

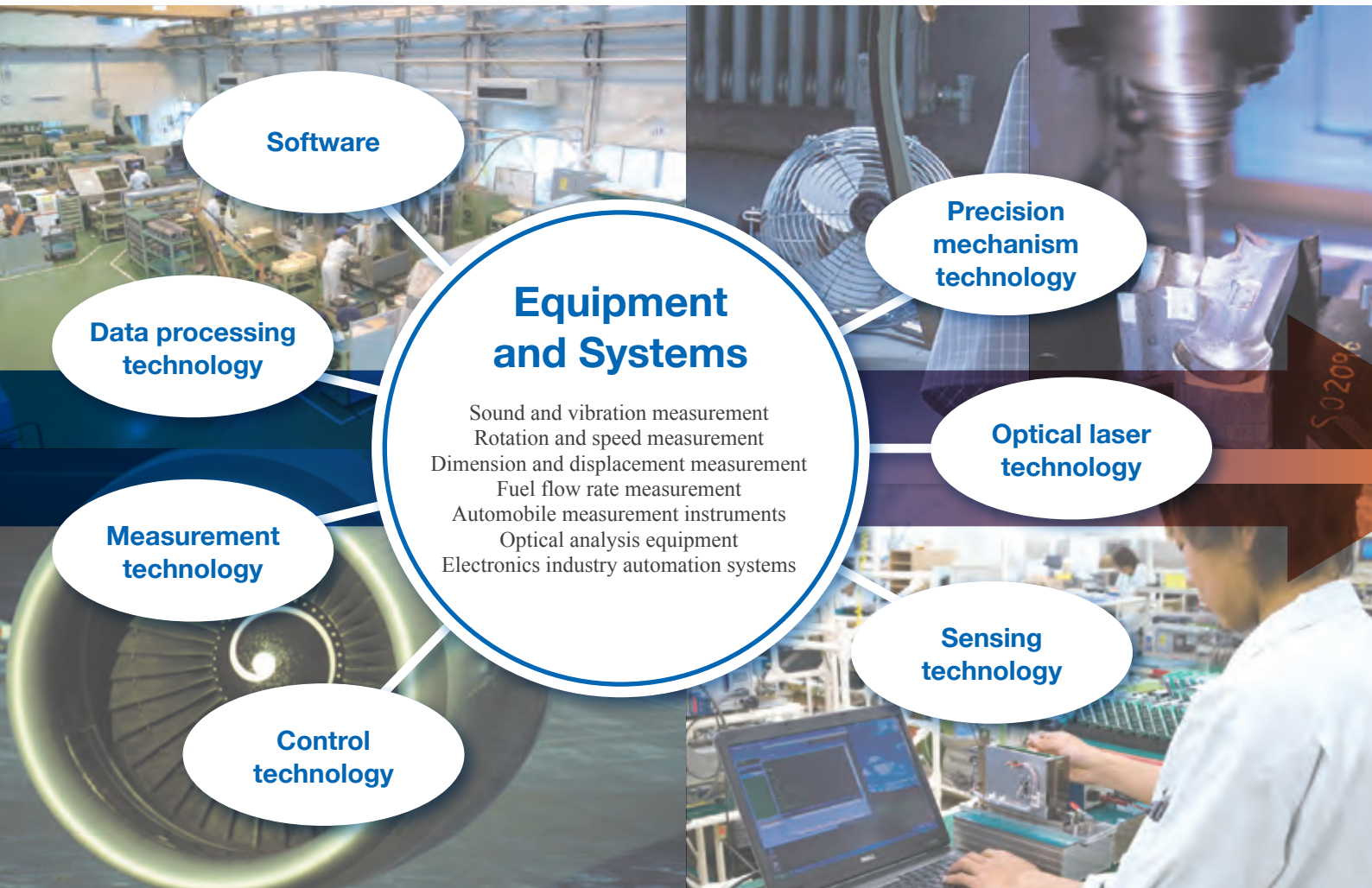


## ONO SOKKI-OVERSEAS COMPANY PROFILE

Ono Sokki has been manufacturing digital instruments since the word "digital" was not popular at all. "Do what others do not do" is the words describing Ono Sokki spirit very well. The measurement technology has been contributing technological evolution of modern industries, and now it is also a key element to realize comfortable environment for human being. Ono Sokki is one step ahead providing tools and solutions to create better quality of both industry and human life.

