

Harmonic Drive Systems Inc.

Investors' Guide FY 2024

Year ended March 31, 2025

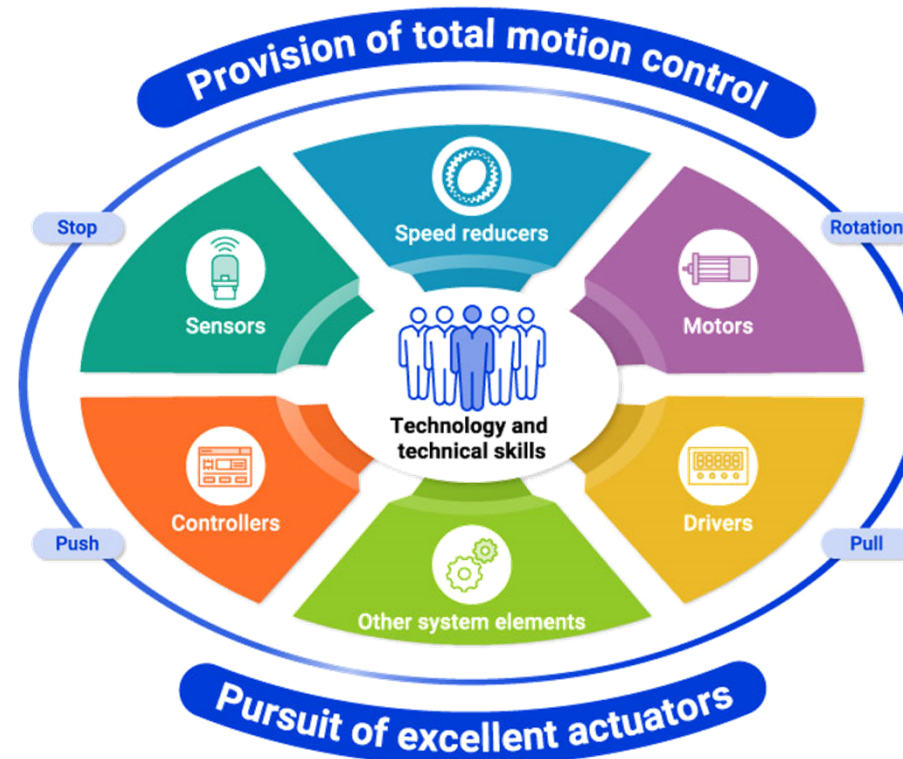
Leadership in Total Motion Control

May 20, 2025

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

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.

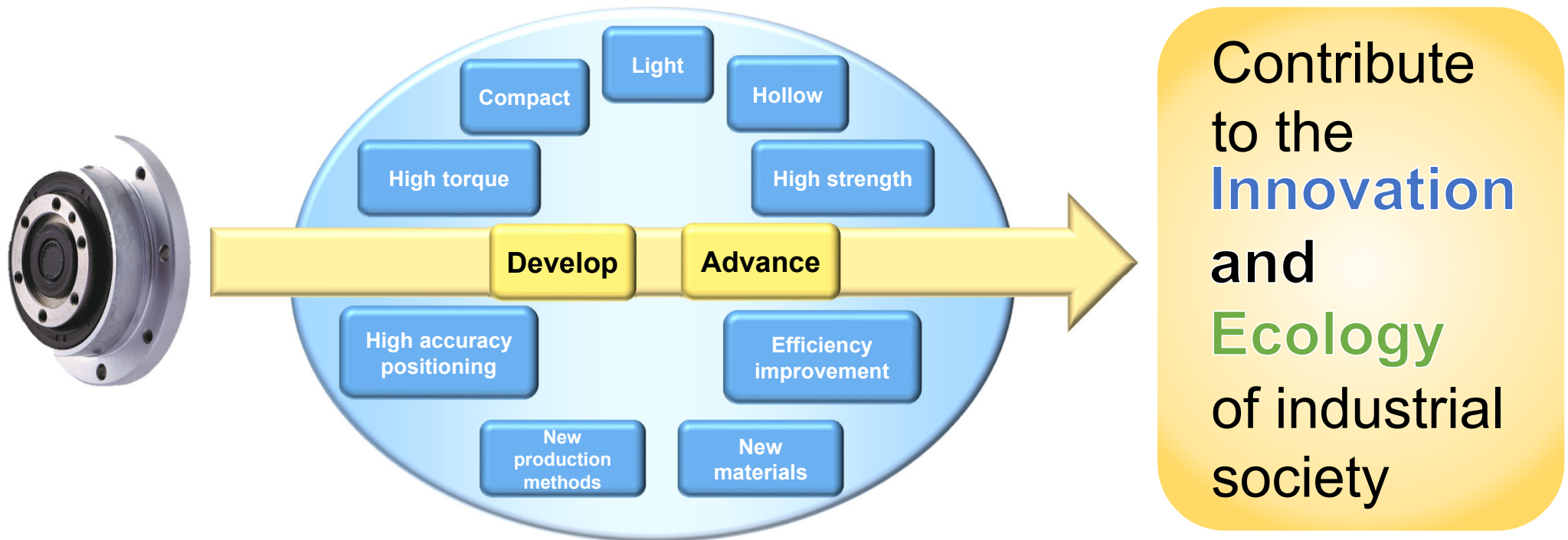
We aspire to be a company that helps to improve the environment and the quality of the communities where we are located.

Basic Policy of Sustainability

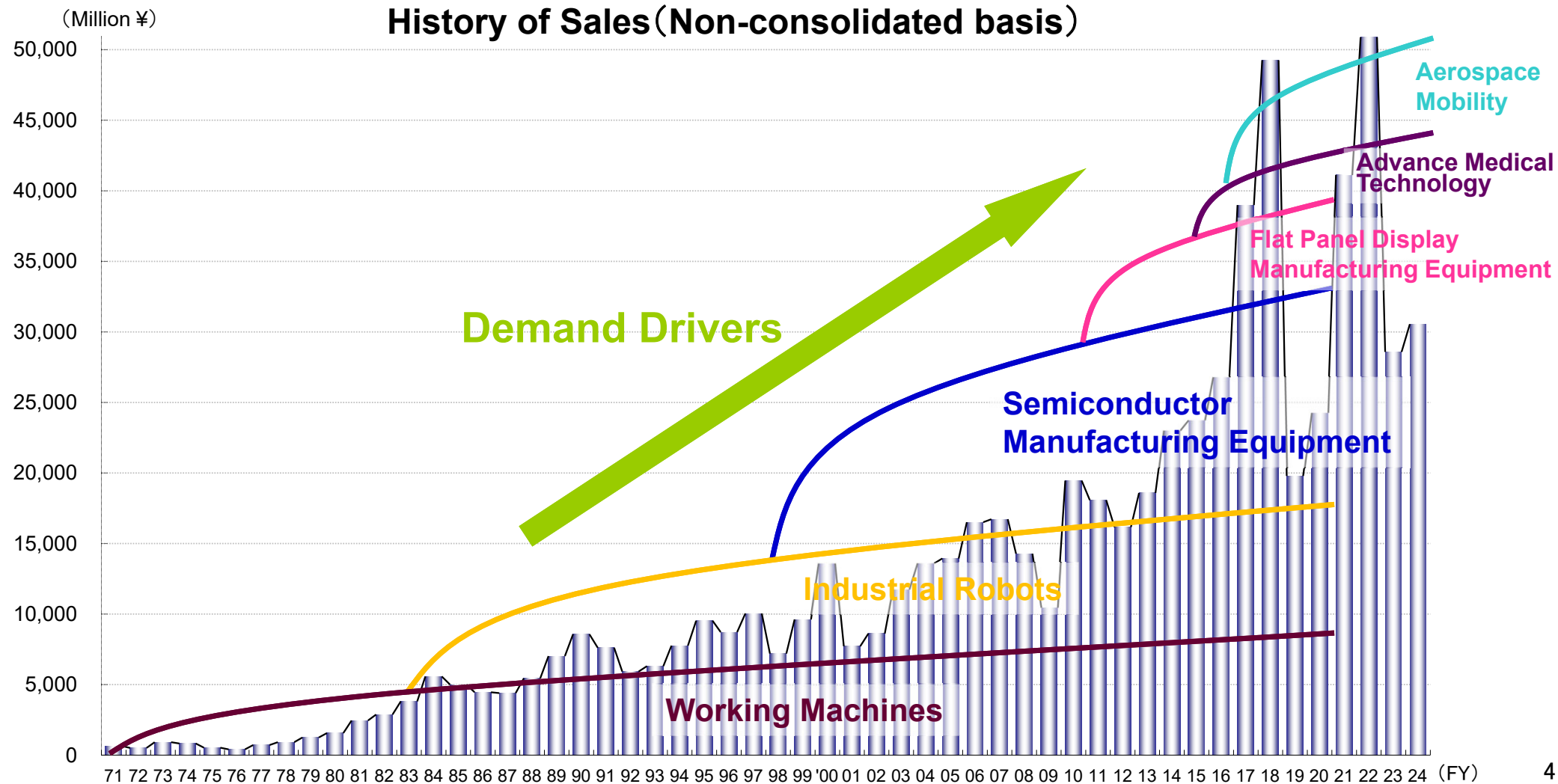
Basic Policy of Sustainability (approved on March 25, 2022)

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



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.

*The above is a summary version. For full details, please refer to the latest Annual Securities Report "Yukashouken Houkokusyo" (in Japanese).

Medium-term to Long-term Management Strategies and Management Targets

Medium-term to Long-term Management Strategies

The Group promotes its unwavering mission of contributing to social and technological innovation through motion control technology. Mechatronics and precision speed reducers, which we produce, are 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 “AI and humanoid 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 current 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 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

Medium-term to Long-term Management Strategies and Management Targets

Medium-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

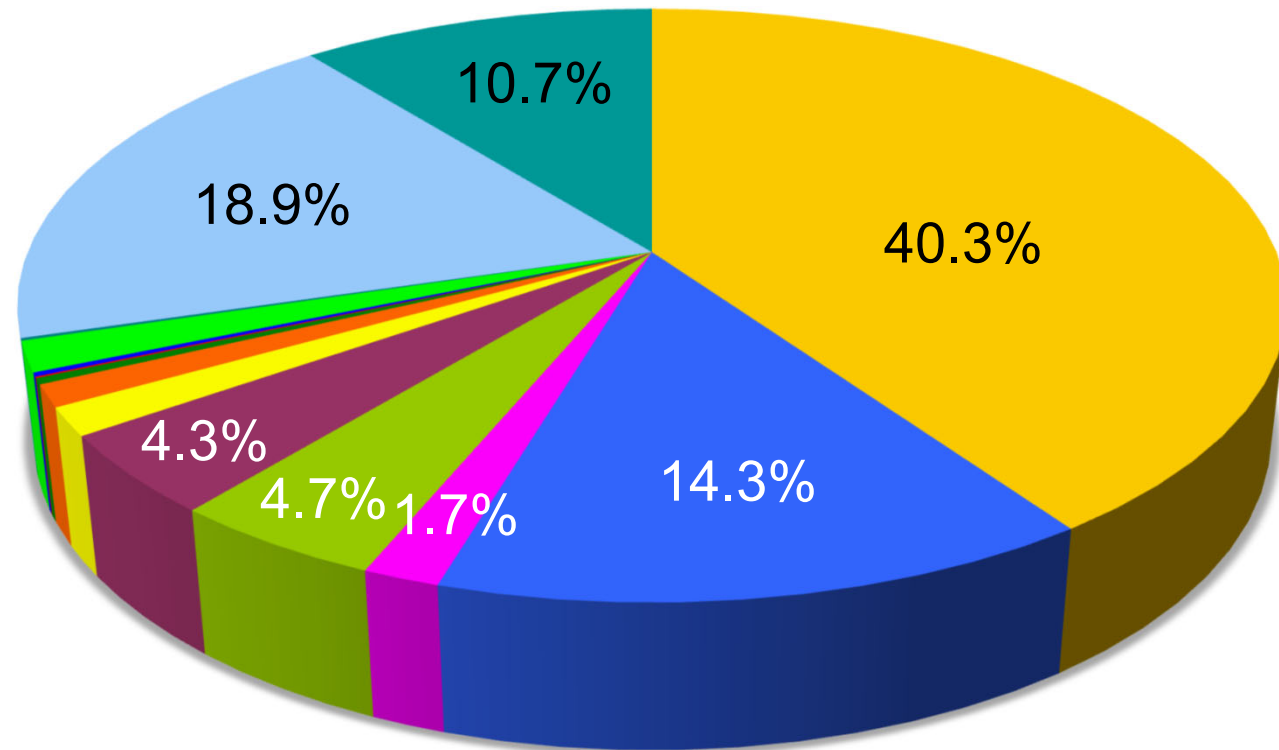
Target Management Indicators

Towards realizing sustainable growth and long-term enhancement of corporate value, the Group sets 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. 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.

