

IR DAY 2020

MinebeaMitsumi
Passion to Create Value through Difference

Ball Bearing Business

December 3, 2020

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Chief of Machined Component
Manufacturing Headquarters



1 Ball Bearing Business Outline

- ▶ Business Value
- ▶ Strength
- ▶ Introduction of the latest factory (NHT in Thailand)

2 Growth Strategy of Ball Bearing Business

- ▶ The path that we have walked
- ▶ Market Trend and Strategy Overview for
 - Automotive application
 - Fan motor for Data Server application
 - Robotics application
- ▶ Technology and Development trend
- ▶ Business expansion for next 10 years

Mission as a top ball bearing manufacturer

To create the indispensable value and future by our strengths. To make a contribution to society.
By bringing together the know-how of ball bearing business which we have been focusing on since our founding, we will deeply pursue niche and future-growth businesses, and further expand our business.

For the future society and industry, the demand for our ultra-precision ball bearing products will further increase.



MinebeaMitsumi bearings contribute to the realization of "comfortable, convenient, and clean" society with Ultraprecision machining technologies & Overwhelming mass production technologies

Manufacturing

- ▶ **Overwhelming Manufacturing Capacity**
Production for 315Mpcs/month with over 8,500 P/Ns
- ▶ **Vertically Integrated Production System**
In-house made technology from each component to assembly process, also production equipment like machine, Jig
- ▶ **R&D activities**
Create only one product because of material, tribology and other technologies
- ▶ **Ultraprecision, high quality**
Available stable and high quality bearing by high level process technology and synergy effect

Global Location

15 locations in 7 countries
in Asia, North America and Europe
Production capacity: 315 million pcs/month

Possible BCP because of Multiple production by application by P/N in several factories,

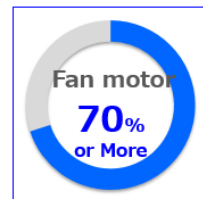
No.1 Market share in the world

Share 60% or more for OD ≤ 22mm

Reason of higher share: technologies for each application which competitors can't follow



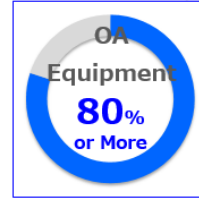
Heat resistance
Durability
High Speed



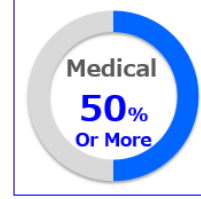
Low friction
Heat resistance
Durability
Silent