# PROGRESSIVE

As a company specializing in measurement, control and information-handling technologies, Ono Sokki plays an active role in the global development of both basic and leading-edge industries, such as the automobile, shipbuilding, aeronautical, machinery and electronics industries. Ono Sokki also offers technologies and products that serve as key solutions for various needs relating to environmental issues and energy conservation. We at Ono Sokki are dedicated to meeting the needs of users from not just these, but a variety of industry sectors, by developing total system solutions which make use of our sensing, metering, data-processing and precision-machining technologies. This strategy of continually adding value to our products is what keeps Ono Sokki progressive and one step ahead of the competition.





## Head Office



Acoustic Laboratory



Automotive Testing Laboratory

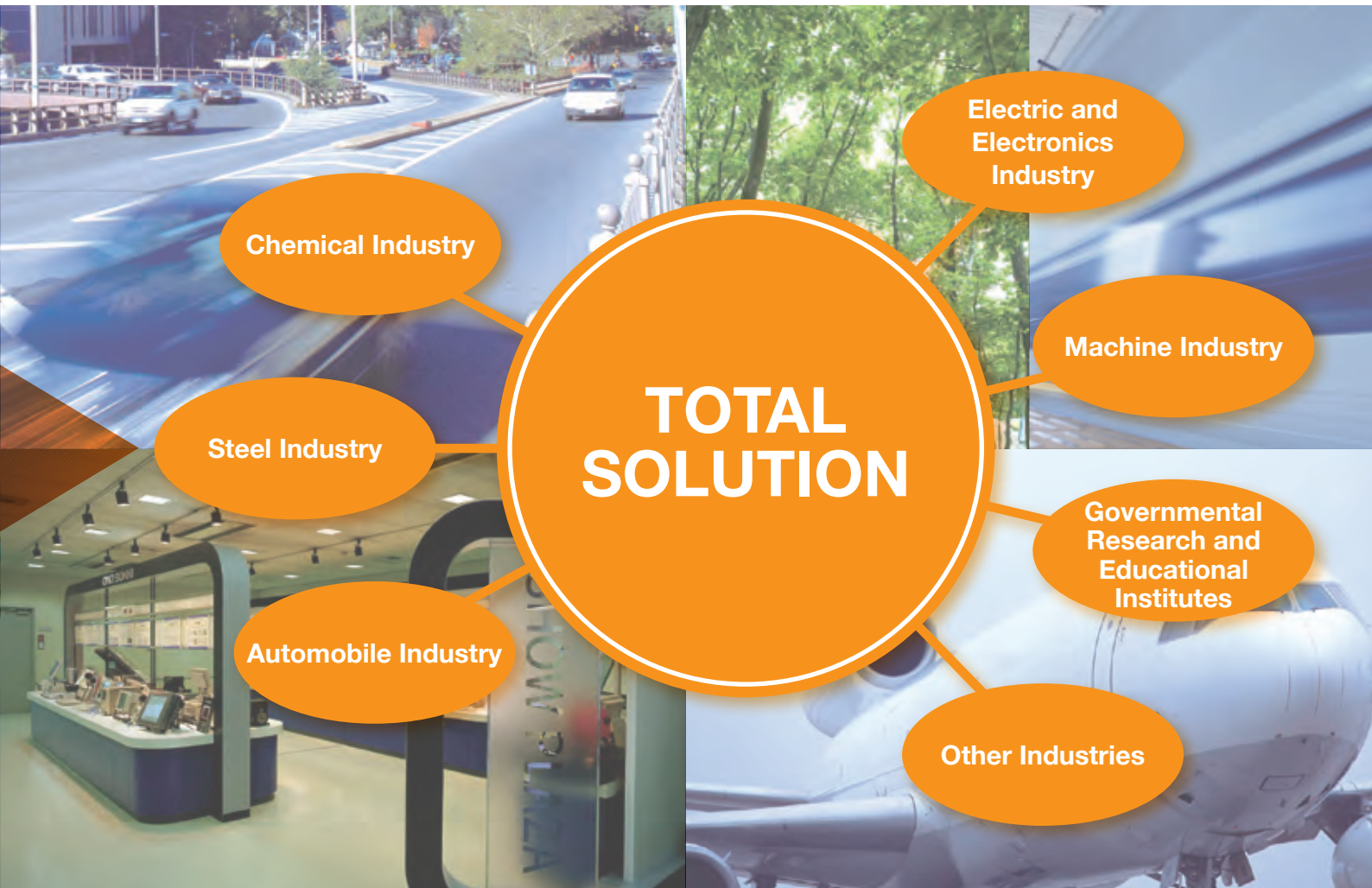


Yokohama Technical Center

## Utsunomiya Technical & Product Center



Automotive Testing Laboratory  
Utsunomiya I & II



# LEADING PRODUCTS OF

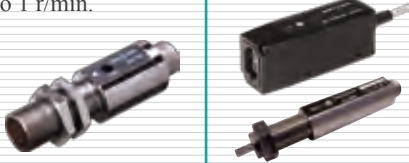
# ONOSOKKI

## Revolution and Torque Measurements

### ROTATIONAL DETECTOR (MP series / LG series)

You can select from both detection gear-required type and built-in gear type sensors. The MP-981 can measure low rotation speed down to 1 r/min.

Compact and all-in-one type optical detector. The non-contact detection method eliminates any effects on objects under measurement.



