

***Harmonic Drive Systems Inc.***

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# ***Investors' Guide FY 2023***

***Year ended March 31, 2024***

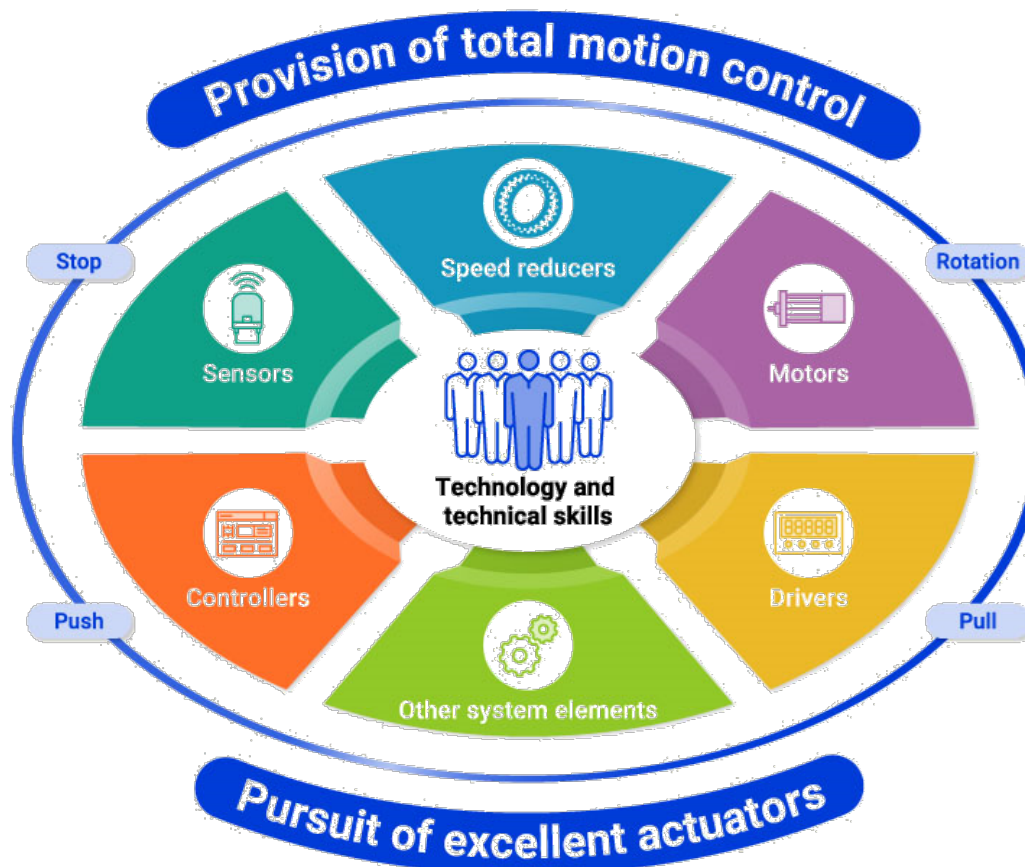
**Leadership in Total Motion Control**

**Jun 19, 2024**

# Primary Objectives

HDSI focuses our expertise and management resources on “Total Motion Control,” developing and producing Precision Control Equipment and Components for a broad range of applications. HDSI aims to become a world industry leader, as a highly skilled precision engineering expert with pioneering spirit. HDSI will strengthen our management processes and our flexibility to become a winner in the dynamic business environment.

## Schematic Concept of Total Motion Control



# Management Philosophy

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HDSI conducts management based on the following management philosophy.

## **1. Respect for the Individual**

HDSI aspires to be a company where the rights of every individual employee are respected, and where individuals can pursue a meaningful, cultural, and worthwhile life.

We will make HDSI a company that believes in each employee's aspirations, supports independent activities, creates an environment where employees can maximize their abilities through work, and where abilities and performance are rewarded.

## **2. A Meaningful Company**

HDSI wants to be recognized as a meaningful, superior company which manifests creativity, has personality and distinctive characteristics, and whose management foundation is based on ceaseless research and development activities and a constant emphasis on quality—a company where the entire organization finds meaning in making utmost efforts.

## **3. Coexistence and Co-prosperity**

HDSI is supported by many different parties including our employees, customers, shareholders, materials and parts suppliers, affiliated companies and trading partners.

We make our best efforts to create attractive products, services, compensation, working environments, and trading relations to satisfy all these concerned parties.

## **4. Contribution to Society**

HDSI broadly contributes to society and industry through our corporate activities as a good corporate citizen. The products and services we provide directly and indirectly contribute to the betterment of society.

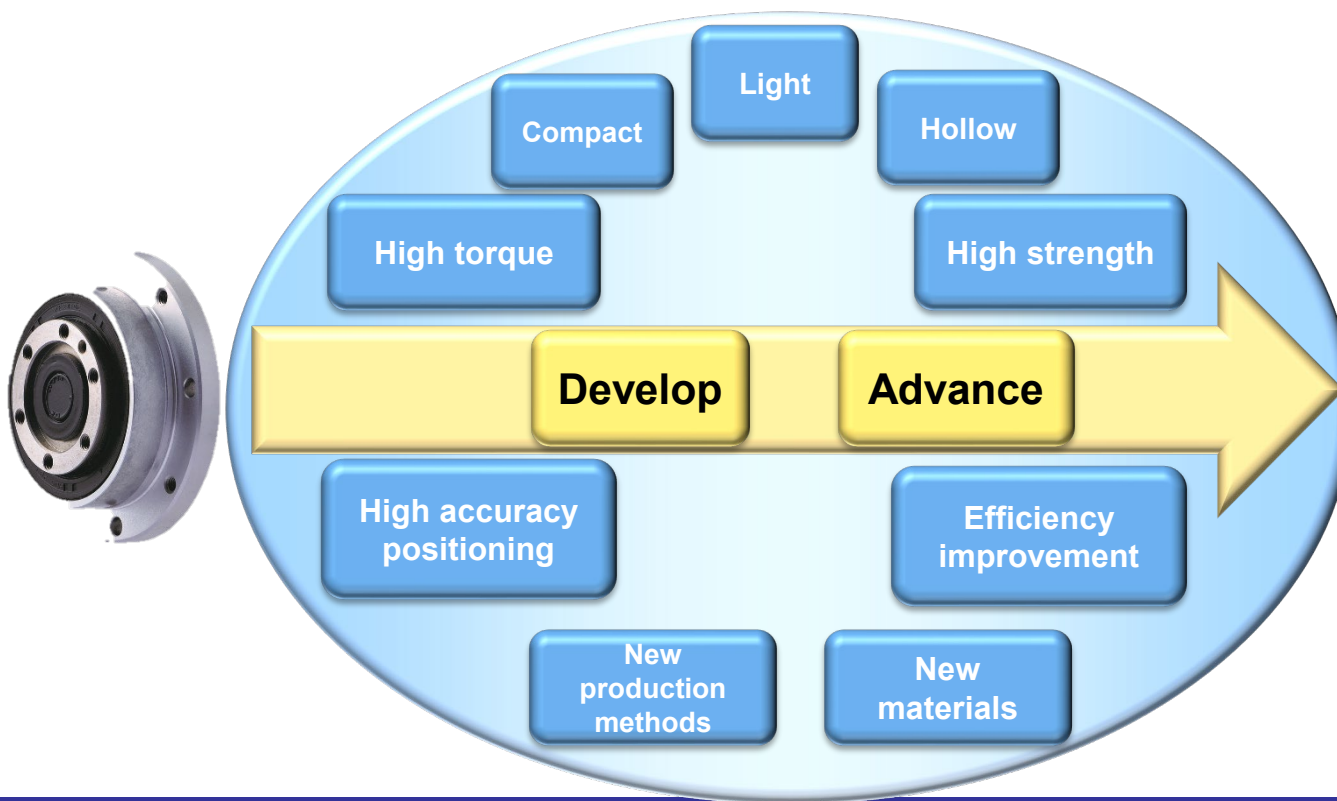
We aspire to be a company that helps to improve the environment and the quality of the communities where we are located.

# Basic Policy of Sustainability

Basic Policy of Sustainability (approved on March 25, 2022)

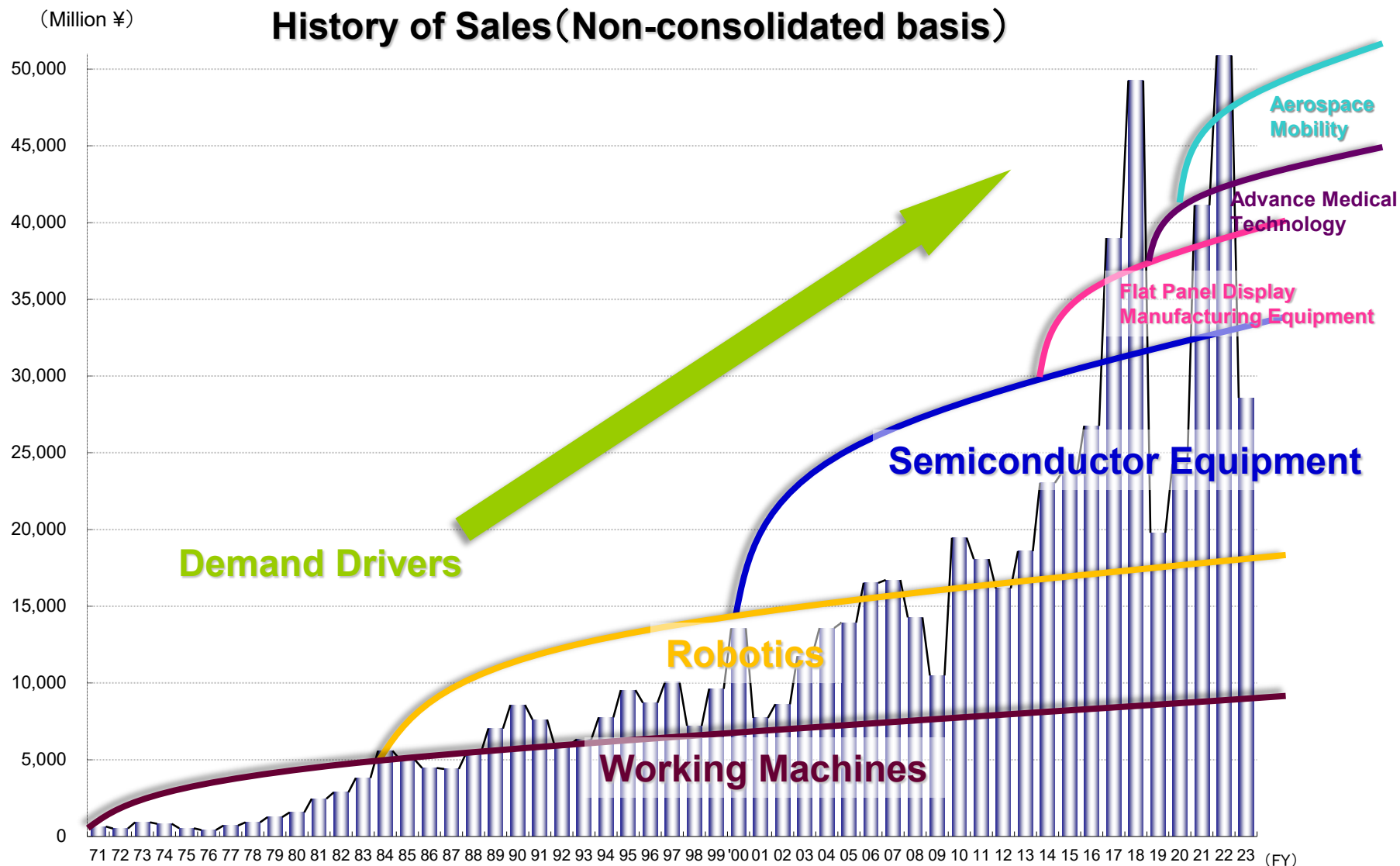
As a technology and skills-based organization in pursuit of Total Motion Control, the HDSI Group aims to enhance corporate value and realize a sustainable society by contributing to technological innovation for the betterment of society. We intend to achieve these goals based on our management philosophy comprising four pillars: **Respect for the individuals**, **be a meaningful company**, **coexistence and co-prosperity**, and **contribution to society**.

## Our mission



Contribute  
to the  
**Innovation**  
and  
**Ecology**  
of industrial  
society

# History of Sales



# Operational Risks

## 1.Plant and Equipment Investment Trends

Because the majority of HDSI Group's products are sold as components for industrial machinery such as industrial robots, semiconductor manufacturing equipment, and flat-panel display manufacturing equipment, plant and equipment investment trends have an influence on the operating performance of the HDSI Group.

In particular, for semiconductor and flat-panel display manufacturing equipment industries, while there is large growth from improved conditions in the semiconductor device and panel markets and from manufacturing technology innovations, an unexpected market contraction resulting from supply-demand adjustments or other developments could adversely affect the operating performance of the HDSI Group.

## 2.Research and Development Results

The HDSI Group develops and puts on the market distinctive, high-value-added products by intensively allocating resources to the research and development division as a technology and technical skills organization in the motion control field. A delay in the market release or market penetration of the resulting new products despite the continuous allocation of resources to research and development could adversely affect the operating performance of the HDSI Group.

## 3.Product Quality

The HDSI Group has received ISO9001 certification and otherwise strives to strengthen its quality assurance system to boost customer satisfaction and gain market advantages. Nevertheless, the emergence of unexpected product defects or other quality issues could adversely affect the operating performance of the HDSI Group.

## 4.Fluctuations in Foreign Exchange Rates

The HDSI Group has two consolidated subsidiaries in the US, one consolidated subsidiary in China, one consolidated subsidiary in South Korea, and one consolidated subsidiaries in Germany which has nine consolidated subsidiaries in Europe, and we are actively advancing internationalization in our businesses. Consequently, foreign exchange rate fluctuations sometimes have a negative effect on the business activities of the HDSI Group. Foreign exchange rate fluctuations also affect the yen-equivalent value of the Group's assets and liabilities and revenues and expenses from transactions denominated in foreign currencies, and may have a negative effect on the HDSI Group's operating results and financial conditions.

## 5.Retirement Benefits Obligations

Harmonic Drive Systems and some HDSI consolidated subsidiaries have defined benefit pension plans or lump-sum retirement benefit plans. Revisions of the assumptions for calculating retirement benefits obligations and retirement benefits expenses, changes in the investment environment for pension assets, and other financial developments could adversely affect the Group's operating performance and financial conditions.

## 6.Other Risks

Changes in the economic and political environment and the occurrence of natural disasters, wars, terrorism, and other unpredictable events that cannot be avoided by the HDSI Group alone could adversely affect the Group's operating performance and financial conditions.



# Mid-term to Long-term Management Strategies and Management Targets

## Mid-term to Long-term Management Strategies

The Group promotes its unwavering mission of contributing to social and technological innovation through motion control technology. Market for mechatronics and precision speed reducers, in which we participate, is contributing greatly to the emerging social and technological innovation, including electrification of vehicles and surgical robots, and such demand is expected to continue to expand. At the same time, with the acceleration of automation as demand for collaborative robots in addition to a new market for “human-like robots” is expected to increase amid the worldwide labor shortage. To properly capture these growth opportunities, the Group aims to further strengthen its business foundation. We also pursue activities for achieving sustainable society through our business, based on the new medium-term management plan (fiscal years 2024-2026) which was newly formulated, with the whole group united. Moreover, we aim to enhance corporate value over the medium to long term by maintaining a balance between defensive and offensive approaches in our management strategy, and by solving issues to be addressed in the new medium-term management plan in order to achieve our missions and new long-term vision.