Sales Composition by Application Fields

Turnover (%) in FY 2024

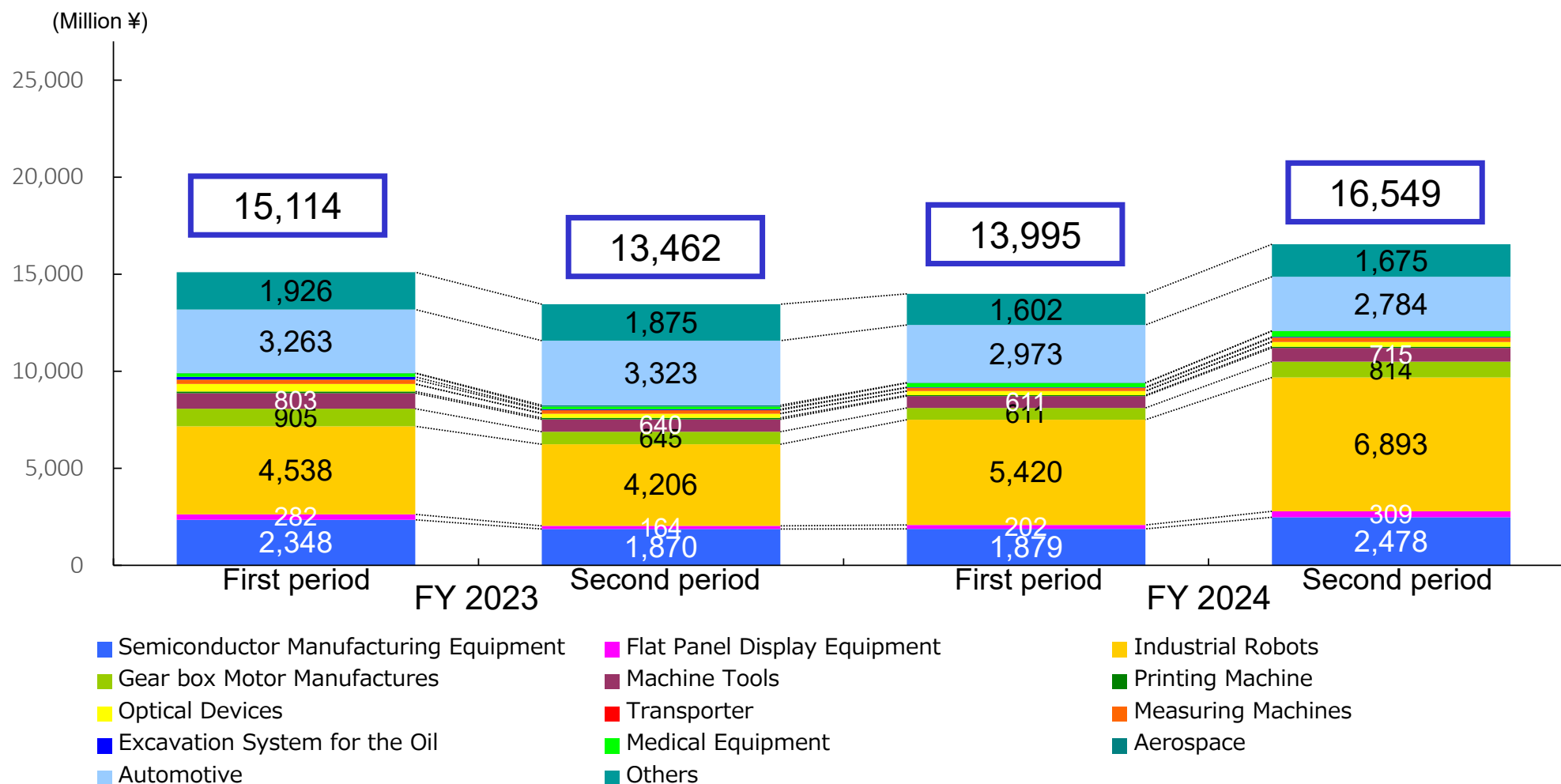
(Non-consolidated basis)



- Industrial Robots
- Semiconductor Manufacturing Equipment
- Flat Panel Display Equipment
- Gearbox for Motor Manufactures
- Machine Tools
- Optical Devices
- Measuring Machines
- Printing Machines
- Transporter
- Excavation System for the Oil
- Medical Equipment
- Aerospace
- Automotive
- Others

Semiannual Sales Composition by Application Fields

(Non-consolidated basis)



Operating Results

During the fiscal year ended March 31, 2025

Overview of Operating Results for the Fiscal Year under Review

Although the global economy during the fiscal year under review was on a recovery trend overall, uncertainties regarding the outlook remained due to persistent concerns, including protectionist policies by U.S. President Donald Trump, the real estate recession and sluggish domestic demand in China, and the surge in resource and raw material prices. As for the impact on the Harmonic Drive Systems Group (hereinafter “the Group”), while orders received showed a moderate recovery, rising costs for procured components and increased personnel expenses due to wage hikes became more apparent. In Japan, signs of a bottoming out in orders were observed, and orders received from customers whose inventories of our products had been optimized began to recover gradually. Orders for industrial robots increased, driven by expanded orders from high-end local robot manufacturers in China and new customer projects, while orders for automotive applications decreased. As a result, consolidated orders received for the full year increased by 20.3% year on year to ¥53,041 million.

Regarding net sales trend by application, net sales for industrial robots increased significantly, reflecting progress in inventory adjustments and a return to near-normal ordering by major customers, as well as order expansion from high-end local robot manufacturers in China and acquisition of new customer projects. On the other hand, net sales for semiconductor manufacturing equipment declined year on year, despite continued demand in cutting-edge fields such as data center and generative AI applications, as the previous fiscal year's results had been supported by a high backlog of orders. Net sales for automotive applications also decreased due to production adjustments by customers.

As a result of the above, consolidated net sales amounted to ¥55,645 million, down 0.3% year on year.

In terms of profit and loss, the Group launched a company-wide cost innovation project, promoting reforms centered on manufacturing methods and operational efficiency. In the first half, the pace of order recovery for industrial robot and semiconductor equipment-related products was slower than expected, and the operating rate of domestic production plants remained at a low level, resulting in an operating loss. In the second half, as orders trended toward recovery, the deficit recorded in the first half was offset. Although operating profit decreased by 94.4% year on year, the Group returned to profitability, recording ¥6 million in operating profit for the full year. In addition, the Group recorded ¥5,868 million in extraordinary income, primarily from the sale of investment securities, and as a result, profit attributable to owners of parent amounted to ¥3,473 million (compared with a loss attributable to owners of parent of ¥24,806 million in the previous fiscal year).

Net sales by product group were as follows: speed reducers totaled ¥42,304 million, up 7.3% year on year, and mechatronics products totaled ¥13,341 million, down 18.5% year on year. These accounted for 76.0% and 24.0% of total net sales, respectively.

Operating Results

In fiscal year 2024, which is the first year of the medium-term management plan for fiscal years 2024-2026, we worked on various measures set out in the plan.

On the sales front, the Company worked to strengthen relationships with customers in the rapidly developing AI and humanoid robot sectors, while also responding more swiftly to issues faced by existing customers in order to secure orders. At the same time, the Company also implemented price increases for its products and, although limited, confirmed a certain level of effectiveness during the fiscal year. Furthermore, the Company sought to expand opportunities for adoption of its products by exhibiting not only at general mechanical component trade shows but also at exhibitions related to the aerospace sector.

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 mechatronics field, the Company launched the HA900A series of AC servo drivers to the market. The Company also focused on the development of servo actuators with precision planetary speed reducers that offer more compact designs than competing products, aiming to strengthen and expand its lineup of high value-added mechatronics products.

On the production front, the Company transferred the manufacturing operations for mechatronics products to Harmonic Winbel Inc. (a consolidated subsidiary), aiming to optimize the overall allocation of production sites across the Group, make effective use of assets, and ensure stable and efficient business operations. The Company also promoted the company-wide cost innovation project, working to reduce costs by expanding its supplier base and shifting assembly operations overseas. Utilizing DX solutions, the Company introduced the "MES (Manufacturing Execution System)" at the Ariake Plant (Nagano Prefecture) for real-time management, including grasping the status of manufacturing processes, managing forecasts and actual results, and providing instructions and support, and has begun operation. The Company has also worked to further advance DX in production by deploying the expertise gained at the Ariake Plant to other facilities.

At overseas production bases in Germany and the United States, the Company transferred product production to increase locally produced items 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 its sustainability initiatives, the Company formulated the "Human Rights Policy of Harmonic Drive Systems Group" and has been advancing efforts to respect human rights. At the Sustainability Committee, established in April 2023, the management team has taken the initiative to actively promote the creation of sustainable corporate value. 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 for industrial robots and semiconductor manufacturing equipment showed a moderate recovery trend, while net sales for automotive and other general industrial machinery applications decreased. As a result, net sales declined by 0.4% year on year to ¥21,727 million. Segment profit (ordinary profit) decreased by 45.6% year on year to ¥2,224 million, reflecting the impact of decreased sales as well as a ¥1,980 million decline in dividend income from subsidiaries.

< China >

Net sales increased by 35.1% year on year to ¥5,623 million due to expanded orders from local robot manufacturers in China. Segment profit (ordinary profit) decreased by 6.5% year on year to ¥302 million due to changes in the sales mix.

< North America >

Net sales decreased by 12.5% year on year to ¥11,628 million, reflecting a decline in demand for advanced medical applications (surgical robot-related) due to customer production adjustments, and a delayed recovery in demand for semiconductor manufacturing equipment. Segment profit (ordinary profit) decreased by 67.4% year on year to ¥556 million due to the impact of decreased sales.

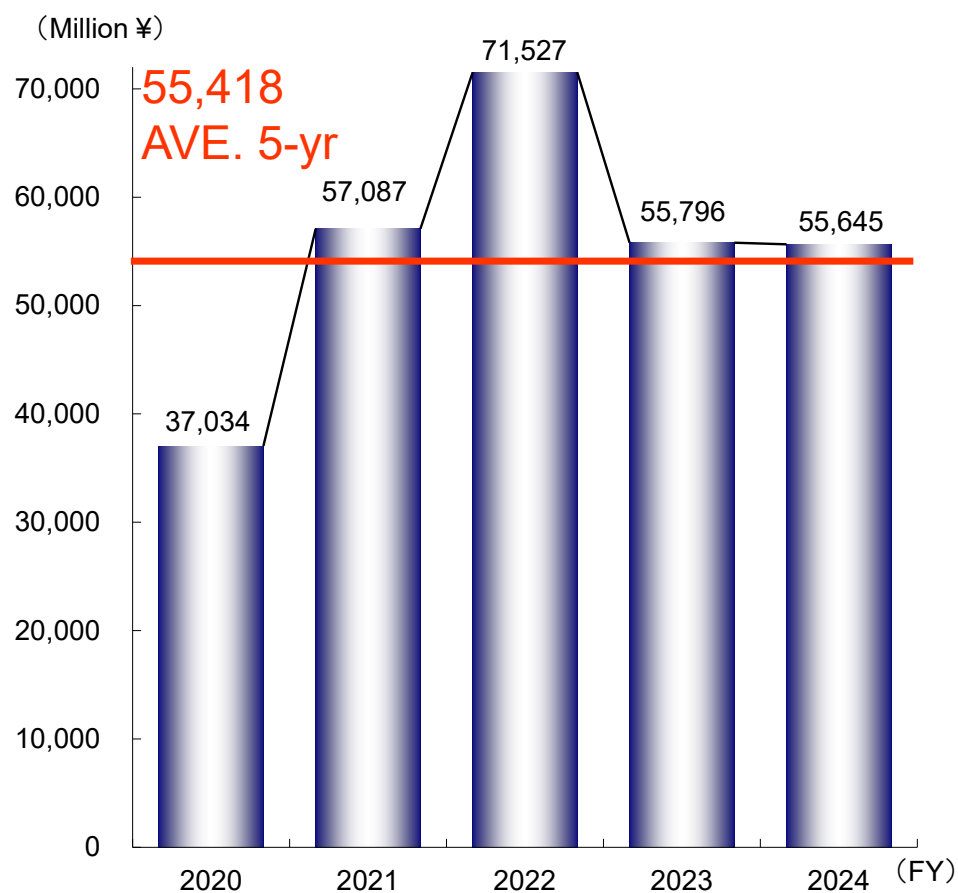
< Europe >

While exchange rates of the yen remained weak, demand did not increase due to sluggish conditions in the European economy, resulting in net sales of ¥16,666 million, up 0.8% year on year. Segment loss (ordinary loss) amounted to ¥52 million (compared with segment profit of ¥214 million in the previous fiscal year), due to ¥944 million in amortization of intangible assets posted at the time of the acquisition of shares in Harmonic Drive SE.

