

**Briefing Materials of  
Financial Results  
for Q2 FY2024  
(Interim Period)**

**TSE Prime: 5991  
NHK Spring Co., Ltd.  
November 28, 2024**



Consolidated Financial Results for the  
First Half Ended September 30, 2024  
Forecast of Consolidated Results for the  
Year Ending March 31, 2025

Executive Vice President & CFO and  
Representative Member of the Board

**Hidefumi Yoshimura**

Thank you for taking the time out of your busy schedule to attend our financial results briefing today. I'm Hidefumi Yoshimura, and I'd like to explain the consolidated financial results for the first half ended September 30, 2024, as well as the full-year earnings forecast for the year ending March 31, 2025.

## Consolidated Financial Results for the First Half Ended September 30, 2024

First, let's review the consolidated financial results for the first half ended September 30, 2024.

## Results for 1st Half Ended September 30, 2024

Automotive-related market : Production volume decreased year-on-year both in Japan and overseas

Information and communications related : Although the global production volume of HDDs decreased year-on-year, the total demand for our main product, HDD suspension, increased.

(100 million yen)

	FY2023 1st half results	FY2024 1st half		Results	Vs. FY2023 1st half	Results	
		May forecast	August forecast			Vs. May forecast	Vs. August forecast
<b>Net Sales</b>	<b>3,621</b>	<b>3,777</b>	<b>3,950</b>	<b>3,912</b>	<b>290</b>	<b>135</b>	<b>-37</b>
<b>Operating Profit</b>	<b>79</b>	<b>142</b>	<b>220</b>	<b>229</b>	<b>149</b>	<b>87</b>	<b>9</b>
Ratio	2.2%	3.8%	5.6%	5.9%	3.7%	2.1%	0.3%
<b>Ordinary Profit</b>	<b>187</b>	<b>195</b>	<b>275</b>	<b>269</b>	<b>82</b>	<b>74</b>	<b>-5</b>
Ratio	5.2%	5.2%	7.0%	6.9%	1.7%	1.7%	-0.1%
<b>Interim Profit Attributable to Owners of Parent</b>	<b>143</b>	<b>150</b>	<b>200</b>	<b>215</b>	<b>71</b>	<b>65</b>	<b>15</b>
Extraordinary profits/losses	13	-	20	20	6	20	-
Average Rate							
US\$	141.3	150.0	153.7	152.3	11.0	2.3	-1.4
Thai Baht	3.9	4.0	4.2	4.2	0.3	0.2	-
Current Rate							
US\$							
This year	149.6	150.0	150.0	142.7	-6.9	-7.3	-7.3
Previous year	133.5	151.4	151.4	151.4	17.9	-	-
Thai Baht							
This year	4.1	4.0	4.4	4.4	0.3	0.4	-
Previous year	3.8	4.1	4.1	4.1	0.3	-	-

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For the first half ended September 30, 2024, net sales were 391.2 billion yen, operating profit was 22.9 billion yen, ordinary profit was 26.9 billion yen, and interim profit attributable to owners of parent was 21.5 billion yen.

Compared to the first half of FY2023 and the initial plan, both sales and profits increased. The results were generally in line with the revised forecast issued in August.

Regarding market conditions compared to the first half of FY2023, production volumes in the automotive-related market decreased both domestically and internationally. In the non-automotive market, although global HDD production volumes declined, demand for our flagship product, HDD suspensions, increased, particularly for data center applications.

As for exchange rates, they are as shown here.