## Basic Policy of Sustainability

Based on our management principles on four pillars: 1) Respect for the individual, 2) a meaningful company, 3) coexistence and co-prosperity, and 4) contribution to society, the HDS Group, a group of technological and engineering experts providing total motion control, aims to realize sustainable society and increase its corporate value by contributing to technological innovation for better society.

## Our Group's Mission

To contribute to technological innovation in society through motion control technology

## Long-term Vision

The best provider of total motion control in harmony with the future

## Materiality

- Maximize the value of human capital
- Achieve QCDS that goes beyond customer expectations
- Take on the challenge of developing new technologies and new skills that coordinate with changes in the environment
- Contribute to creating a sustainable society through corporate activities
- Establishment of a management foundation in harmony with the times



# Mid-term to Long-term Management Strategies and Management Targets

## Mid-term Management Plan for fiscal years 2024–2026

-Take on the challenge of “value creation and transformation” –

Basic policies

(a) Sustainable growth of all businesses with an emphasis on profitability

-Develop new drivers for growth

-Thorough implementation of QCDS+Speed to meet customer expectations

(b) Strengthen management resources (people, things, money, information) that can adapt to changes in the environment

-Realize an organization where individual growth and diverse skills are demonstrated and respected

-Growth investment aware of capital efficiency

-Strengthen the financial foundation and governance

(c) Initiatives to enhance corporate value that will continue into the future

-Promote Net Zero

-Appoint and hire diverse personnel

-Develop products that promote the reduction of customers' environmental load

## Target Management Indicators

Towards realizing sustainable growth and long-term enhancement of corporate value, the Group has newly added ratio of operating profit to net sales of 15% or more and a ratio of net sales to EBITDA of 25% or more as a “cash generation ability indicator” for net sales as indicators in the medium-term management plan (fiscal years 2024–2026) as the Group's important management indicators. As an important financial indicator, in addition to return on equity (ROE), ROIC is a new indicator. Assuming that a comparable capital cost (WACC) is approximately at the 9% level, setting a target of return on equity (ROE) and ROIC at 10% or more, we aim to improve return on capital through conducting management aware of the operational efficiency of invested capital.

## Management Indices Targets

The HDS Group has established the following management indices targets.

- Profit Margin: At least 20%

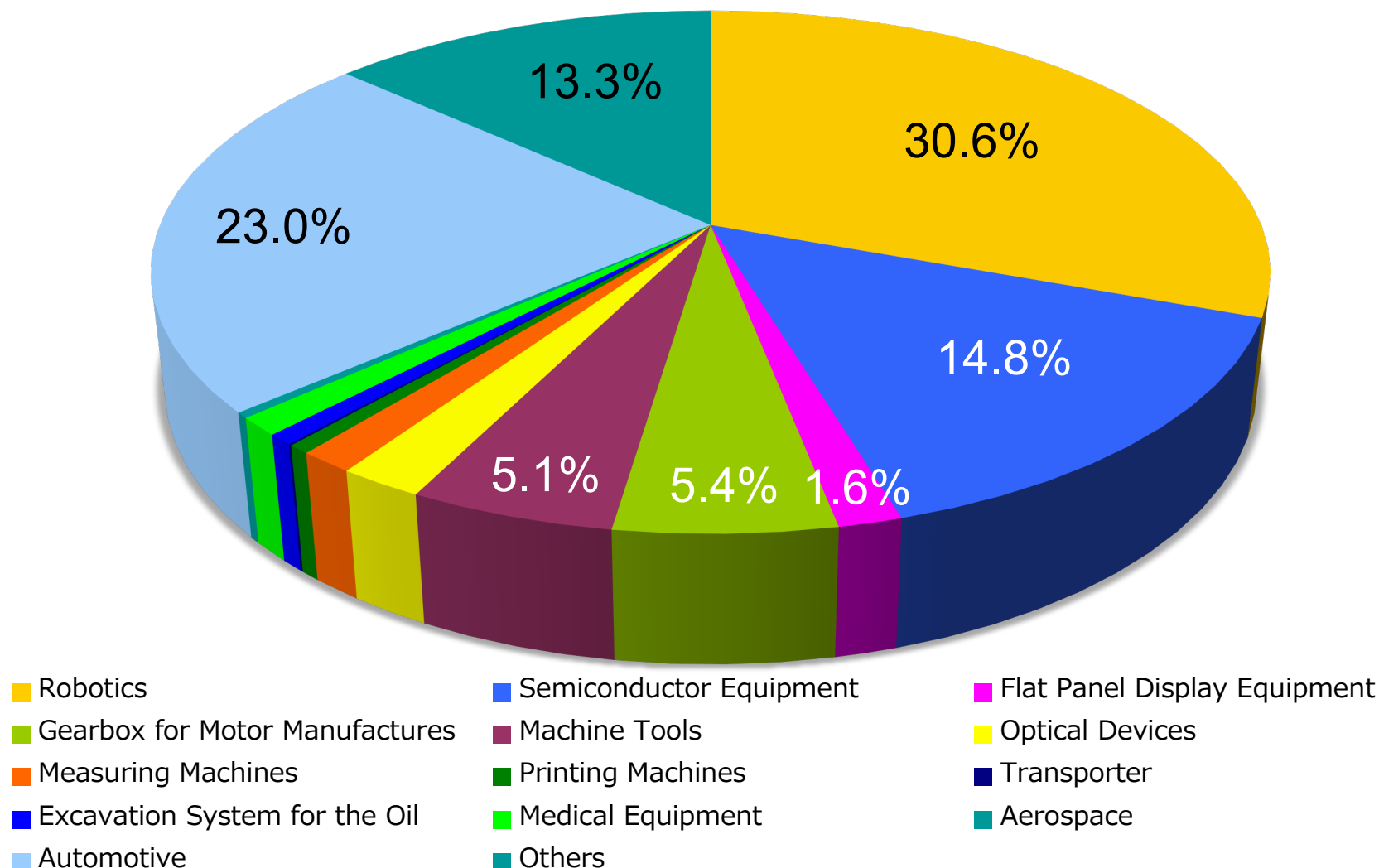
- Return on Equity (ROE): At least 10%



# Sales Composition by Application Fields

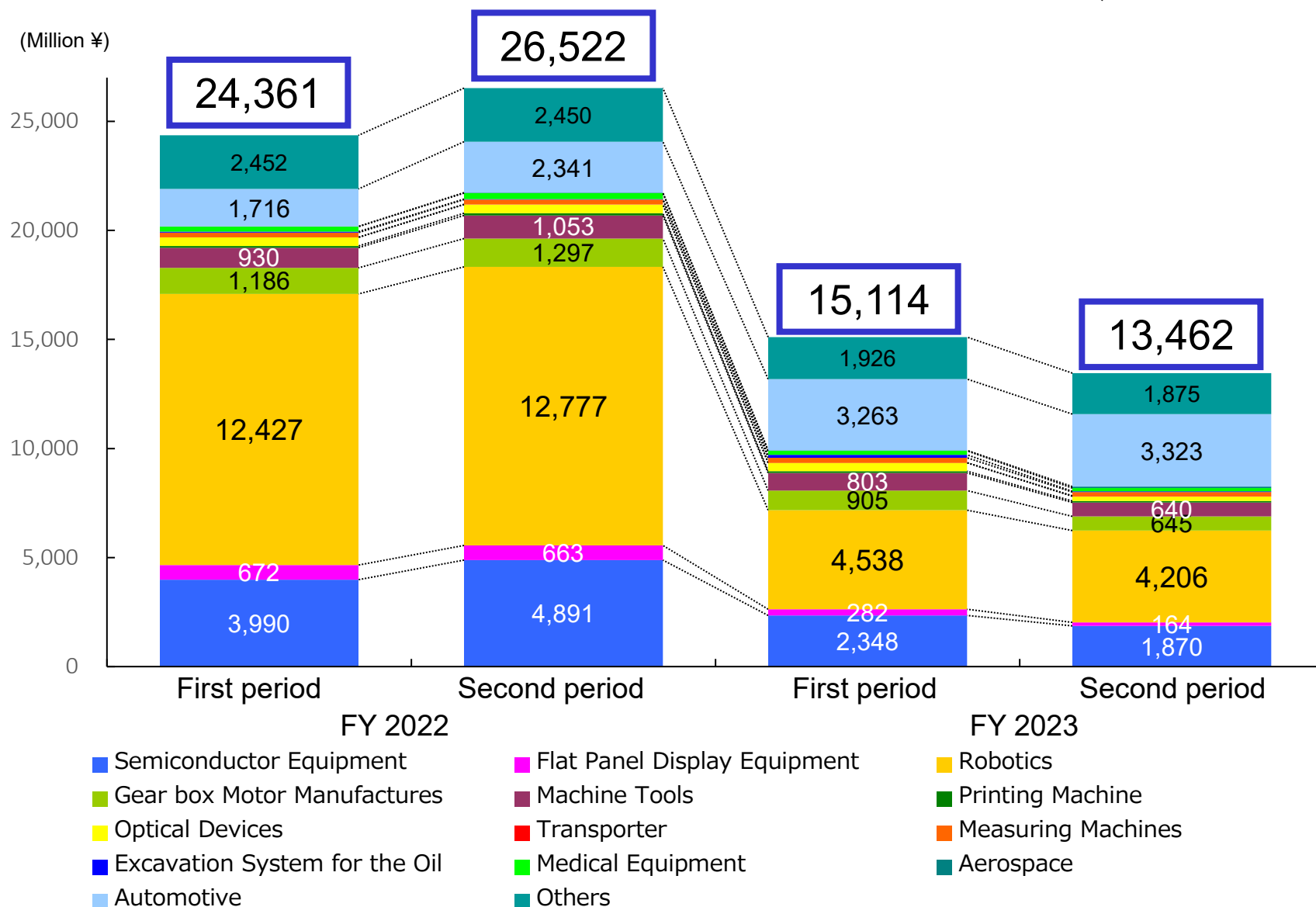
(Non-consolidated basis)

## Turnover (%) in FY 2023



# Semiannual Sales Composition by Application Fields

(Non-consolidated basis)



# Operating Results

## During the fiscal year ended March 31, 2024

### Overview of Operating Results for the Fiscal Year under Review

Future of the world economy increased uncertainty during this fiscal year under review due to factors such as further instability of the international situation, strong inflationary pressures and surge in resource and raw material prices, in addition to the slower growth in the Chinese economy. The situations concerning orders received by the Harmonic Drive Systems Group (hereinafter “the Group”) generally became tough owing to continuous cutbacks in future orders received by customers who were concerned about demand trends, reflecting slower capital investment in China’s manufacturing industry, stagnancy of investment in new facilities for cutting-edge semiconductors, and others. On the other hand, although it cannot be said that Japan is experiencing a full-on recovery, it can be confirmed that orders received have bottomed out, and orders received from customers whose inventories of our products have been optimized have begun to return, albeit gradually. As a result, consolidated orders received decreased by 20.9% year on year to ¥44,104 million.

Consolidated net sales for the fiscal year under review have especially been significantly affected by sluggish orders received in Japan, which has continued from the previous fiscal year, and amounted to ¥55,796 million, down 22.0% year on year.

Regarding net sales trend by application, net sales for industrial robots decreased significantly, due to factors such as slower capital investment in China, the main market, in addition to cutbacks in capital investment in EVs. Net sales for semiconductor manufacturing equipment also decreased, especially in the cutting-edge area, where new indications of investment such as in data center application and generative AI application were shown; however, there was no full-scale progress in the fiscal year under review. On the other hand, net sales for advanced medical applications such as surgical robots rose reflecting steady demand growth, mainly from customers in the United States of America. Net sales for automotive applications steadily progressed, due to gradual improvement since the latter half of the previous fiscal year in production adjustment by customers caused by the semiconductor shortage.

In terms of profit and loss, depreciation cost increased as a result of investment made to enhance production capacity. In addition, the lower operating rates of production plants in Japan during the fiscal year under review also affected the results, and operating profit decreased to ¥124 million, down 98.8% year-on-year. In addition, loss attributable to owners of parent was ¥24,806 million (profit attributable to owners of parent of ¥7,595 million in the previous fiscal year) due to the recording of ¥28,159 million of impairment losses of intangible assets related to Harmonic Drive SE, a consolidated subsidiary, and other factors.

In terms of net sales by product group, speed reducers totaled ¥39,432 million, down 30.8% year on year and mechatronics products reached ¥16,363 million, up 12.6% year on year. They accounted for 70.7% and 29.3% of the total net sales, respectively.

In fiscal year 2023, which is the final year of the medium-term management plan for fiscal years 2021-2023, we worked on various measures set out in the plan.

On the sales front, we worked to acquire orders with a greater sense of urgency in solving customer issues on a case-by-case basis. In the exhibition area, continuing from the previous year, we held the “Mechatronics Show” again on August 31 and September 1, featuring three major manufacturers of core motion control components (THK Co., Ltd., SMC Corporation, and the Company). Through the appeal of the combined strength of each company, the show provided an opportunity for attracting many visitors and having substantive business negotiations.

# Operating Results

Aiming to expand adoption opportunities for the Company's products, we exhibited at exhibitions related to the space industry, etc. in order to expand to other new uses.

In terms of R&D, we worked on evolving the flagship product, the HarmonicDrive® strain wave gearing, as well as focused on joint research with external research institutes, continuing to develop and commercialize elements that are potentially essential to next-generation motion control technology. In particular, we applied the latest weight reduction technology and construction method development for new development projects, contributing to customers' new technological transformation. In the field of mechatronics, in addition to the development of next-generation drivers (control devices), focused on developing torque sensors and enhancing value-added products, we strengthened a new technological foundation.

On the production front, Japanese factories continued to operate at a low level due to impacts of sluggish orders received. The Company saw this as a chance and worked on reforms and improvements that could only be done at this time, aiming to further improve productivity and quality, anticipating growing demand. Utilizing information systems, we introduced the "MES (Manufacturing Execution System)" at the Ariake Plant, for real-time management, grasping the status of manufacturing processes and managing forecasts and actual results, and providing instructions and support. In addition, with the aim of further improving and passing on skills of employees, improvements in operations and promoting multi-skilled workers were conducted based on the key phrase of "eliminated waste" for all processes.

We have been progressing with the complete transfer of production capabilities of our mechatronics product from the Company to Harmonic Winbel Inc. (a consolidated subsidiary), a new manufacturing base. Alongside this, production capacity is also being increased, with the transfer scheduled to be completed in October 2024.

We also increased production capacity at our overseas production sites in Germany and the United States in anticipation of increased demand in the future. Furthermore, we transferred product production to increase locally produced products for customers in each region, with the aim of maximizing production efficiency within the Group.

In terms of quality, we significantly expanded the "visualization" of various manufacturing data, and strengthened our quality control framework.

We also focused on coordination with each Group company and worked to maintain and raise our Common Global Quality initiative as we promote production transfers.

