Developing State-of-the-Art Technology in Anticipation of Society's Needs

The history of TAMAGAWA SEIKI CO., LTD. can be traced back to March 1938, when the company's founder, Hiroichi Hagimoto, established the company along the banks of the Tamagawa River in the south of Tokyo. Seeing the cleaner environment and a diligent labor force, and aiming to contribute to regional industrialization, he built the Iida Plant three years later in his hometown area in the Ina Valley, located in mountainous Nagano Prefecture several hours west of Tokyo. Since then, Tamagawa Seiki has significantly expanded its business from the manufacturing of instrument motors and tapping machines to the development of technologies in a wide variety of areas, including the manufacture and sale of products in the aviation aerospace and industrial automation areas. Throughout its history, the company has endeavored to meet the changing needs of the times.

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### Company Profile

**TAMAGAWA SEIKI CO., LTD.**
- **Date of Establishment**
  - March 3, 1938
- **Headquarters**
  - 1879 Oyasumi, Iida, Nagano Pref. 395-8515 Japan
- **Executive**
  - Board Chairman & CEO Hiroyuki Hagimoto (Ph.D., in Mechanical Eng.g.)
  - President & COO Shigoe Seki
  - Senior Managing Director Hideo Kumagai (Ph.D., in Electrical Eng.g.)
  - Managing Director Hiroshi Hagimoto
  - Managing Director Masashi Uryu
  - Managing Director Mamoru Tsukadaara
  - Managing Director Hiroshi Kusihara
  - Managing Director Kazuyuki Miyazawa
  - Managing Director Tadanori Matsuo
  - Auditing Director Toshiaki Ito

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**TAMAGAWA TRADING CO., LTD.**
- **Executive**
  - Board Chairman & CEO Hiroyuki Hagimoto (Ph.D., in Mechanical Eng.g.)
  - President & COO Shigoe Seki
  - Managing Director Yasuo Hagimoto
  - Director Masahiro Shiozawa
  - Auditing Director Toshiaki Ito
- **Main Products**
  - Contract manufacturing, Sales and service of servo components (encoder, resolver, rate sensor, gyro, AC servomotor, LVDT etc.)
  - motor driver, controller, robot, IMU, automatic control equipment and (bio) research reagents.

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**Associated Banks**
- Sumitomo Mitsui Banking Corporation
- MUFG Bank, Ltd.
- Mizuho Bank, Ltd.
- THE HACHJUNI BANK LTD.

**Group Company**
- Tamagawa Hightech Corporation
- Tamagawa Microtep Co., Ltd.
- Tamagawa Seiki Electronics Co., Ltd.
- Tamagawa Logistics Co., Ltd.
- TAMAGAWA MOTORTRONICS CO., LTD.
- TAMAGAWA HONG KONG LIMITED
- Tamagawa TECHNOCREATION CO., LTD.
- TAMAGAWA MOBILE EQUIPMENT CO., LTD.
- TAMAGAWA AERO SYSTEMS CO., LTD.
- Tamagawa Seiki Suzhou Co., Ltd.
- Tamagawa Links Co., Ltd.
- Tamagawa Sky Precision Co., Ltd.
- Tamagawa Parts Manufacturing Co., Ltd.
- Tamagawa Europe GmbH
- TAICANG TAMAGAWA TRADING CO., LTD.
MOTORTRONICS Technology A new vision of the future

The trademark 'MOTORTRONICS' is a compound derived from the words 'motor', 'electronics', and 'mechanics'.

Used as the generic name of Tamagawa Seiki products, the name indicates how we integrate advanced technologies of motors, sensors, electronics and precision machinery in a balanced way.

Tamagawa Seiki applies the concept of MOTORTRONICS to the development and manufacture of all kinds of automated systems for the Amusement Application (AA), Car Application (CA), Defense Application (DA), Factory Application (FA) and Science Application (SA).

Since our foundation, for eight decades, we have constantly been at the frontier of angular accuracy in sensing technologies.