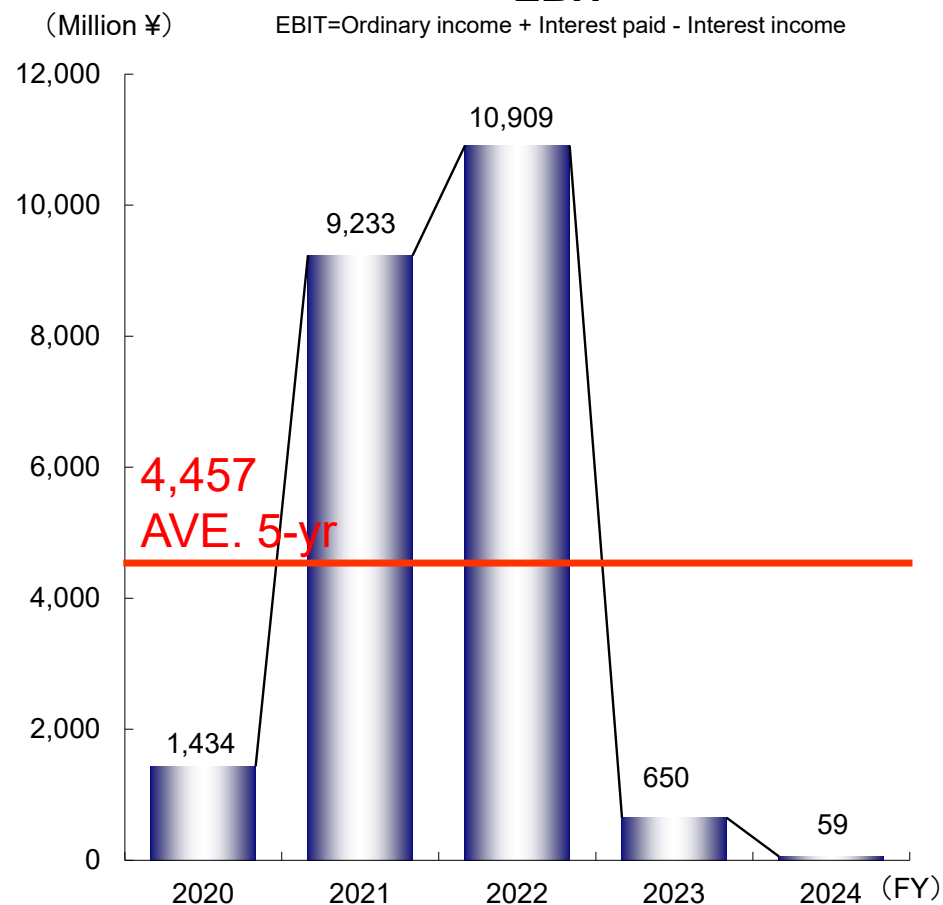
Results i Net Sales, EBIT

(Consolidated basis)

Net Sales



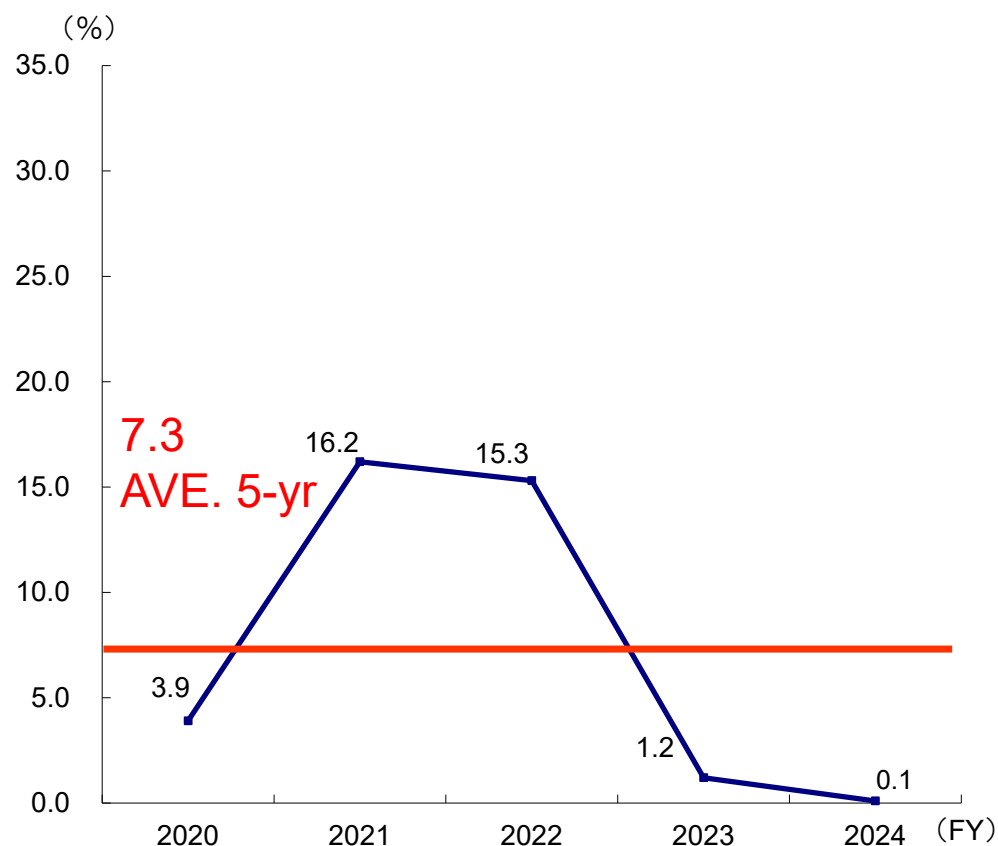
EBIT



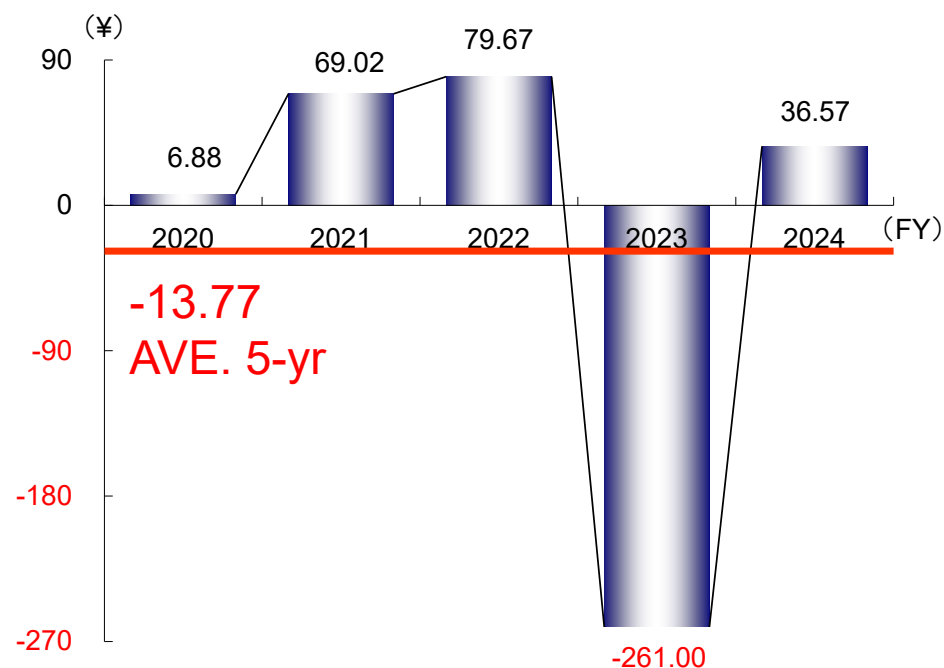
Results ii EBIT to Net Sales Ratio, EPS

(Consolidated basis)

EBIT to Net Sales Ratio



EPS



Dividends paid per share

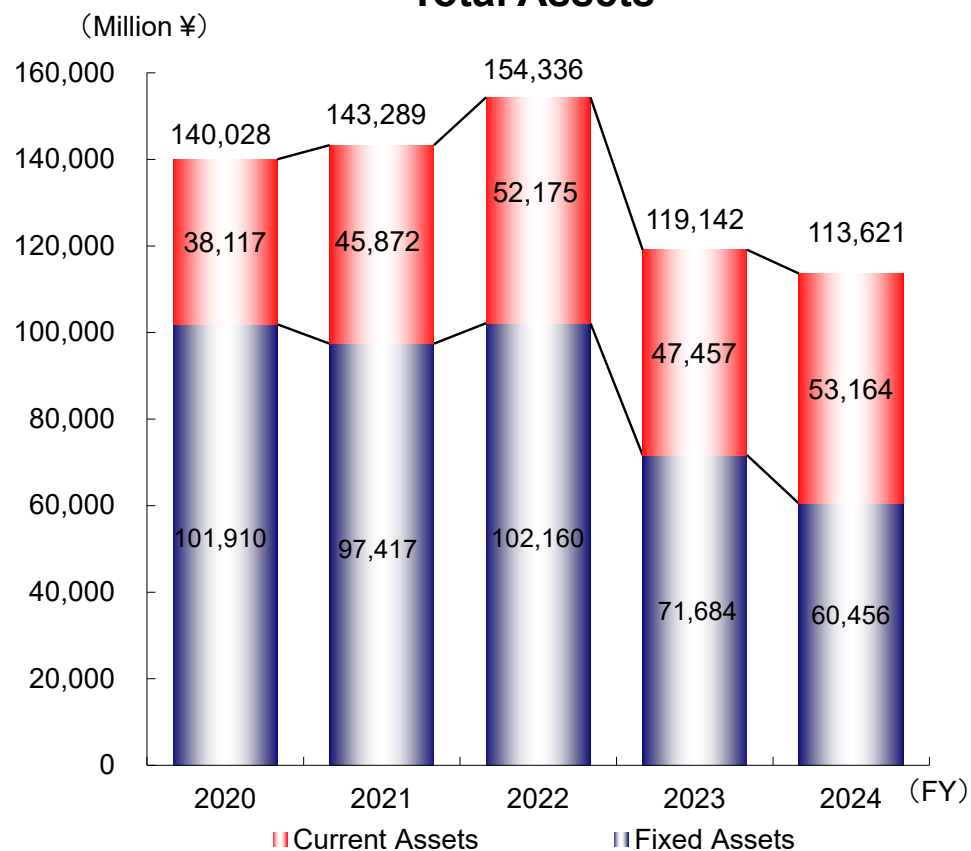
FY	2020	2021	2022	2023	2024
Dividends(¥)	20	21	28	20	20

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

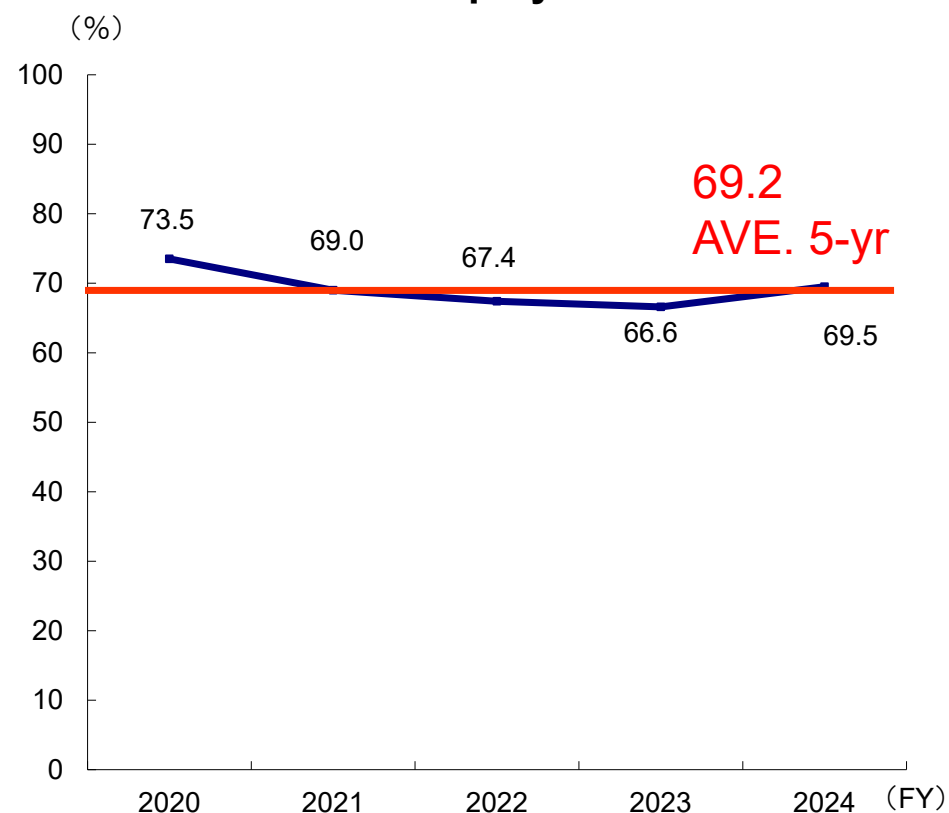
(Consolidated basis)

