



**FUKUDA**

福田交易株式會社

Company Profile 2019

# History

1940's

1940-Rakuo Fukuda (1904-1981) founded his trading company in Tokyo. The Company specialized in imports of bearings, machine tools, automobile and aircraft parts. We closed our company in 1941, due to World War II.

1980's

Hiroshima and Hokuriku branch offices opened. Inventory control center was established in Urayasu. Atsugi factory was opened to manufacture precision lock nuts. Engineering department established to start technical services.

1950's

1950-The company resumed operations as, R. Fukuda & Company Ltd., Imports of bearings and cutting tools became an important area of its business activities.

1990's

Atsugi and Kyushu branch offices opened. The company was renamed Fukuda Corporation. Our Business shifted from MRO to OEM.

1960's

Nagoya and Osaka branch offices opened to increase precision bearings for machine tool, electrical machinery parts and automobile parts. At that time, industrial import parts made up 44% of our sales, while automobile parts were 56% of our sales.

2000's

Inventory control center moved to Chiba. ISO 9001 and ISO 14001 acquired.

1970's

We stopped handling automobile parts in 1977. At that time, import parts business increased to 86%.

2010's

Mr. Takayuki Fukuda was appointed President, while Mr. Ryoza Fukuda became Chairman.

# Business Concept

**We are an import Firm specializing  
in machine Technology**

**=Superior Products from All Parts of the World=**

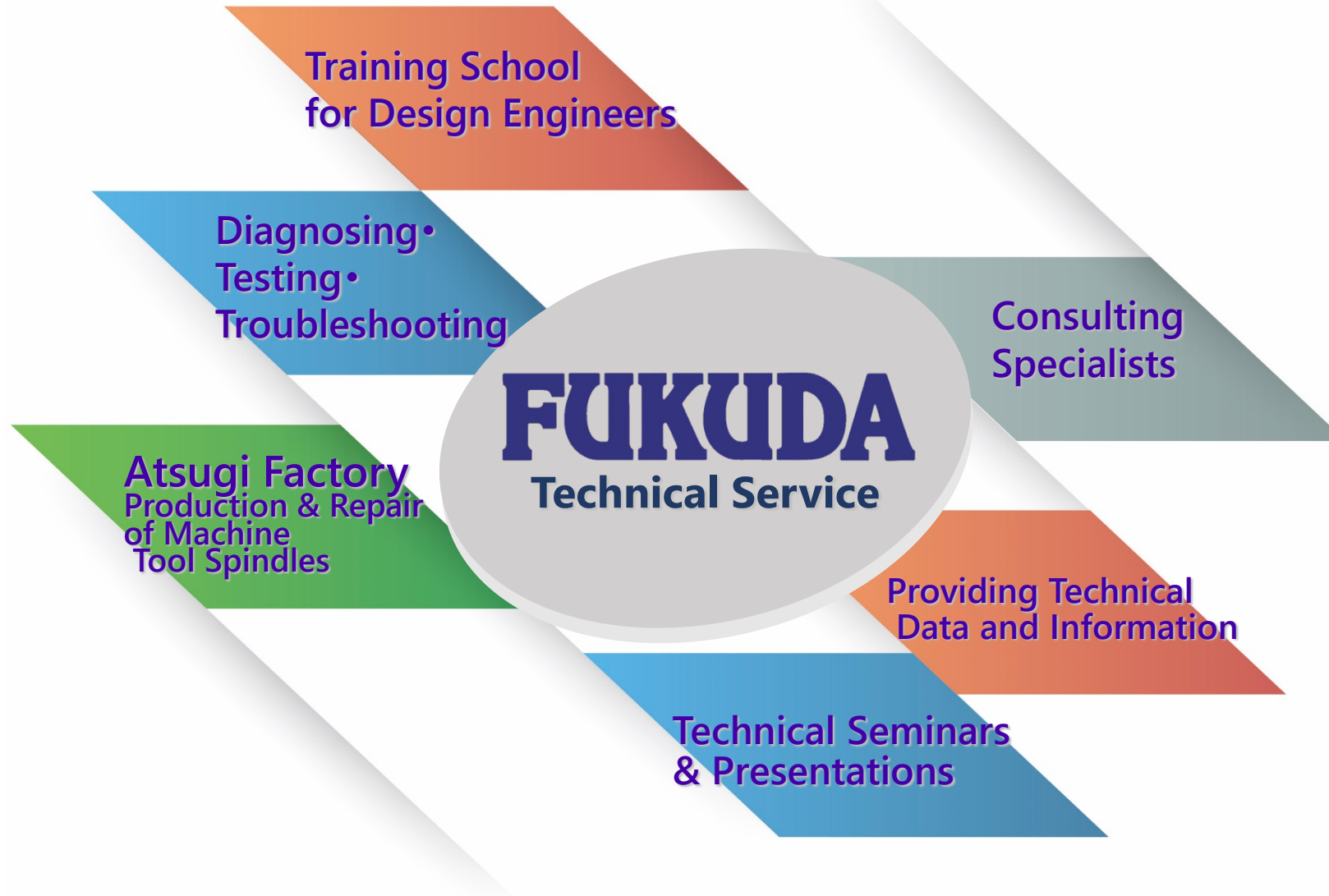
We are introducing and offering to the Japanese machine industry unique and exceptional accessory parts and equipment for machinery - produced in Europe and North America.



# Business Concept

We offer more than just products...

