

Aspiring always to be an environmentally friendly and trustworthy company

TAMAGAWA NEWS

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26



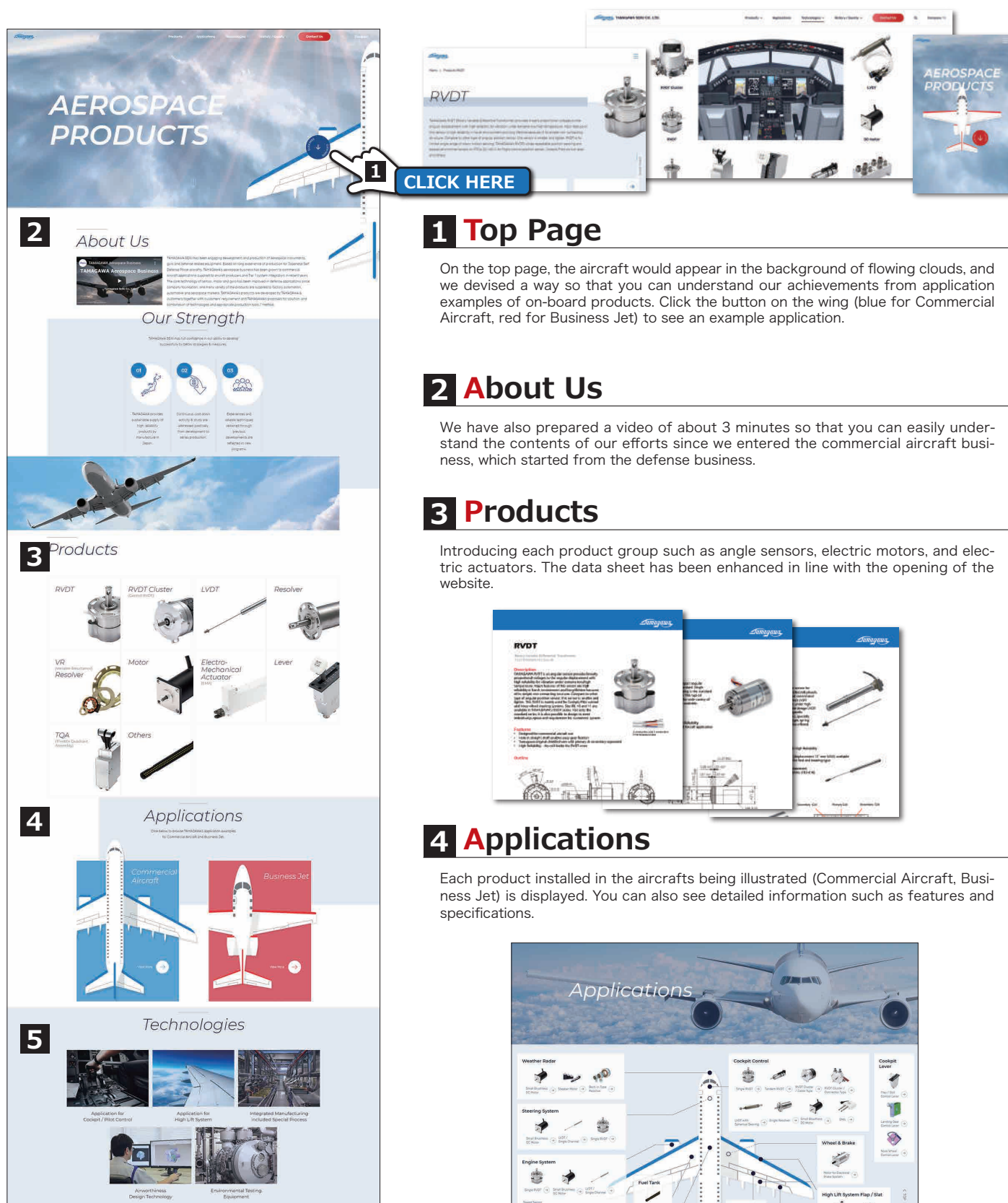
Aircraft-related website newly opened / Notice regarding officer personnel

