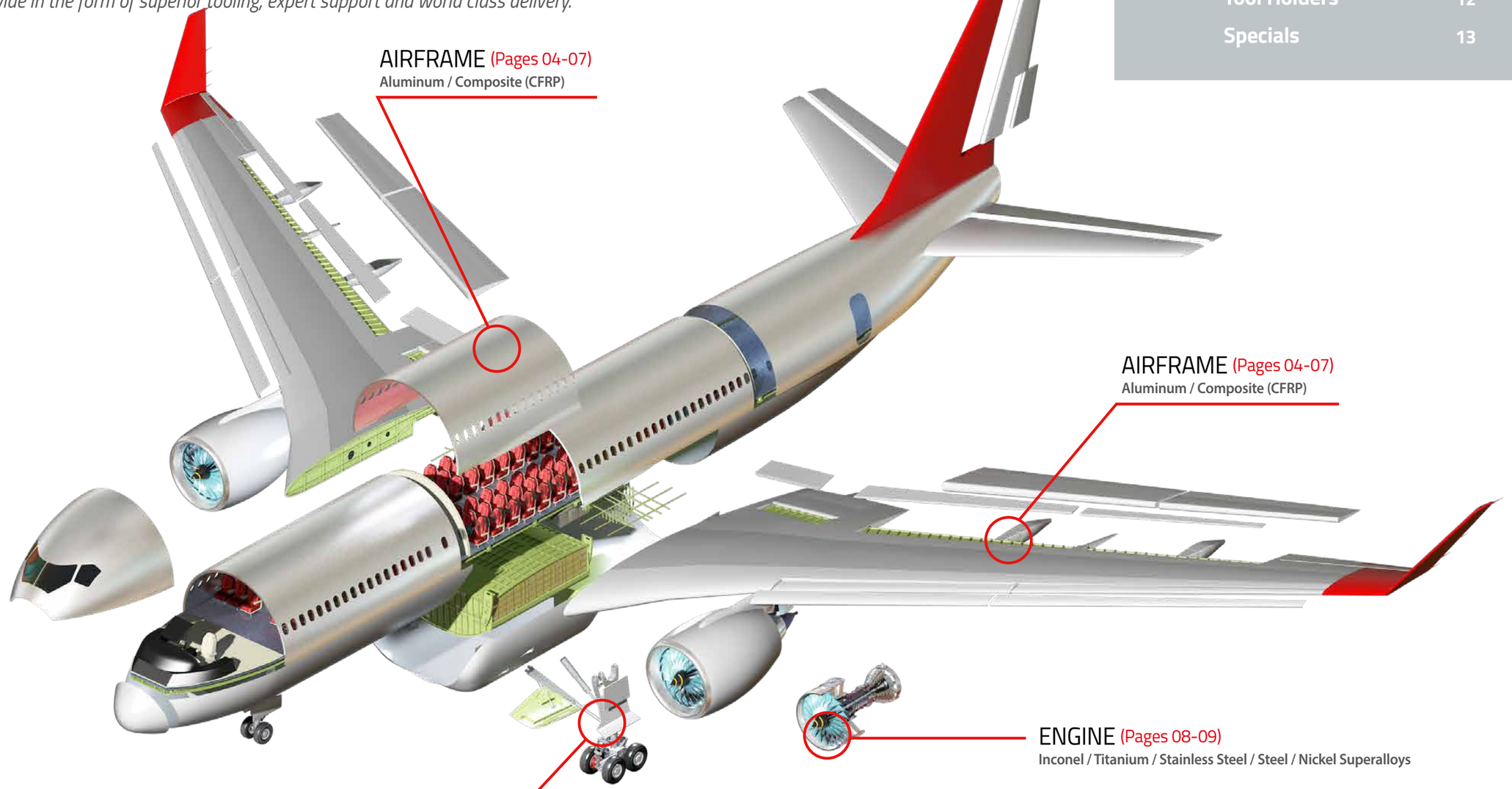
YG-1 AND THE AEROSPACE INDUSTRY – AN INNOVATION STORY