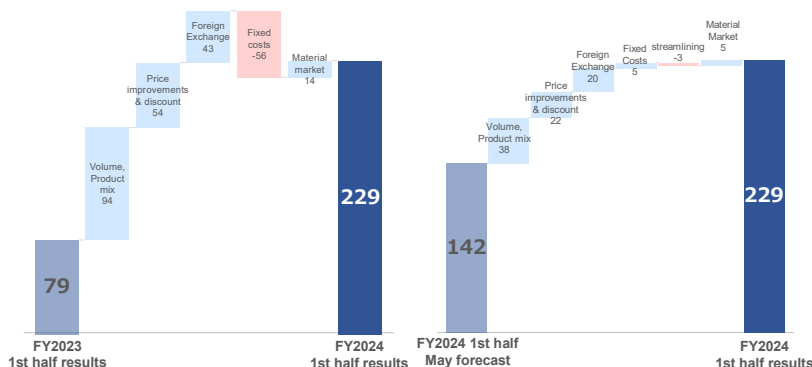
## Variable Factor Analysis for Operating Profit

	FY2023	FY2024 1st half		Results	Vs. FY2023	Vs. May	(100 million yen)
	1st half results	May forecast	August forecast		Results	forecast	Vs. August forecast
Net Sales	3,621	3,777	3,950	<b>3,912</b>	290	135	-37
Operating Profit	79	142	220	<b>229</b>	149	87	9
Ratio	2.2%	3.8%	5.6%	<b>5.9%</b>	3.7%	2.1%	0.3%

### Variable Factor Analysis for Operating Profit

(Vs. Previous year)

(Vs. May forecast)



#### Vs. FY2023 1st half

About half of the increase in sales reflected the impact of the weaker yen on overseas subsidiaries. Sales were therefore significantly impacted by fluctuations in exchange rates.

In terms of profit and loss, factors such as a recovery in the volume of HDD-related components, which had been sluggish in the previous year, and profit boosts from the shifts in exchange rates contributed to higher sales and increased profits.

#### Vs. May forecast

Although there were negative impacts from the slowdown in the automotive market, particularly in Thailand, stronger-than-expected recovery in demand for HDD-related components contributed to increased revenue and profit.

#### Vs. August forecast

Operating profit landed roughly in line with expectations. In the automotive-related business, despite a decline in volume in North America and delays in price revisions, profit growth was secured through measures such as offsetting the impact of rising steel prices and other material costs in Japan. In the non-automotive-related business, results slightly underperformed projections due to lower volumes of HDD-related components and the impact of yen appreciation.

Of the 29 billion yen increase in revenue compared to the first half of FY2023, approximately half, or 13.9 billion yen, was due to foreign exchange conversion gains from overseas subsidiaries driven by yen depreciation.

In addition, the HDD-related business, which was sluggish in the previous fiscal year, recovered significantly. Combined with the profit boost from yen depreciation, operating profit increased by 14.9 billion yen compared to the first half of FY2023.

Compared to the initial forecast, while the slowdown in the automotive market, particularly in Thailand, had a negative impact, the HDD-related business performed better than expected, leading to an overall profit increase of 8.7 billion yen.

**Non-operating and Extraordinary Profits/Losses****Non-operating profits/losses**

(100 million yen)

Breakdown	FY2023 1st half results	FY2024 1st half results	Vs. FY2023 Results
<b>Non-operating profits/losses</b>			
Exchange rate profits/losses (Japan)	52	△28	△ 80
Exchange rate profits/losses (Asia, America & Europe & Others)	18	35	17
Dividend income	15	16	1
Equity in profits/losses of affiliates	9	10	1
Other	13	7	△ 6
<b>Total</b>	<b>108</b>	<b>40</b>	<b>△ 68</b>

**▽Exchange gain or loss**

Due to the rapid depreciation of the dollar in the foreign exchange market towards the end of September, foreign exchange losses were incurred at business sites in Japan, but at some overseas business sites that use a December accounting period, foreign exchange gains were recorded due to the appreciation of the dollar towards the end of June.

**▽Dollar-Yen Exchange Rate Fluctuations****Extraordinary profits/losses**

(100 million yen)

Breakdown	FY2023 1st half results	FY2024 1st half results	Vs. FY2023 Results
<b>Extraordinary profits</b>			
Gain on sale of investment securities	13	—	△ 13
Settlement proceeds received	—	20	20
<b>Total</b>	<b>13</b>	<b>20</b>	<b>6</b>

Next, I'd like to discuss non-operating profits and losses, as well as extraordinary profits and losses.