Explore the Area
S-BIRD<4>

Minoru Takahashi

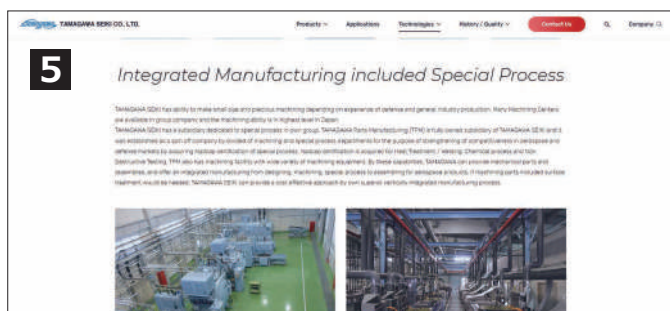
We have opened a website dedicated to **AEROSPACE PRODUCTS!**

The website for commercial aircraft products, which was newly opened this time, is a dedicated website only in English, conscious of the fact that “the market is in the world.” It has a playful design so that people in the technology, procurement, and other departments of aircraft and system manufacturers, mainly overseas, will be interested.



5 Technologies

We are also introducing our strengths in integrated production (design-manufacturing including special processes-equipment that can carry out environmental tests), as well as characteristic technologies.



In the future, we will continue to enhance the contents by regularly distributing e-mail newsletters to registered users and adding pages exclusively for e-mail newsletter members. Please visit the URL below.
The aviation industry is particularly affected by the worldwide spread of the new coronavirus, but after-corona, a change is expected in global business. Under such circumstances, we will further enhance the awareness of our commercial aircraft business and will aim to expand our business.

● AEROSPACE PRODUCTS Website

URL: <https://aircraft.tamagawa-seiki.com>



● TAMAGAWA Aerospace Business



Click here for video

Exhibited at Engine Forum Kobe 2020

Session: October 20th(Tuesday) to 21st(Wednesday), 2020

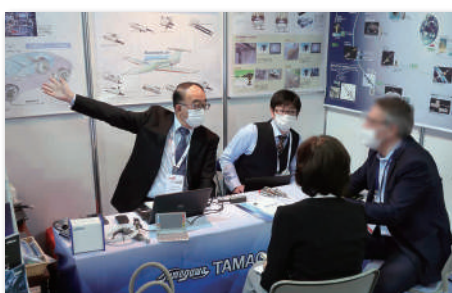
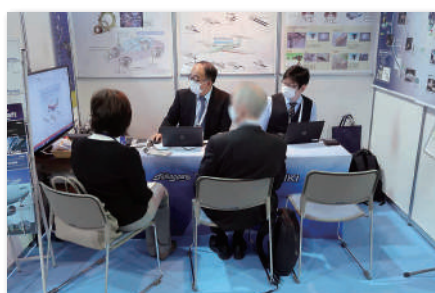
Engine Forum Kobe 2020 was the first business meeting (B to B meeting) held in Japan focusing on aircraft engines, and we also exhibited and participated in the forum.

At this business meeting, in addition to regular business negotiations (Face to Face), online business negotiations (using WebEx) were also introduced, making it a hybrid business meeting using two methods. We have also prepared a virtual booth and conducted business talks with overseas companies which could not visit due to the influence of the new coronavirus.

Although it was held in a new style different from the conventional exhibitions and business meetings, we were able to hold fulfilling business talks with companies with a high degree of seriousness with an eye on after-corona.



Tamagawa Seiki Virtual Booth



Face to face business talks held at the venue

Renewal of small and high-precision IMU website

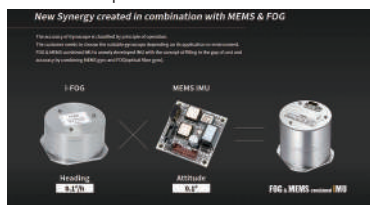
In September 2020, along with the launch of the new product FOG & MEMS combined IMU, we renewed our dedicated website for compact and high-precision IMU (Inertial Measurement Unit) for the first time in about three years. The layout has changed to a dynamic one, and each product can be visually grasped, so that the desired information can be obtained smoothly. In addition, the gyro's difficult terminology has been revisited and detailed pages have been added to make it easier to understand and explain in detail. We will continue to enhance the content such as videos, so please have a look.