Each industry in manufacturing presents multiple challenges, and today Aerospace manufacturing industry is no stranger to challenges, working with materials (Carbon, glass, Kevlar, … fibers reinforced plastics) in multiple applications, including primary structures such as airframes and engine and non-structural parts, Titanium in structural frame and working components, Inconel in engine parts located in 'hot' zones of the engine, and aluminum in airframe and other critical and non-critical components. YG-1, working with Aerospace OEM's, machine tool builders, tier one, two and three for composite (CFRP) parts have developed 'best in class' products, processes and relationships that drive success.
These relationships built over time, are designed to bring you the most cost effective and secure solutions available today.

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



CONTENTS

AIRFRAME

Aluminum

For generations, aircraft manufacturers have produced airplanes using the lightest possible materials available. Many of these airframe, structural and non-structural components are made from Aluminum Alloys. YG-1 addresses the challenges facing the machining of aluminum head on with **ALU-POWER HPC, SPADE DRILLS** and **DREAM DRILLS ALU.** These products address milling / drilling challenges such as smearing, heat build-up and poor finishes with an all new geometry, specifically made to reduce tool pressure, provide an escape path for chips, thus creating excellent chip evacuation, and coatings like DLC and micro grain substrates for extended tool life. Providing the needed geometries with polished flutes, extended length tools for better reach, corner radius selections, neck tools, and coolant through options, YG-1 covers your needs for aluminum, and also needs for larger diameter tools with even **HSS** and **HSSCo** tooling too. Drilling requires the same attentions, where **SPADE DRILLS** and **DREAM DRILLS ALU**, will give you the performance needed while drilling.
ALU-POWER HPC – Your Choice in Milling Aluminum.

ALU-POWER HPC

ALU-POWER HPC's highly polished 3-flute design provides more balanced cutting performance – without excessive heat buildup. In fact, while other end mills can gum up at surface speeds of 3,000 or less, ALU-POWER HPC keeps its cool by dissipating heat and providing outstanding chip evacuation.

※ Available in Non-coated & DLC coated items

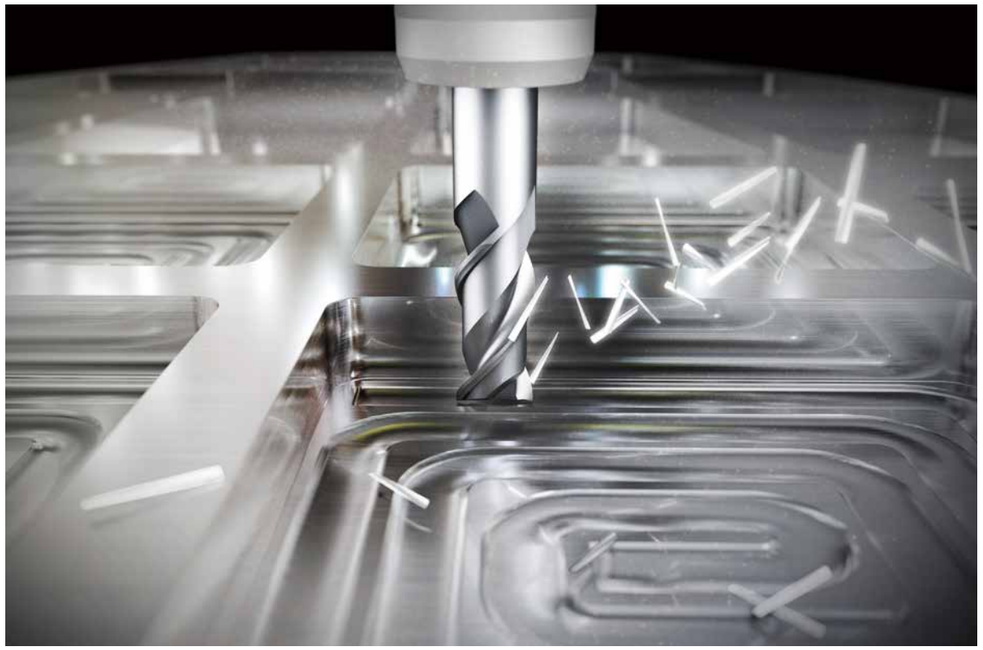
SPADE DRILLS

Very large holes exchangeable SPADE DRILLS for Cast Irons, Stainless Steels, Aluminum, Pre-Hardened Steels, High Alloyed Steels

Spade Drills – low cost performer in the manufacture of small to very large holes. Optimized special Point and geometry will guide you in hole making, in the most stable and effective manner.

