Interview:
KYOCERA SGS's Solid Tools Contribution to Aerospace Industry

KYOCERA SGS Precision Tools, Inc. (herein: KSPT), a U.S.-based solid tool maker started selling SGS branded products in the Japanese market as of April 2019 for the purpose of expanding the KYOCERA Group's global solid tool business. What is the background of KSPT's business and products? How will KSPT solid tools contribute to the aerospace industry? We spoke with **Thomas Haag**, President of KSPT and **Senri Nagashima**, Deputy General Manager of the Corporate Industrial Tools Group at KYOCERA Corporation (herein: KYOCERA) to learn more about their business and Japanese expansion plans.

With more than 60 years of Experience in solid tools, KSPT's wide variety of product lines are capable of machining difficult-to-cut materials such as titanium alloy and CFRP.

KSPT solid tools are capable of machining difficult materials

Senri Nagashima, Executive Officer, Deputy General Manager of the Corporate Industrial Tools Group

What is KYOCERA SGS's role as a part of the Kyocera Group?

Nagashima: SGS Tool Company (now: KSPT) joined the KYOCERA Group in March 2016. Prior to then, KYOCERA sold various cutting tools using different materials such as cemented carbide, cermet, ceramic and diamond, but most of them were indexables. By adding SGS Tool's solid tool products, KYOCERA aims to create a business structure capable of providing total solutions and to strengthen the KYOCERA Group's business as a comprehensive cutting tool manufacturer.

Can you please describe more about KSPT?

Nagashima: KSPT has 60 years of experience in manufacturing and selling solid tools since its establishment as SGS Tool Company. Its headquarters and main factory are located in Ohio, U.S.A., with an additional European production site located in the United Kingdom. The company is highly recognized in the United States and Europe, and it is considered the top solid-tool brand, particularly for the aerospace industry.

What types of products does KSPT have? What are the advantages?

Haag: KSPT's biggest advantage is its wide range of product lines capable of cutting difficult materials such as stainless steel, titanium alloy, aluminum alloy and CFRP. For example, the Z-Carb AP end mill for machining steel stainless steel, titanium alloy features newly developed 4-flute geometry to reduce vibration. The S-Carb APR end mill for machining aluminum alloy is equipped with coolant holes. What is common to all our products is their ability to solve our customer's most difficult challenges, improve productivity and reduce costs.

Thomas Haag, President of KYOCERA SGS Precision Tools, Inc.

Playing a leadership role in the aerospace industry, KSPT accelerates joint research with the world's top companies.

Accelerating research and development through joint research with CCAM (left) and AMRC (right)

Why does KSPT have such a strong reputation in the aerospace industry?

Haag: What's most important to earning a strong reputation in the aerospace industry is "consistency." Obviously in the aerospace market, performance depends on durable products and this is exactly what customers are looking for in their manufacturing processes as well. Cutting tools with excellent consistency improve productivity, therefore they can create consistent products whether it is in aerospace structures or in aerospace engines. In other words, because of their consistency, KSPT tools can contribute to the productivity of the aerospace market.

It is also important to adopt change in terms of the materials we use. As technology advances, harder and lighter materials are frequently being selected. In other words, KSPT's tools are more widely being utilized because there is a growing demand for tools capable of machining difficult materials including titanium alloy, aluminum alloy, and CFRP.

Can you elaborate on KSPT's research and development toward the ever-progressing aerospace industry?

Nagashima: The aerospace industry is one of the world's fastest growing industry and it is expected that the market for civilian airplanes will double in the next 20 years. In accordance with technological development progressing at such high speeds, extremely high-quality manufacturing is required. For example, the ability to machine difficult-to-cut materials and maintain high precision machining are becoming important for cutting tool makers.

In order to respond to such requirements, we are focusing on research and development. KSPT is involved in advanced research as a top member of the Commonwealth Center for Advanced Manufacturing (CCAM) in the U.S. and the Advanced Manufacturing Research Center (AMRC) in the UK.

Tool users, material makers, machine makers and cutting tool makers are all represented in CCAM and AMRC where the technologies cultivated in each field are shared to achieve the common goal of improved research. CCAM and AMRC encourage leading companies in each field to collaborate and apply user's feedback for the R&D process. The collaboration at CCAM and AMRC help participating companies improve their development speed.

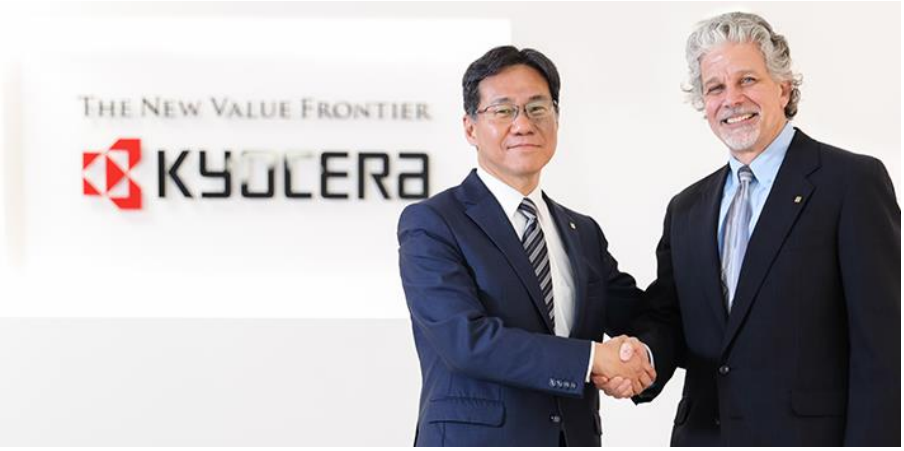
What is the role of the KYOCERA SGS TECH HUB? How does it function in KSPT's overall R&D?

Haag: The concept is a "Hub" which encourages project members to share development resources beyond companies and organizations, and to connect various technologies and expertise. Internal and external professionals collaborate at the Tech Hub and share opinions in order to develop unprecedented products.

By utilizing KPST's first-rate technology, the hub enables us to shorten the lead time from design and development to the manufacturing of special tools. We expect the Tech Hub will play an important role also in the Japanese market to provide products that meet our customer's needs.

KYOCERA SGS Tools Tech Hub in Danville, Virginia, U.S.A.

Establishing a new section to facilitate entry into Japanese market, we aim to support productivity improvement for all our customers



Nagashima and Haag at the KYOCERA Japan headquarters

Finally, do you have any message you would like to tell your customers in Japan?

Nagashima: KYOCERA started selling KSPT products in Japan as of April 2019. With experience in helping many leading European companies, we are convinced that KSPT tools will contribute to improving the productivity of all our customers.

To help customers learn the features of our tools and how to use them, we arranged support systems and services including the establishment of a new technological service section and organizing customer lectures. We hope many Japanese customers will try out our world-class cutting tools!

Haag: We have a wide variety of products that can solve difficult challenges no matter what the application, such as milling or drilling. If you are having difficulties in solving your manufacturing challenges with standard items, KSPT will be able to provide unique solutions by utilizing its technology and expertise cultivated through joint research with CCAM/AMRC and the Tech Hub. If you are facing problems in machining, please feel free to consult with us.