High Speed
Low friction
Silent
Durability



Conductivity
Chemical attack



High Reliability
Corrosion resistance

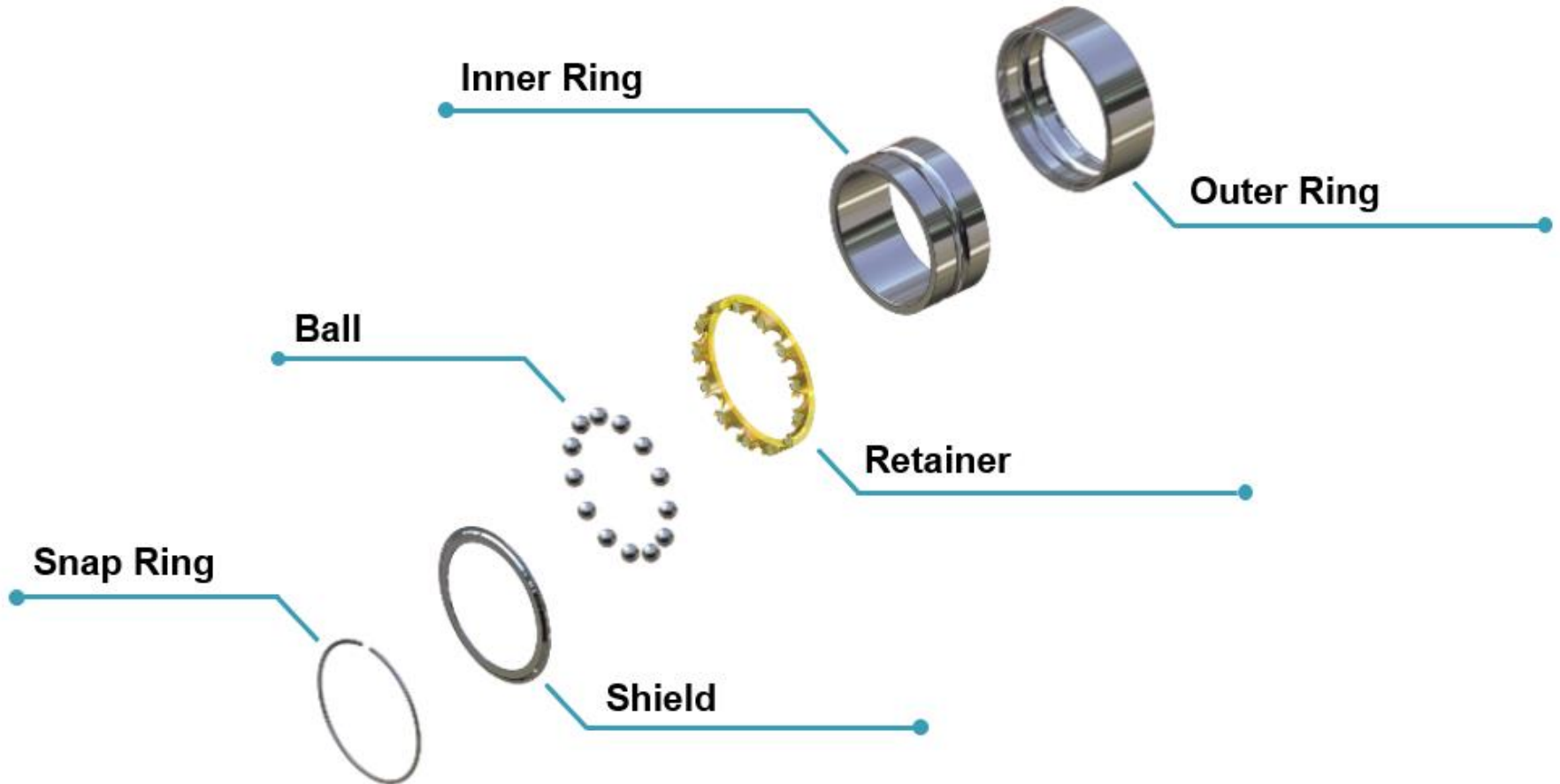


Corrosion resistance
Low friction
Silent

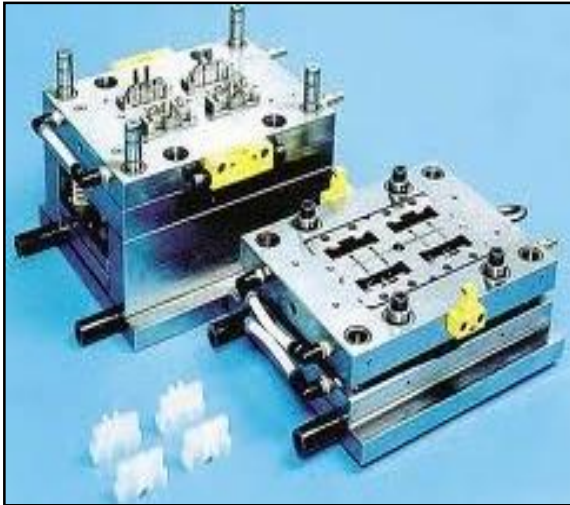
NHT factory in Thailand



Ball Bearing Components



Vertically Integrated Production system



Video slide

Video slide

Video slide

Video slide

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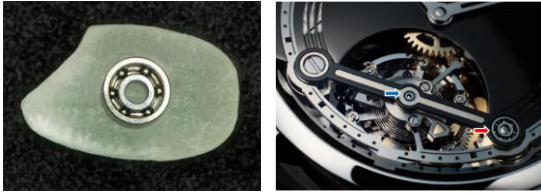
Video slide

MinebeaMitsumi Group (Thailand)



The path that we have walked

The smallest size bearing (OD:1.5mm)



Downsizing

The longest rotation bearing



Saving energy

High speed rotation up to approx.500Krpm



High speed, Durability

INTEGRATING many know-how we have cultivated as a top manufacturer for small and miniature size ball bearings, we will continue to be an indispensable presence in the world.