As part of our sustainability initiatives, the Sustainability Committee was established in April 2023, and we have adopted a system in which management themselves promote initiatives. Furthermore, materiality was partially reviewed in November of the same year, and we are working to further clarify the Group's issues. We are promoting the sustainability activities of the Group, such as establishing an "SDGs Proposal System," where all employees can actively participate and not just be told what to do.



# Operating Results

## Performance of reportable segments is stated below:

### < Japan >

Net sales increased for automotive application resulting from a recovery of car production in line with a relaxation of the supply-demand balance for semiconductors. Meanwhile, demand declined for industrial robots, semiconductor manufacturing equipment, flat panel display manufacturing equipment, and other general industrial machinery applications owing to softness in capital investment trends in Chinese electronics and semiconductors, and the inventory adjustments of our products by customers and distributors of the Group. As a result, net sales decreased by 42.9% year on year to ¥25,971 million. Segment profit (ordinary profit) decreased by 64.6% year on year to ¥4,513 million due to the effect of decreased sales.

### < North America >

Exchange rates of the yen remained weak, and demand increased for advanced medical applications (surgical robot-related) and amusement application. As a result, net sales increased by 22.3% year on year to ¥13,284 million. Segment profit (ordinary profit) increased by 21.4% year on year to ¥1,707 million due to the effect of increase in sales.

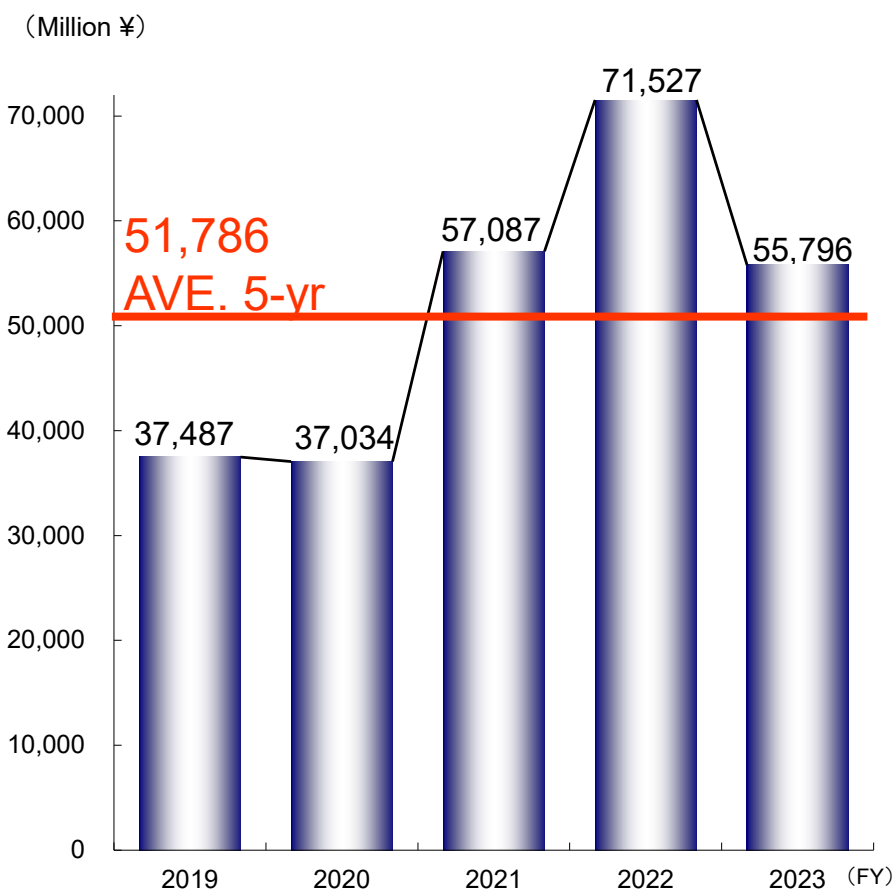
### < Europe >

Exchange rates of the yen remained weak, and demand increased for cutting-edge semiconductor manufacturing equipment, despite a decrease in demand for industrial robots. As a result, net sales increased by 8.7% year on year to ¥16,540 million. Segment profit (ordinary profit) decreased by 65.7% year on year to ¥214 million due to depreciation of ¥1,898 million on intangible assets posted at the time of acquisition of shares in Harmonic Drive SE.

# Results i Net Sales, EBIT

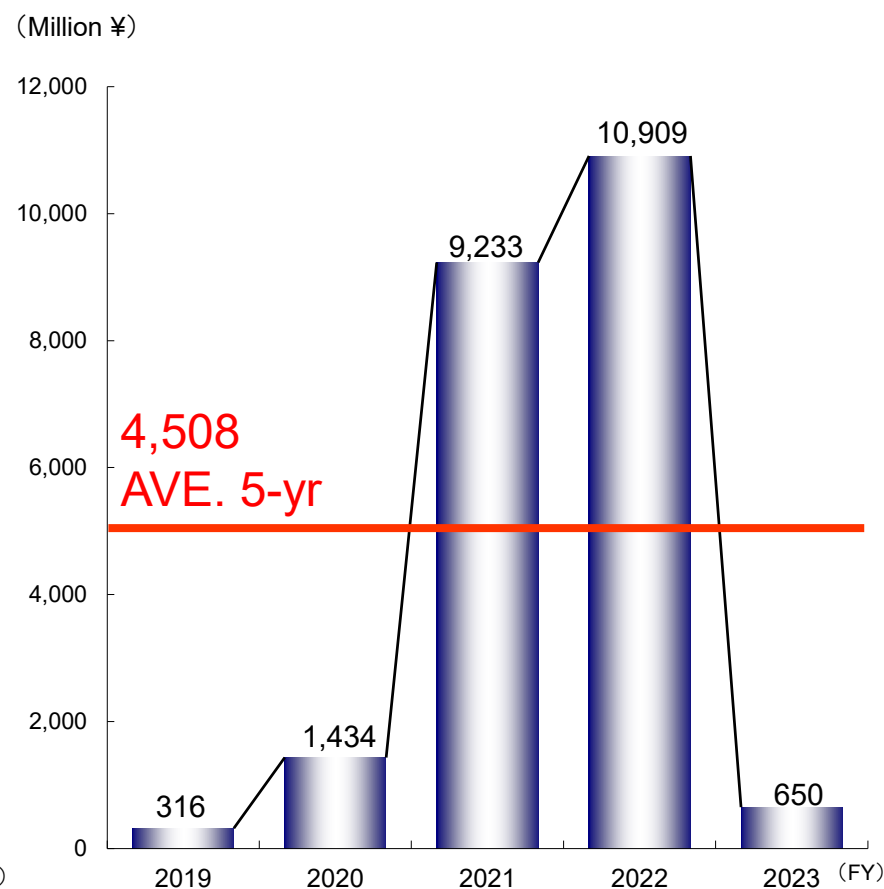
(Consolidated basis)

## Net Sales



## EBIT

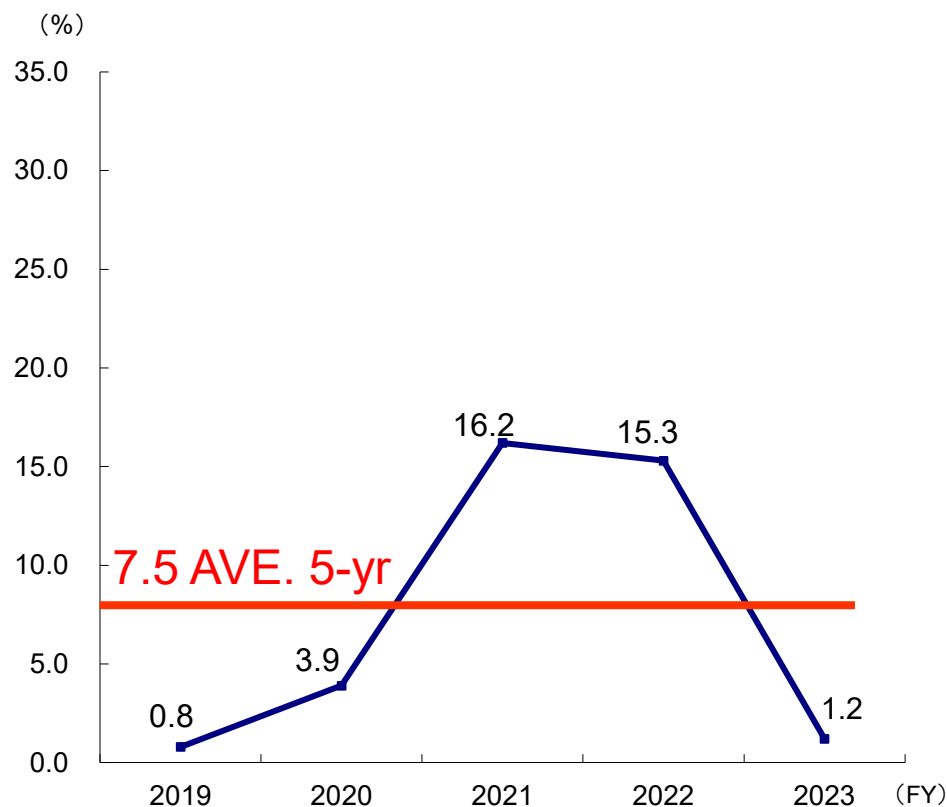
EBIT=Ordinary income + Interest paid - Interest income



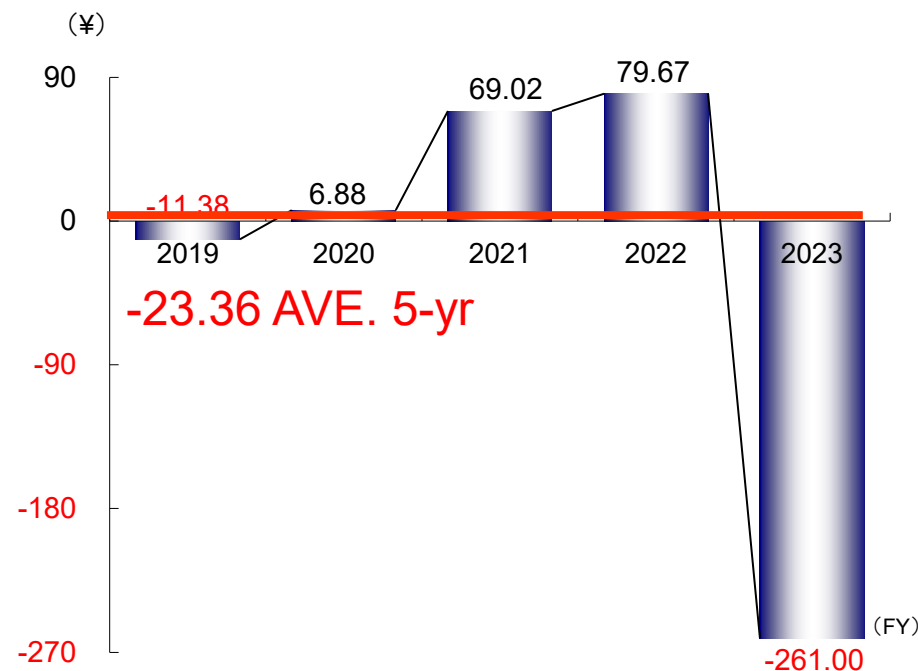
# Results ii EBIT to Net Sales Ratio, EPS

(Consolidated basis)

## EBIT to Net Sales Ratio



## EPS



## Dividends paid per share

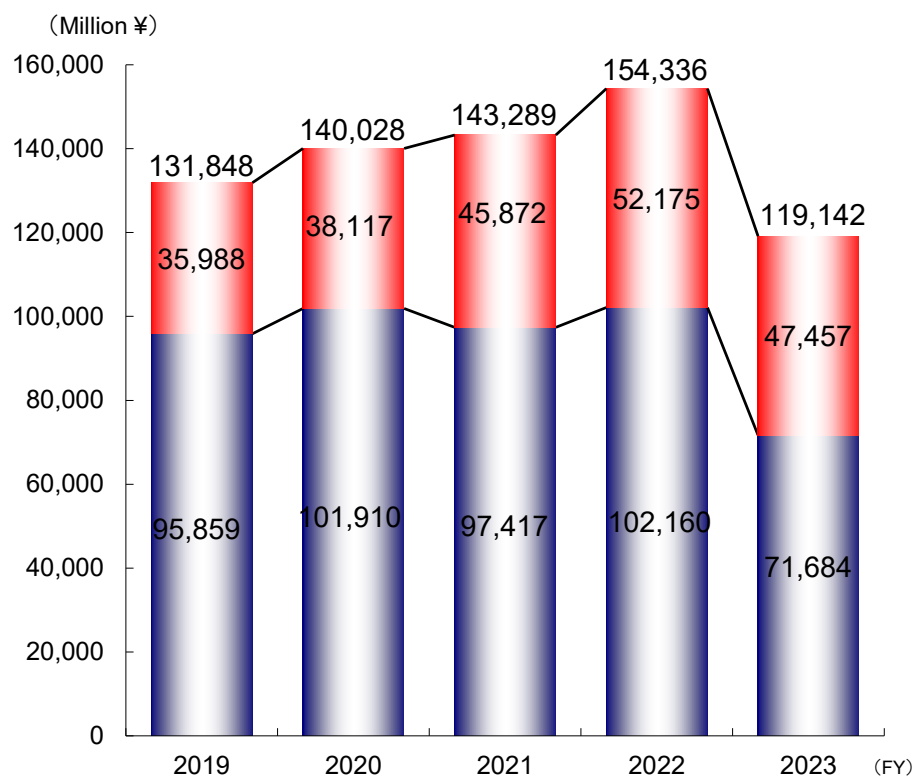
FY	2019	2020	2021	2022	2023
Dividends(¥)	20	20	21	28	20

The net loss attributable to owners of the parent for FY2023 includes ¥28,159 million in impairment loss on intangible assets related to a consolidated subsidiary, Harmonic Drive SE.