### DIGITAL TORQUE DETECTOR (TH series)

The TH series is easy to use high precision torque detector, having a high durability and long service life. Accurate measurement has been enabled by the new magnetic phase difference method, and AC power supply and switching of the rotation direction (CW/CCW) are no longer required. The high-speed rotation type can measure up to 25,000 r/min of a rotating body.



### DIGITAL TACHOMETER (TM series)

Compact and light weight. Conforms to DIN standard size (96 × 48 mm). Can be connected with various detectors, meeting requirements for various measurements.



### ELEVATOR SPEEDOMETER (EC-2100)

Designed for maintenance, adjustment and inspection of elevators. Wide measurement range up to 2,000 m/min, saving calculation time with 10 ms. Useful for a high speed elevator. The distance measurement function (option) can measure actual moving distance of an escalator after emergency stop operation.



### DIGITAL TORQUE METER

Assured high accuracy, stability and durability against overtorque. Various types of detectors cover entire range from microscopic to gigantic torque.



### DIGITAL HANDHELD TACHOMETER (HT series)

Both contact and non-contact types are available. Each type is small size and light weight. Very handy for speed measurements.



### ADVANCED TACHOMETER (FT series)

FFT computing type, small size and light weight. Measures rpm of a rotating shaft without any marker attached on it, or even if the shaft itself is not come out.



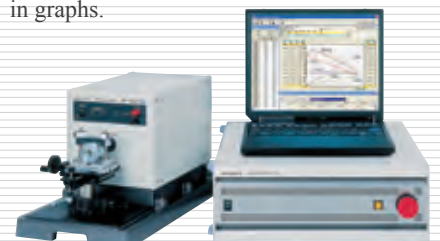
### FIBER OPTIC DETECTOR (FG-1300 + FS-540)

A High-performance non-contact type amplifier to be used with an optical fiber sensor. Perfect for measuring rotating thin shafts of micro motors, or rotation measurements of narrow spaces.