**FUKUDA**  
よりよいものを世界から

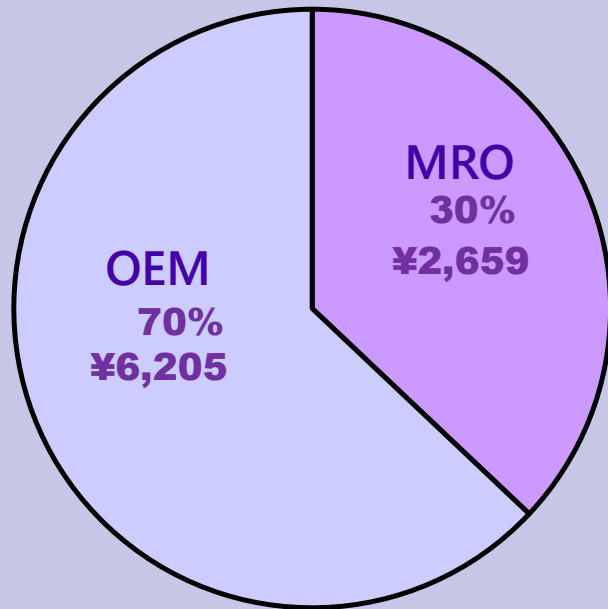


# FUKUDA's Business Fields

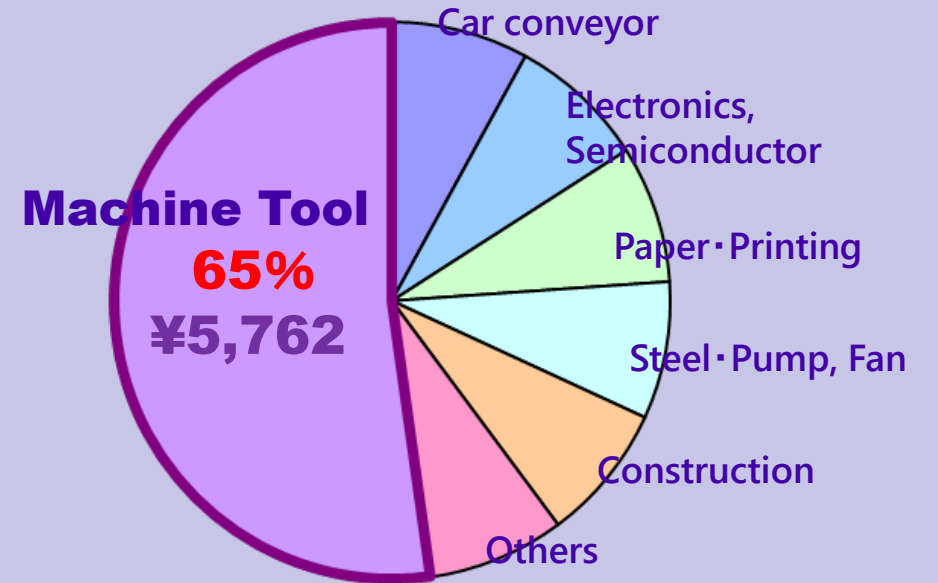
## Sales Volume

¥8,864

(Apr.2018~Mar.2019)

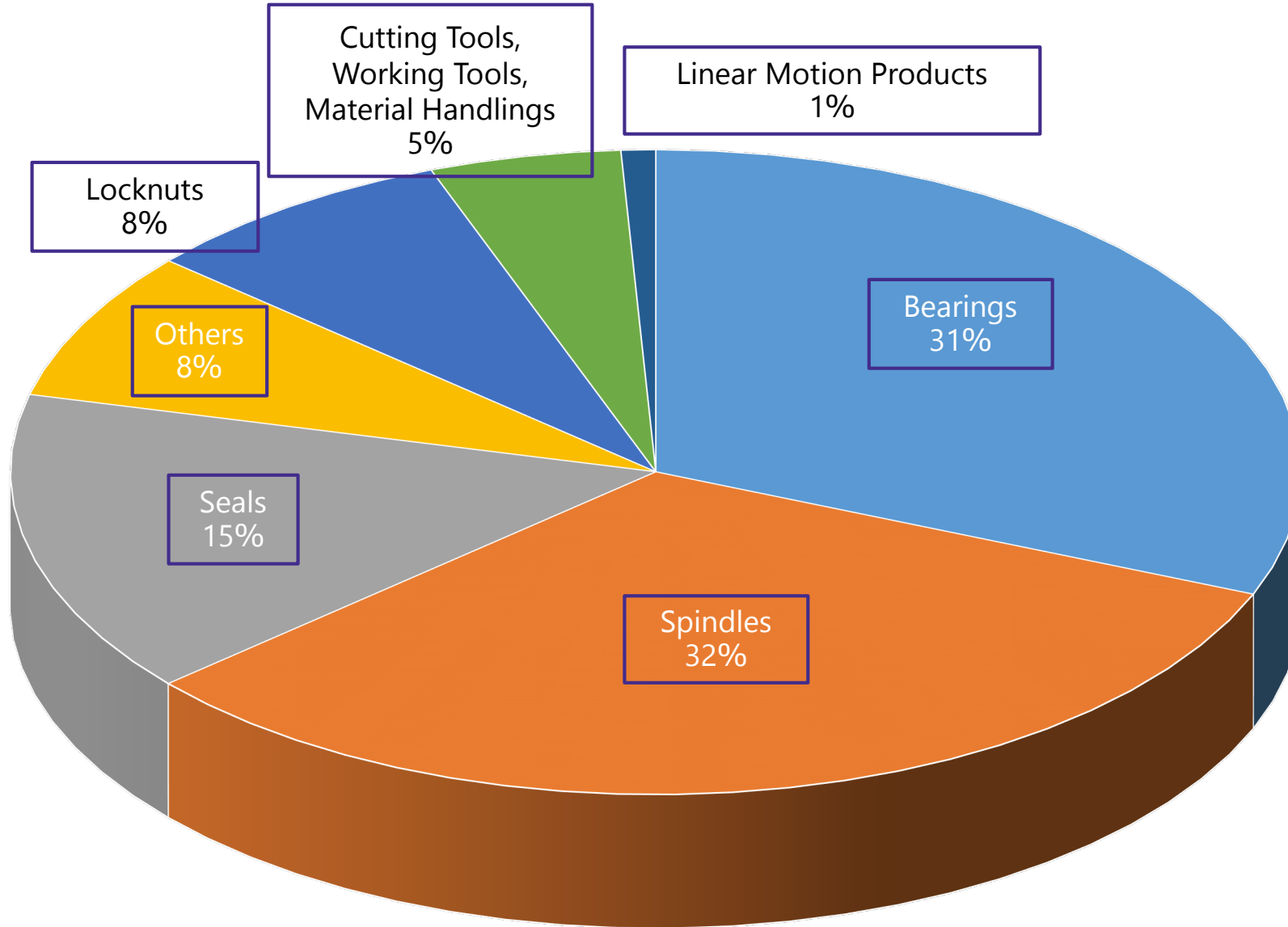


## Sales Fields



(¥=million)