Total Assets



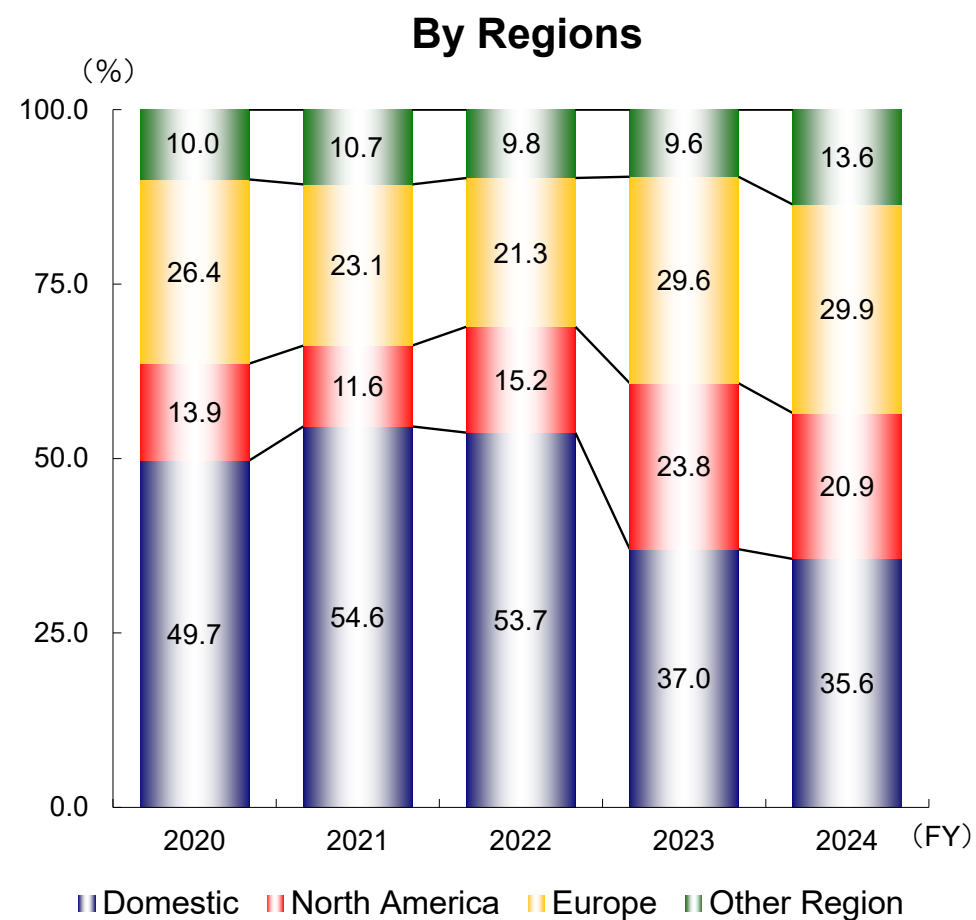
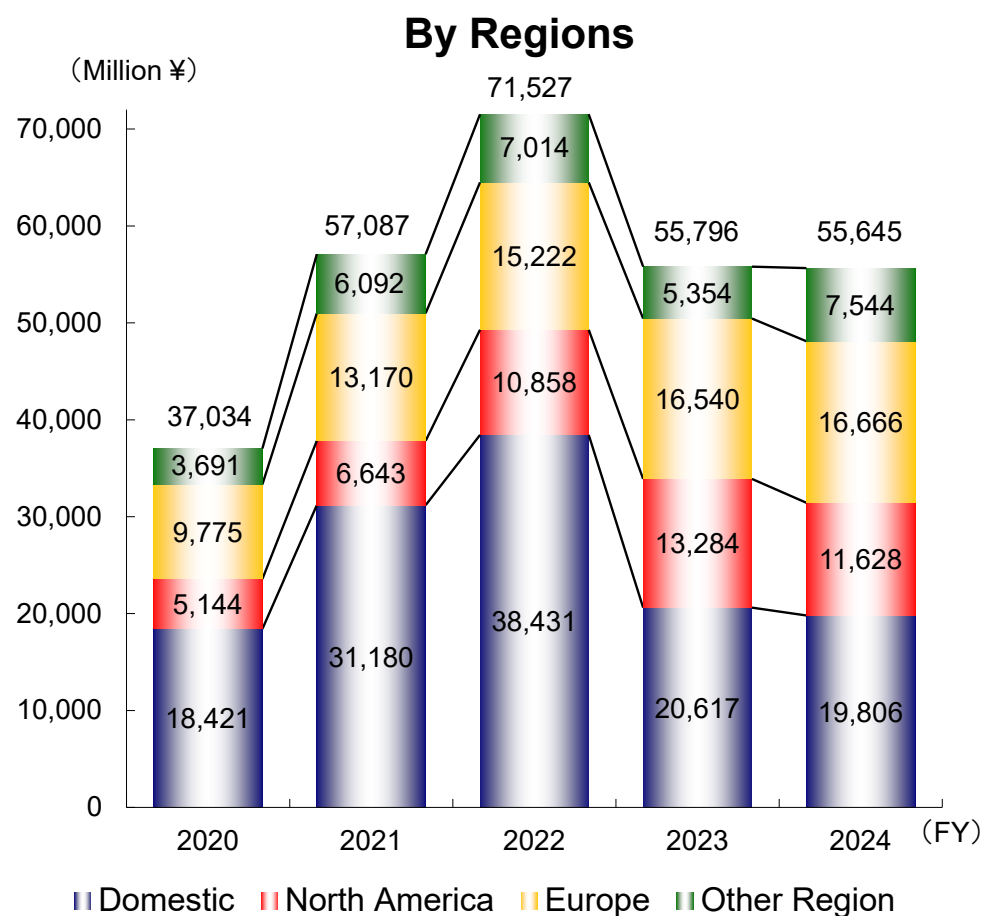
The Company recognized an impairment loss of ¥28,159 million on intangible fixed assets in FY2023, in conjunction with the consolidation of Harmonic Drive SE as a subsidiary.

Equity Ratio



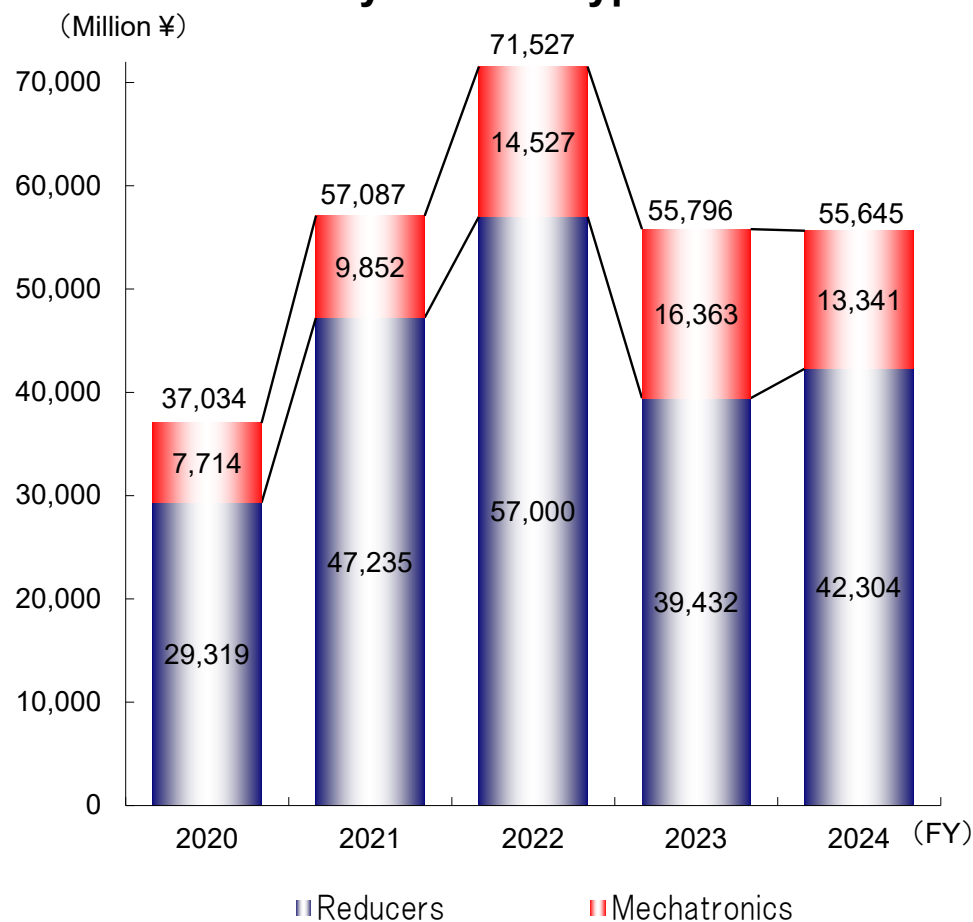
(Consolidated basis)