### TORQUE STATION (TS-7700)

Uses Windows®-based software for operational easiness. Applicable to both DC and AC motors. Up to 16 input signals can be simultaneously measured and be presented in graphs.



\* Windows® is a registered trademark of Microsoft Corporation in the U.S.A. and other countries.



# Automotive Related

## CHASSIS DYNAMOMETER FOR CARS

Simulating actual road load conditions of the vehicle under test, the chassis dynamometer system measures various parameters on driving performance, exhaust gas emission, etc. indoors.



## CHASSIS DYNAMOMETER FOR MOTORCYCLES

For a wide range of motorcycle tests on driving performance, durability and exhaust gas emission.



## MULTI INJECTION MEASURING SYSTEM (FJ series)

Measures multi and main injection for each stroke on fuel injection systems. Realizes precision measurement over a wide range using the on-line calibration technique. Results are shown in tables and graphs, and it gives analog output for ROI.



## ENGINE TESTING SYSTEM (FAMS-R5)

FAMS-R5 (Flexible Automatic Measuring System-Release 5) provides a variety of testing systems to suit advanced tests flexibly such as EV/HEV testing by utilizing the simulation, measurement technologies, control technologies and know-how that have cultivated through the previous model FAMS-8000.



## GEAR TESTING SYSTEM

Gear mesh noise is proved to be a major noise source in quieter vehicle interior. It analyzes gear mesh harmonics in the range of actual operation rpm or under various torque conditions.



## GRAVITY FLOW METER (FM & FX series)

A precision differential pressure gauge is employed to detect variations in liquid level inside a highly accurate stainless steel and aluminum burette.



## VOLUMETRIC FLOW METER (DF/FM & FP series)

A complete series of volumetric flow meters, used for measuring and controlling fuel consumption of various types of engines. It is highly accurate and covers a wide range of flow rate. Convenient for measuring on board.



## MASS FLOW METER (FM & FZ series)

Capable of continuous measurement by the principle of the Coriolis force without being affected by temperature or pressure. It is also available to measure density.



## ENGINE TACHOMETER

Wide selection of tachometers for gasoline engines, diesel engines and motors. Easy to use for checking engine speeds accurately in combination with engine rotational detectors.



## DIGITAL ENGINE TACHOMETER (CT-6700)

Used with a variety of sensors, it can measure rotational speed for virtually all types of engines. Its speed comparison function can be used to give the alarm of abnormal engine speeds.



## COMPACT & HIGH-SENSITIVE GPS SPEEDOMETER (LC-8300)

LC-8300 can measure speed, distance and other vehicle-related items by satellite signals of GPS/GLONASS. Mutual interpolation of GPS and IMU enables measurement of high accuracy and high function. It allows measurement even at a limited space. Easy to see, easy to operate with a touch panel.



## COMBUSTION ANALYSIS SYSTEM (DS-3000 series)

A successor to the DS-2000 series Combustion Analysis System. Basic functions such as monitoring, measurement/calculation and data storage are packaged in the basic software. You can perform a variety of analyses including transient combustion, knocking, and multiple injection by adding optional software.



# Acoustic and Vibration Data Processing

## MICROPHONE (MI series)

A series of microphones, including high sensitivity type and wide-band type for a variety of applications. The microphones exhibit good environmental stability with regard to temperature and humidity. A selection of preamplifiers meet various applications.



## SOUND CALIBRATOR FOR MICROPHONE

Model name	SC-3120	SC-2500	SC-2120A
Appearance			
Type	Piston-phone	Speaker	Speaker
Applying standard	IEC60942:2003		
	Class1/C	Class1	Class2
Applicable microphone	1/2-inch & 1/4-inch*		Speaker

\*Calibration of 1/4-inch microphone requires the SC-0313 adapter which is provided with the MI-3140 preamplifier (sold separately).