Material improved corrosion resistance for 20times



Environment
Corrosion resistance

Hybrid-bearing develop. & production



CEROBEAR[®]
ceramic bearing technology
A Minebea Company

High efficiency
Electric corrosion

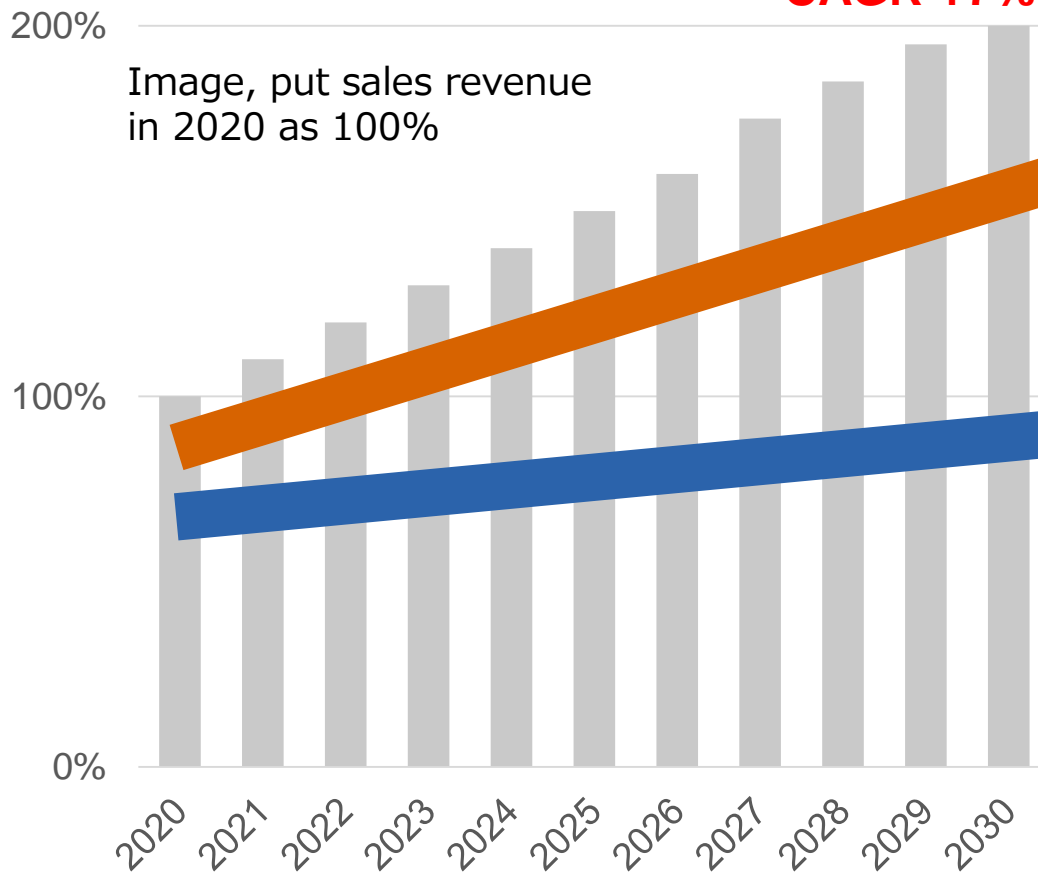
Integrated bearing with high precision & optimize design



Economics

We will expand our business with Organic growth from existing products and Entry into new fields as two pillars.