DREAM DRILLS ALU

Drilling and hole making require special attention to detail. Whether you are drilling blind or fine finishing, you will want the features that DREAM DRILLS ALU offers.
Built to fit the needs of the Aerospace market, DREAM DRILLS ALU utilizes special point geometry, margin relief and polishing to make chips flow, thus making hole accuracy and penetration rates well above standard.
DREAM DRILLS ALU cover your 3xD, 5xD and 8xD needs.



YG-1 AEROSPACE SOLUTIONS

Composites

DRILLING CFRP AND CFRP / METAL STACKS

Unique challenges are faced when drilling CFRP and CFRP / METAL STACKS. Delamination, fiber pull out, and tool life issues plague these processes. In new generation aircraft, CFRP, CFRP / ALUMINUM, CFRP / TITANIUM, are most common and YG-1 has developed a series of drills including straight drills, combo drill-countersink and countersinks. YG-1 covers the drilling processes, most used including, gantries with 3, 4, or 5 axis, robot end effectors, power feed machines and hand held. YG-1 drilling products are performing with high production rate and providing the lowest cost per hole – while maintaining the highest standard in quality. **D-POWER** – Your choice in drilling CFRP.

MILLING, TRIMMING AND CUTTING CFRP PARTS

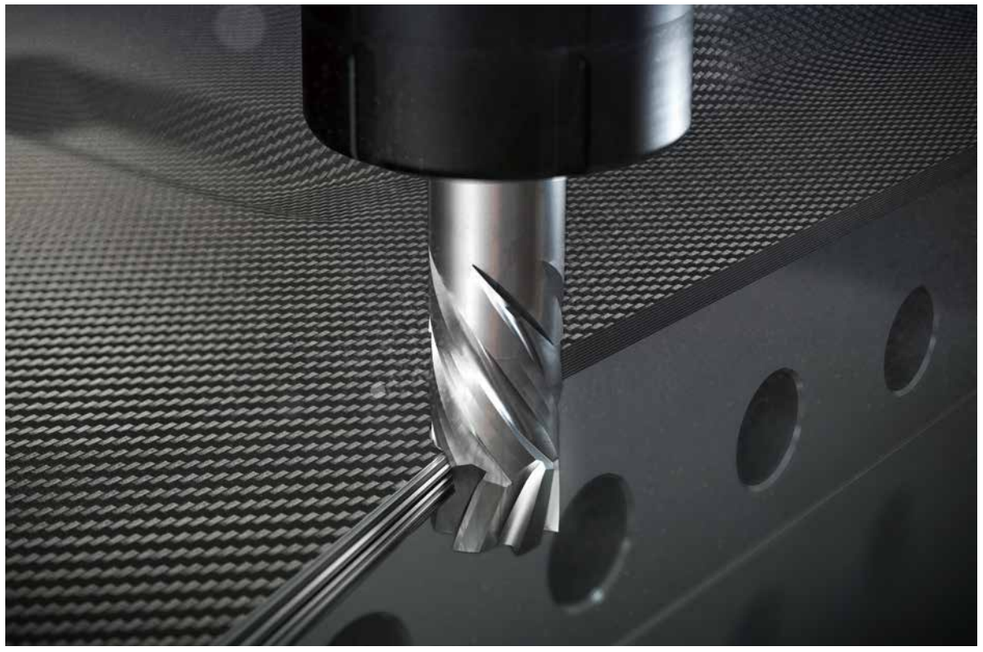
Most CFRP parts need trimming and cutout prior to assembly in the aircraft. These processes are prone to leave you with more delamination and fiber pullout. Dust evacuation and tool life are key components to successful CFRP manufacturing. Understanding this, YG-1 developed a wide range of CFRP End Mills starting from the chip breaker, to the compression, to the helical flute to the one shot roughing and finishing End Mills series. With this investment in tooling for trimming and cutout, YG-1 is serving customers in all platforms, with all types of machines, with high degree of technical support. **D-POWER** – Your choice in milling / trimming CFRP.