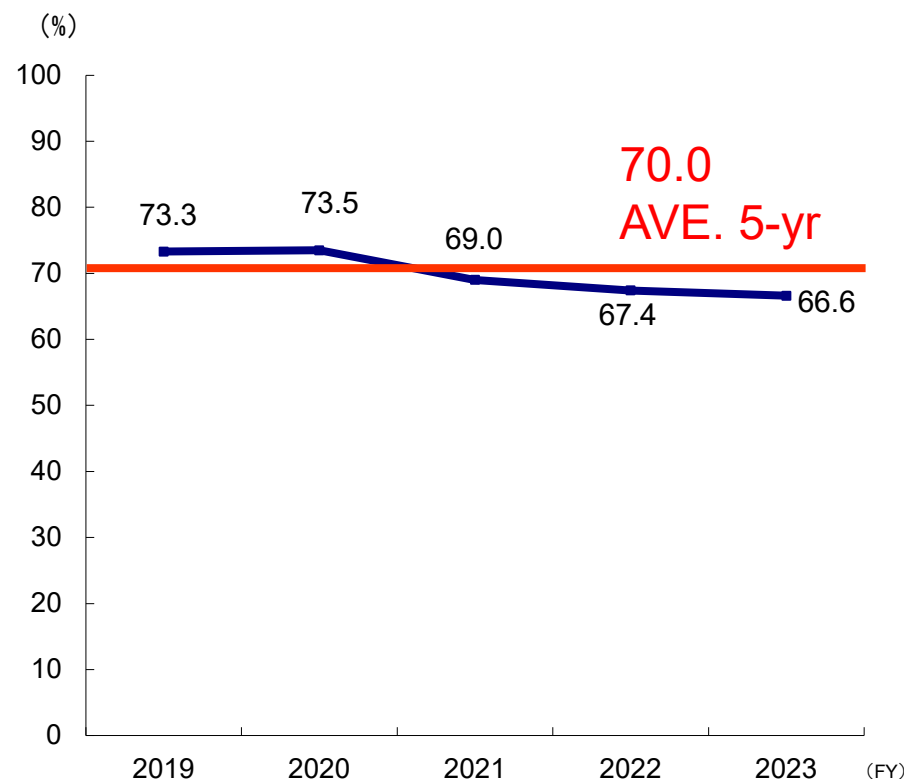
# Results iii Total Assets, Equity Ratio

(Consolidated basis)

## Total Assets



## Equity Ratio



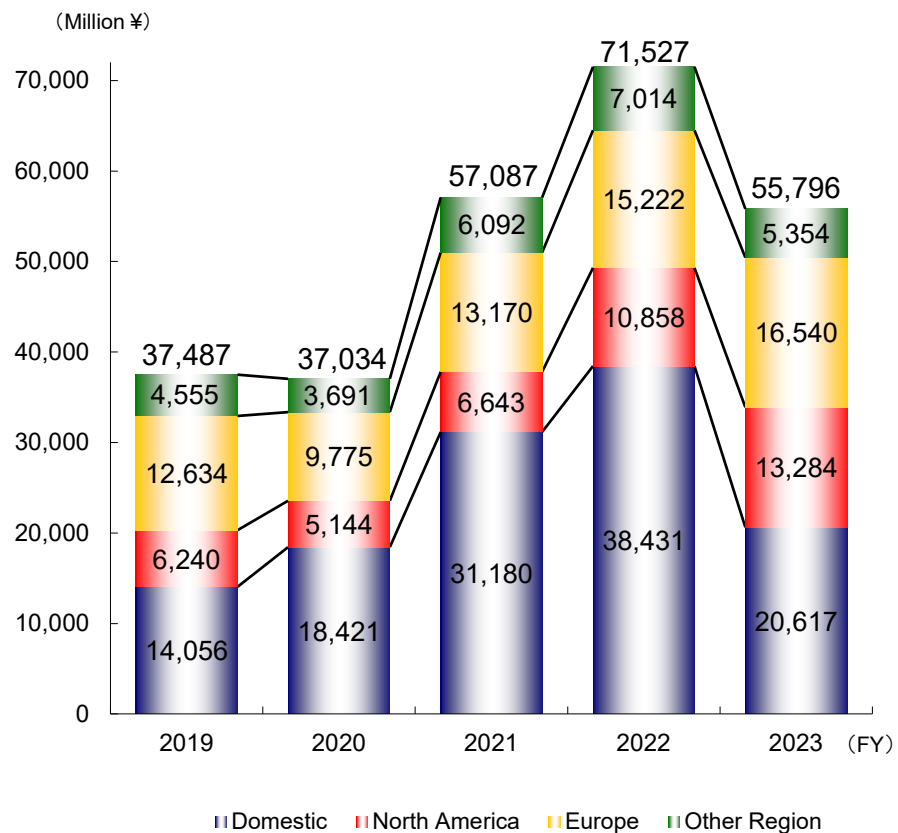
The Company recognized an impairment loss of ¥28,159 million on intangible fixed assets in FY2023, in conjunction with the consolidation of Harmonic Drive SE as a subsidiary.



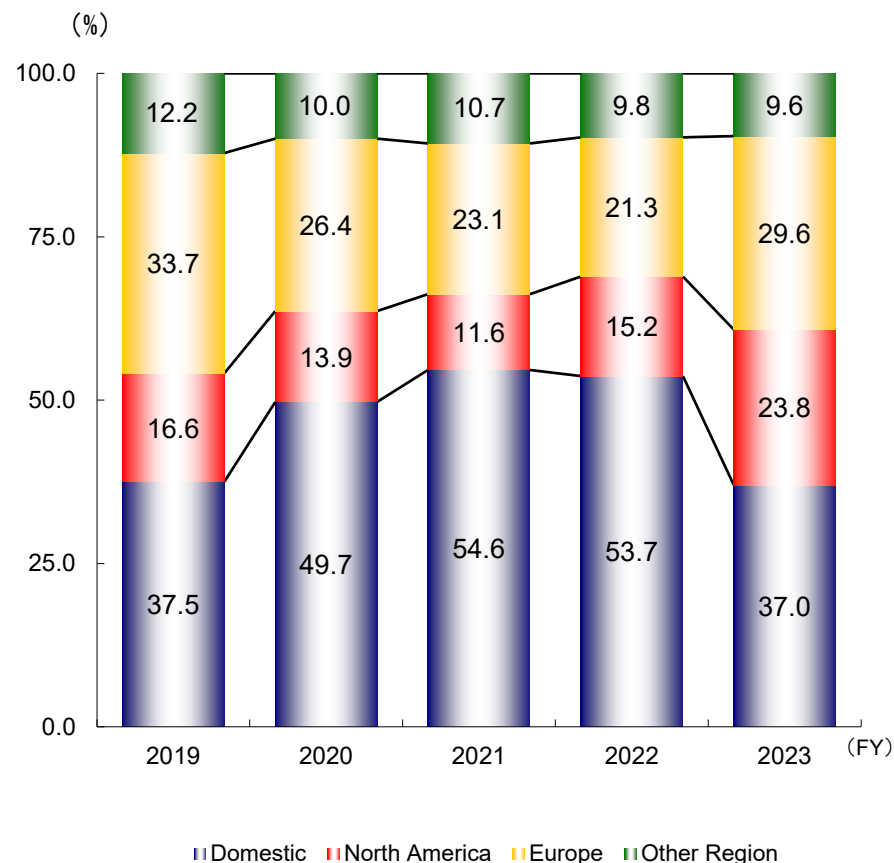
# Sales Structure by Regions

(Consolidated basis)

## By Regions



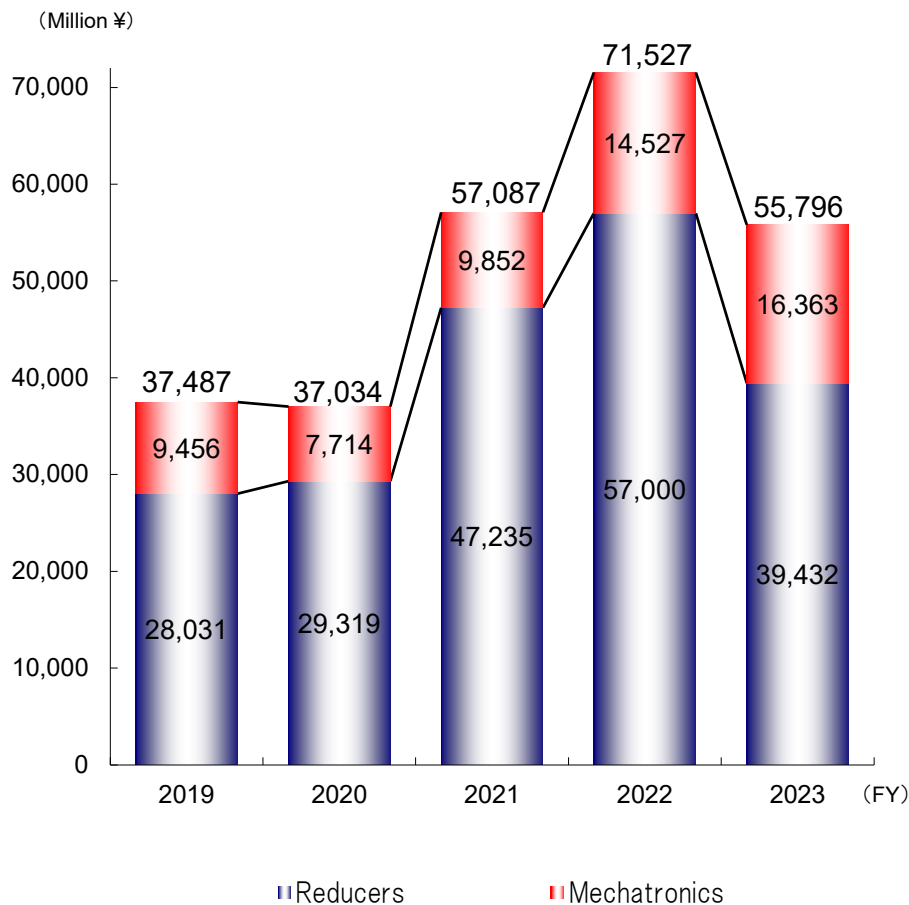
## By Regions



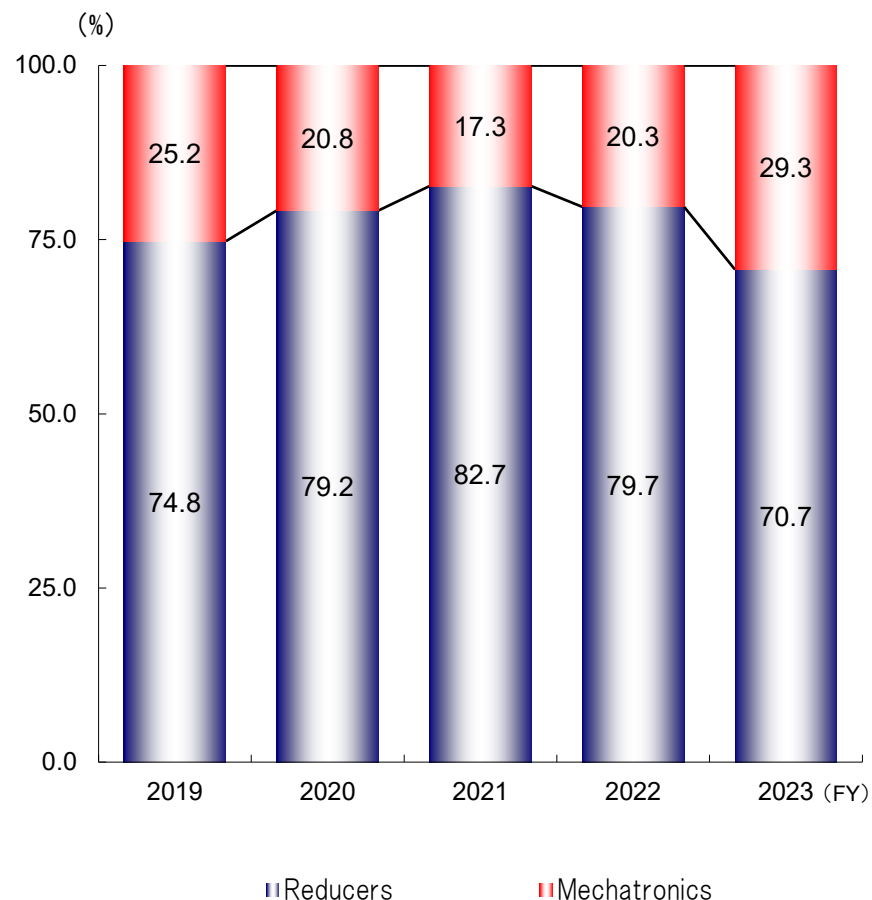
# Sales Structure by Product Types

(Consolidated basis)

## By Product Types



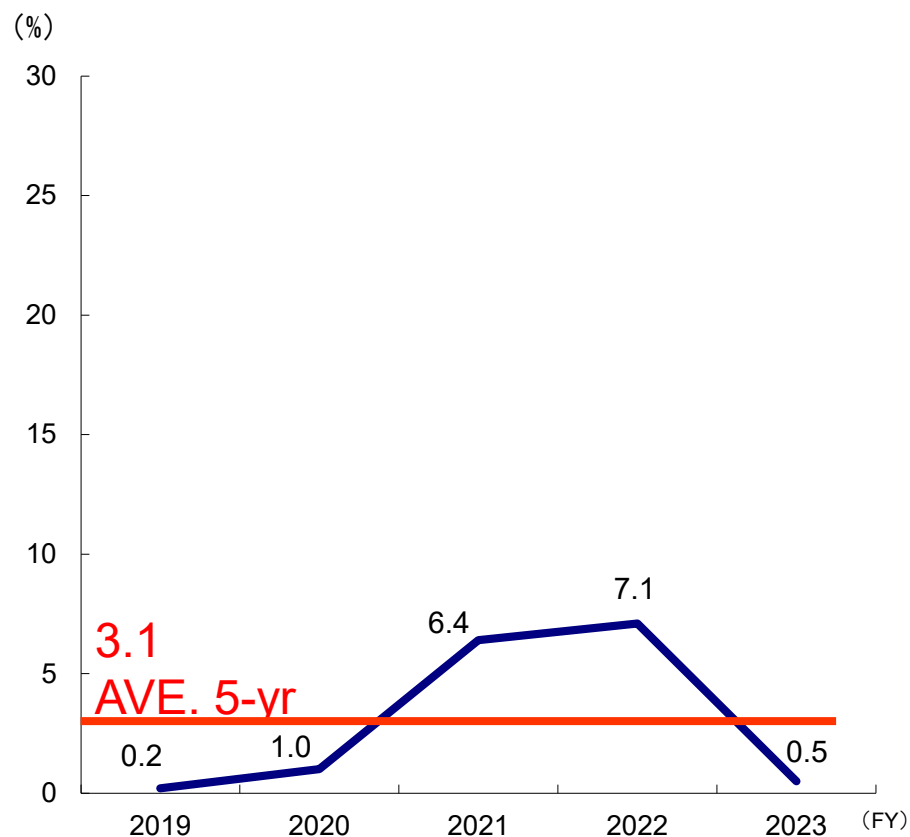
## By Product Types



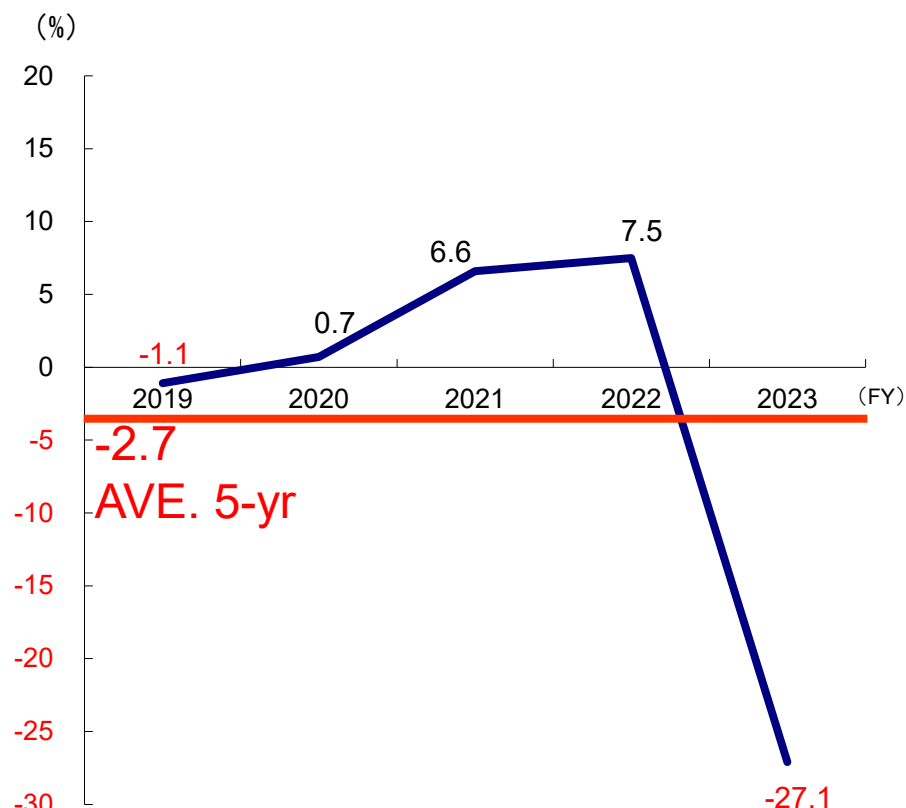
# Profitability EBIT to Total Assets Ratio, ROE