Sales Structure by Regions



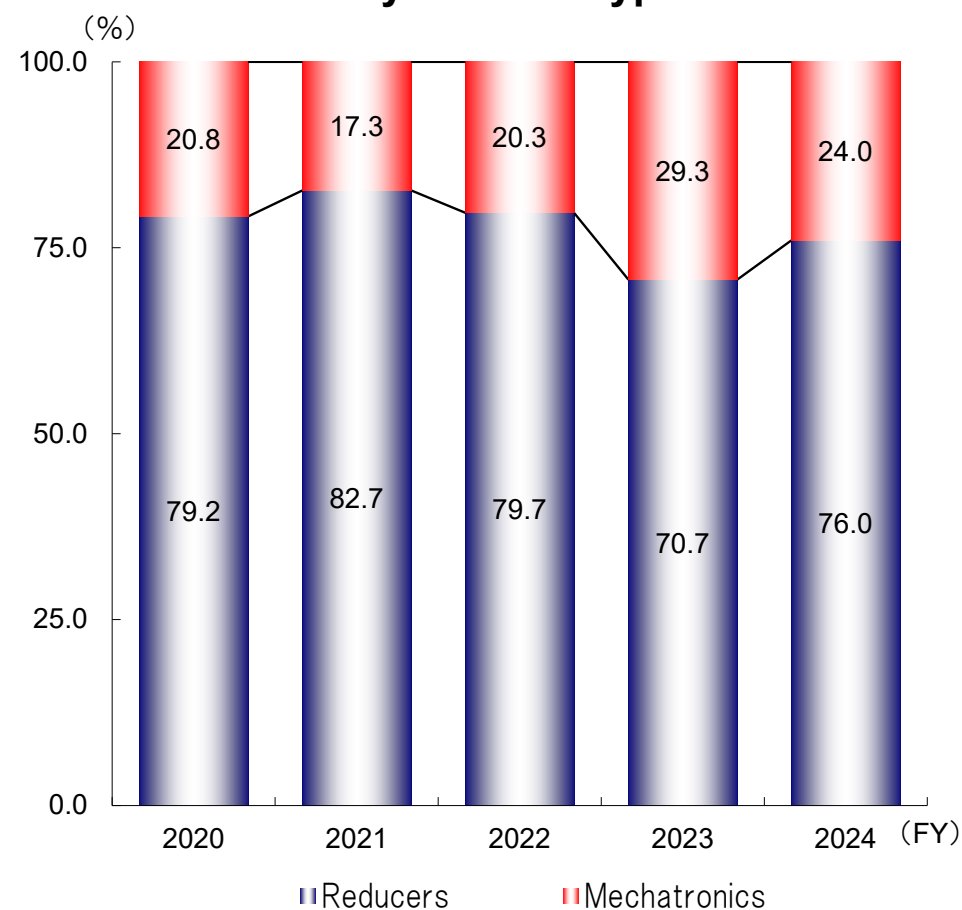
Sales Structure by Product Types

By Product Types



By Product Types

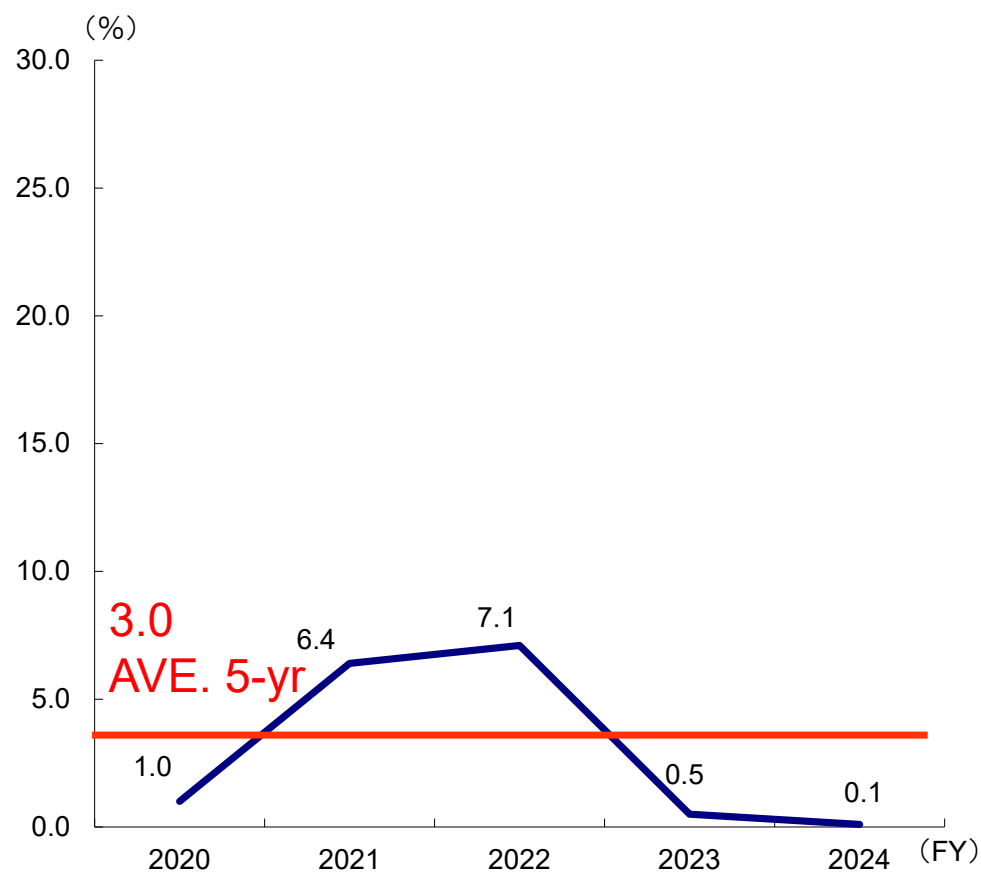
(Consolidated basis)



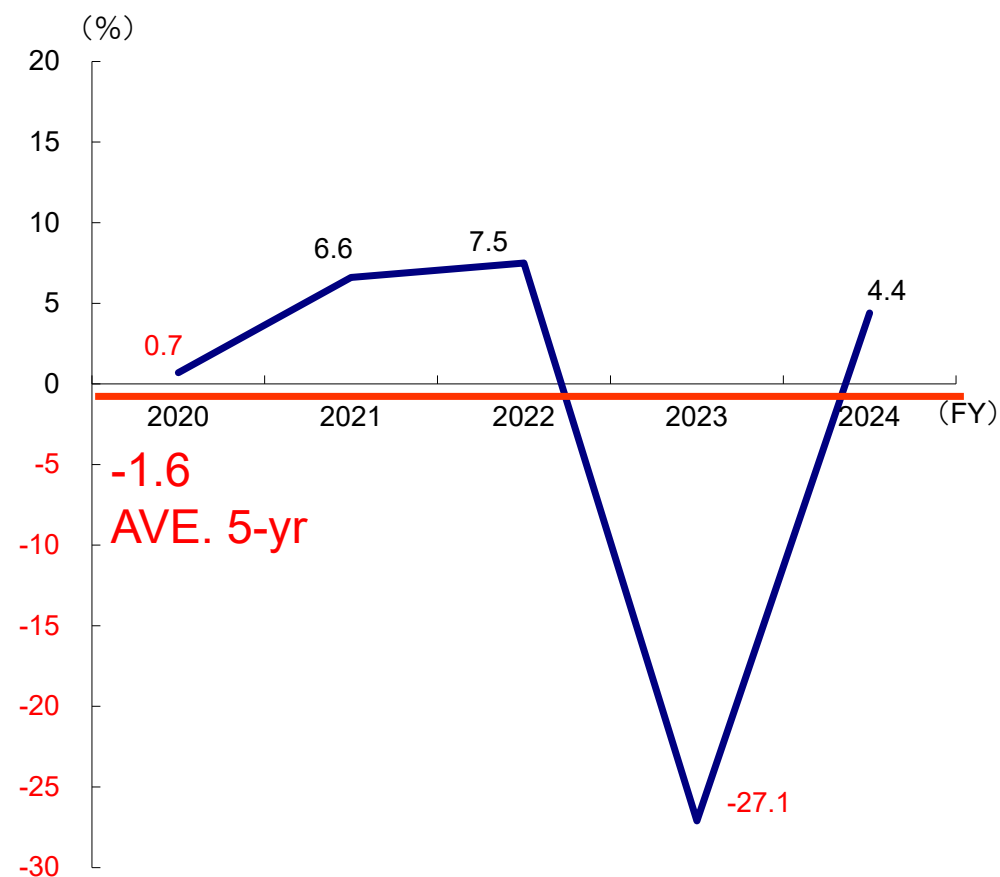
Profitability EBIT to Total Assets Ratio, ROE

(Consolidated basis)

EBIT to Total Assets Ratio



ROE

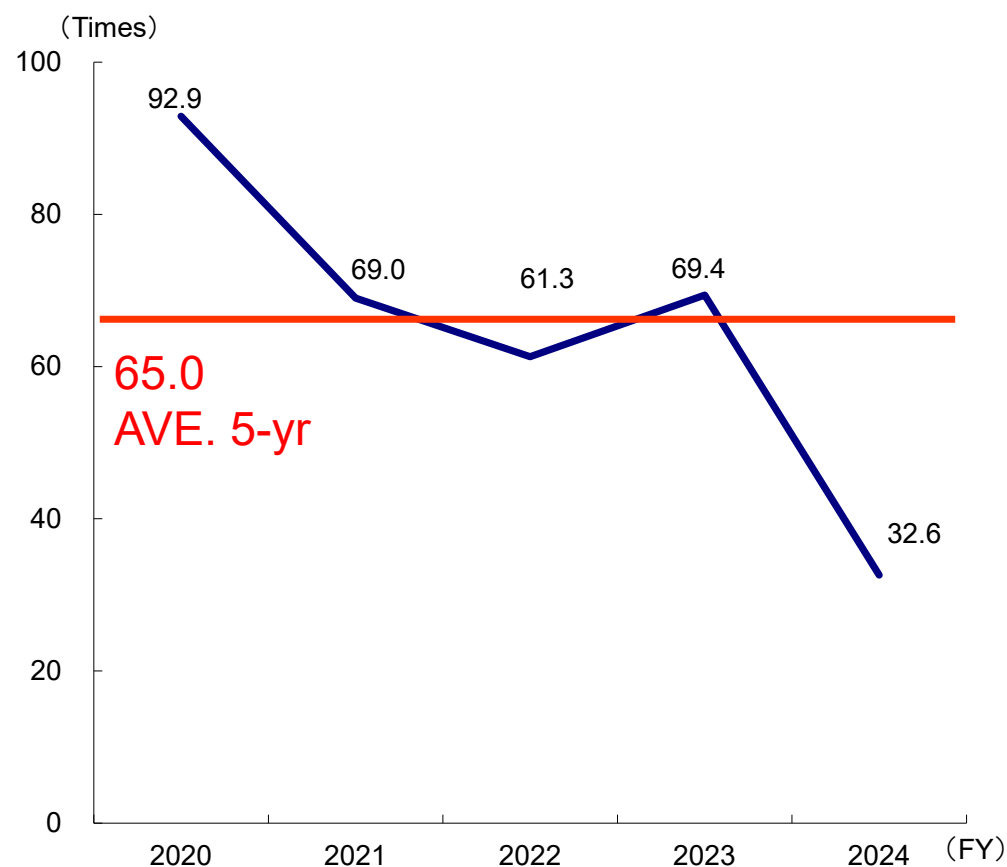


Stability Interest Coverage Ratio, Debt / Equity Ratio

(Consolidated basis)