Double sales in 10 years
CAGR +7%



New fields

- ★ **Medium size bearing**
 - Main motor for NEV
 - Electric compressor
 - ISG
- ★ **Robotics**
 - Elastic bearings
 - Sinner bearings

Organic growth fields

- | | |
|-------------------|-------------------------|
| ★ Auto | ★ Fan motor |
| ★ Robotics | Advanced Home appliance |
| Drone | Air-conditioner |
| Fishing | Power tool |
| OA | Medical |
| ATM | Other motors |

Growth strategy : Automotive application

<10-year New Growth Project>

INTEGRATING the know-how of High Speed, Electric Corrosion and Durability at High Temp cultivated by small and miniature size ball bearing business with the technologies of group companies, **we will develop unique bearing for NEV main motor**, and enter into the business.

Bearing demand estimation for EV main motor application



Traditional

Production mainly up to OD ≤ 22mm

Current

Production up to OD ≤ 35mm

Next Step

Production up to OD ≤ 100mm

MinebeaMitsumi



- Located in Japan, Aisa
- No.1 share for Small & Miniature size bearings
- Cost advantage, Mass Production Technology
- R&D - Material, Tribology



myonic



- Located in Europe
- Development and Production for Medical and Aerospace application
- Technical advantage for high speed application



Technology INTEGRATION

NHBB



New Hampshire Ball Bearings, Inc.
— MinebeaMitsumi Group —

- Located in US
- Development and Production of special bearings for Aviation and Medical application
- Available from small up to large size bearings



CEROBEAR

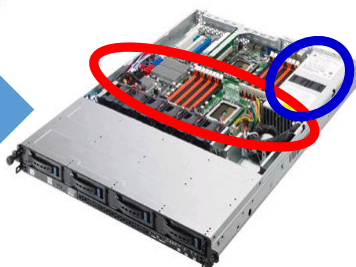


- Located in Europe
- Ceramics Bearing Technology (Aviation, F1, Industrial)
- Customised bearing available up to large size bearings



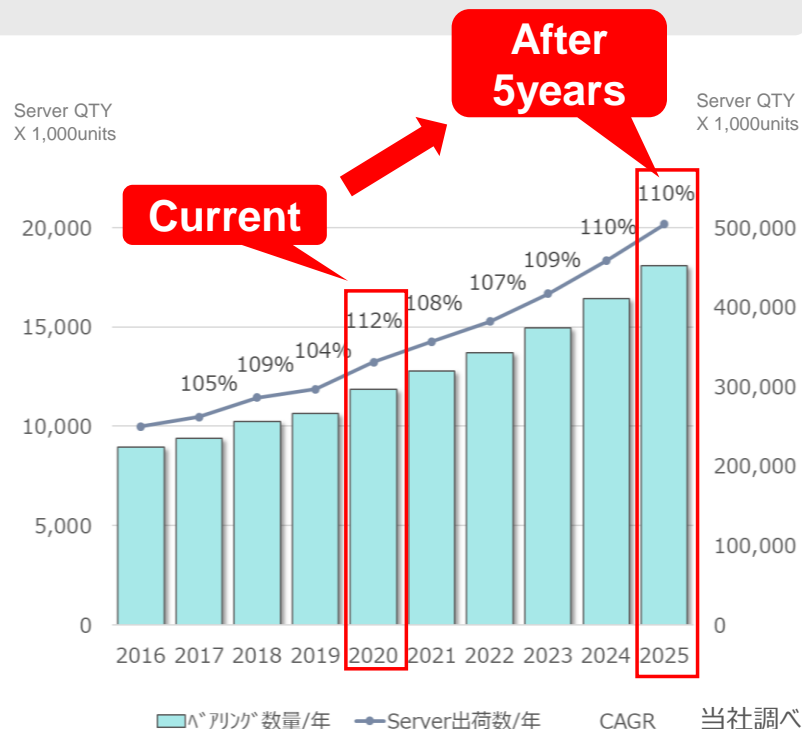
Growth Strategy : Fan motor for Data Server

The trend of digitalization such as 5G, DX, and IoT will **accelerate increase of storage capacity**, and the bearing demand for this application will grow at a high rate.