Due to the yen appreciating toward the end of September, foreign exchange gains decreased significantly compared to the first half of FY2023.

The extraordinary income of 2 billion yen is attributed to settlement proceeds received from a patent infringement lawsuit.

Results for 1st Half Ended September 30, 2024

## Net Sales/Operating Profit by Business Segment



(100 million yen)

	FY2023 1st half results	FY2024 1st half		Vs. FY2023 Results	Vs. May forecast	
		May forecast	Results			
■ Automotive Suspension Spring	Net Sales	786	865	835	49	-29
	Operating Profit	-35	4	-6	28	-10
	Ratio	-4.5%	0.5%	-0.8%	3.7%	-1.2%
■ Automotive Seating	Net Sales	1,555	1,516	1,508	-46	-7
	Operating Profit	77	43	54	-22	11
	Ratio	5.0%	2.8%	3.6%	-1.3%	0.8%
■ Precision Springs & Components	Net Sales	454	483	498	43	15
	Operating Profit	-7	9	17	24	8
	Ratio	-1.5%	1.9%	3.4%	5.0%	1.6%
■ Disk Drive Suspension	Net Sales	293	359	519	226	160
	Operating Profit	13	58	126	112	68
	Ratio	4.6%	16.2%	24.3%	19.7%	8.1%
■ Industrial Machinery & Others	Net Sales	532	554	550	17	-3
	Operating Profit	31	28	37	6	9
	Ratio	5.8%	5.1%	6.9%	1.0%	1.8%
Total	Net Sales	3,621	3,777	3,912	290	135
	Operating Profit	79	142	229	149	87
	Ratio	2.2%	3.8%	5.9%	3.7%	2.1%

### Vs. FY2023 1st half

With the exception of the seat business, which performed strongly in the previous term, sales and profits increased in all businesses.

In particular, the DDS business performed strongly and drove overall performance. Suspension springs also improved significantly compared to the previous term.

### Vs. May forecast

With the exception of the suspension springs business, each business secured operating profit that exceeded the initial plan.

In particular, the DDS business performed more strongly than initially expected, and this greatly boosted overall operating profit.

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This slide provides an overview of net sales and operating profit by business segment.

Compared to the first half of FY2023, all businesses except for the automotive seating business showed improved earnings, with the DDS business achieving a substantial profit increase.

Compared to the initial forecast, results exceeded expectations in all businesses except automotive suspension springs. The DDS business, in particular, outperformed initial projections and made a significant contribution to the increase in sales and profits for the first half.

We will look at the details of each business segment shortly.

Results for 1st Half Ended September 30, 2024

## Net Sales/Operating Profit by Region Segment



(100 million yen)

		FY2023	FY2024 1st half		Vs. FY2023	Vs. May
		1st half results	May forecast	Results	Results	forecast
● Japan	Net Sales	2,084	2,083	<b>2,194</b>	110	111
	Operating Profit	84	68	<b>154</b>	70	86
	Ratio	4.0%	3.3%	<b>7.0%</b>	3.0%	4.2%
● Asia	Net Sales	896	960	<b>1,014</b>	118	54
	Operating Profit	36	85	<b>113</b>	77	28
	Ratio	4.1%	8.9%	<b>11.2%</b>	7.2%	2.1%
● America & Europe & Others	Net Sales	640	734	<b>702</b>	62	-31
	Operating Profit	-40	-11	<b>-38</b>	2	-27
	Ratio	-6.4%	-1.5%	<b>-5.5%</b>	0.9%	-5.0%
<b>Total</b>	Net Sales	3,621	3,777	<b>3,912</b>	290	135
	Operating Profit	79	142	<b>229</b>	149	87
	Ratio	2.2%	3.8%	<b>5.9%</b>	3.7%	2.1%

### Vs. FY2023 1st half

In Japan, sales and profits increased compared to the same period of the previous year, driven significantly by the recovery in HDD-related components. Additional contributions came from the effects of yen depreciation, increased volumes of semiconductor process components, and the turnaround to profitability in the motor core business.