## SOUND LEVEL METER (Basic type)

- Simultaneous measurement of  $L_p$ ,  $L_{eq}$ ,  $L_E$ ,  $L_N$ ,  $L_{max}$ ,  $L_{min}$  and  $L_{pk}$ .
- Wide linearity range: 100 dB
- Simple and easy data processing via RS-232C or USB.
- Comparator output function (option)



## SOUND LEVEL METER (High functional type)

- Simultaneous measurement of  $L_p$ ,  $L_{eq}$ ,  $L_E$ ,  $L_N$ ,  $L_{max}$ ,  $L_{min}$  and  $L_{pk}$ .
- Wide linearity range: 110 dB.
- Possible to measure and record while listening via headphones.
- Performs more than the sound level meter by adding options; analyzer, recorder, comparator.



## ACCELEROMETER (NP series)

Accelerometers are available in both charge output and built-in amplifier types. Used in conjunction with PS series amplifiers or other ONO SOKKI instruments, complex vibrations of objects can be measured with a high degree of accuracy. A sensitivity calibrator can be purchased.



## LASER DOPPLER VIBROMETER (LV series)

This is a non-contact laser vibrometer using a laser Doppler technique. You can detect the vibration of microscopic or high frequency objects with no load.



## VIBRATION COMPARATOR (VC-2200/3200)

TEDS function enables easy sensor settings. You can set different types of band-pass filters for the detected signal in order to make a judgment. Measured vibration values can be transferred via RS-232C interface. It incorporates analog output, too.



## PORTABLE DATA RECORDER FOR ACOUSTICS & VIBRATION (DR-7100)

The DR-7100 Portable Data Recorder can record sound and vibration data simultaneously with ease and high speed. It enables evaluation of sound and vibration according to changing rotational speed.



## HIGH-SPEED RESPONSE F/V CONVERTER (FV series)

Converts input frequency into voltage or current signals in several microseconds, being ideal for transient speed fluctuation analysis such as measurements of elevator speed fluctuation, electric motor startup characteristics, etc.



## SOUND & VIBRATION REAL-TIME ANALYSIS SYSTEM (DS-3000 series)

Flexible building of multi-channel measurement system up to 64 channels by "FRAME LINK". Backup data can be recorded automatically while performing real-time analysis. Various software of sound and vibration analysis are available such as FFT, real-time octave, tracking and sound intensity.



## SOUND INTENSITY ANALYSIS SYSTEM

This system consists of DS series FFT Analyzer and MI-6420 Acoustic Intensity Probe with 3D arranged microphones. You can analyze noise emission distribution from noise source, and search the noise source position with this system.



## PORTABLE 2-CH/4-CH FFT ANALYZER (CF-9200/9400)

Compact and light weight body (approx. 3.9 kg) with a 10.4-inch color touch panel for easy portability. 2-ch/4-ch input with data recording function, equipped with CCLD & TEDS. Provides multiple analysis and calculation functions, including a newly incorporated real-time tripartite graph display function.



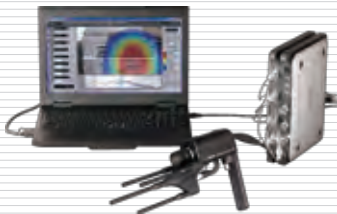
## FFT COMPARATOR (CF-4700)

Accurate Pass/Fail judgment and quality inspection by analyzing the frequency signal of sound/vibration on production lines. Pass/Fail judgment function allows precise inspection of various products. Measurement data and judgment result can be managed in a PC by means of copying those data in USB memory.



## SOUND SOURCE VISUALIZATION SYSTEM BY BEAMFORMING SOFTWARE

This system enables figuring out the sound source position and recording of the sound. You can perform more detailed analysis including offline analysis by using with the OS-2000 series software, as well as real-time monitoring by BF-3100. Used with DS-3200 series as a measurement unit, and MI-5420 as a sensor.