(Consolidated basis)

## EBIT to Total Assets Ratio



## ROE

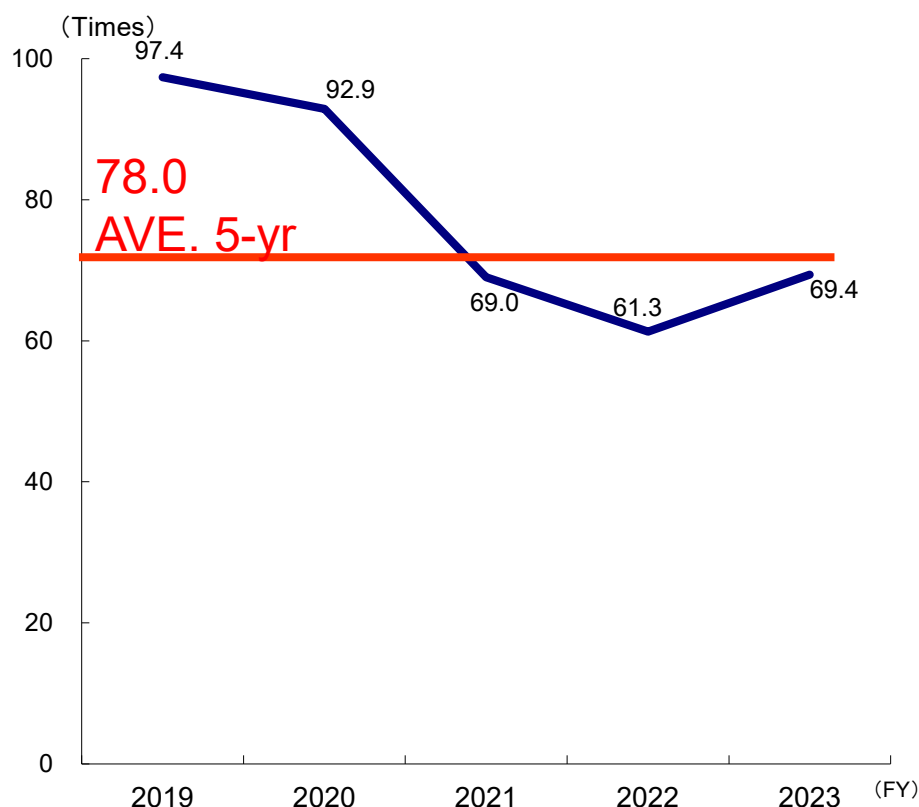


# Stability Interest Coverage Ratio, Debt / Equity Ratio

(Consolidated basis)

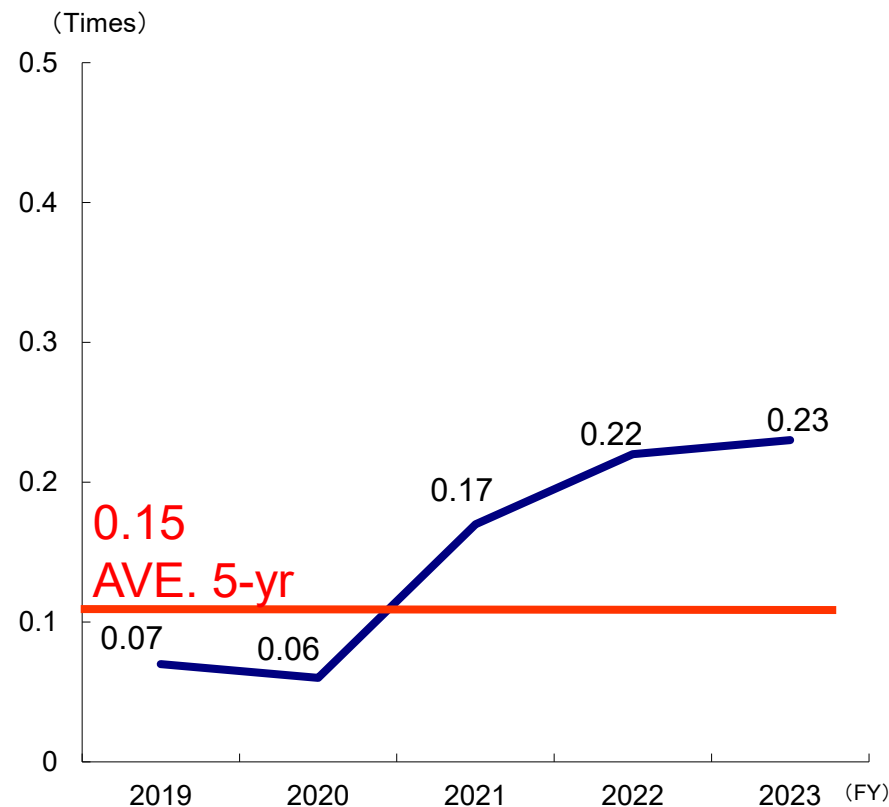
## Interest Coverage Ratio

Interest Coverage Ratio = Net Cash provided by operating activities / Interest paid-net



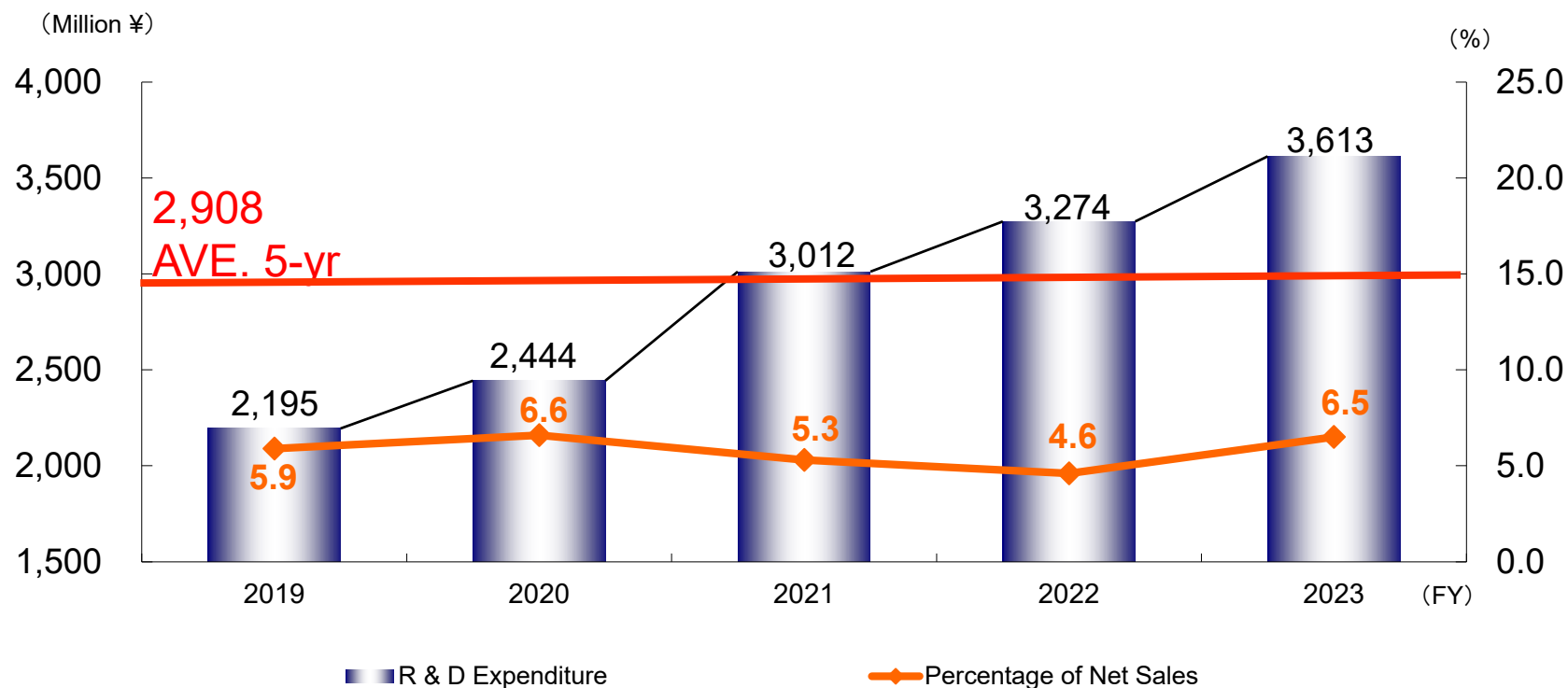
## Debt / Equity Ratio

Debt / Equity Ratio = interest-bearing debt / total shareholders' equity



# R&D Investments

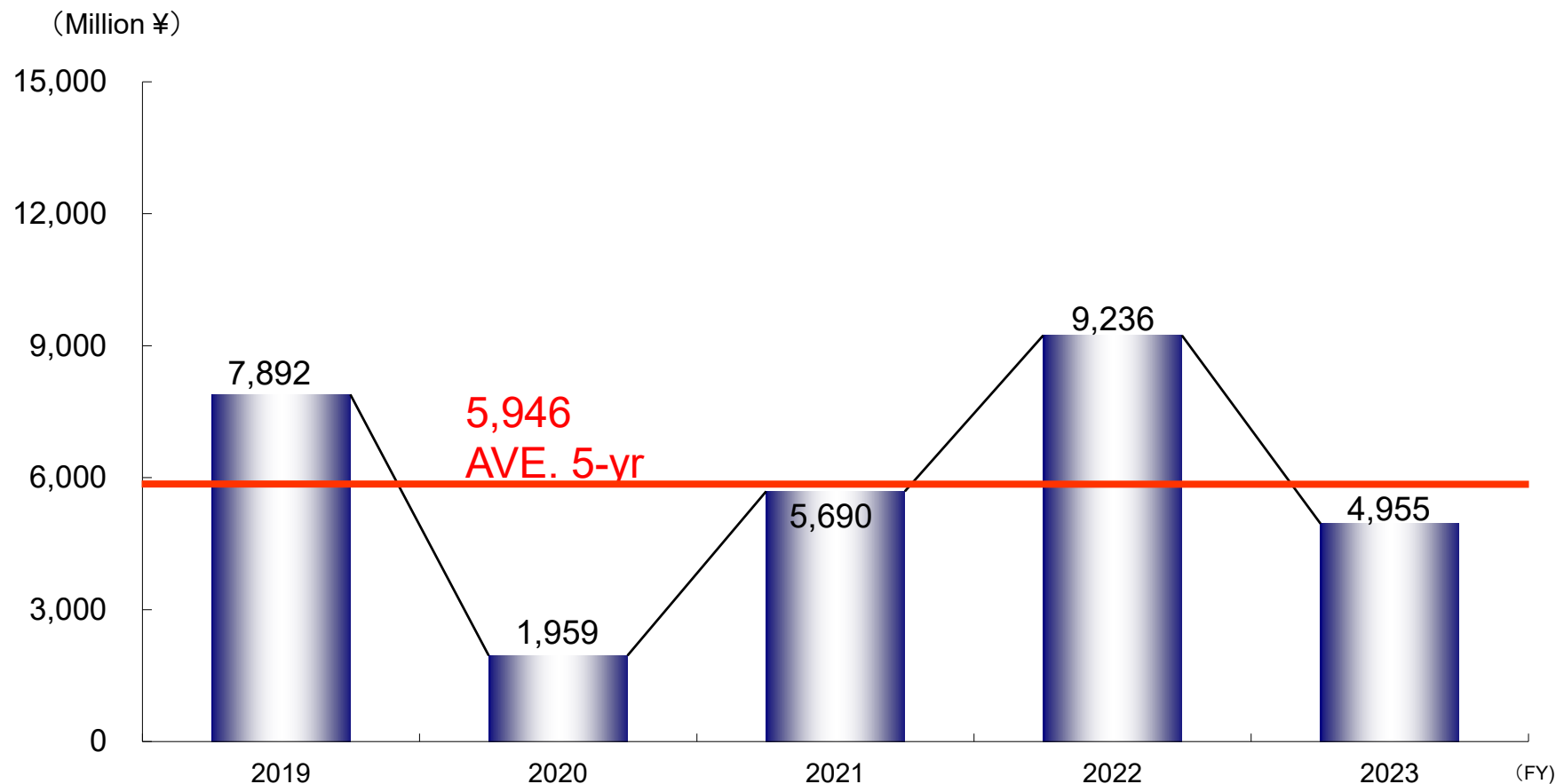
(Consolidated basis)



Fiscal Year	2019	2020	2021	2022	2023
Number of R&D persons	139	144	139	137	141
Share of total employees (%)	12.7	13.0	12.1	10.3	10.5

# Capital Expenditures

(Consolidated basis)



\*Purchases of tangible and intangible fixed assets

# Consolidated Balance Sheets

(Million ¥)

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Current Assets	35,988	38,177	45,872	52,175	47,457
Fixed Assets	95,859	101,910	97,417	102,160	71,684
Tangible fixed Assets	45,500	41,991	43,967	48,926	48,147
Intangible fixed Assets	40,212	41,003	40,435	40,332	12,897
Investment and other Assets	10,146	18,915	13,013	12,901	10,639
<b>Total Assets</b>	<b>131,848</b>	<b>140,028</b>	<b>143,289</b>	<b>154,336</b>	<b>119,142</b>
<b>Total Liabilities</b>	<b>25,129</b>	<b>29,968</b>	<b>44,433</b>	<b>50,380</b>	<b>39,740</b>
Current Liabilities	5,127	7,954	14,127	16,467	11,719
Long-term Liabilities	20,002	22,014	30,306	33,913	28,020
<b>Total Net Assets</b>	<b>106,718</b>	<b>110,059</b>	<b>98,856</b>	<b>103,955</b>	<b>79,401</b>
Shareholders' Equity	93,192	91,784	89,184	89,747	62,048
Other Comprehensive Income	3,435	11,104	9,671	14,207	17,353
Subscription rights to shares	625	—	—	—	—
Minority Interest (Non-controlling Interests)	9,464	7,170	—	—	—
<b>Total Liabilities and Net Assets</b>	<b>131,848</b>	<b>140,028</b>	<b>143,289</b>	<b>154,336</b>	<b>119,142</b>

The Company recognized an impairment loss of ¥28,159 million on intangible fixed assets in FY2023, in conjunction with the consolidation of Harmonic Drive SE as a subsidiary.