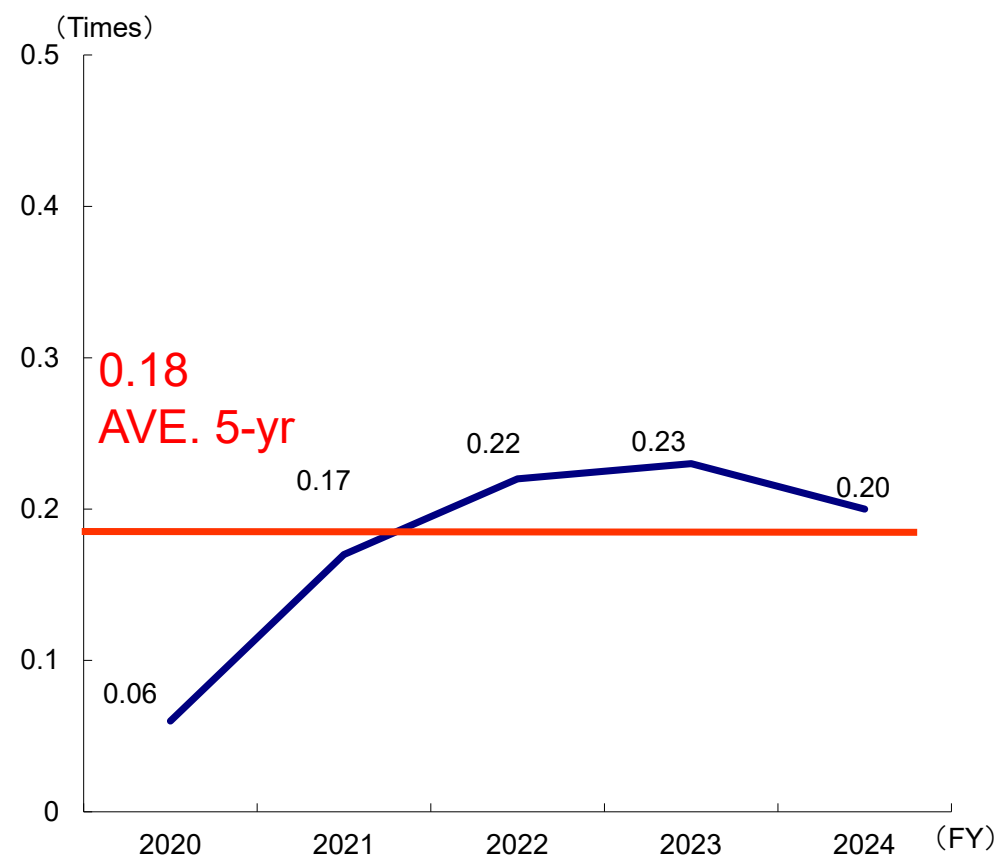
Interest Coverage Ratio

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



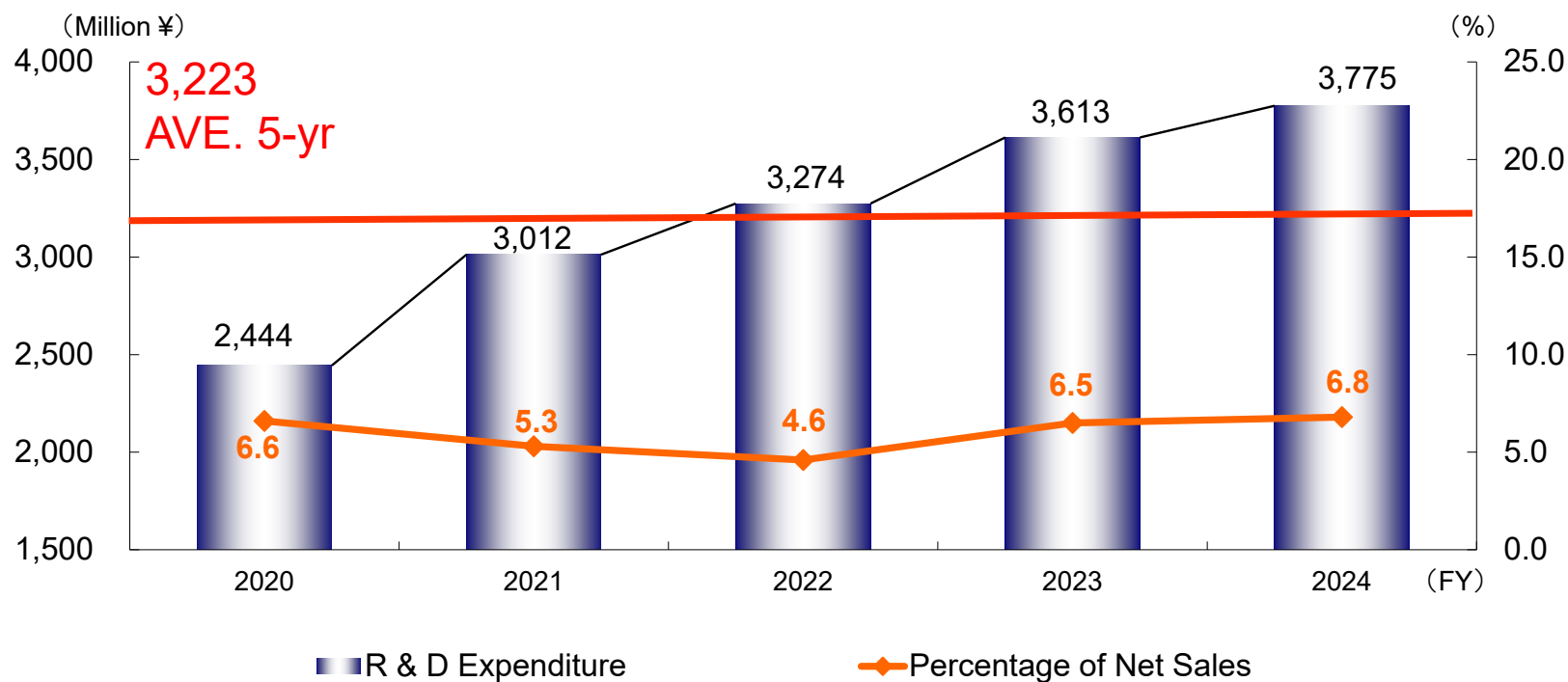
Debt / Equity Ratio

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



R&D Investments

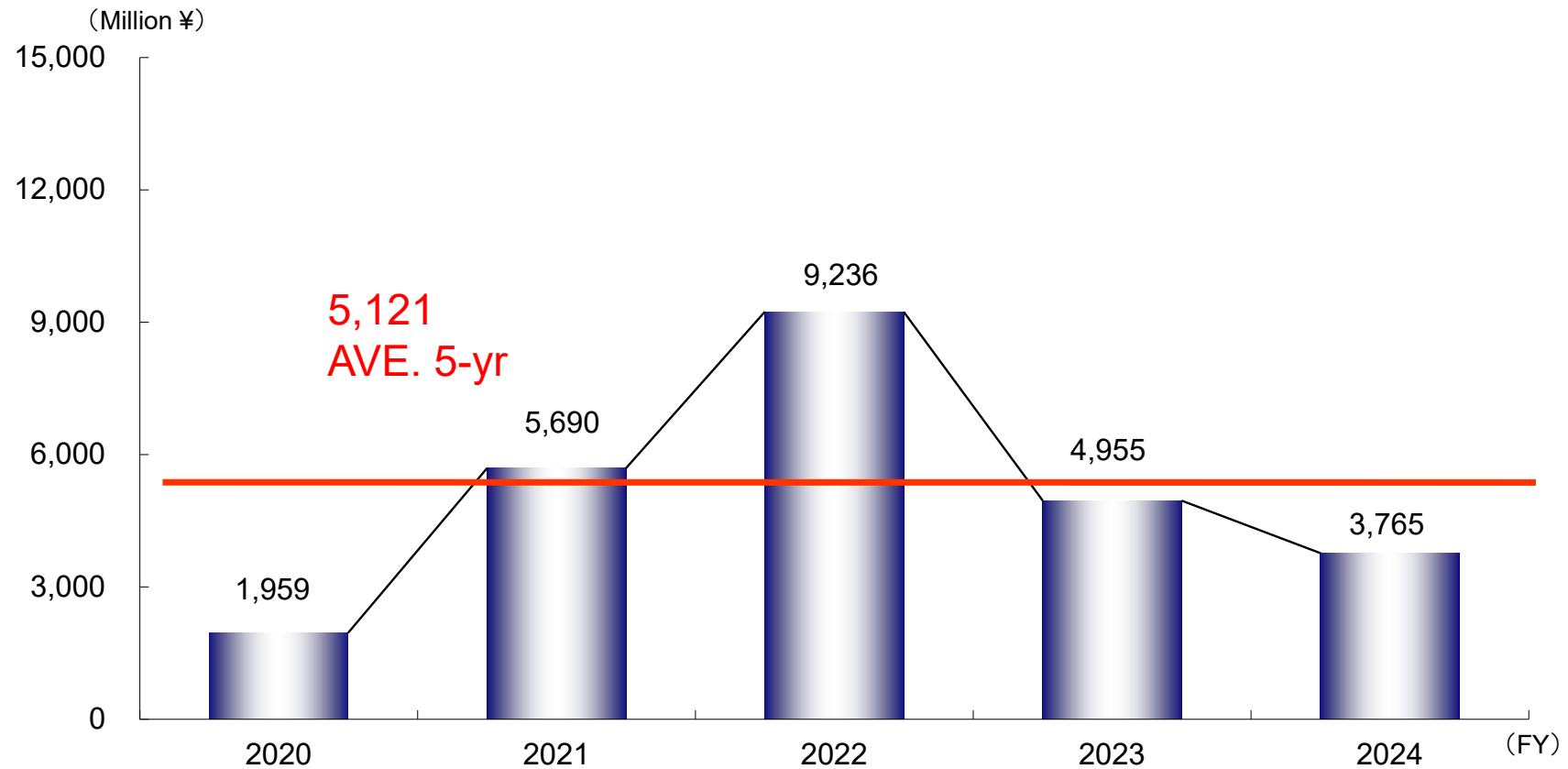
(Consolidated basis)



Fiscal Year	2020	2021	2022	2023	2024
Number of R&D persons	144	139	137	141	148
Share of total employees (%)	13.0	12.1	10.3	10.5	10.7

Capital Expenditures

(Consolidated basis)



*Purchases of tangible and intangible fixed assets

Consolidated Balance Sheets

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	(Million ¥)
Current Assets	38,177	45,872	52,175	47,457	53,164	
Fixed Assets	101,910	97,417	102,160	71,684	60,456	
Tangible fixed Assets	41,991	43,967	48,926	48,147	45,959	
Intangible fixed Assets	41,003	40,435	40,332	12,897	12,158	
Investment and other Assets	18,915	13,013	12,901	10,639	2,338	
Total Assets	140,028	143,289	154,336	119,142	113,621	
Total Liabilities	29,968	44,433	50,380	39,740	34,678	
Current Liabilities	7,954	14,127	16,467	11,719	13,896	
Long-term Liabilities	22,014	30,306	33,913	28,020	20,781	
Total Net Assets	110,059	98,856	103,955	79,401	78,943	
Shareholders' Equity	91,784	89,184	89,747	62,048	63,305	
Other Comprehensive Income	11,104	9,671	14,207	17,353	15,637	
Subscription rights to shares	—	—	—	—	—	
Minority Interest (Non-controlling Interests)	7,170	—	—	—	—	
Total Liabilities and Net Assets	140,028	143,289	154,336	119,142	113,621	

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

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	(Million ¥)
Net sales	37,034	57,087	71,527	55,796	55,645	
Gross profit	12,582	22,426	25,786	15,606	14,854	
S G & A	11,716	13,686	15,561	15,481	14,847	
Operating income	865	8,739	10,224	124	6	
Ordinary income	1,366	9,108	10,757	570	151	
Net income (loss) attributable to owners of parent	662	6,643	7,595	▲24,806	3,473	

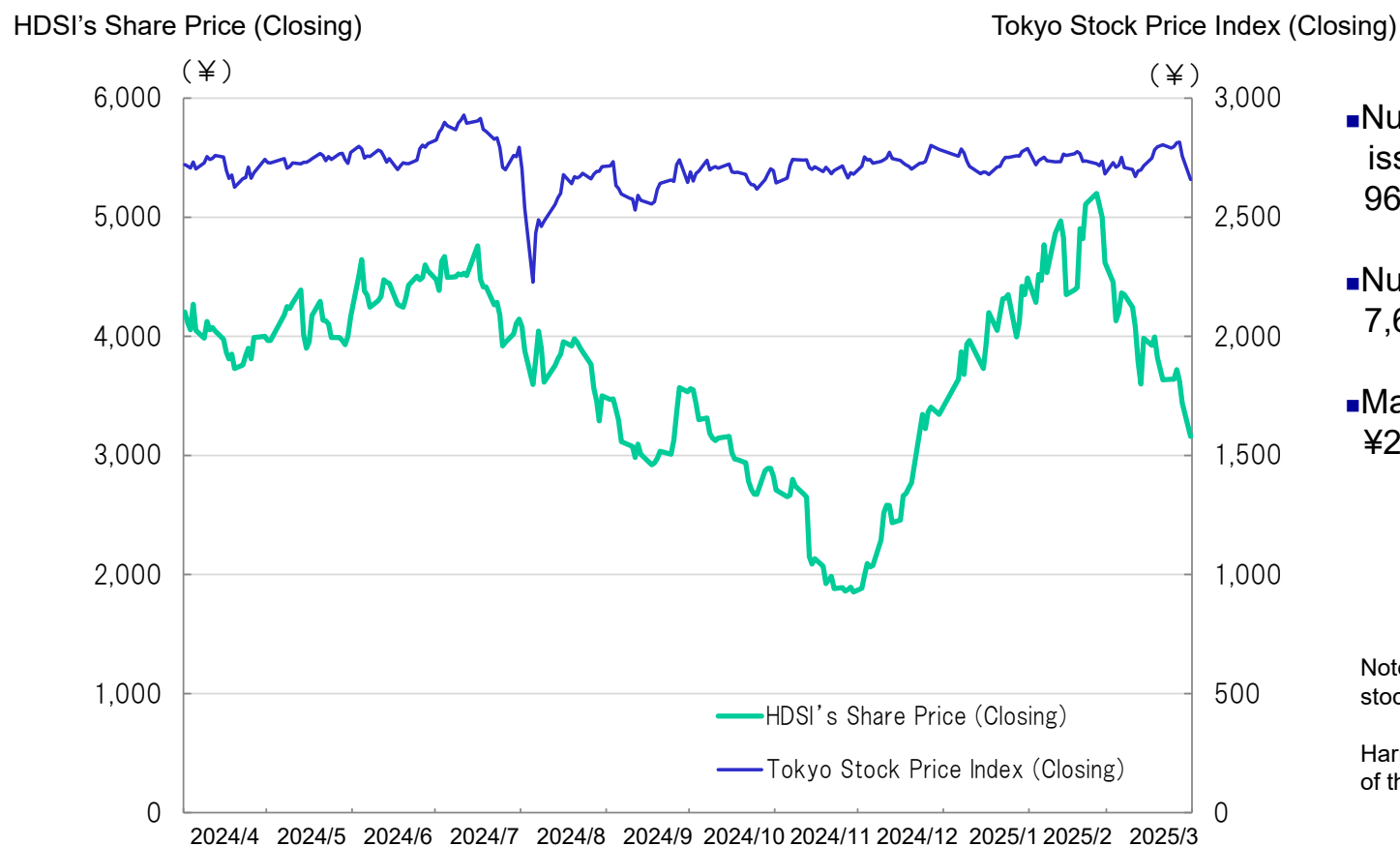
The net loss attributable to owners of the parent for FY2023 includes ¥28,159 million in impairment loss on intangible assets related to a consolidated subsidiary, Harmonic Drive SE.