In Asia, despite a decline in the automotive market in Thailand, the recovery in volumes in the HDD-related sector led to higher sales and profits.

In Europe, America, and other regions, although losses in the U.S. suspension springs business narrowed, declines in profitability in the Mexico and U.S. automotive seating business limited operating profit growth to a slight increase.

### Vs. May forecast

In Japan, sales and profits increased due to a recovery in the volume of HDD-related parts that exceeded expectations. The automotive-related business also secured an increase in profits. In Asia, despite the downturn in the Thai automotive market, sales and profits increased due to the strong performance of HDD-related parts.

In Europe, America, and other regions, both sales and operating profits fell short of the initial plan, affected by a decline in volumes and delays in sales price adjustments in the U.S. suspension springs business and adverse changes in the product mix in the automotive seating business.

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Next, we'll review the overview by region.

In Japan, the recovery of HDD-related components significantly contributed to increased sales and profits compared to the first half of FY2023. Additionally, the recovery of semiconductor process components and expanded motor core sales also contributed.

The same trend was observed against the initial forecast, with the automotive-related business also achieving profit growth.

In Asia, while Thailand's automotive market experienced a downturn, the recovery of HDD-related components drove growth, resulting in increased sales and profits compared to both the first half of FY2023 and the initial forecast.

In the America and Europe, losses in automotive suspension springs in North America and Europe narrowed compared to the first half of FY2023. However, for automotive suspension springs in Mexico and other automotive-related businesses, profits declined, limiting operating profit growth to a slight increase despite higher revenue.

Compared to the initial forecast, automotive-related businesses in North America saw volume declines, delays in sales price improvements for automotive suspension springs, and adverse product mix changes in the automotive seating business, resulting in performance falling short of the plan.

Let's now take a closer look at each business segment.



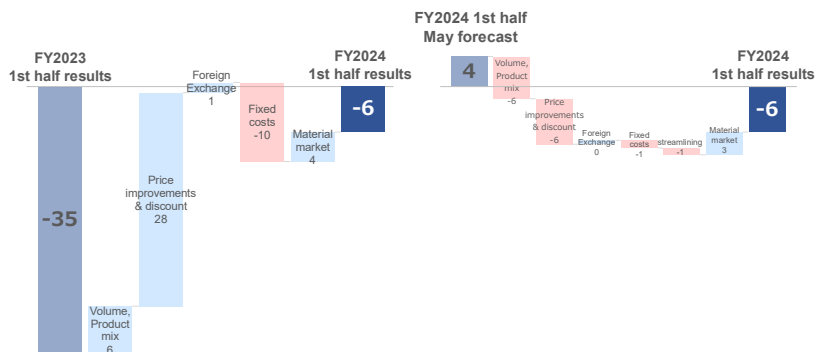
## Automotive Suspension Spring

	FY2023	FY2024 1st half		Vs. FY2023	(100 million yen)
	1st half results	May forecast	Results	Results	Vs. May forecast
Net Sales	786	865	835	49	-29
Operating Profit	-35	4	-6	28	-10
Ratio	-4.5%	0.5%	-0.8%	3.7%	-1.2%

### Variable Factor Analysis for Operating Profit

(Vs. Previous year 1st half)

(Vs. May forecast)



### Vs. FY2023 1st half

Although costs increased due to the launch of new products in Mexico, the effects of improved sales prices and productivity enhancements at U.S. operations and the reduction in fixed costs in China primarily contributed to a narrowing of the deficit.

### Vs. May forecast

In Japan, despite a decline in volume, improved sales prices and the incorporation of higher raw material costs into pricing contributed to profits exceeding the initial forecast. However, in North America, volume declines, delays in sales price improvements, as well as increased costs due to changes in supply bases, and the slowdown in Thailand's automotive market resulted in both sales and operating profits falling short of the initial plan.