# Sales Breakdown



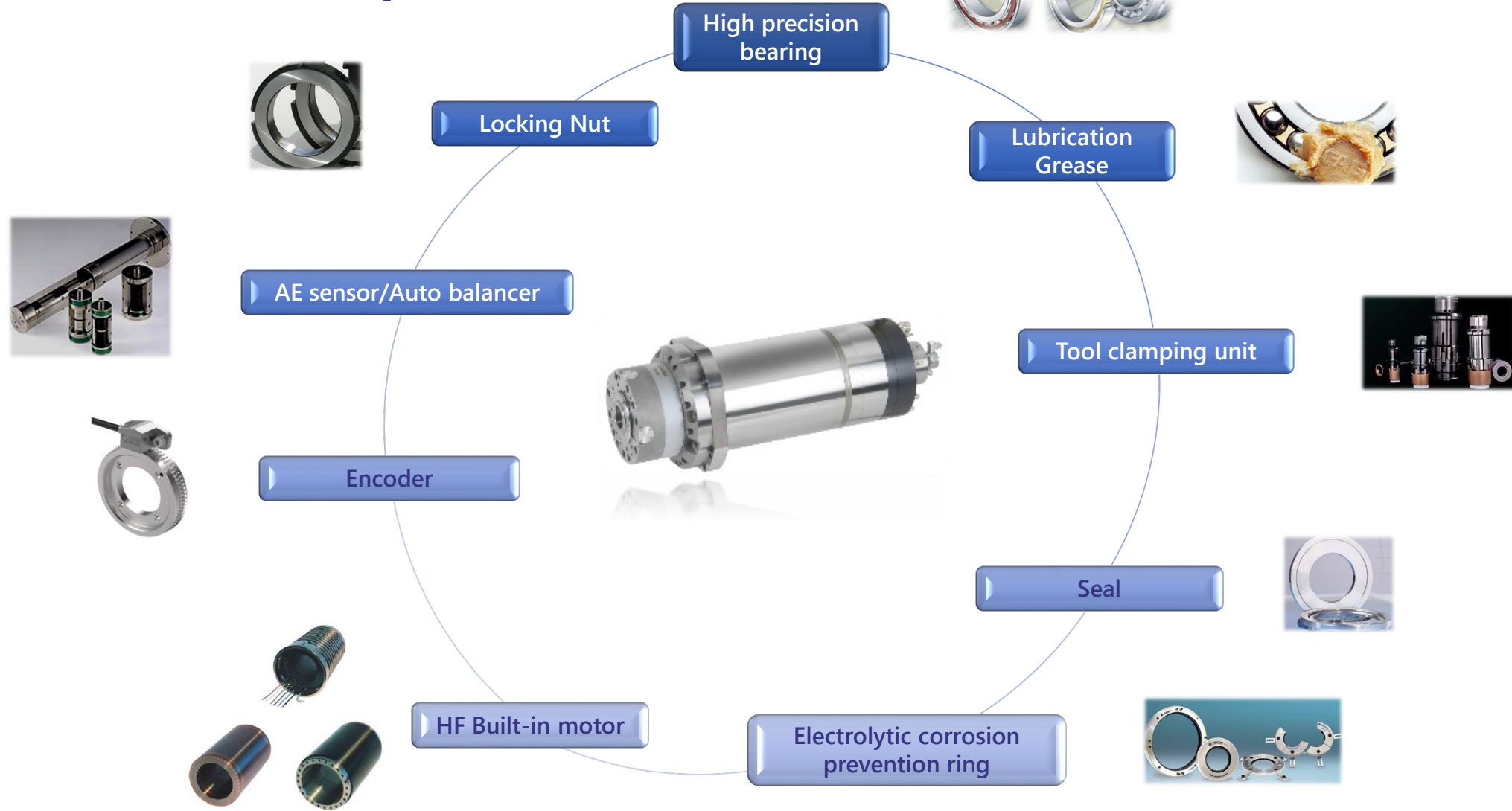
# Product portfolio for Machine Tool

## Products for Machine Tool



# Product portfolio for Machine Tool

## Products for Machine Spindle





# Main Customers

AISIN AW CO., LTD.

Amada Co., Ltd.

BRIDGESTONE CORPORATION

CITIZEN MACHINERY CO., LTD.

DENSO CORPORATION

DMG Mori Seiki Co., Ltd.

EBARA CORPORATION

FANUC LTD

FUJI CORPORATION

HONDA MOTOR CO., LTD.

HORKOS CORP

IHI Corporation

ISUZU Motors LIMITED

JAXA

JFE Steel Corporation

JTEKT CORPORATION

Kashiyama Industries, Ltd.

Kawasaki Heavy Industries, Ltd.

KUBOTA Corporation

Kobe Steel, Ltd.

Komatsu Ltd.

MAKINO MILLING MACHINE CO., LTD.

Mazda Motors Corporation

MICRON MACHINERY CO., LTD.

MITSUI SEIKI KOGYO CO., LTD.

Mitsubishi Motors Corporation

MITSUBISHI HEAVY INDUSTRIES, LTD.

Panasonic Corporation

Mitsubishi Electric Corporation

MITSUBISHI MATERIALS CORPORATION

NACHI-FUJIKOSHI CORP.

Nagase Integrex Co., Ltd.

NIKON CORPORATION

NISSAN MOTOR CO., LTD.

Komatsu NTC Ltd.

Okuma Co., Ltd.

OKK CORPORATION

Okamoto Machine Tool Works, Ltd.

ROKU-ROKU SANGYO, LTD.

SHIMADZU CORPORATION

Shin Nippon Koki Co., Ltd.

SUBARU CORPORATION

Sumitomo Heavy Industries, Ltd.

Hitachi, Ltd.

TAIYO KOKI Co., Ltd.

THK Co., Ltd.

TOSHIBA MACHINE CO., LTD.

TOYO ADVANCED TECHNOLOGIES Co., LTD.

TOYOTA MOTOR CORPORATION

TSUDAKOMA Corp.

TSUGAMI CORPORATION

Union Tool Co.

WAIDA MFG. CO., LTD.

YAMAZAKI MAZAK CORPORATION

YASDA PRECISION TOOLS K.K.

Yanmar Co., Ltd.