# Consolidated Statement of Income

(Million ¥)

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Net sales	37,487	37,034	57,087	71,527	55,796
Gross profit	12,003	12,582	22,426	25,786	15,606
S G & A	12,198	11,716	13,686	15,561	15,481
Operating income (loss)	▲195	865	8,739	10,224	124
Ordinary income	236	1,366	9,108	10,757	570
Net income (loss) attributable to owners of parent	▲1,095	662	6,643	7,595	▲24,806

The net loss attributable to owners of the parent for FY2023 includes ¥28,159 million in impairment loss on intangible assets related to a consolidated subsidiary, Harmonic Drive SE.



# Consolidated Statement of Income

(Million ¥)

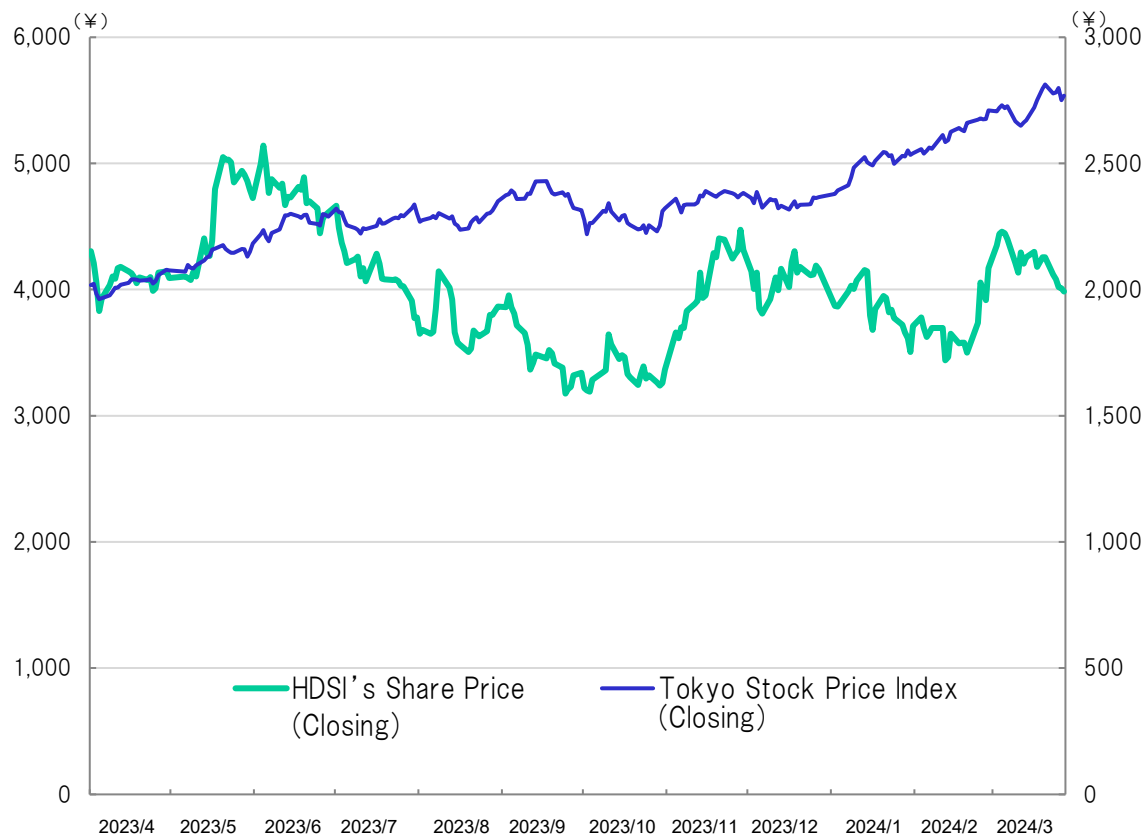
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Cash flow from operating activities	10,950	9,555	9,881	10,850	12,728
Cash flow from investing activities	▲12,537	▲1,230	▲4,703	▲8,663	▲5,950
Cash flow from financing activities	2,362	▲6,561	▲6,663	▲1,599	▲8,122
Effect of exchange rate changes on cash and cash equivalents	▲33	▲108	256	567	363
Net increase (decrease) in cash and cash equivalents	742	1,654	▲1,229	1,154	▲980
Cash and cash equivalents at end of year	18,342	19,996	18,767	19,921	18,941

# Share Price Trend

## Share Price

HDSI's Share Price (Closing)

Tokyo Stock Price Index (Closing)



- Number of shares of common stock issued and outstanding:  
96,315,400 shares (As of March 31, 2024)
- Number of shareholders:  
8,302 persons (As of March 31, 2024)
- Market capitalization:  
¥378,480,726,855 (As of March 31, 2024)

Note: TOPIX is a stock index calculated and published for stocks listed on the Tokyo Stock Exchange (TSE).

Harmonic Drive Systems Inc. is listed on the Standard Market of the TSE.

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***Harmonic Drive Systems Inc.***

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***Investors' Guide FY 2023***

***Year ended March 31, 2024***

**Appendix**

Results forecasts on this document are based on the management's decisions for future business strategies and performance, and may include risks from the business environment, uncertainties, and other factors. For this reason, the understanding is that the actual business results may not agree with the business prospects as presented on this document.

**May 20, 2024**

# Outlook for FY 03/25

## FY 03/25 Outlook

Amid expectations of further uncertainty in the global economy, such as resource and raw material prices remaining high due to instability of the international situation, and exchange rate fluctuations, in the business environment of the Group in fiscal year 2024, product demand is expected to recover due to expanding investment in automation, such as robots to make up for the decline in the working population, and expanding demand for cutting-edge semiconductors, which are necessary for expanding data centers and generative AI. As a result, with inventory adjustments of our products by customers and distributors, we expect a recovery in orders received during the period.

In order to respond to this business environment, we will continue to maintain our high production capacity and strengthen our supply chain system to ensure stable procurement of materials, further promote productivity improvement and operational efficiency through proactive investment in IT, and strive for further quality, cost, delivery, service; product power enhancement, cost reduction, and lead-time reduction), which were implemented as measures in the current medium-term management plan (fiscal years 2021-2023).

In addition, we will promote the improvement of our ability to solve customer issues and the acceleration of our response through the integration of sales and development technology, and focus on further expanding our competitive advantage.

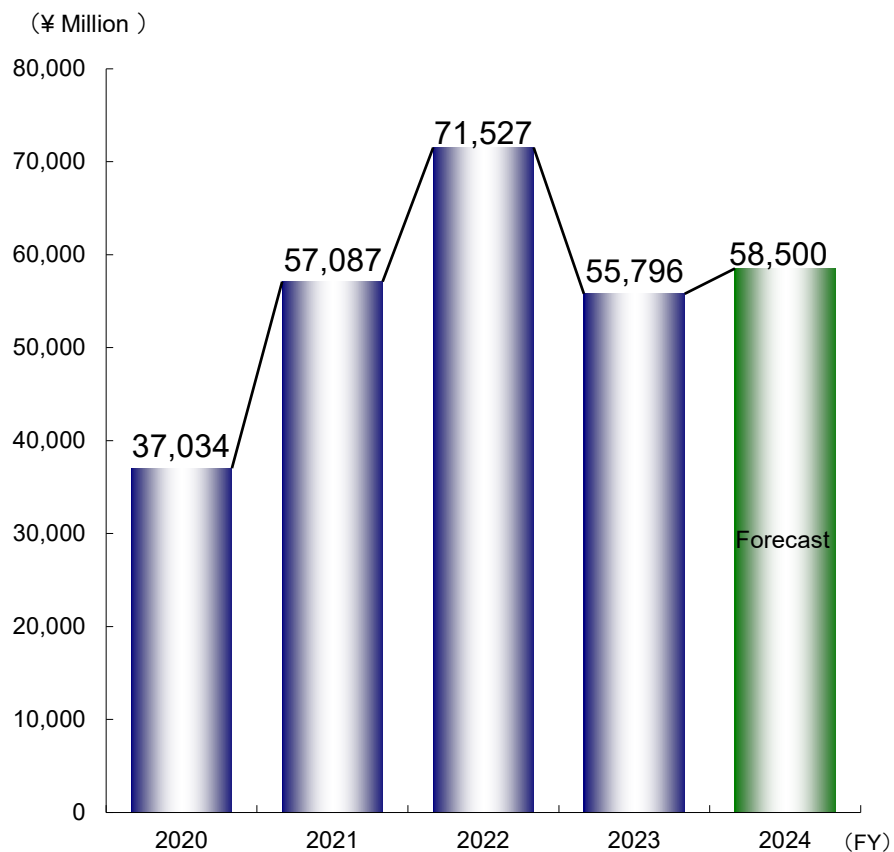
For the consolidated earning for the fiscal year ending March 31, 2025, based on the above business environment, the Group forecasts net sales of ¥58,500 million, operating income of ¥2,700 million, ordinary income of ¥2,700 million, and income attributable to owners of parent of ¥2,000 million.



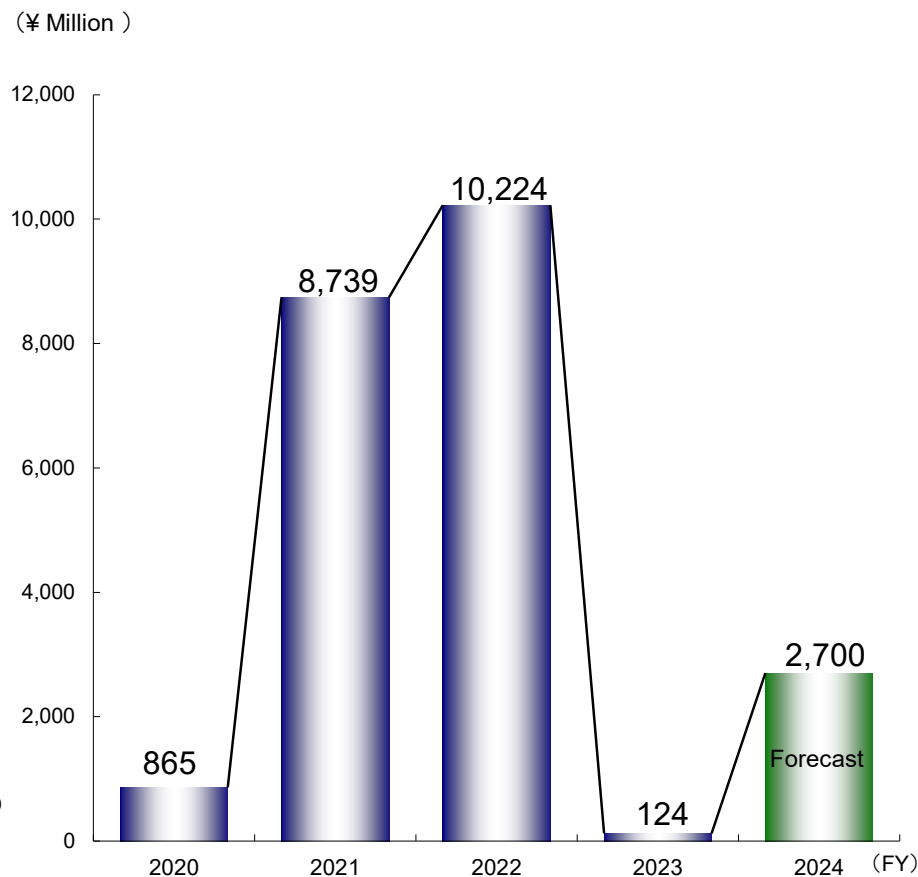
# Forecast i Net Sales, Operating Income

(Consolidated basis)

## Net Sales

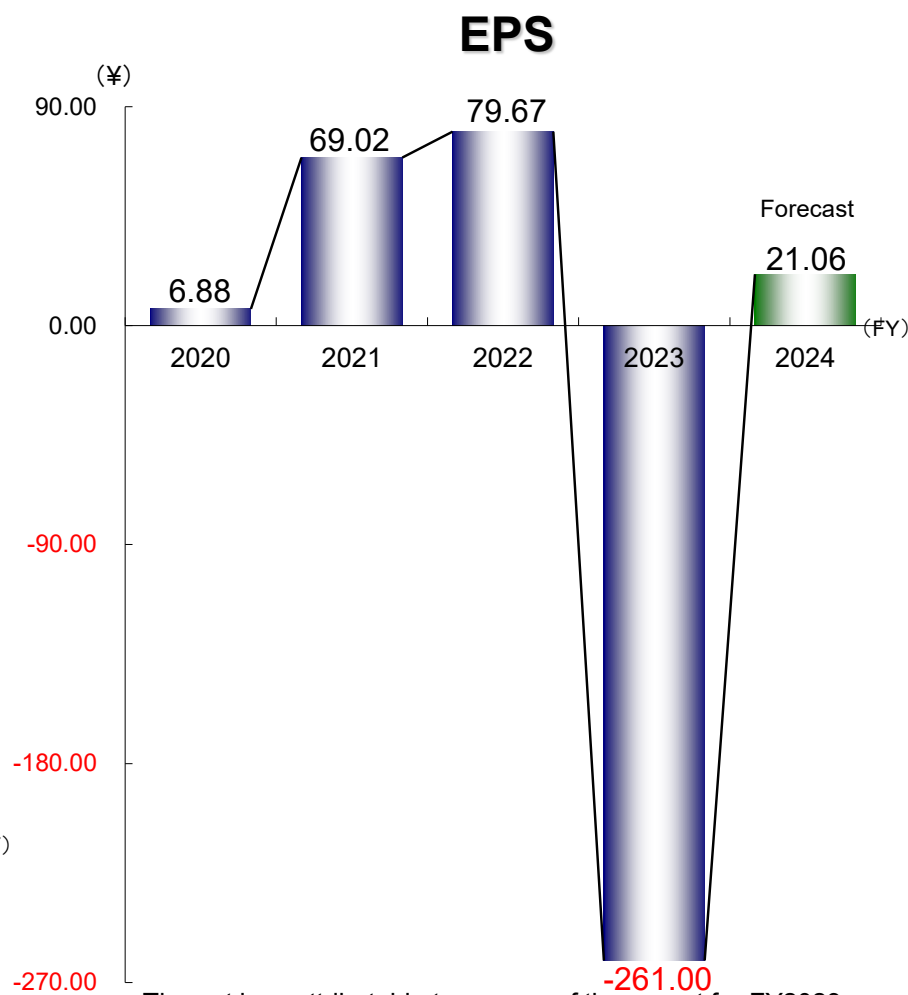
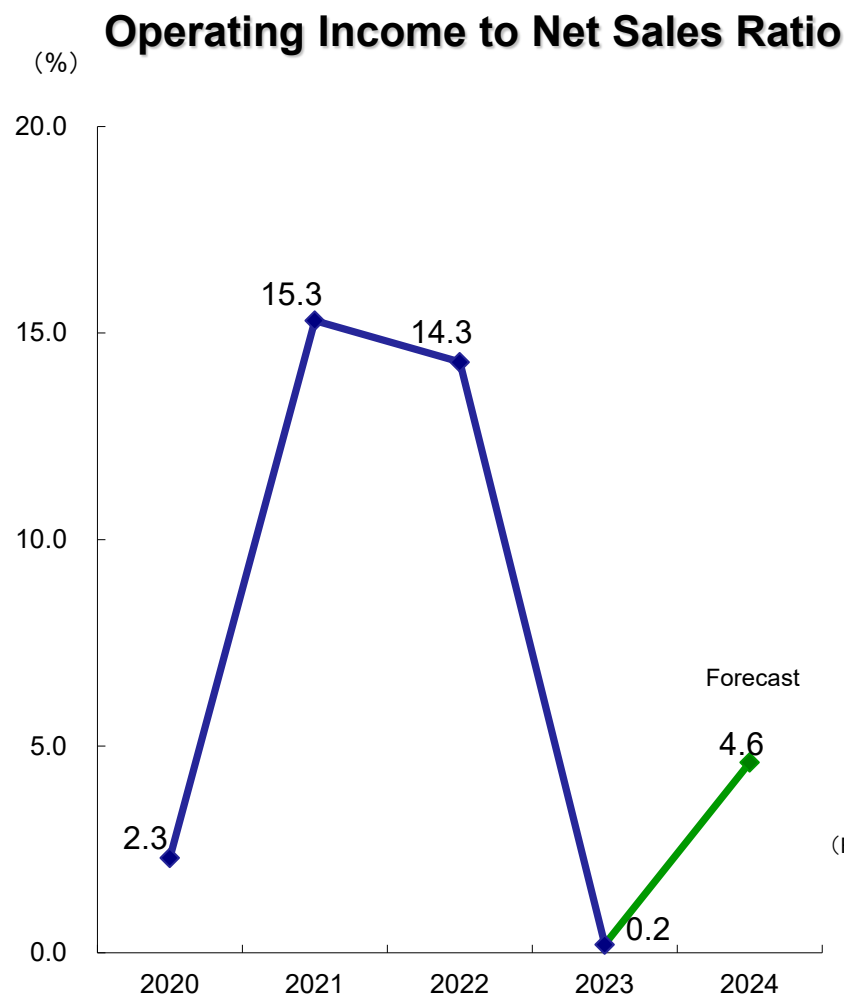