The principles underlying what we attempt to achieve can be compared to the capabilities of the human body; sensor technologies are like the nervous system, electronics is like the brain, and precision machine technology like the body tissue.

Also our software technology enhances the total function.

Driving Forward the Frontiers of Technology

From Sensors to Applied Systems — From the Office All the Way to Outer Space —

Throughout its history, Tamagawa Seiki has succeeded in manufacturing products with the most accurate angular control possible at the time.

This attitude will continue, even if it takes more than 10 years to improve the accuracy by 1 digit.
Business Summary

Tamagawa Seiki started its business form developing defense-related products. Sticking to the accuracy and quality of products with highly reliable technology that we have cultivated there, we are working on the development of new technologies and products.

Aviation, Space & Defense-Related Products

Main Products:

- Angular velocity sensors and systems
  - Gyros
  - Rate gyros (mechanical type)
  - Gas rate sensors
  - Fiber optical gyros
  - Ring laser gyros
  - MEMS gyros
  - Inertial measurement equipment
  - Attitude heading reference system
  - Accelerometers, Inclinometers
  - Servo accelerometers

- Aviation instruments
  - Torque, Servo motor, LVDT, RVDT, Resolver
  - Power supply (Rectifier, AC/DC, DC/DC)
  - Engine indicators and instruments
  - Aircraft indicators and instruments
  - Electric actuators and other instruments
  - Pump
  - Valve

- Special instruments
  - S/D, D/S Signal converters
  - Rocket management systems (RMS)
  - Missile control devices
  - Surveillance Camera System
  - Slip ring
  - Optical measurement equipment
  - Position detectors
  - Trackballs
  - Throttle lever
  - Overhaul of equipment listed above

- Motors and Sensors for Outer Space
  - Reaction wheel
  - Brushless synchros and resolvers
  - Encoders
  - Brushless DC motors
  - Resolvers (geared)
  - Brushless DC motors
  - Encoders
  - Stepmotors (geared)
  - Actuators
  - Vacuum equipment
  - Ground test equipment
  - Mechanical units for space instrum

Brushless DC motor for driving flexible paddles in solar cells

These products play active role in 5 different application fields.

Defense Application  Car Application  Factory Application
Servo Components

Main Products:
- AC servomotors
- Step motors (2-phase / 5-phase)
- Step motor encoders
- DC motors
- DC motor encoders
- Optical Rotary encoders (Absorutive / Incremental)
- Magnetic encoders
- LVDTs / RVDTs
- Synchrons and resolvers
- Brushless resolver “Smartsyn”
- VR type resolvers “Singlsyn”
- Multi-pole & speed synchrons and resolvers
- MEMS gyro

System equipments

Main Products:
- Iron and steel equipment
- Water treatment equipment
- Vehicle equipment
- Ship related equipment
- Peripheral equipment for semiconductor manufacture
- Machine tool components
- Logistics related equipment
- Applied optics equipment
- Medical care equipment
- Spatial stability equipment
- Test and inspection equipment
- Smart Cam System
- Servo drivers and controllers
- Trackballs
- Teaching aids
- Leisure equipment
- Inertial measurement Unit

Quality Policy

The tenacious commitment to the quality makes it possible to make things in the unit of “seconds”.

Action Guidelines

Providing our Products and Services to be Safety and Reliable to Customers

“Each one promises Quality without the compromise”

- We will assure the quality, cost and delivery of products by processes ourselves.
- We will execute exactly to conform to the requirements of customers and operate the quality management system, as well as compliance.
- We will aim to improve continuously the validity and efficiency of quality management system to increase its performance.
- We will settle the quality targets every year and place our effort to attain them in TQM activities.

Environment Policy

We are promoting consideration to the environment from the viewpoint of CSR.

Based on corporate philosophy of “Striving to build an industry ready for the 21st century through creative business activities, contributing to the economic revitalization of communities”, as Tamagawa Seiki we make improving the environment a part of every step we take.
Tamagawa Network

Tamagawa Seiki has developed production and sales bases in different areas of Japan as well as in the world to respond flexibly to various customer needs.