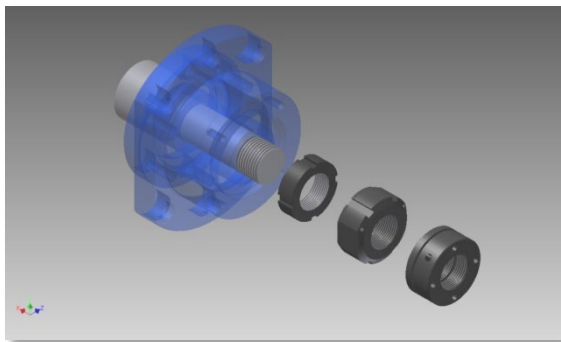
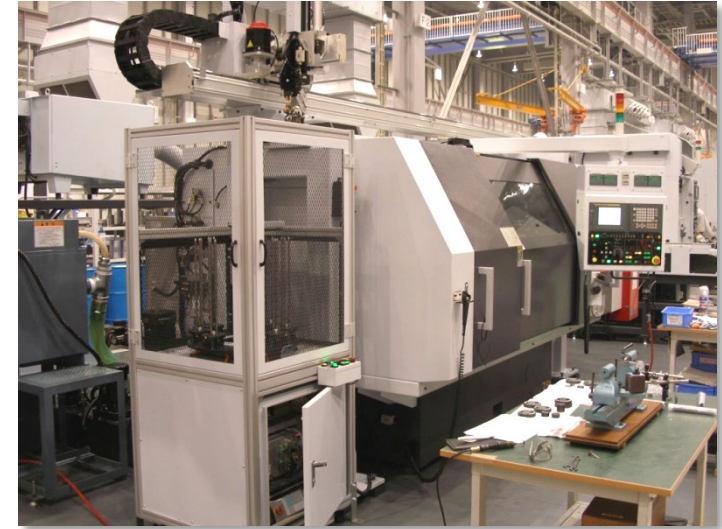
# FKD Precision Lock Nuts

In 1985, Gewinde Ziegler Swiss and FUKUDA concluded a precision lock nut license agreement. We started manufacturing Precision Lock Nut under FKD brand name in our Atsugi factory.

Subsequently, manufacturing of the Precision Lock Nut went to our domestic subcontractor.

**Precision Lock Nut - 200,000 pcs. per year**

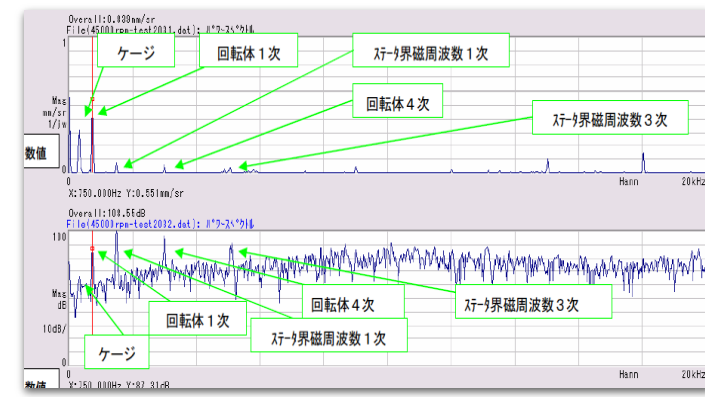
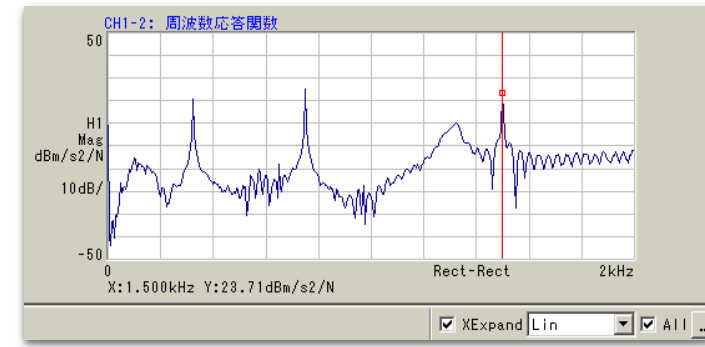
We also supply Precision Turning Nut for various applications.



# Engineering for Sales Support

Division	Mechanical Engineers	Electrical Engineers
Bearing	8	—
Spindle	5	3
Seal/Tool	6	
Linear Motion	2	

- ▶ Bearing calculation by PC.
- ▶ Design Analysis by 3D CAD.
- ▶ Design of Inverter control systems.
- ▶ Spindle repair, Bearing measurement.
- ▶ Vibration Analysis.
- ▶ Technical Seminars (6 times/year).
- ▶ Spindle Technical Seminars (3 times/year).



# Seminars for Machine Tool Design Engineers



## FKD Training School

Six times a year in Tokyo, Nagoya, Osaka and Hiroshima, we hold our “TRAINING SCHOOL” to help machine tool design engineers keep pace with developments in their fields. This helps them broaden and further their knowledge; from the fundamentals to the appropriate selection of bearings for machine tool design. During the past 122 sessions of training (as of March, 2019), 1,950 engineers, from 330 companies have attended.



## Spindle Training School

In 2014 we started our “SPINDLE TRAINING SCHOOL” for machine tool design engineers . This session includes covering extensive knowledge of the components, mainly spindle elements, drive technologies of the built-in motors / inverters, spindle incidental sensors as well as the evaluation procedure of the spindle. We introduce cutting-edge technologies from Europe and to help machine tool design engineers in their field.

# Seminars for Machine Tool Design Engineers

## Companies that have attended FKD training school - more than 10 times.

YAMAZAKI MAZAK CORPORATION	58	MAKINO MILLING MACHINE Co., LTD.	28	JTEKT CORPORATION	17	Nagase Integrex Co., Ltd.	13
TOYOTA MOTOR CORPORATION	45	Howa Machinery, Ltd.	27	WAIDA MFG CO., LTD.	17	DENSO CORPORATION	13
SHIN NIPPON KOKI CO., LTD.	41	THK CO., LTD.	27	Mitsui Seiki Kogyo Co., Ltd.	17	Brother Industries, LTD.	13
NISSAN MOTOR CO., LTD.	40	TAIYO KOKI CO., LTD.	25	TAKEDA MACHINERY CO., LTD.	17	AISIN AW INDUSTRIES CO., LTD.	13
Komatsu NTC Ltd.	40	AMADA MACHINE TOOLS CO., LTD.	22	KITAGAWA IRON WORKS Co., LTD.	17	NSS Co., Ltd.	13
OKK CORPORATION	39	BIG DAISHOWA SEIKI CO., LTD.	22	MAKINO SEIKI CO., LTD.	16	Mitsuboshi Kogyo Co., Ltd.	13
Honda Engineering Co., Ltd.	38	YASDA PRECISION TOOLA K.K.	21	YUTAKA SEIMITU KOGYO, LTD.	16	OKAMOTO MACHINE TOOL WORKS, LTD.	11
Toyo Advanced Technologies Co., Ltd.	36	HORKOS CORP	20	Kashifuji Works, Ltd.	16	Kohzu Precision Co., Ltd.	11
AISHIN AW CO., LTD.	33	THK INTECHES CO., LTD.	19	Ikegai Corp	14	Takatori Corporation.	11
Honda Motor Co., Ltd.	31	TOSHIBA MACHINE CO., LTD.	19	Mitsubishi Motors Corporation	14	Yamashina Seiki Co., Ltd.	11
SHIGIYA MACHINERY WORKS LTD.	29	TSUDAKOMA Corp.	19	ONO SOKKI CO., LTD.	14	SEIWA CORPORATION	11
Mazda Motor Corporation	29	UNION TOOL CO.	18	Nakamura-tome Precision Industry Co., Ltd.	14	YAMAZAKI INDUSTRY CO.,LTD.	11
YASUNAGA CORPORATION	28	Minebea Co., Ltd.	18	CITIZEN MACHINERY CO., LTD.	14	Matsuura Machinery Corporation	11
KANZAKI KOKYUKOKI MFG Co., Ltd.	28	MICRON MACHINERY CO., LTD.	17	ENSHU Limited	13	Okuma Corporation	10