Next, I'll go over the automotive suspension springs business. Compared to the first half of FY2023, while costs increased due to the launch of new products in Mexico, profitability improved thanks to sales price improvements at operations in the America and Europe. In China, fixed costs were reduced due to impairment charges at the end of the previous fiscal year. Overall, the automotive suspension springs business reduced its deficit compared to the first half of FY2023.

Against the initial forecast, profits increased domestically. However, in North America, factors such as volume declines, delays in sales price improvements, cost increases due to changes in supply bases, and the slowdown in Thailand's automotive market caused overall results to fall short of expectations.

## Automotive Seating

	FY2023	FY2024 1st half		Vs. FY2023	Vs. May
	1st half results	May forecast	Results	Results	forecast
Net Sales	1,555	1,516	1,508	-46	-7
Operating Profit	77	43	54	-22	11
Ratio	5.0%	2.8%	3.6%	-1.3%	0.8%

### Variable Factor Analysis for Operating Profit

(Vs. Previous year 1st half)

(Vs. May forecast)



#### Vs. FY2023 1st half

Although efforts were made to reflect higher costs and improve sales prices, a decline in production volumes in Thailand and Japan, a decrease in development revenue in Japan, and adverse changes in the product mix in North America led to lower sales and profits.

#### Vs. May forecast

Despite challenges such as the slowdown in Thailand's automotive market, product mix changes in North America efforts to manage price cooperation and incorporate higher raw material costs into pricing resulted in increased profits despite a decline in sales.

In the automotive seating business, reductions in production volumes in Thailand and Japan, decreased recovery of development costs, and profit declines due to adverse changes in vehicle and product mix in North America led to lower sales and profits compared to the first half of FY2023.

Against the initial forecast, although production volumes in Thailand declined and profitability in North America deteriorated, measures such as limiting price concessions and recovering the impact of rising material costs contributed to an increase in profits despite lower sales.

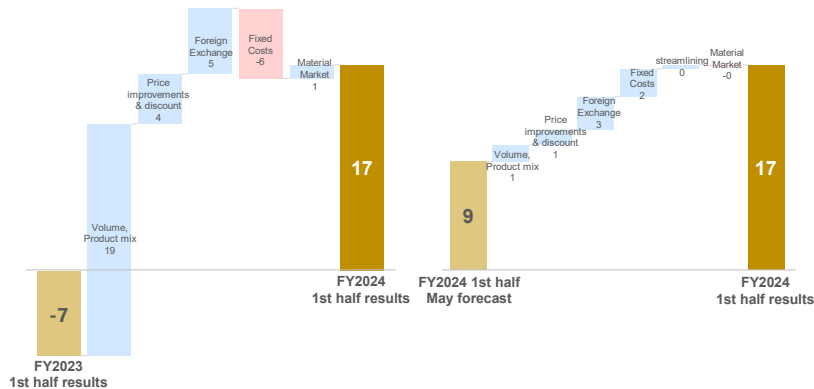
## Precision Springs & Components

	FY2023	FY2024 1st half		Vs. FY2023	Vs. May
	1st half results	May forecast	Results	Results	forecast
Net Sales	454	483	498	43	15
Operating Profit	-7	9	17	24	8
Ratio	-1.5%	1.9%	3.4%	5.0%	1.6%

### Variable Factor Analysis for Operating Profit

(Vs. Previous year 1st half)

(Vs. May forecast)



### Vs. FY2023 1st half

The sales growth and productivity improvements in the domestic motor core business, along with the recovery in the volume of HDD mechanical components, contributed to improved profitability. Additionally, the boost in profits from yen depreciation led to increased sales and profits.

### Vs. May forecast

The increase in HDD mechanical component volumes, sales growth and productivity improvements in the domestic motor core business, and profit gains from yen depreciation all contributed to higher sales and profits.