Renewal points

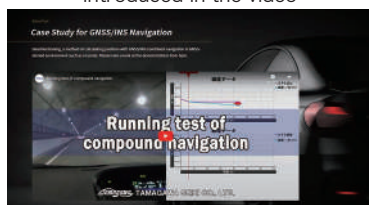
① New release of FOG & MEMS combined IMU

FOG & MEMS combined IMU is newly released as an IMU that achieves the accuracy required for autonomous driving. It consists of a 3-axis gyro (i-FOG (interfering optical fiber gyro) on the Z axis, MEMS gyro on the X and Y axes) and an accelerometer, and in addition to detecting angular velocity and acceleration, the attitude angle (roll angle, pitch angle) and azimuth can be calculated.

Visual expression of IMU structure



The state of the demo is introduced in the video



② The explanation of technical terms has become easier and more detailed.

What is the difference between angular velocity and acceleration? What is drift? Gyro terminology such as above is explained in five categories. In addition, the "LEARN MORE" page has been set up and it explains more details using graphs. We have also set up an inquiry form, so please feel free to contact us.

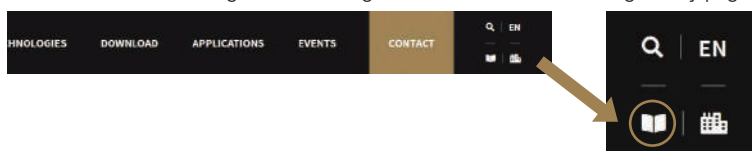
Introduced in 5 categories



Newly added LEARN MORE page



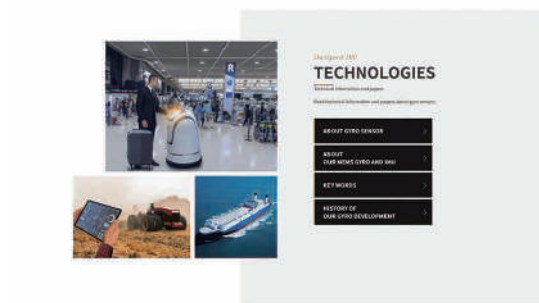
The "Book" icon at the right end of the global menu also links to the glossary page.



③ Video content has been fulfilled



The introduction video of i-FOG shows the demonstration of self-position estimation. We will continue to enhance the content, so please take a look.



● Compact & High-accuracy IMU Website
URL: <https://mems.tamagawa-seiki.com/en/>





Introducing the new facility, S-BIRD, in a four-part series.

Explore the Area

A base for industrial development and human resource development

S-BIRD

Address: 3349-1, Zakoji Iida City, Nagano

(Foundation) Minami-Shinshu Iida Industry Center

Flammability and Fire-resistance Testing Equipment

Flammability and Fire-resistance Testing Equipment

There is 8 different chambers for flammability and fire-resistance testing at S-BIRD. All of these chambers are made by Merlin Engineering (USA). In Japan, they are the only public chambers specialized in aircraft equipment.

Federal Aviation Administration (FAA) established regulations that all passengers and crewmembers can be evacuated within 90 seconds in an emergency. It is necessary for aircraft equipment not only to have fire resistance but also to suppress the smoke and toxic gas generation.



Building F



Flammability Chamber

Evaluate the flame-spread rate and self-extinguishing properties of specimen.



Heat Release Chamber

Evaluate the heat release value of specimen.



Smoke Density Chamber

Evaluate the smoke generation of specimen.



Toxicity Analysis Kit

Analyze the toxic gas components emitted from combustion of specimen.



Vertical Flame Propagation Chamber

Evaluate the flammability of insulation material.



Radiant Panel Chamber

Measure the heat radiated from the panel.



Sonic Burner

Evaluate the flame resistance of specimen, such as seat cushions, cargo liners, magnesium parts, insulation near engine exhaust.



Conditioning Chamber

Equalize the temperature and humidity.

Information

01

We are continuing our efforts to prevent the spread of new coronavirus infection.

Since the establishment of the "Corona Crisis Countermeasures Office" in April 2020, which is a cross-company organization, regular meetings have been held 30 times, and the Office plays a central role in preventing the spread of infection, not only in business, but also in private circumstances, implementing various initiatives such as formulating guidelines, creating a work environment, and responding to infections.