## Operating Income



# Forecast ii Operating Income to Net Sales Ratio, EPS

(Consolidated basis)

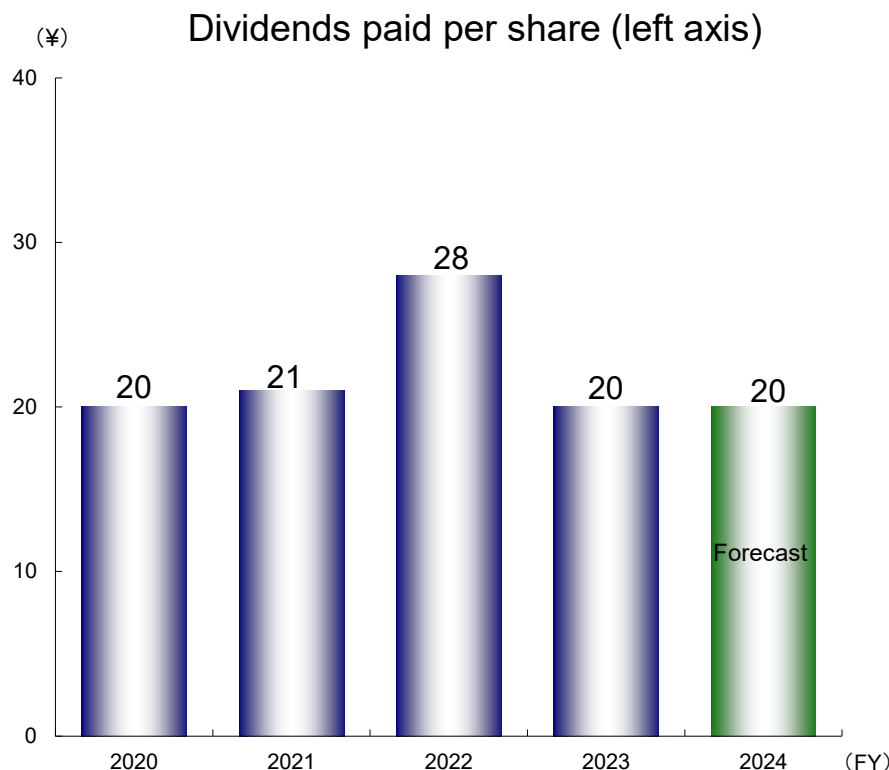


The net loss attributable to owners of the parent for FY2023 includes ¥28,159 million in impairment loss on intangible assets related to a consolidated subsidiary, Harmonic Drive SE.

# Forecast iii Dividends paid per share

(Consolidated basis)

## Dividends paid Per share



## Basic Policy on Earnings Distribution

At HDSI, our basic policy is to distribute earnings in accordance with operating performance.

While our general dividend policy is to maintain an annual dividend payout ratio of 30% of net income attributable to owners of parent, we determine return to shareholders through comprehensive considerations including dividend continuity and the maintenance of sufficient internal reserves.

For future business development, internal reserves are mostly invested in such areas as researching and developing new products, expanding and improving production facilities, and upgrading information management systems. Internal reserves are also used for agile execution of capital policies.

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***Harmonic Drive Systems Inc.***

— — — — —

***Business Activity — Products***

Leadership in Total Motion Control

May 20, 2024



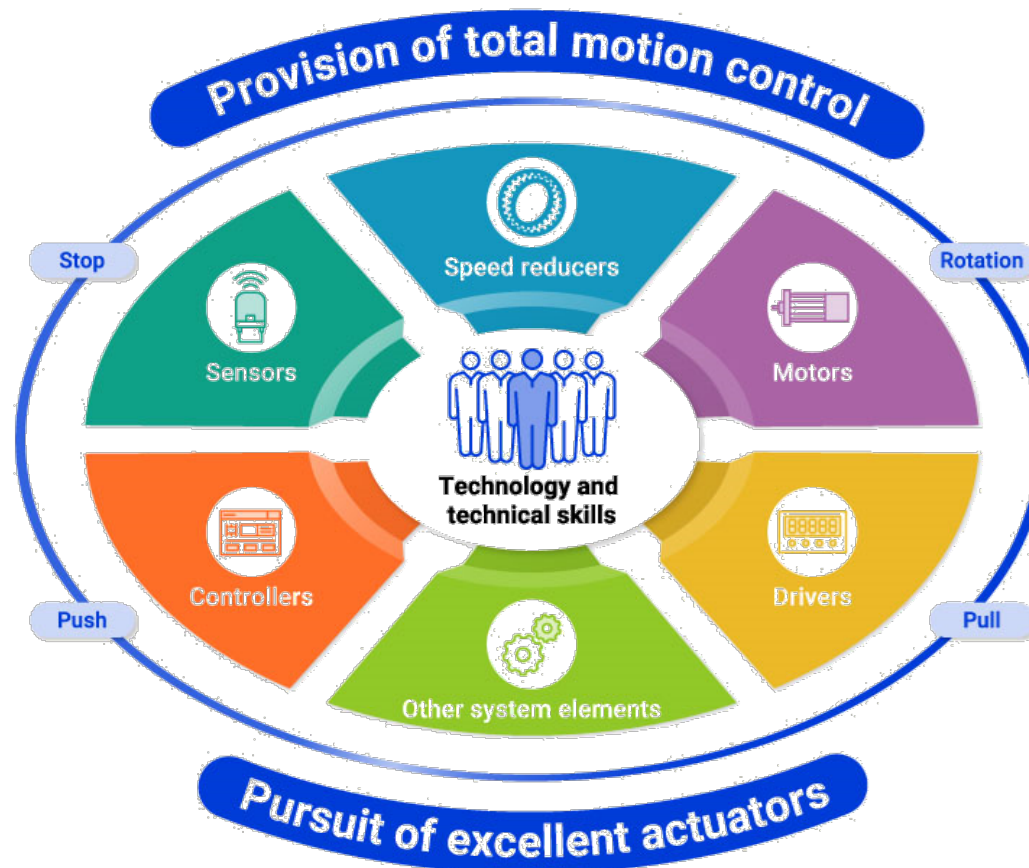
# Total Motion Control

## Our business Domain

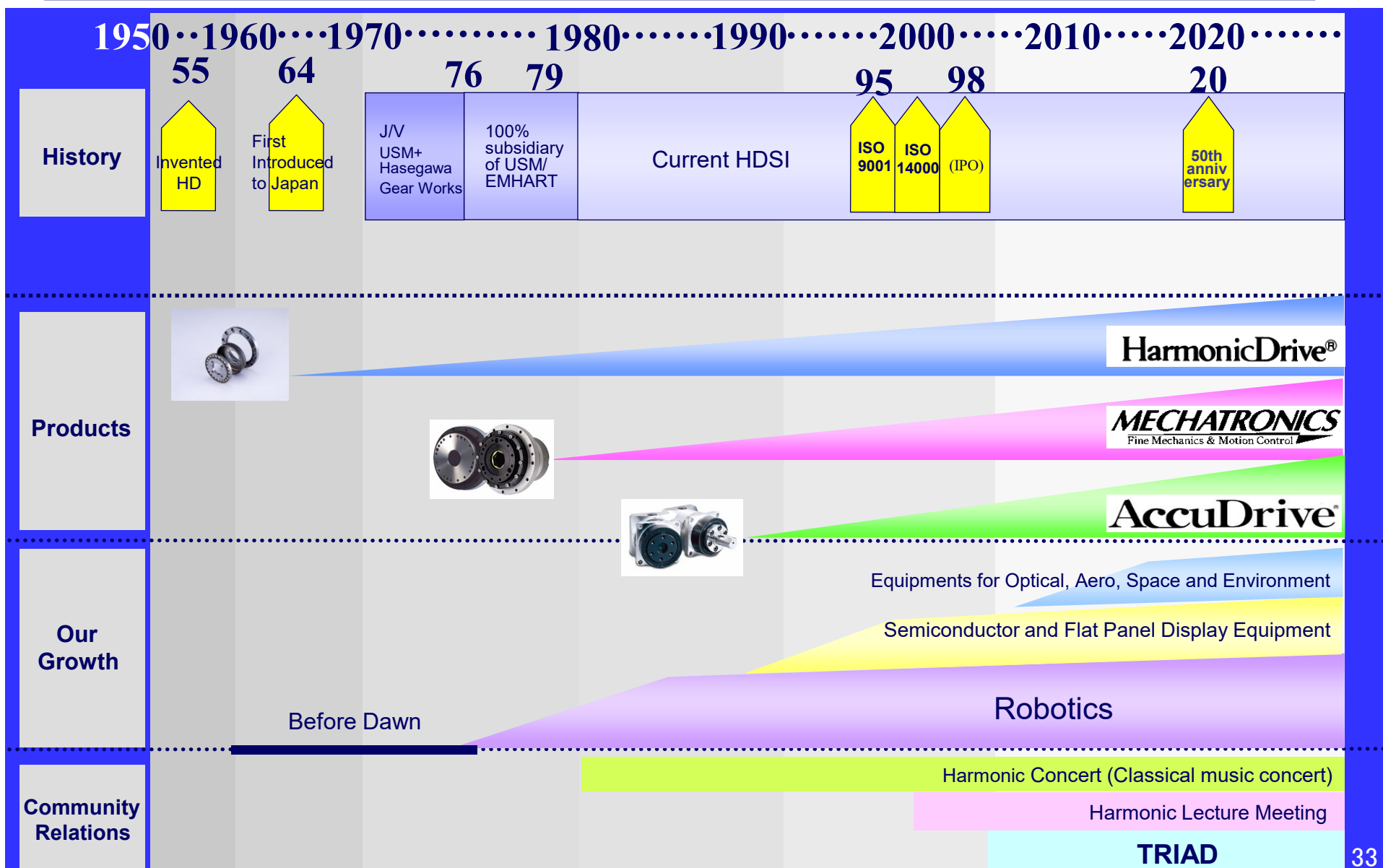


Developing and producing Precision Control Equipment and Components for a broad range of applications, focus on “Total Motion Control”

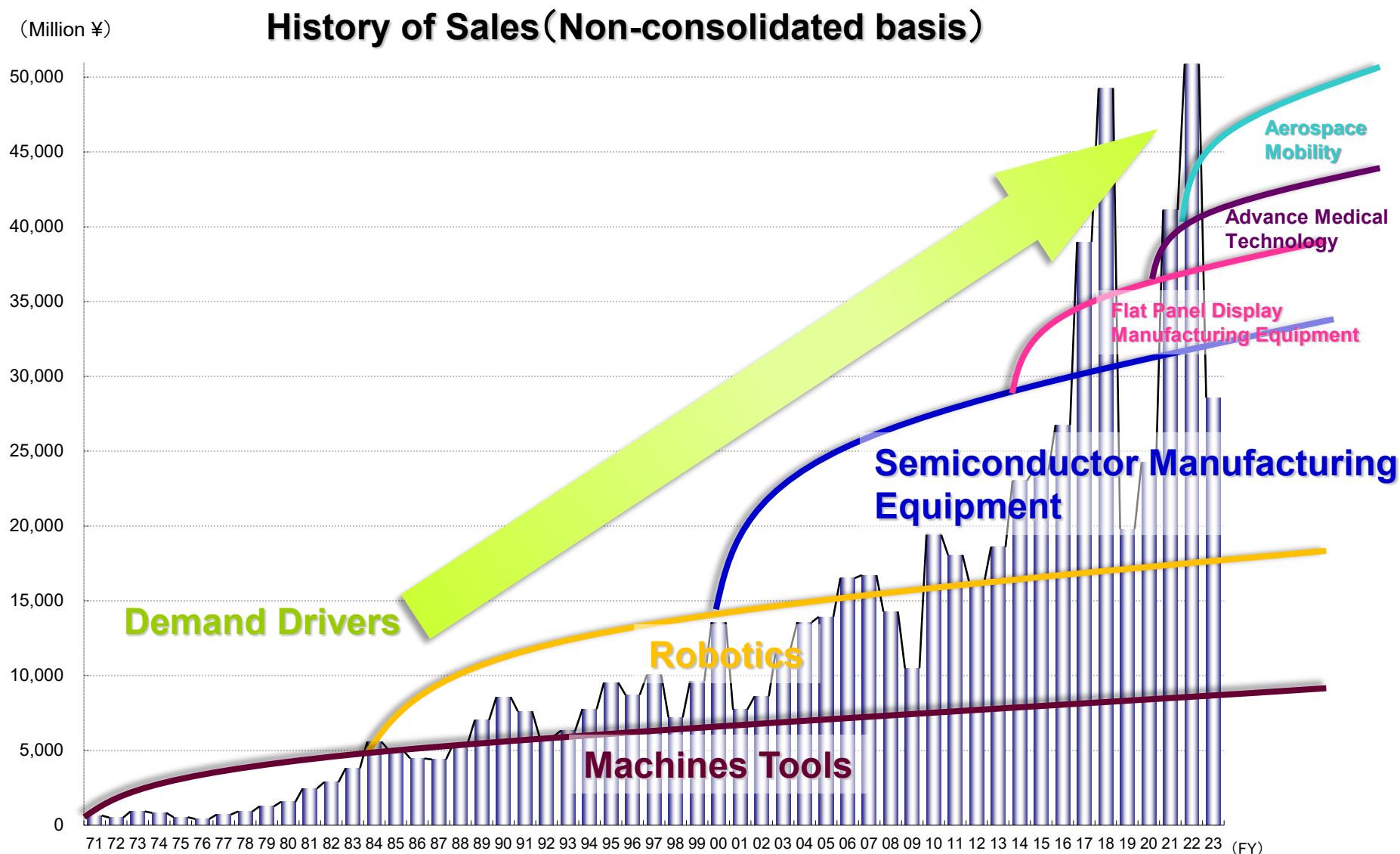
## Schematic Concept of Total Motion Control