In the precision springs and components business, sales and profits increased compared to both the first half of FY2023 and the initial forecast. This was driven by sales growth and productivity improvements in the domestic motor core business, a recovery in HDD mechanical component volumes, and profit boosts from yen depreciation.

Results for 1st Half Ended September 30, 2024 : Analysis by Business Segment  
**DDS (Disk Drive Suspension)**

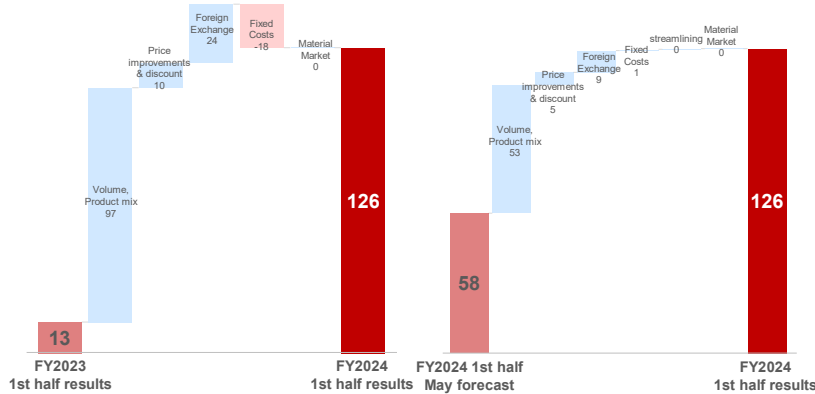


	FY2023	FY2024 1st half		Vs. FY2023	Vs. May
	1st half results	May forecast	Results	Results	forecast
Net Sales	293	359	<b>519</b>	226	160
Operating Profit	13	58	<b>126</b>	112	68
Ratio	4.6%	16.2%	<b>24.3%</b>	19.7%	8.1%

**Variable Factor Analysis for Operating Profit**

(Vs. Previous year 1st half)

(Vs. May forecast)



**Vs. FY2023 1st half**

During this period, demand for high-capacity HDDs for data centers recovered, leading to a significant increase in sales volumes of HDD suspensions compared to the previous year. Additionally, the boost in profits from exchange rate effects led to increased sales and profits.

**Vs. May forecast**

Demand for HDD suspensions exceeded initial expectations in Japan, Thailand, and China. In addition to volume growth, the profit contribution from yen depreciation resulted in a substantial increase in both sales and profits.

In the DDS business, demand in the industry dropped significantly in the first half of FY2023. However, since the beginning of this year, volumes have recovered sharply. Supported by favorable exchange rates, the DDS business achieved substantial increases in sales and profits, exceeding both the results of the first half of FY2023 and the initial forecast.

## Industrial Machinery & Others

	FY2023	FY2024 1st half		Vs. FY2023	Vs. May
	1st half results	May forecast	Results	Results	forecast
Net Sales	532	554	550	17	-3
Operating Profit	31	28	37	6	9
Ratio	5.8%	5.1%	6.9%	1.0%	1.8%

### Variable Factor Analysis for Operating Profit

(Vs. Previous year 1st half)

(Vs. May forecast)



#### Vs. FY2023 1st half

Although volumes decreased in the leisure sector, including golf shafts and marine products, as well as in integrated metal substrates, the recovery in semiconductor process component volumes, driven by a rebound in the semiconductor market, and profit boosts from exchange rate effects contributed to higher sales and profits.

#### Vs. May forecast

Although the fact that there were upfront costs for expanding the metal substrate business, a decrease in the volume of existing products, a decline in volumes in the leisure sector, steady sales of semiconductor process components and parking devices, along with profit gains from yen depreciation, contributed to increased profits despite a decline in sales.

In industrial machinery and other businesses, while there were upfront costs associated with expanding the IMS (integrated metal substrates) business, lower volumes of existing products, and a downturn in the leisure market compared to the first half of FY2023, recovery in semiconductor process components and profit boosts from yen depreciation led to increased sales and profits.