Consolidated Statement of Income

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	(Million ¥)
Cash flow from operating activities	9,555	9,881	10,850	12,728	7,516	
Cash flow from investing activities	▲1,230	▲4,703	▲8,663	▲5,950	1,480	
Cash flow from financing activities	▲6,561	▲6,663	▲1,599	▲8,122	▲5,874	
Effect of exchange rate changes on cash and cash equivalents	▲108	256	567	363	859	
Net increase (decrease) in cash and cash equivalents	1,654	▲1,229	1,154	▲980	3,981	
Cash and cash equivalents at end of year	19,996	18,767	19,921	18,941	22,923	

Share Price Trend

Share Price



- Number of shares of common stock issued and outstanding:
96,315,400 shares (As of March 31, 2025)
- Number of shareholders:
7,660 persons (As of March 31, 2025)
- Market capitalization:
¥299,895,088,440 (As of March 31, 2025)

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.

Harmonic Drive Systems Inc.

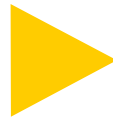
Business Activity — Products

Leadership in Total Motion Control

May 20, 2025

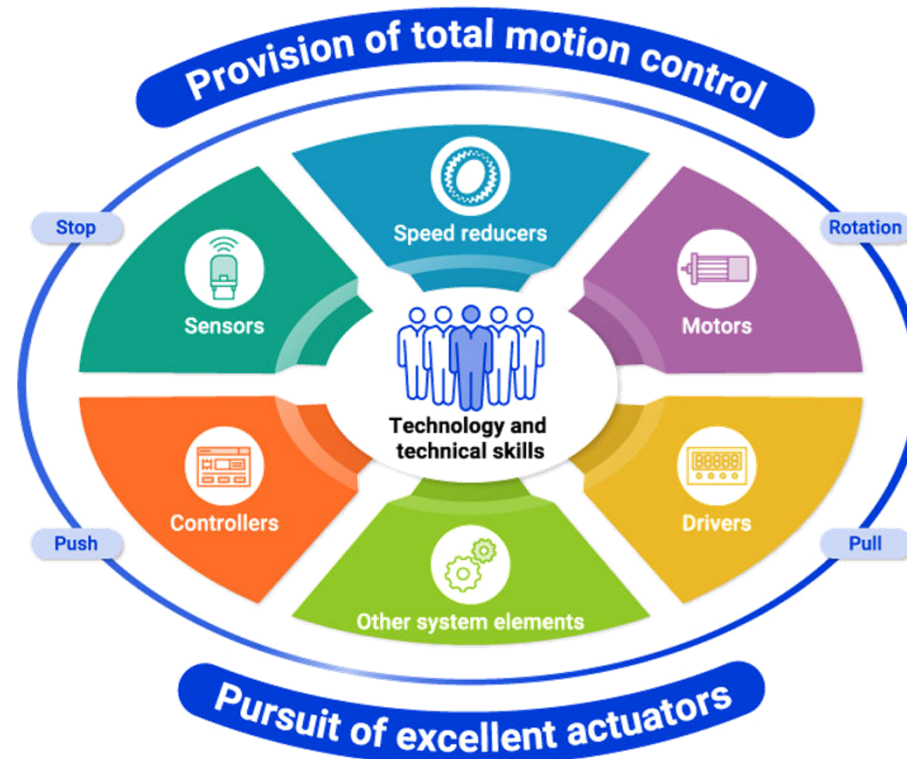
Total Motion Control

Our business Domain

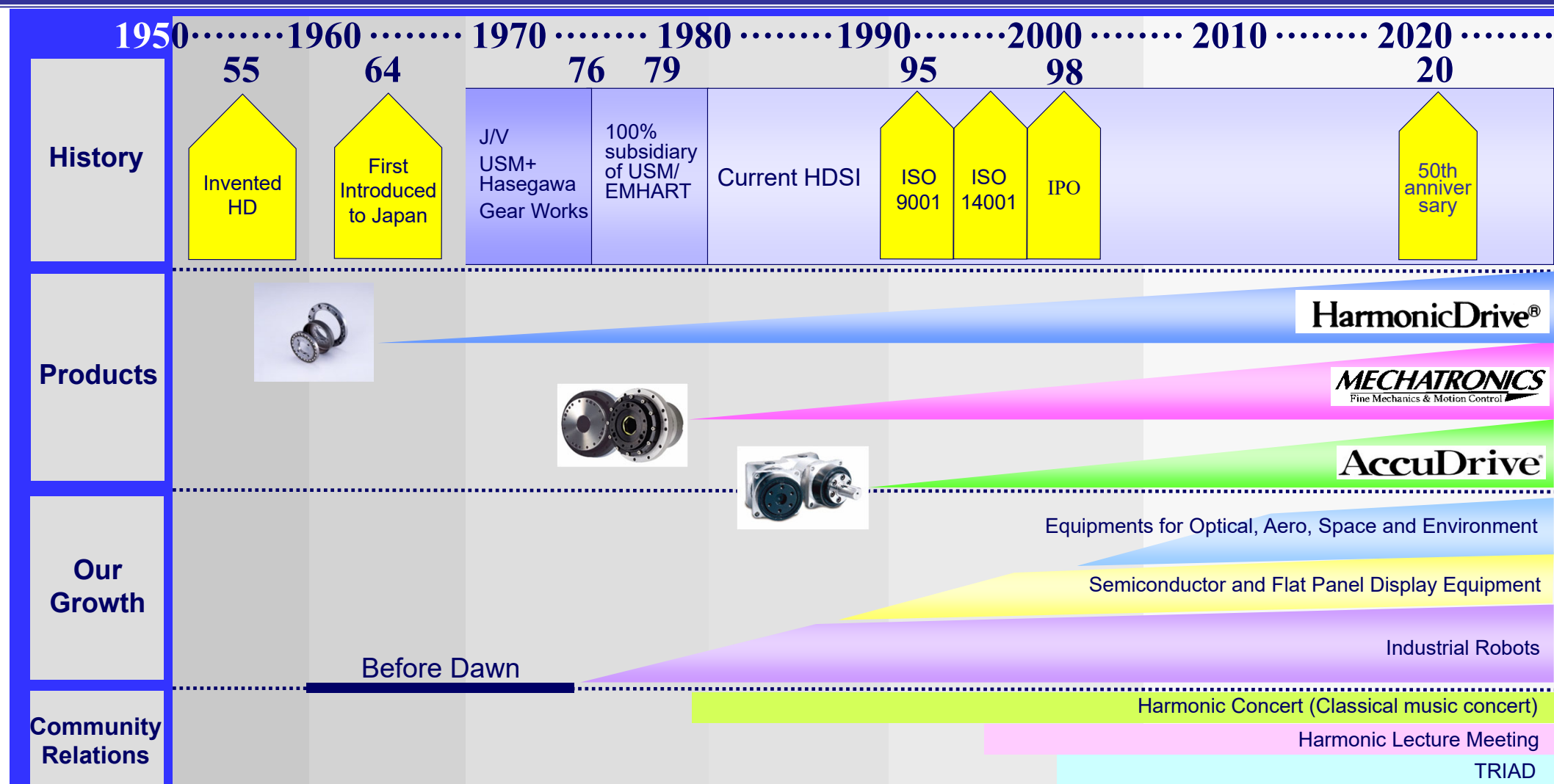


Developing and producing Precision Control Equipment and Components for a broad range of applications, focus on “Total Motion Control”

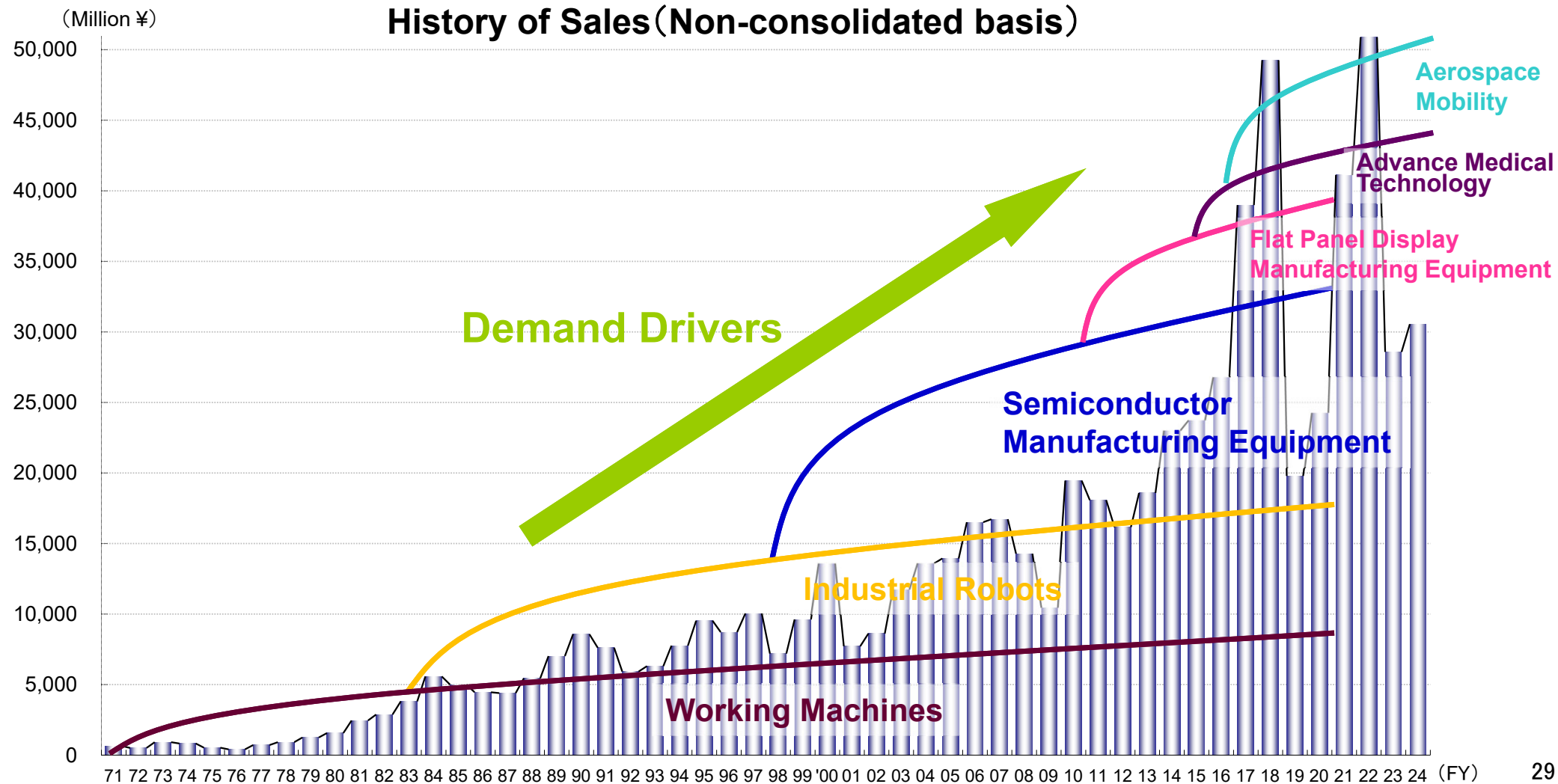
Schematic Concept of Total Motion Control



History of Harmonic Drive Systems Inc.