Network in Japan

Headquarters / First Plant / Space Electronics Laboratory
Occupied area: 13.6200m²
Building space: 10.4600m²

Second Plant / Commercial Aircraft Group / Motortronics Laboratory / Motion Control Laboratory
Occupied area: 44.0000m²
Building space: 23.2000m²

Third Plant / Space Electronics Laboratory
Occupied area: 35.4000m²
Building space: 10.4000m²

Hachinohe Plant
First Hachinohe Factory
Occupied area: 36.3000m²
Building space: 5.5000m²

Second Hachinohe Factory
Second Hachinohe Factory
First Fukuchi Factory
Second Fukuchi Factory
Misawa Factory

Aomori Prefecture
Hachinohe plant
First Hachinohe Factory
Second Hachinohe Factory
First Fukuchi Factory
Second Fukuchi Factory
Misawa Factory

Matsukawa Town, Nagano Prefecture
Third Plant

Iida City, Nagano Prefecture
Headquarters / First Plant / Second Plant

Kisarazu City, Chiba Prefecture
Tamagawa Sky Precision Co., Ltd.

Osaka Office

Chubu Office

Kagoshima Office

Kirishima City, Kagoshima Prefecture
TAMAGAWA AERO SYSTEMS Kagoshima Satellite

TAMAGAWA SEIKI CO., LTD.
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FAX: +81-265-21-1861

Tokyo Office: 3-19-19 Shinkamata, Ohta-ku, Tokyo 144-0054 Japan
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FAX: +81-3-3738-3134

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PHONE: +886-92-0214-645
FAX: +886-7-3502257

TAMAGAWA HONG KONG LIMITED
Unit1010 10/F, Tower 3 Enterprise Square, No.9 Shoung Yuet Road, Kowloon Bay, Hong Kong
PHONE: +852 2753 9668
FAX: +852 2753 9669

Tamagawa Seiki Suzhou Co., Ltd.
TIAICANTAMAGAWA TRADING CO., LTD.
Nodi Sanhe Road, Luda Town Taicang city, Jiangsu Province China
PRC 215142
PHONE: +86-512-53200791
FAX: +86-512-53200786

Tamagawa Europe GmbH
Magirus-Deutz-Str. 14, 89077 Ulm Germany
PHONE: +49 731 96 33 89 52
FAX: +49 731 96 33 89 57
Global Network and Performance

**World' Market Ratio (2018)**

- **$375 Million/year**
  - **DOMESTIC** 79.0%
  - **ASIA** 9%
  - **EUROPE** 6%
  - **U.S.A.** 6%

**Sales Market (2018)**

- **$375 Million/year**
  - **Factory Application** 45%
  - **Car Application** 34%
  - **Amusement Application** 1%
  - **Science Application** 4%
  - **Defense Application** 16%

**Consolidated sales**

**Unconsolidated Sales**

**Transition of Sales (Tamagawa Seiki Group)**

- **$Millions/Year**
  - **2008** $370
  - **2009** $390
  - **2010** $384
  - **2011** $408
  - **2012** $433
  - **2013** $447
  - **2014** $467
  - **2015** $489
  - **2016** $436
  - **2017** $346
  - **2018** $313

- **For Exports**
  - **Consolidated sales**
  - **Unconsolidated Sales**

- **For Domestic**

**Representative office in Taiwan**

- Tamagawa Europe GmbH
- Tamagawa Seiki Suzhou Co., Ltd.
- TAICANG TAMAGAWA TRADING CO., LTD.
- TAMAGAWA HONG KONG LIMITED (China)

(TAMAGAWA HONG KONG LIMITED (China)

(Tamagawa Europe GmbH (Germany)

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(TAICANG TAMAGAWA TRADING CO., LTD.)

(TAMAGAWA HONG KONG LIMITED (China)