CFRP CUTTING TOOLS INNOVATION

CFRP materials are known for their inhomogeneous nature, anisotropic and abrasive properties, therefore YG-1 has developed a process to study tool material type and geometry to prevent any part defects due to the drilling or trimming process, and optimize the tool life. By developing the best carbide, matched with innovative processes in CVD coating done in-house, YG-1 can maintain its leading position in CFRP machining. **D-POWER** – Your choice in cutting CFRP.

D-POWER CFRP

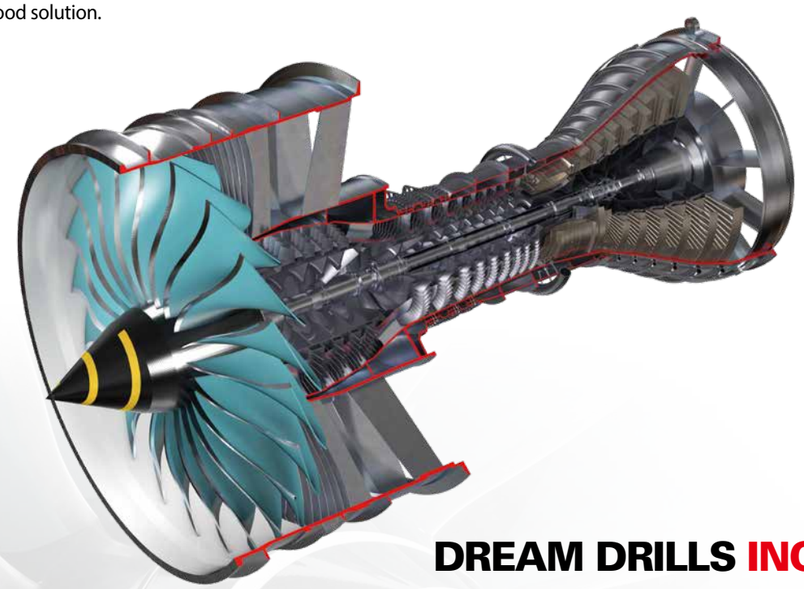
Sharper, more defined and pinpointed in development strictly around CFRP.
Shapes, geometries and flexibility provided in this exclusive YG-1 performer.



ENGINE

Inconel • Titanium • Stainless Steel • Steel • Nickel Superalloy

High Temperature Alloys, Structural and Stainless Steel are the backbone of aircraft engines.
Where heat has nowhere to go, these materials pose specific challenges in thermal transfer of heat in the cutting process. While most materials carry heat away in the chip, heat resistant alloys do not. Sharp cutting edges, superior coatings and finishes help deflect the heat. Processes developed to minimize the arc of engagement and added flutes also help in heat dissipation. Slotting, roughing and finishing are faced by YG-1's double core technology - **TitaNox Power** and provides the strongest tool available with the latest coatings and superior carbide grade. **V7 Plus** is the choice in variable helix, pitch corner radius options and length options when double core is not needed.
DREAM DRILLS INOX – Specifically made to tackle those difficulties to machine materials available in 3, 5 and 8xD.
YG5X End mills are technically designed for 5-axis CNC machines. Optimized to gain a larger cutting surface to machine an extensive width compared to conventional ball End mills.
The drilling process of Inconel 718, a nickel-based superalloy, and Titanium Alloy are very challenging due to the material properties, the operating conditions and the high quality requirements. Carbides within the material matrix cause an excessive amount of abrasive tool wear. **DREAM DRILLS SuperAlloy** and **DREAM DRILLS TITANIUM** are recommended for a good solution.