Grand Total 1950 Engineers,  
330Companies

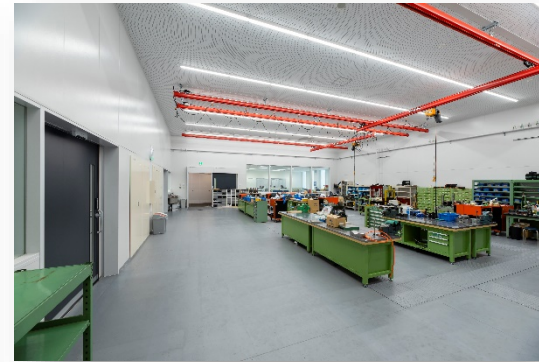
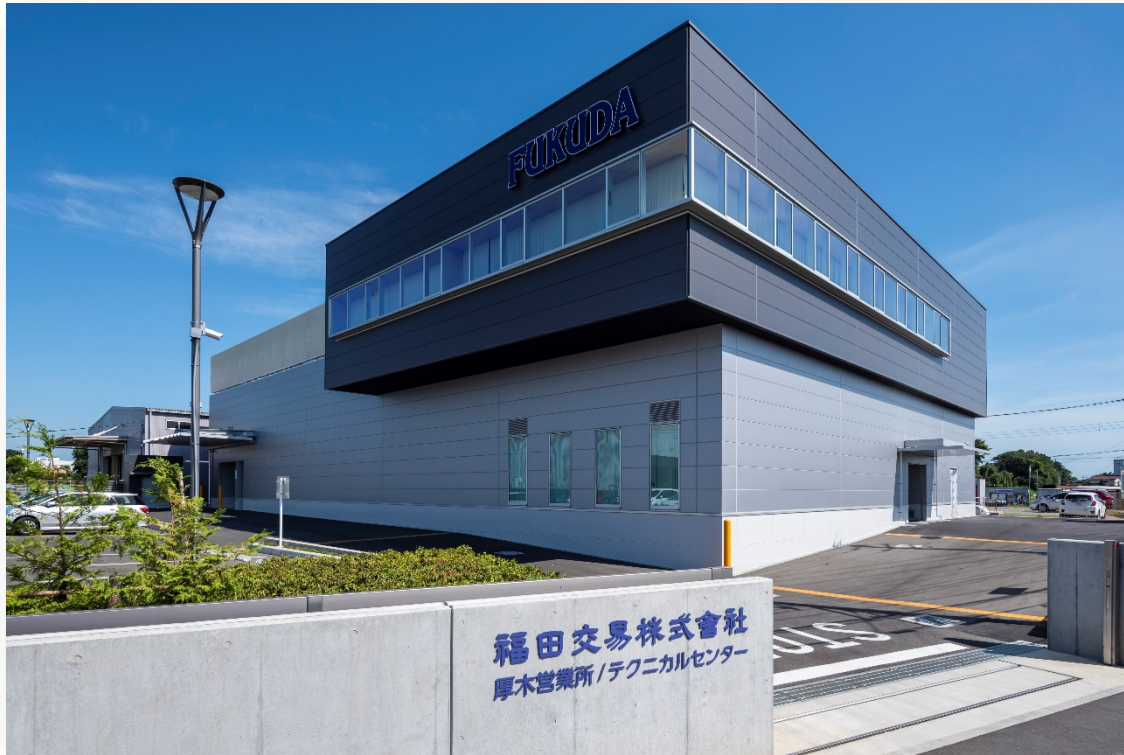
# Damaged Bearing / Spindle Analysis For Customer Satisfaction

**Customer service =** ● Quicker response  
● More precise advise **⇒ New Demands**



# Technical Center

In July 2019, Our new Technical Center was opened in Ebina, Kanagawa. It has an expanded working area for spindle overhauls, trial runs and machine shop. It is fully equipped with temperature-controlled inspection rooms for bearings, spindle components and spindle performance in dynamic behavior, and a soundproof room for acoustics noise measurement of spindles.