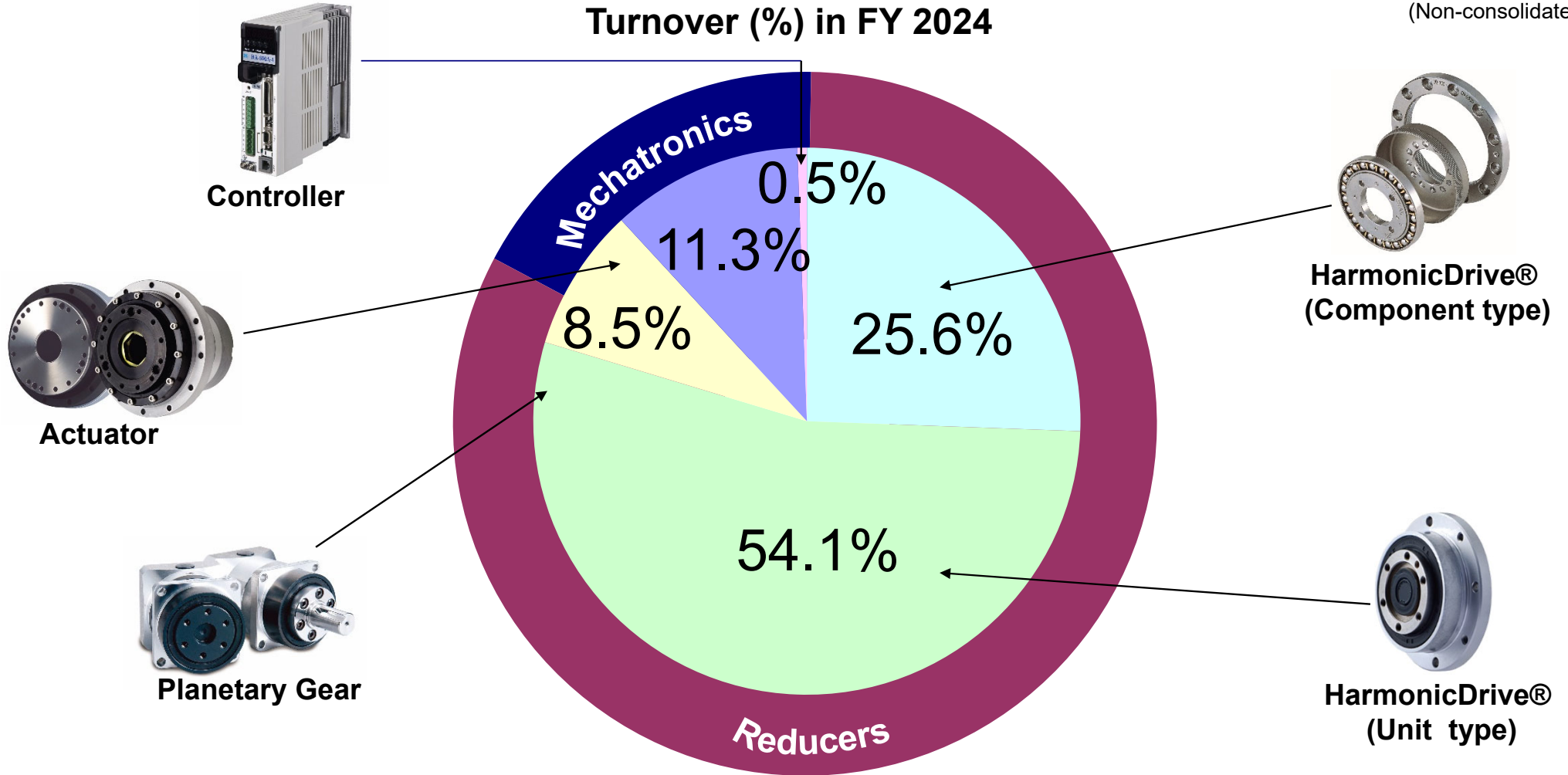
History of Sales



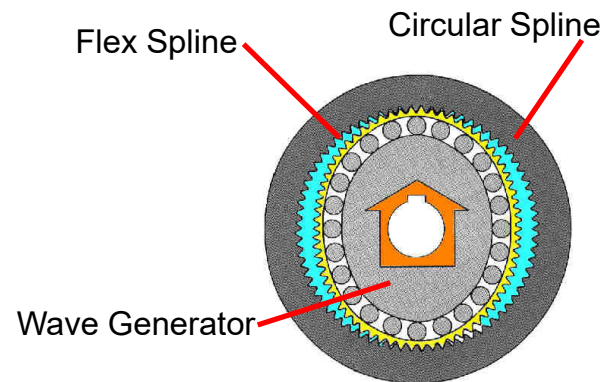
Sales Structure by Product Types

Turnover (%) in FY 2024

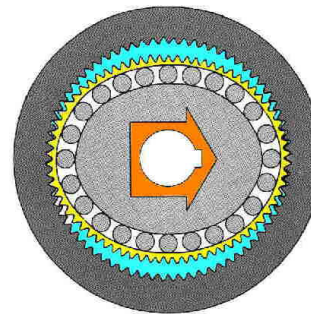
(Non-consolidated basis)



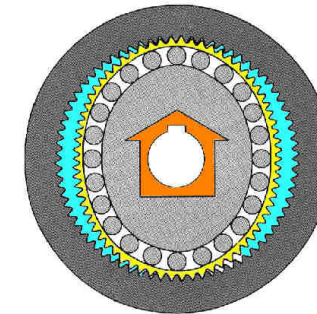
Principle and Advantages of “HarmonicDrive®”



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.



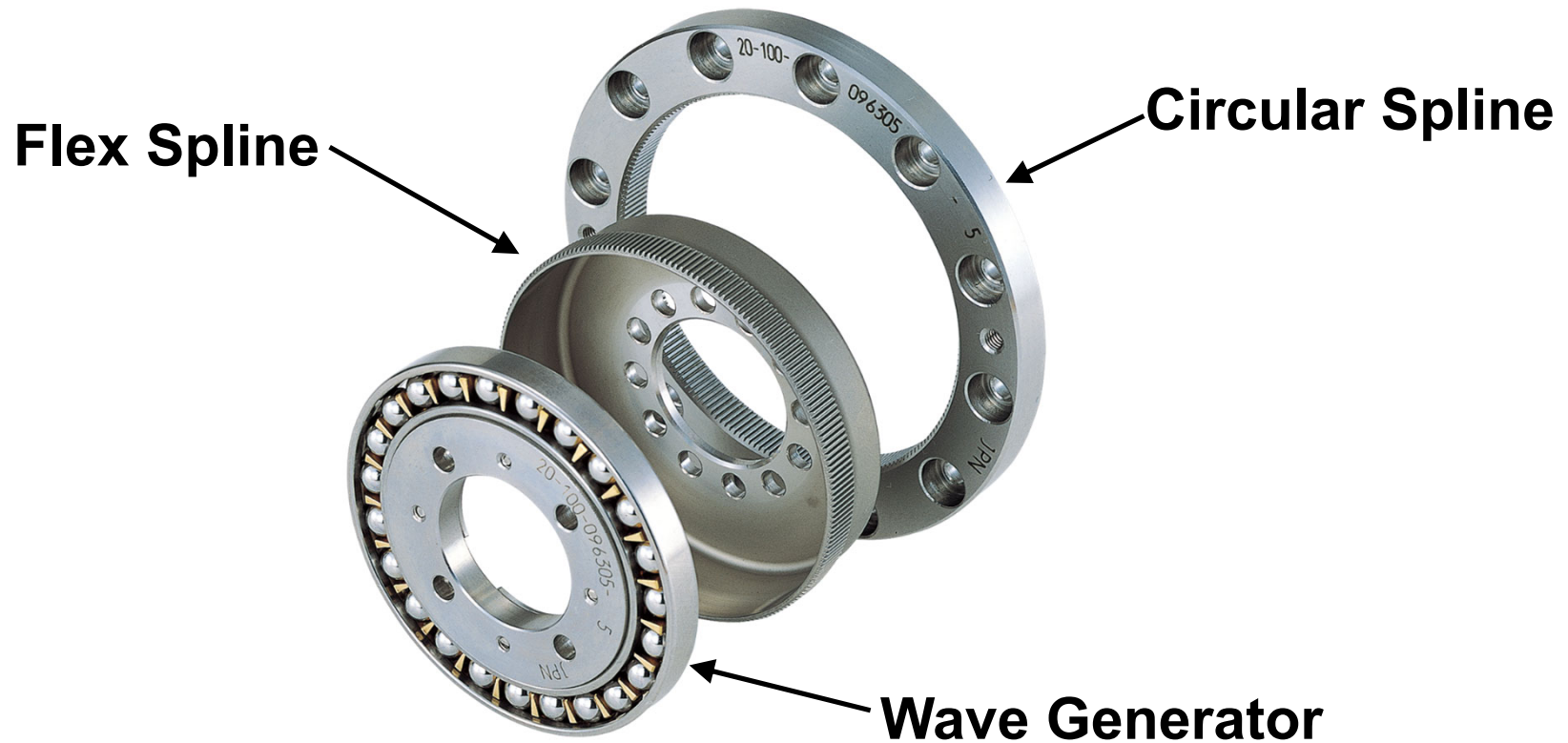
When the wave generator rotates one revolution clockwise, the flexspline moves counterclockwise by two teeth relative to the circular spline.

Advantage of “HarmonicDrive®”

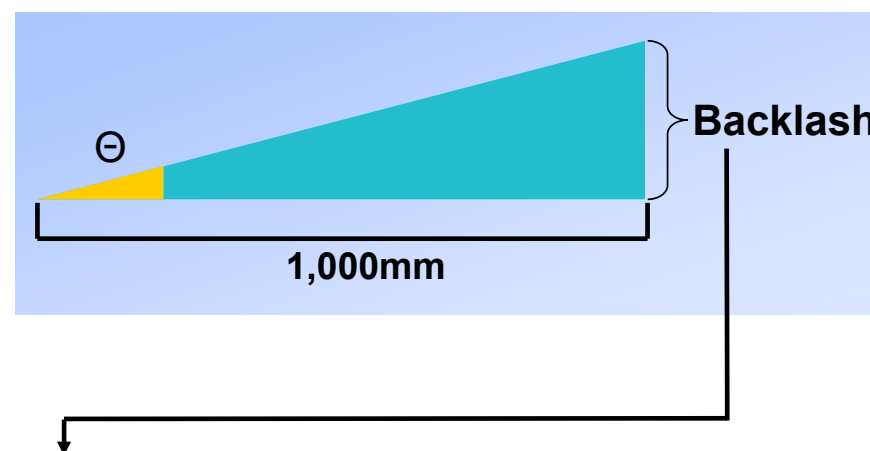
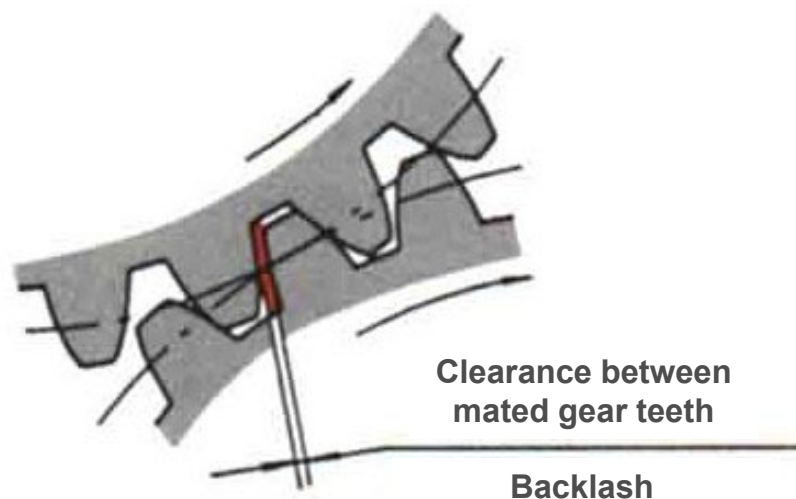
- Compact Design/ Reduced Weight
- Non-backlash
- Hollow Construction
- High Reduction Ratio by Single Stage
- High Efficiency
- High Torque Capacity
- High Positioning Accuracy and Repeatability
- High Torsional Stiffness
- Simple Installation and Assembly
- Low Noise and Smoothness operation

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 [®] HarmonicPlanetary [®]
Industrial Robots and Semiconductor Manufacturing Equipment	0~0.02 degrees	0~0.3mm	HarmonicDrive [®]

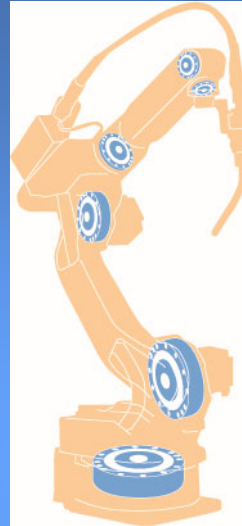
Feature Applications

Hayabusa 1. 2

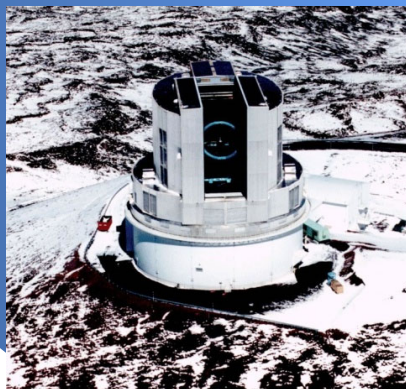
Photograph courtesy of Japan
Aerospace Exploration Agency (JAXA)



Industrial robots



eVTOL



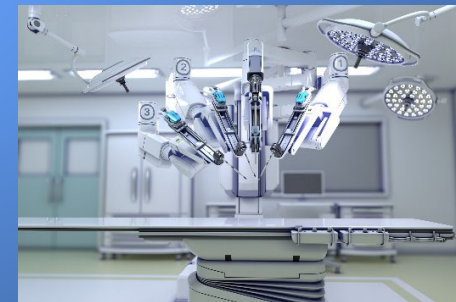
Optical-infrared telescope “Subaru” installed on Mauna Kea on the island of Hawaii

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