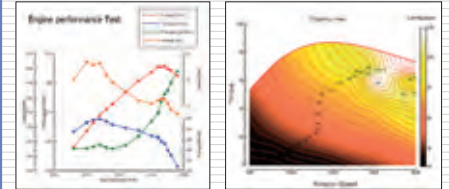
## TIME-SERIES DATA ANALYSIS SOFTWARE (OS-2000 series)

OS-2000 series can read various data format quickly, and analyze the sound and vibration data offline. You can display multiple data in a screen simultaneously, and also play back the sound. It includes FFT analysis, sound quality evaluation, sound fluctuation analysis etc., which can clarify the features of the sound.



## MULTI-FUNCTIONED GRAPH CREATING SOFTWARE (OC-1300 series)

OC-1300 series is graph creating software that anyone can easily make a beautiful graph report quickly and smoothly. Various kinds of graph are able to be created as desired such as multi-axis graph, 3D/4D graph, and color map.



# Dimension and Displacement Measurement

## NON-CONTACT THICKNESS METER

For conductors and semiconductors. Used with VE series gap detector, the CL series measures thickness as well as gap between sensor and object. Optional resolution: up to 0.02μm



## DIGITAL GAUGE (High-resolution type)

Ball spline bearing and development of new optical system achieve both of high resolution and environment resistance (IP66G). Detected signal can be obtained as square wave to connect PLC directly. The exclusive counter provides various calculation functions.



## ROTARY ENCODER (RP series)

The series ranges from general purpose industrial type to ultra-compact type. There is a selection of pulse rates and maximum rotations.



## DIGITAL GAUGE (Sensor) (BS/GS series)

Measurement range: Max. 100 mm\*1  
Resolution: 0.1\*2 μm to 10 μm  
Various types of gauge sensors (including space-saving type) are available. Please use with the DG series gauge counter.



## DIGITAL GAUGE (Counter) (DG series)

Combined with the BS/GS series gauge sensor. DIN 72 standard models which are easily mounted on a variety of panels.





# History

- 1954: Ono Sokki Co., Ltd. was established in Yokohama.  
Manufactured the first tachometer in Japan for use with jet engines.
- 1955: Started manufacture of a wide variety of digital instrumentation.
- 1961: For the first time in Japan, Ono Sokki manufactured transistorized digital instrumentation.
- 1963: Developed digital torque measurement instruments which were widely acclaimed throughout Japan and the world.
- 1963: Completed and delivered computer on-line data management device for use in engine development.
- 1968: Introduction of IC technology into all products.
- 1973: Development of CF-type statistical analysis system using a built-in minicomputer.
- 1977: Development of ultra-rugged high-reliability linear gauge.
- 1979: Developed the first portable dual channel FFT analyzer with 64-K byte mass-storage memory, model CF-500 and put on mass-production line.
- 1986: Listed on the First Section of the Tokyo Stock Exchange.
- 1986: Ono Sokki Technology Inc. was established.
- 1989: New Technical Center was established in Yokohama.
- 1990: Acoustics Lab. was established in Technical Center.
- 1992: Ono Sokki Beijing Office was established.
- 1996: Conformance to ISO 9001 was certified.
- 1997: Conformance to ISO 14001 was certified.
- 2004: Automotive Testing Lab. was established in Technical Center.
- 2006: Ono Sokki (Thailand) Co., Ltd. was established.
- 2007: Automotive Testing Lab. Utsunomiya was established in Utsunomiya factory.
- 2009: New office building was established in Shin-Yokohana. Relocation of head quarter and Software Development Center to the new building in Shin-Yokohama.
- 2012: Ono Sokki India Private Ltd. was established.  
Ono Sokki Shanghai Technology Co., Ltd. was established.
- 2015: Automotive Testing Lab. Utsunomiya II was established in Utsunomiya Technical & Product Center.

## Overseas Subsidiaries and Offices

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