Against the initial forecast, although the leisure sector experienced a significant drop in sales, strong performance in semiconductor process components and other businesses exceeded expectations. As a result, overall profits increased despite lower sales.

## Forecast of Consolidated Results for the Year Ending March 31, 2025

Next, I will explain the forecast of consolidated results for the year ending March 31, 2025.

## Forecast for the year ending March 2025

	FY2023 Results	FY2024			Vs. FY2023 Result	Results Vs. May forecast	Vs. August forecast	
		May forecast	August forecast	Latest Forecast				
<b>Net Sales</b>	<b>7,669</b>	<b>7,800</b>	<b>8,000</b>	<b>8,000</b>	<b>330</b>	<b>200</b>	-	
<b>Operating Profit</b>	<b>346</b>	<b>400</b>	<b>480</b>	<b>500</b>	<b>153</b>	<b>100</b>	<b>20</b>	
Ratio	4.5%	5.1%	6.0%	6.3%	1.7%	1.1%	0.3%	
<b>Ordinary Profit</b>	<b>478</b>	<b>470</b>	<b>550</b>	<b>550</b>	<b>71</b>	<b>80</b>	-	
Ratio	6.2%	6.0%	6.9%	6.9%	0.6%	0.8%	-	
<b>Profit Attributable to Owners of Parent</b>	<b>391</b>	<b>400</b>	<b>450</b>	<b>450</b>	<b>58</b>	<b>50</b>	-	
Extraordinary profits/losses	90	85	105	105	14	20	-	
Average Rate	US\$	144.4	148.0	152.1	148.9	4.5	0.9	-3.2
	Thai Baht	4.0	4.0	4.2	4.2	0.2	0.2	0.0
Current Rate	US\$							
	This year	151.4	145.0	145.0	145.0	-6.4	-	-
	Previous year	133.5	151.4	151.4	151.4	17.9	-	-
	Thai Baht							
	This year	4.1	4.0	4.0	4.2	0.1	0.2	0.2
	Previous year	3.8	4.1	4.1	4.1	0.3	-	-

The forecast for the year ending March 2025 is as follows: net sales of 800 billion yen, operating profit of 50 billion yen, ordinary profit of 55 billion yen, and profit attributable to owners of parent of 45 billion yen.

The exchange rates are as shown.

Forecast for the year ending March 2025

## Variable Factor Analysis for Operating Profit

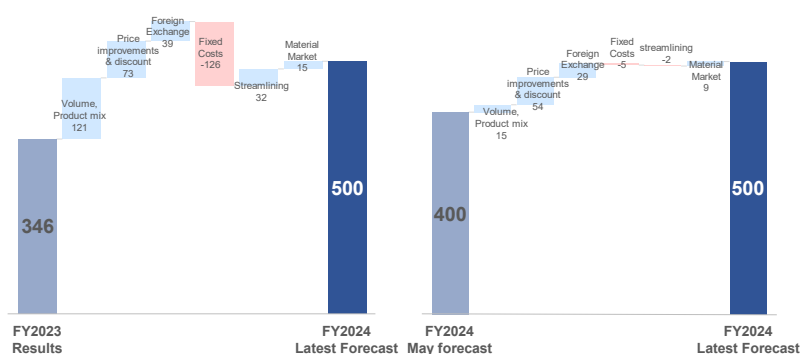


	FY2023	FY2024			Vs. FY2023	Vs. May	Vs. August
	Results	May forecast	August forecast	Latest Forecast	Results	forecast	forecast
Net Sales	7,669	7,800	8,000	8,000	330	200	-
Operating Profit	346	400	480	500	153	100	20
Ratio	4.5%	5.1%	6.0%	6.3%	1.7%	1.1%	0.3%

### Variable Factor Analysis for Operating Profit

(Vs. Previous year)

(Vs. May forecast)



#### Vs. FY2023

Although the automotive seating business, which performed well in the previous year, declined, strong performance in HDD-related components and semiconductor process components and profit gains from yen depreciation are expected to contribute to higher sales and profits.