Used bearings for 20pcs or more per Server

<Required performance to Ball Bearing>
High Speed, Heat Resistance,
Saving energy, High reliability

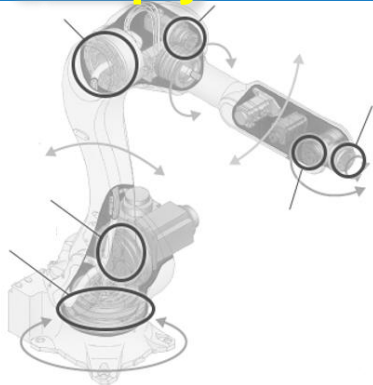


<Bearing Technology>

Ultra precision · High Quality
Optimized design-Rings, Retainer
Tribology – Grease, Oil
Modularization – Integrated Bearing

Due to the increase in touchless system and the growing for labor saving under COVID-19 pandemic, **Accelerate to install Robotics system into the fields such as medical, care-service, entertainment, food service and others.**

Robot itself is tendency to downsizing because of limited space and/or reduced required weight capacity, **Our Bearing demand will accelerate sharply**



Follow further demand by **expanding our product range like medium size bearings and bringing new products to the market.**

Target No.1 share in the new application



Expand our product range

Required downsizing from market

New Opportunity

Target share 60% or more

(2021年度量産開始予定)

Apply Dustproof technology from HDD business

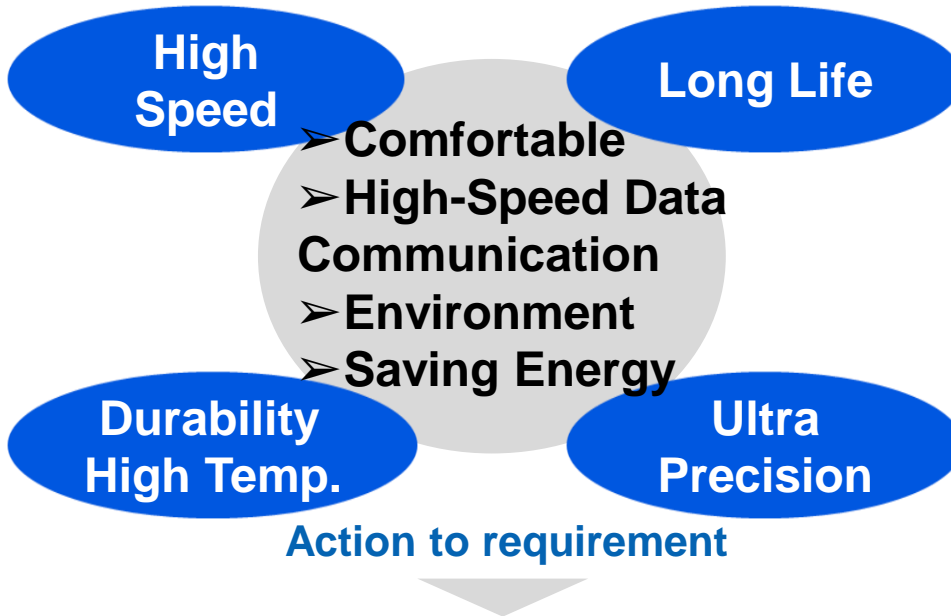
For Servo Motor

Apply ultra precision technology 1nm(nano) order

For Reduction Gear

背景画像出典: 川崎重工株式会社HP
<https://robotics.kawasaki.com/ja1/xyz/jp/1804-03/>

Further Diversified and Sophisticated



Strengthen development

Open New Technology center at Karuizawa H/Q in Japan in 2021

In order to meet technical requirements from market, **we strengthen Element technology and development of bearing products.**