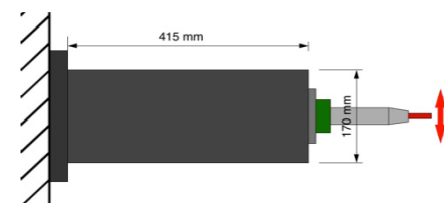
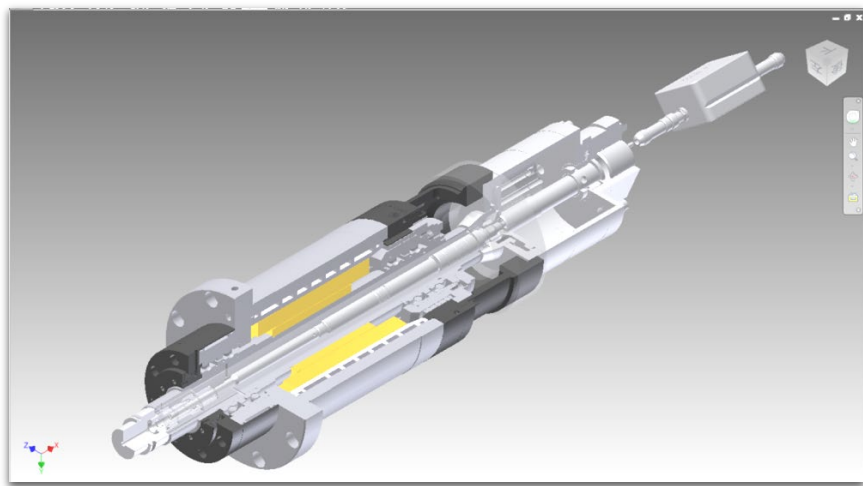
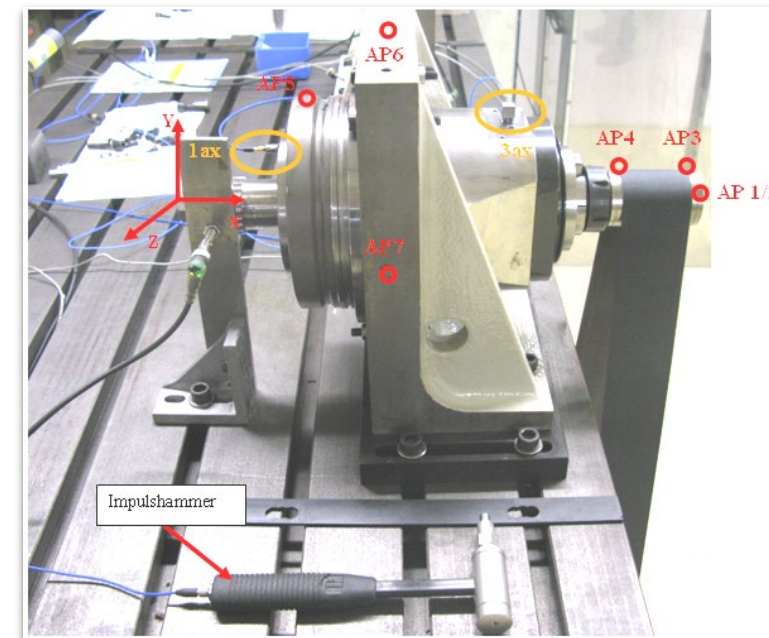
Site area: 3,000 m<sup>2</sup> Building area: 1,150 m<sup>2</sup> Total floor area: 1,660 m<sup>2</sup>

# FKD Spindle

- **Quality Control by ISO9001**
- **Designed by Autodesk 3DCAD system**

FKD custom spindles incorporate significant new and advanced technology. Our development experience using new technology helps us explain and guide not only our customers, but also our suppliers.

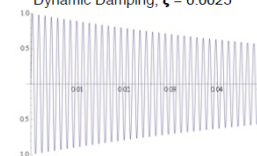
**We design and test more than 10 spindles per year.**  
These spindles incorporate new technology helping increase the spindle performance.



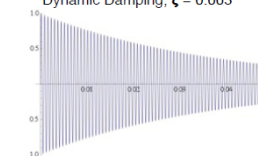
CompoTech have developed new composites that have the ability to dissipate vibrational energy.

Tests were done by comparing 3 Spindle Tubes: with and without a simulated tool of 30kg

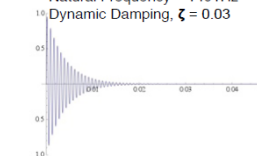
**Steel Spindle Tube**  
Natural Frequency = 734Hz  
Dynamic Damping,  $\zeta = 0.0025$



**Carbon Fibre Spindle Tube**  
Natural Frequency = 1401Hz  
Dynamic Damping,  $\zeta = 0.003$



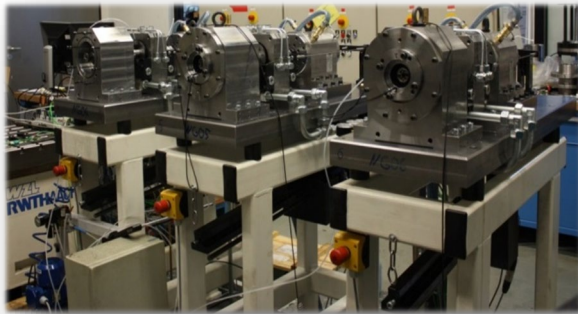
**Carbon-Graphite-Damping Spindle Tube**  
Natural Frequency = 1401Hz  
Dynamic Damping,  $\zeta = 0.03$



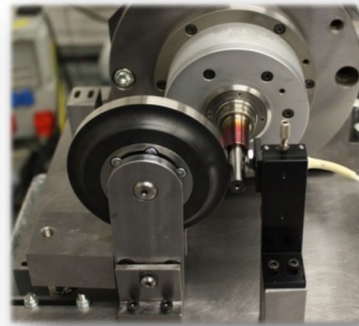


# Industry-University Collaboration

- Joint research with Aachen University of Technology WZL
- Technical exchanges with Darmstadt University of Technology PTW, and Fraunhofer Institute for Manufacturing Engineering and Automation IPA, and Fraunhofer Institute for Production Technology IPT
- We participate in The Japanese Society for Abrasive Technology, and the European Society for Precision Engineering, and also other associations and groups
- Joint research and study meetings with many Engineering Departments of several prominent Japanese Universities
- We host “FKD Innovation Days”, an international cutting-edge technology symposium for Machine Tool Technologies (see right picture below)



Source: WZL Aachen



Source: WZL Aachen



FKD Innovation Days

# FKD INNOVATION DAYS 2013

**FUKUDA**  
よりよいものを世界から

In November, 2013, we invited approximately 100 customers to the Grand Prince Hotel New Takanawa Tokyo, in Shinagawa, for two days, to attend our “FKD INNOVATION DAYS 2013.”

This engineering conference featured a Keynote Speech by Dr. Christen Brecher from WZL RWTH Aachen, an authority on advances in machine tool research.

Presentations from important suppliers regarding new technologies were well received.

We also held numerous practical workshops. The reactions to the conference were overwhelming and beyond our best hopes.