In addition to measures such as recording and storing the daily body temperature and behavior history of employees, we are limiting the number of people in meetings (priority is given to the use of web conferencing), and providing the guidelines for

using the employee cafeteria (seat allocation and use of seats in rotation to avoid congestion). We are working to prevent infection of employees by taking steady measures in the work environment, such as implementing alcohol disinfection and installing splash prevention partitions, installing vinyl curtains in customer service and cargo receiving spaces, and thorough ventilation. We are already working from home at our sales offices, but in the future, we will actively incorporate remote work at our plants as well, in order to create a system and structure to prevent discontinuation of work even in outbreaks of infection within our site.



Partitioned office



The company cafeteria used at different times.

Information

02

TAMAGAWA motor on Hayabusa2 delivered the capsule to Earth and headed back out into deep space!

Hayabusa2 (asteroid sample-return mission) delivered the capsule with the asteroid "Ryugu" sample to Earth after six-year voyage on Dec.5. The capsule landed in Woomera Prohibited Area in south Australia and brought back to Japan for laboratory analysis. Hayabusa2 is now headed back out into deep space to embark on an extended mission for new target, asteroid 1998 KY26! Our stepping motor is installed in shatter mechanism of TIR (Thermal

InfraRed Imager) and machined parts are components of Solar array on Hayabusa2 and contributed to the mission success. TAMAGAWA SEIKI is a leading producer and supplier of spacecraft components. Products include actuators, gyroscopes and gimbal mechanisms. Our products are on virtually many satellites and space station built in the last 35 years.



Stepping motor installed in Hayabusa2

Launched a new organization "DX Promotion Office" to overcome the "cliff of 2025" issue.

In year 2025 and thereafter, it is said that economic loss up to 12 trillion yen per year may occur (= cliff in 2025 *) due to aging, complicated, black-boxed existing core systems (legacy systems) that are a hindrance to management and business strategies and a cause of high cost structure. To overcome this, we will set up a new "DX Promotion Office" and start full-scale introduction and deployment of DX.

Since it is necessary to solve our problems beyond the organization and to have a strong enthusiasm to fundamentally reform the existing working style, we recruited 24 members widely regardless of job title, age, and department. The organization started on November 21, 2020.

A centralized database of a wide range of information such as technologies, products, customer information, and market trends that we have cultivated over many years, and our core systems (production management, sales management, technical management) will be linked and will function across the board. By doing so, we are planning reforms that would digitally connect a series of operations from order intake to development, production, and shipping.

In 2021, the first year, we started with the theme of "determining what we would like to accomplish and planning an approach to achieve it." We will gather the wisdom of the members so that they will be the foundation of Tamagawa Seiki in the future.

* Reference: "DX Report" September 7, 2018 Ministry of Economy, Trade and Industry



State of "DX Promotion Room" promotion meeting
Since some employees work not only in the Iida area but also in the Hachinohe office and sales offices, we carry out this online.

Notice regarding officer personnel

Tamagawa Seiki decided to make changes to its officers at the General Meeting of Shareholders held on February 13, 2021, and we would like to inform you as follows.

Makoto Yamaguchi: Appointed Director of Tamagawa Seiki Co., Ltd.

In charge of Headquarters Accounting Department and
Material Procurement Management Center

Tadasu Takigawa: Appointed Director of Tamagawa Seiki Co., Ltd.

In charge of Material Procurement Management Center

Appointed Director of Tamagawa Trading Co., Ltd.

In charge of Overseas Sales Headquarters

The cover of this edition



Crescent Moon-2

Sanriku Reconstruction
National Park Tanesashi Coast
"Black-tailed Gull Karakuri"Hachinohe Portal Museum Hacchi
"Karakuri - Mechanical Lion Dance"

The photo on the cover page is a work titled "Crescent Moon-2", and you can feel the tension in the balance between the crescent moon and the rabbit. This issue marks the end of Minoru Takahashi's cover page work series. Mr. Takahashi's works are exhibited in various places in Aomori Prefecture, and some of them use our servo system. When you come to our Hachinohe plant, please take a moment to visit the places where his works are exhibited as well.

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