Also pursue mass production technology for **further ultraprecision and high quality**

Completion by end.2021 as plan



Material Development

● Enhanced functionality material

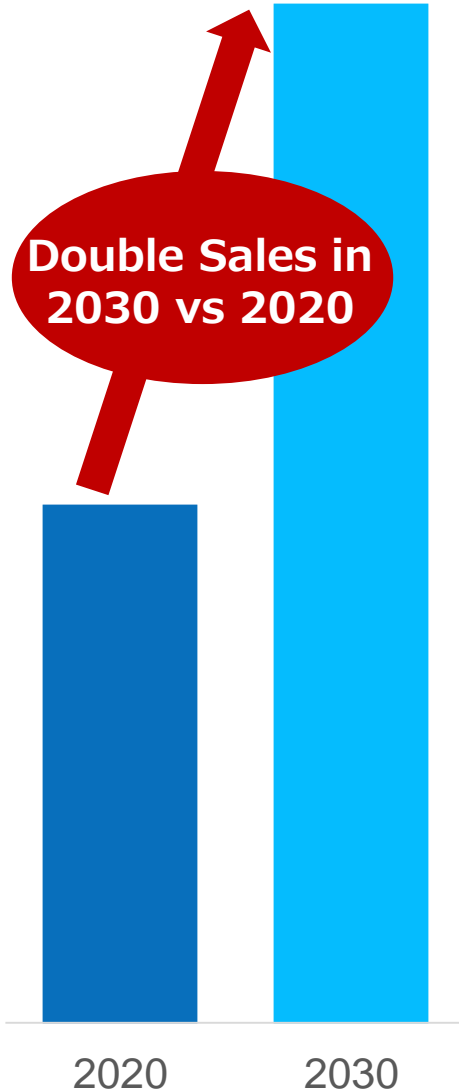
Tribology Development

● New grease for high/low temp, Low friction, Long life

Further Ultra Precision

● Machining process technology, Rotation accuracy

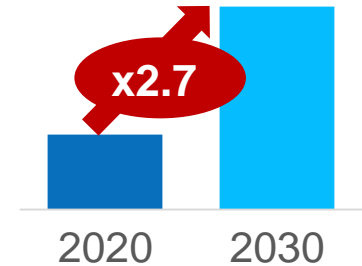
Overall Business



Three growth markets with keyword

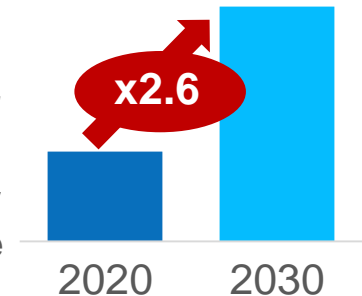
Automotive

Higher penetration for NEV and Enhanced functionality,
Propose new product value by INTEGRATING several technologies
Sales 10Mpcs/month in realistic



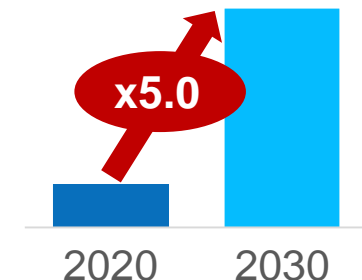
5G/DX/IoT

Data server continue to grow due to increase of storage capacity
Keep high share with high quality and reliability
In general, electronics related products positive impact



Robotics

Downsized Robot to grow in new- normal
To No.1 share with expanding product range





Any statements in this presentation which are not historical are future projections based on certain assumptions and executive judgments drawn from currently available information.

Please note that actual performance may vary significantly from any particular projection due to various factors.

Factors affecting our actual performance include but are not limited to: (i) changes in economic conditions or demand trends related to MinebeaMitsumi's business operations; (ii) fluctuation of foreign exchange rates or interest rates; and (iii) our ability to continue R&D, manufacturing and marketing in a timely manner in the electronics business sector, where technological innovations are rapid and new products are launched continuously.

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