THREAD MILLS

Solid Carbide Thread Mill with and without Coolant Hole

A Thread mill can produce various thread diameters with the same pitch and it is multi usable for blind-holes and through-holes and for left-hand threads. The biggest benefits are decreased costs and eliminating the possibility of threading rework due to broken taps.

DREAM DRILLS INOX

YG-1 Tailored TiAlN-Coated Solid Carbide Drills (with Coolant Holes) for Tough Materials like Stainless Steels, Nickel Alloys and Titanium

The staple of YG-1. Drilling made simple and cost effective.

Drill point geometry, advanced flute design, coolant through and coating will give you both security and simplicity in hole making.
DREAM DRILLS INOX cover your 3xD, 5xD and 8xD needs.

V7 Plus SOLID CARBIDE END MILLS

Y-Coated Solid Carbide End Mills for Steels, Cast Iron,Stainless Steels

The work horse of the End Mill line with the most options, in variable flute, variable helix, corner radius, neck tools, flute options and geometries of all kinds for your steel, stainless, iron needs

TitaNox Power

Y-Coated Solid Carbide End Mills for Titanium, Stainless Steels

True Double Core technology plows through your roughing and semi-finish to finish needs in difficulty to machine Ti and stainless applications.
Multiple flute options and radii.

DREAM DRILLS SUPER ALLOY

YG-1 Tailored TiAlN-Coated Solid Carbide Drills (with Coolant Holes) for Inconel

Special Surface treatment after Coating and Convex Cutting Edge achieve the better Surface finish of materials to be cut and the longer tool life.
Optimized Special Flutes are ideal for Outstanding Chip Removability and Productive Drilling.
DREAM DRILLS SUPER ALLOY cover your 3xD, 5xD and 8xD needs.
* Available as made to order

DREAM DRILLS TITANIUM

Z-Coated Solid Carbide Drills (with Coolant Holes) for Titanium

Relief of 4 facet shape than General's Relief shape is relatively good in workability due to the sharp cutting edge. In addition, the cutting edge is treated with honing to prevent chipping easily on difficult materials such as titanium. Optimized Wide Flute Design and Negative land on the cutting Edge will give you both longer tool life and lower Cutting Force in Holemaking.
DREAM DRILLS TITANIUM cover your 3xD, 5xD and 8xD needs.
* Available as made to order

YG5X END MILLS

High Efficiency High Performance End Mills For 5-Axis Machining

FLAT FORM (Taper Shape) avoids risk of Collision for Structural Parts with flat long surfaces
FREE FORM(Radius Shape) for blade finishing process

FLAT FORM

FREE FORM

LANDING GEAR

Titanium Alloy • Stainless Steel • Pre-Hardened Steel

Titanium, stainless steel and pre-hardened steel wrap up the aircraft experience.
Smearing and sticking, part distortion while roughing, poor surface finishes and chip evacuation along with tool life are very mentionable challenges in these materials. Components of pre-hard material can reach up to 60HRc and require a process and tool all by themselves. **X5070** was developed with this material in mind, capable of machining materials up to 70HRc. Uniquely qualified, this product was designed to hold up to your hard component needs.
4, 5 and 6 flute versions of both **V7 Plus** and **TitaNox Power** will cover your solid carbide End Mill needs. **TitaNox Power** – Double core technology allows for slotting and finishing with a strong, reliable performance in TI and stainless steel. **V7 Plus** can handle the stainless steel, steel (up to 45HRc). Hole making, suffering the same challenges can be met with **DREAM DRILLS INOX** and 2 variations of insert drills, **SPADE DRILLS** and **i-One DRILLS**, developed with these applications in mind.
The drilling process of Titanium Alloy is very challenging due to the material properties, the operating conditions and the high quality requirements. Carbides within the material matrix cause an excessive amount of abrasive tool wear.
DREAM DRILLS TITANIUM are recommended for a good solution.

V7 Plus
SOLID CARBIDE END MILLS

Y-Coated Solid Carbide End Mills for Steels, Cast Iron, Stainless Steels

The work horse of the End Mill line with the most options, in variable flute, variable helix, corner radius, neck tools, flute options and geometries of all kinds for your steel, stainless, iron needs

TitaNox Power

Y-Coated Solid Carbide End Mills for Titanium, Stainless Steels

True Double Core technology plows through your roughing and semi-finish to finish needs in difficulty to machine Ti and stainless applications. Multiple flute options and radii.