## Topics & Speakers

「How to create the future machine tools」- opening session  
Prof. Dr. Shimizu / Sophia university

「Advances in machine tool research」- keynote speech  
Prof. Dr. Christian Brecher / WZL RWTH Aachen

「Energy efficiency-Reducing power loss by modern spindle bearing concepts」  
Schaeffler / Dr. Martin Voll

「Actual developments on condition monitoring for integrated motor spindle tool clamping systems」  
Dr. Stefan Bonerz / OTT- JAKOB

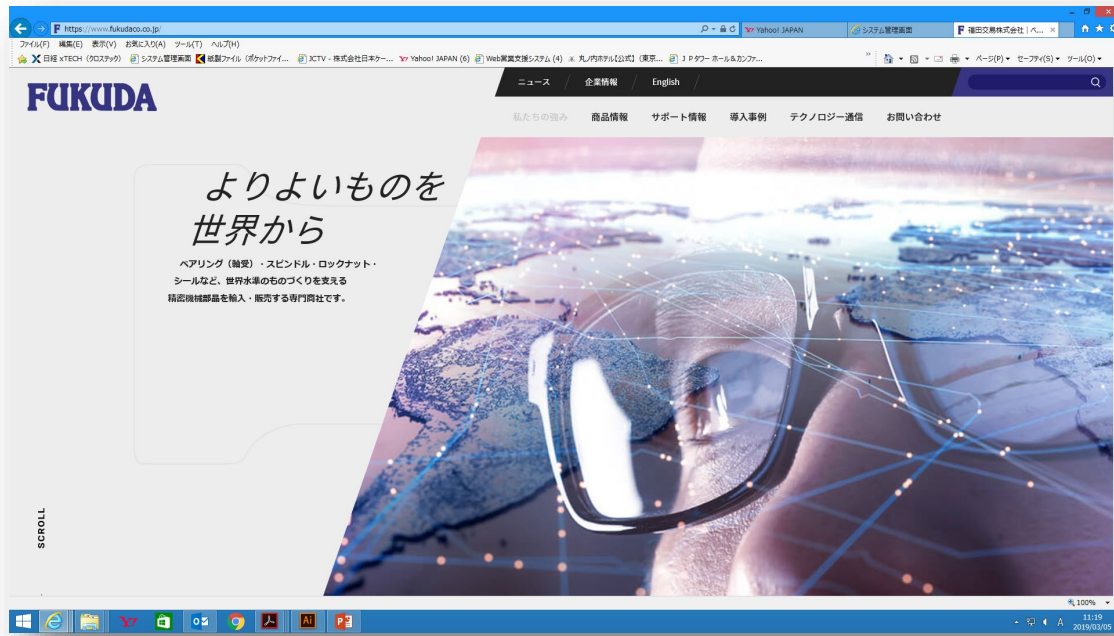
「Composites in Machine Tool Applications-material revolution」  
Dr. Ondrej Uher / COMPOTECH

「Improvement of spindle performance by Micro-Lubrication( $\mu$  Lub)」  
Dr. Bernd Moeller / GMN

「Advance hydrostatic bearing technology toward high speed・high precision of spindle」  
Dr. Leonid Kashchenevsky / ELKA PRECISION



# Sources of Information We are Providing



Website



JIMTOF2018

- ▶ We participate in trade shows such as JIMTOF
- ▶ We conduct on site demonstrations at your company
- ▶ Our web-site provides our full company profile along with seven categories of products - with full technical data.

# Surpassing Competency in Purchasing



Through close relations with overseas manufacturers and distributors that have been established for over half a century, we are ready to purchase products from all over the world, rapidly and expertly, to help service your needs.

## EUROPE

<b>ABL</b>	<b>Cooper</b>	<b>KGM</b>	<b>pro-micron</b>
<b>ATE</b>	<b>Fey</b>	<b>LENORD+BAUER</b>	<b>Protect Air</b>
<b>Balance Systems</b>	<b>GAMET</b>	<b>LEVICRON</b>	<b>SIEB&amp;MEYER</b>
<b>Barden UK</b>	<b>GMN</b>	<b>LUBCON</b>	<b>SKF</b>
<b>BEHA</b>	<b>GOETZE</b>	<b>Merkel</b>	<b>SWC</b>
<b>BIAX</b>	<b>GRW</b>	<b>MWM Schmieranlagen</b>	<b>SycoTec</b>
<b>BILSING AUTOMATION</b>	<b>Hofmann</b>	<b>NOVATOR</b>	<b>Trelleborg</b>
<b>CEROBEAR</b>	<b>HUTCHINSON</b>	<b>OTT-JAKOB</b>	<b>Wen</b>
<b>Colibri</b>	<b>Hyprostatik</b>	<b>PPE</b>	<b>WEH</b>
<b>COMPOTECH</b>	<b>INA/FAG</b>	<b>PEJO</b>	<b>WSE</b>
<b>Conoptica</b>	<b>JAKOB</b>	<b>PRECISE France</b>	<b>Ziller</b>

## AMERICA

<b>Barden USA</b>	<b>M4Sciences</b>
<b>Danaher Motion</b>	<b>McGill</b>
<b>EST</b>	<b>NEWWAY</b>
<b>FAFNIR</b>	<b>Parker/Trilogy</b>
<b>Fenner Drives</b>	<b>RIMTEC</b>
<b>Haydon/kerk</b>	<b>SKF</b>
<b>INPRO/SEAL</b>	<b>SLADE</b>
<b>KAYDON</b>	<b>TIMKEN</b>
<b>MCT</b>	

# Inventory Control

In August 2007, our New Inventory Control Center was opened. Its aim is to improve the distribution service we provide to our customers.