# History of Harmonic Drive Systems Inc.

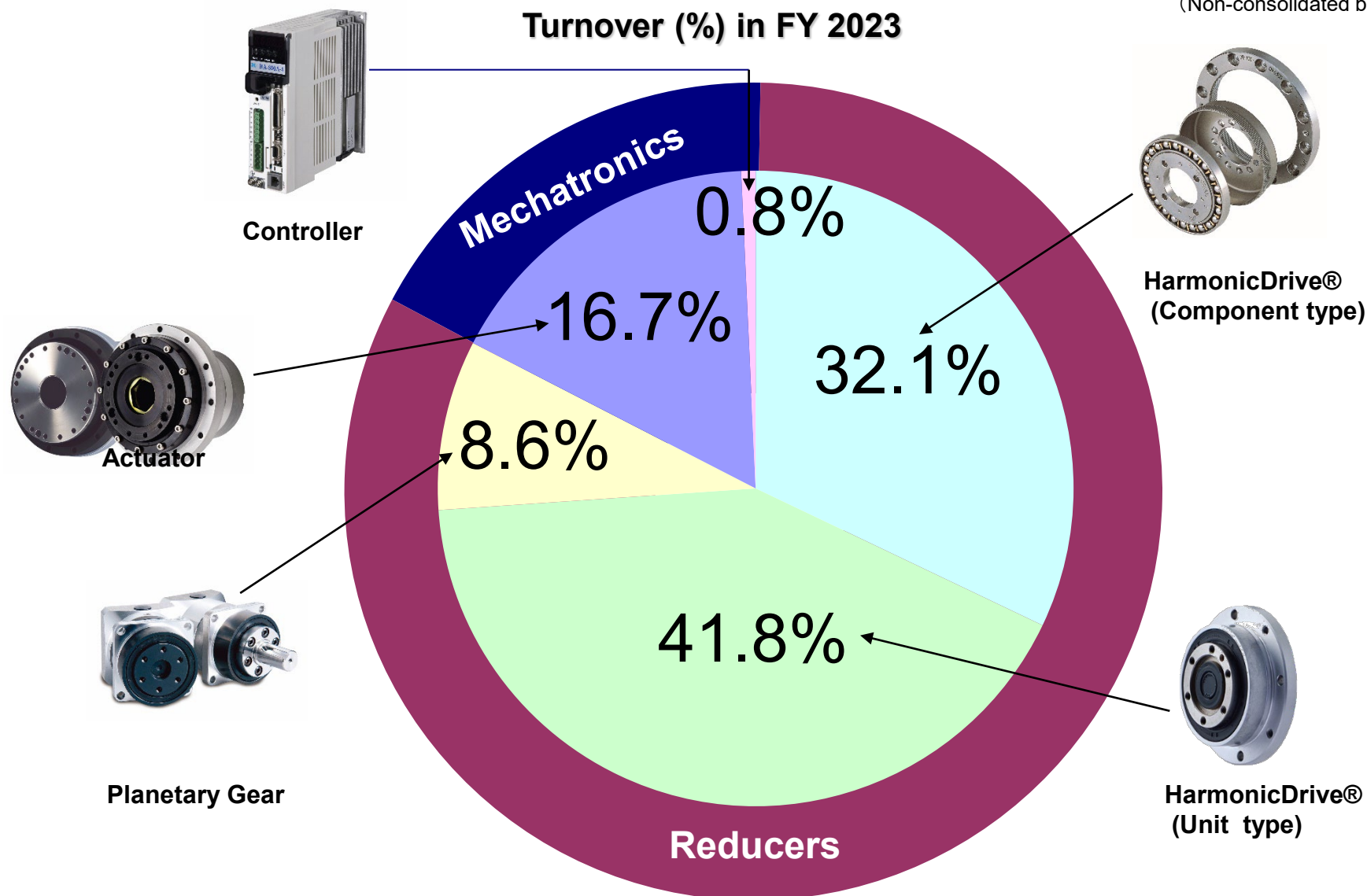


# History of Sales

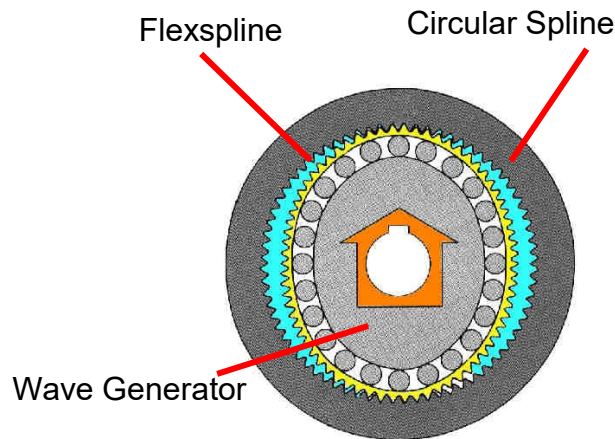


# Sales Structure by Product Types

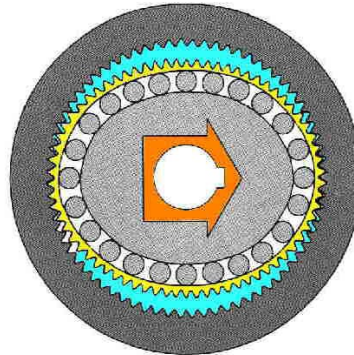
(Non-consolidated basis)



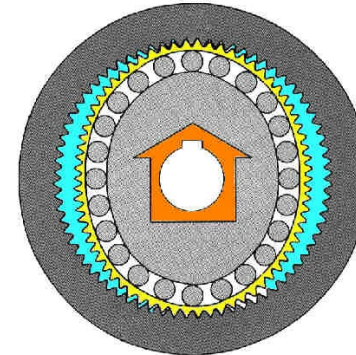
# Principle and Advantages of “HarmonicDrive®”



The flexspline is deflected by the wave generator into an elliptical shape, so the flexspline teeth to engage with those of the circular spline at the major axis and to be completely disengaged across the minor axis.



A clockwise rotation of the wave generator causes the flexspline to rotate in the opposite direction while subjecting it to elastic deformation.



When the wave generator rotates one revolution clockwise, the flexspline moves counterclockwise by two teeth relative to the circular spline.

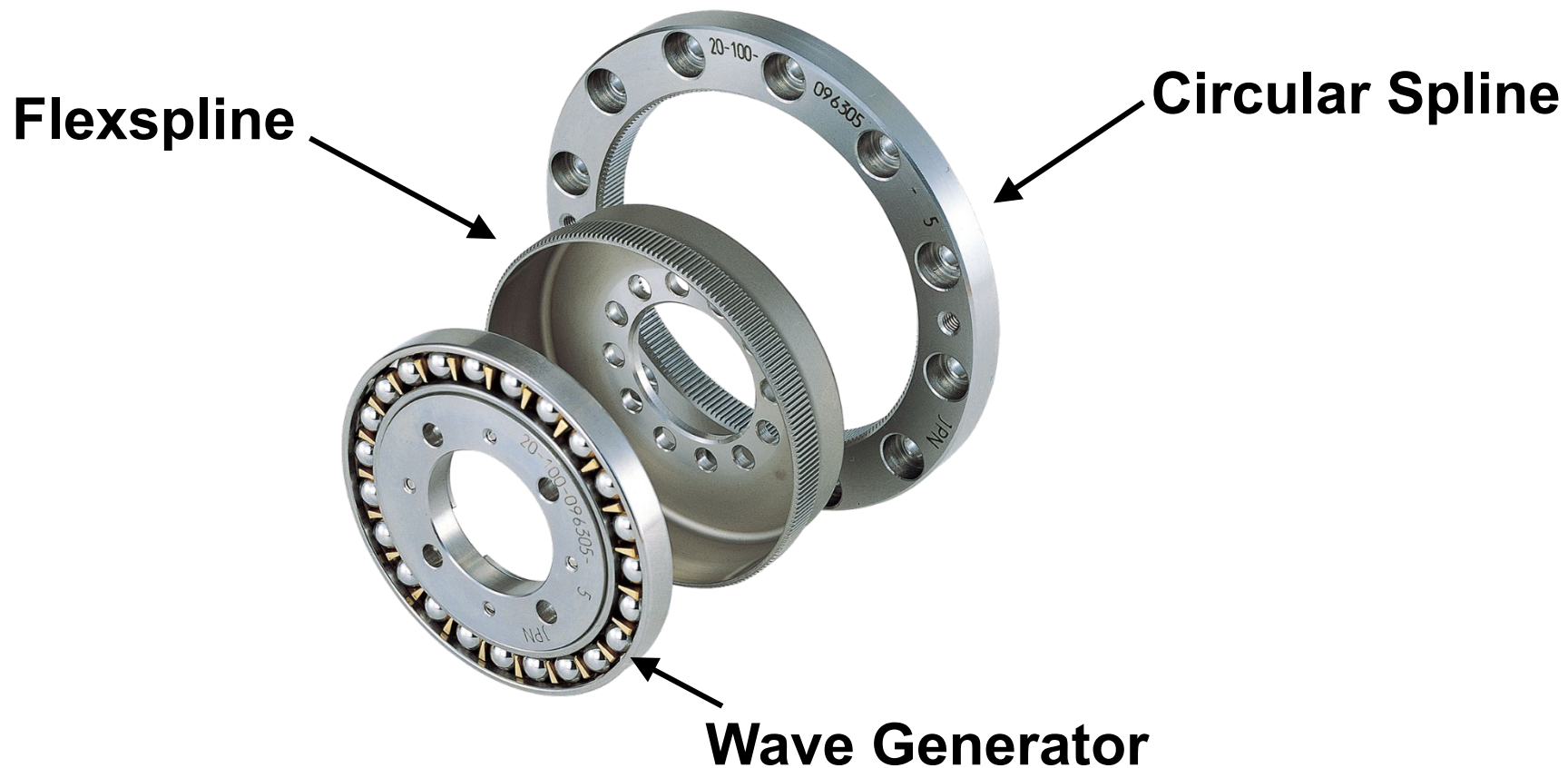
## Advantage of “HarmonicDrive®”

- Compact Design/ Reduced Weight
- Non-backlash
- Hollow Construction
- High Reduction Ratio by Single Stage
- High Efficiency
- High Torque Capacity
- High Positioning Accuracy and Repeatability
- High Torsional Stiffness
- Simple Installation and Assembly
- Low Noise and Smoothness operation



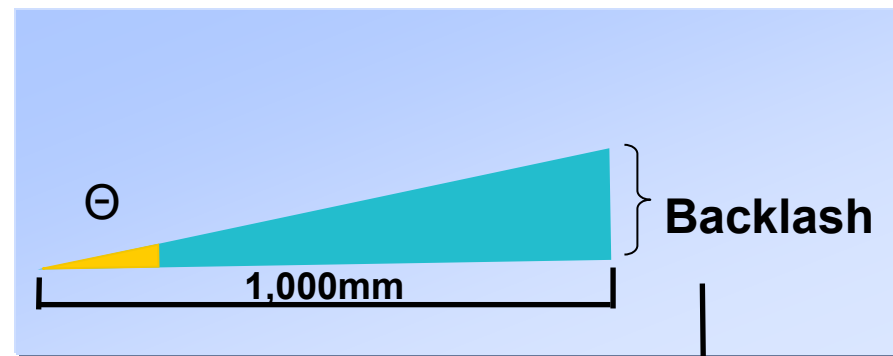
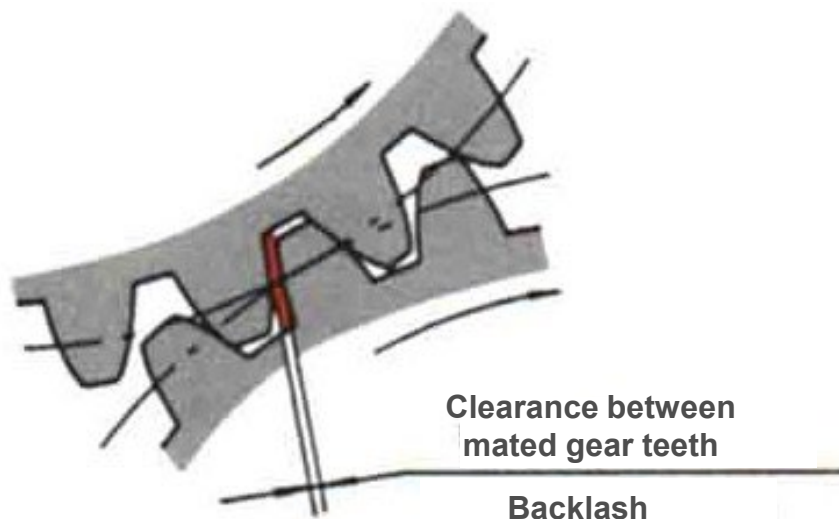
# Features and Benefits “ Compact and Lightweight”

Comprised of just three basic components → Compact and Lightweight





# Features and Benefits “Zero Backlash”



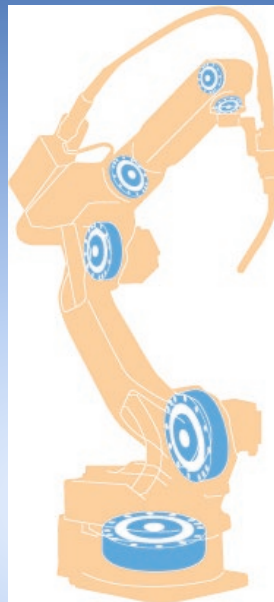
Applications	Backlash	Backlash after 1m	Our Products
General Industrial Machinery	0.5 degrees	8.7mm	None
Transporters and Processing Machinery	0.05~0.25 degrees	0.9mm~4.3mm	AccuDrive <sup>™</sup> HarmonicPlanetary <sup>®</sup>
Robotics and Semiconductor Equipment	0~0.02degrees	0~0.3mm	HarmonicDrive <sup>®</sup>

# Feature Applications

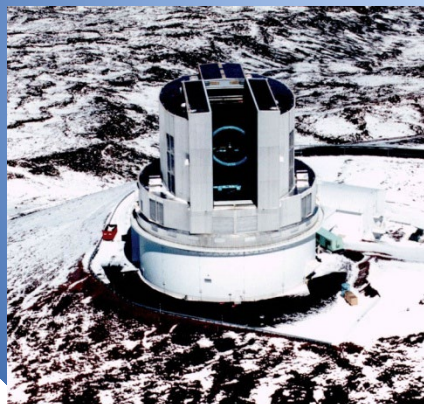
**Hayabusa 1.2** Photograph courtesy of Japan Aerospace Exploration Agency (JAXA)



**Industrial robots**



**eVTOL**



**Optical-infrared telescope "Subaru"**  
installed on Mauna Kea on the island of Hawaii

Photograph courtesy of the National Astronomical Observatory of Japan, National Institutes of Natural Sciences



**Cobot** Photograph courtesy of Techman Robot Inc.



**Robotic Surgical System**



# Target Segment Image