X5070

Blue Coated Solid Carbide End Mills for High Hardened Steels

It's in the name – designed to cut materials between 50HRc and 70HRc the newly designed workhorse cuts through those heat-treated materials where others tools fail. X5070 is superbly engineered to cut finer finishes, rough hardened steels and stainless steels, and finish processes previously left to grinding.

SPADE DRILLS

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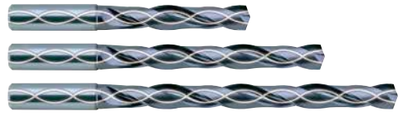
Spade Drills – low cost performer in the manufacture of small to very large holes. Optimized special Point and geometry will guide you in hole making, in the most stable and effective manner.

DREAM DRILLS INOX

YG-1 Tailored TiAlN-Coated Solid Carbide Drills (with Coolant Holes) for Tough Materials like Stainless Steels, Nickel Alloys and Titanium

The staple of YG-1. Drilling made simple and cost effective.
Drill point geometry, advanced flute design, coolant through and coating will give you both security and simplicity in hole making.
DREAM DRILLS INOX cover your 3xD, 5xD and 8xD needs.



Synchro TAP Combo TAP

Combo, Synchro, Hand, STI, Prime – Tapping in today's materials and applications takes an enormous amount of engineering. Today, at YG-1 engineering is in the forefront of tap manufacturing.
With world class design and support – combined with expedited specials production YG-1 understands that tapping is one of the most important features supported today. YG-1 can produce the tapped hole you require, promptly, accurately, and cost effectively.

i-ONE DRILLS

High Performance Exchangeable Drilling Tools, "H"-Coated Micro Grain Carbide Inserts with coolant holes for Carbon Steels, Alloy Steels, Cast Irons, High Alloyed Steels

YG-1's newest addition to the Dream Drill line. Simple exchangeable insert, with all of the geometry of a solid carbide and the economy of throw-away inserts.
i-One Drills cover 3xD, 5xD and 8xD needs.

DREAM DRILLS TITANIUM

Z-Coated Solid Carbide Drills (with Coolant Holes) for Titanium

Relief of 4 facet shape than General's Relief shape is relatively good in workability due to the sharp cutting edge. In addition, the cutting edge is treated with honing to prevent chipping easily on difficult materials such as titanium. Optimized Wide Flute Design and Negative land on the cutting Edge will give you both longer tool life and lower Cutting Force in Holemaking.
DREAM DRILLS TITANIUM cover your 3xD, 5xD and 8xD needs.
* Available as made to order

TOOL HOLDERS

High Performance Tool Holders

Produced to todays highest standards, HSK, CAT, BT, Straight, etc.
Tool holders and related accessories support the YG-1 product line-up. Dynamic Hydraulic, superior balancing, End Mill holders and Milling Chucks all produced with accuracy, rigidity and simplicity in design.

YG-1 Tool holders complete the machining package

SPECIALS

Custom Solutions to Your Needs

With up to 40% of all tooling used to manufacture aircraft today requiring specials, YG-1 is committed to an engineering, technical and production staff that can design and apply this unique tooling.

Through experience and know-how, situated in the heart of densely populated manufacturing areas, YG-1 has built specials facilities that are staffed with these professionals. With decades of experience and the most talented workforce, YG-1 produces the specials that meet your demands.

MEMO

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.

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FINLAND
ITALY
PORTUGAL
SLOVENIA
THE NETHERLANDS
CROATIA
FRANCE
LITHUANIA
ROMANIA
SPAIN
TURKEY
CZECH REPUBLIC
GERMANY
NORWAY
RUSSIA
SWEDEN
UNITED KINGDOM
DENMARK
HUNGARY
POLAND
SERBIA
SWITZERLAND

ASIA PACIFIC

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INDONESIA
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Super Alloy

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