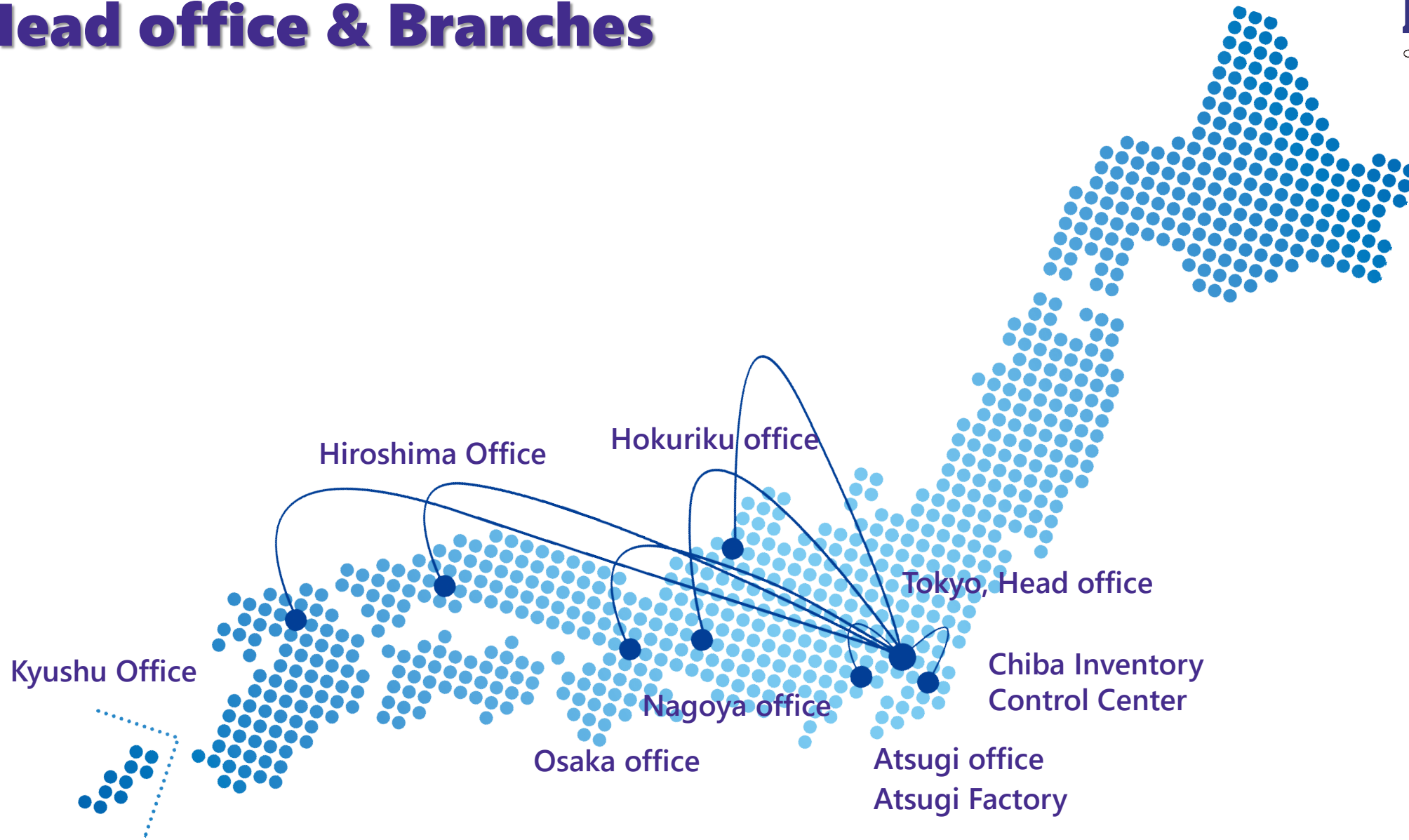
Location: Inage, Chiba city  
Very close to the North Chiba Interchange  
of the Higashi Kanto Expressway

Lot area 3,640m<sup>2</sup>, Floor space 3,880m<sup>2</sup>

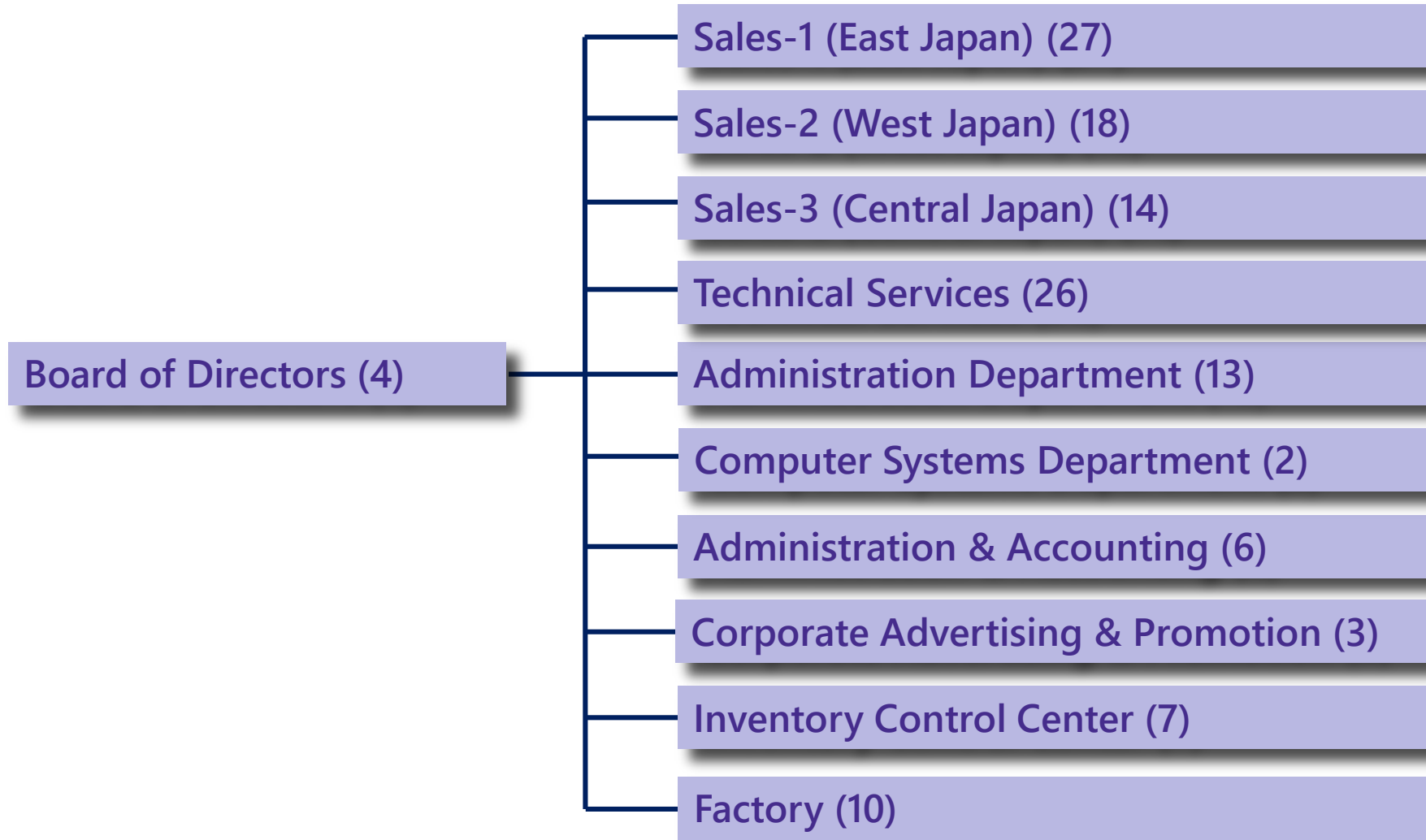
The Inventory Control Center is state of the art including an earthquake absorbing structure.  
Our large and wide ranging inventory is stored in a temperature and humidity controlled center-24/7.



# Head office & Branches



# Organization



APR.2019

**FUKUDA**  
[www.fukudaco.co.jp](http://www.fukudaco.co.jp)