#### Vs. May forecast

In the automotive-related business, a slowdown primarily in automotive suspension springs and seating is expected to continue, similar to the first half of the year. However, stronger-than-anticipated demand recovery in HDD-related components is projected to drive overall group performance, leading to higher sales and profits.

In the automotive-related business, a slowdown centered on automotive suspension springs and seating is expected. However, the HDD-related business is anticipated to maintain strong performance, and operating profit is forecast to reach 50 billion yen, an increase of 2 billion yen compared to the revised forecast at the end of the first quarter.

Compared to FY2023, while profits are expected to decline in the automotive seating business, strong performance in the HDD-related business and semiconductor process components, along with operating profit boosts from yen depreciation, are projected to result in higher sales and profits.

Against the initial forecast, the strong performance in the HDD-related business is expected to offset the slowdown in the automotive-related business, leading to increased sales and profits.



Forecast for the year ending March 2025

## Net Sales/Operating Profit by Business Segment



	FY2023 Results	FY2024		Vs. FY2023 Results	Vs. May forecast	
		May forecast	Latest Forecast			
■ Automotive Suspension Spring	Net Sales	1,711	1,800	1,700	-11	-100
	Operating Profit	15	42	15	0	-27
	Ratio	0.9%	2.3%	0.9%	-0.1%	-1.5%
■ Automotive Seating	Net Sales	3,241	3,100	3,050	-191	-50
	Operating Profit	191	116	110	-81	-6
	Ratio	5.9%	3.7%	3.6%	-2.3%	-0.1%
■ Precision Springs & Components	Net Sales	945	990	1,010	64	20
	Operating Profit	6	40	45	38	5
	Ratio	0.7%	4.0%	4.5%	3.8%	0.4%
■ Disk Drive Suspension	Net Sales	671	740	1,100	428	360
	Operating Profit	64	116	245	180	129
	Ratio	9.6%	15.7%	22.3%	12.7%	6.6%
■ Industrial Machinery & Others	Net Sales	1,099	1,170	1,140	40	-30
	Operating Profit	68	86	85	16	-1
	Ratio	6.2%	7.4%	7.5%	1.3%	0.1%
Total	Net Sales	7,669	7,800	8,000	330	200
	Operating Profit	346	400	500	153	100
	Ratio	4.5%	5.1%	6.3%	1.7%	1.1%

### Vs. FY2023

Sales and operating profit for suspension springs are expected to be about the same as in the previous term.

Although sales and profits for seats, which were strong in the previous term, are expected to decrease, non-automotive related businesses, centered on DDS, are expected to perform well, and overall sales and profits are expected to increase.

### Vs. May forecast

The automotive business continues to slow down. Non-automotive business is generally strong, but the market for leisure products is sluggish, and there are also factors such as increased costs due to upfront investment to expand orders for the metal substrate business and a decrease in existing products, so industrial equipment and other products are expected to fall slightly short of the initial operating profit target.

DDS continues to perform well and is driving the overall business.

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This slide provides an overview of the performance forecast by business segment.

In the automotive suspension springs business, sales and operating profit are expected to remain at approximately the same level as FY2023.

The automotive seating business is forecast to see a decline in both sales and profits, falling short of the strong performance in FY2023.

On the other hand, the non-automotive-related business, led by the DDS business, is expected to perform well, resulting in an overall increase in sales and profits compared to FY2023.

Compared to the initial forecast, the automotive-related business is expected to continue its slowdown. While the non-automotive business is generally expected to remain solid, the leisure-related and integrated metal substrates businesses are projected to continue facing a sluggish market.

Overall, the strong performance of the DDS business is expected to make a significant contribution, leading to an increase in sales and profits.

Forecast for the year ending March 2025

## Net Sales/Operating Profit Forecast by Region



	FY2023 Results	FY2024		Vs. FY2023 Results	Vs. May forecast	
		May forecast	Latest Forecast			
● Japan	Net Sales	4,377	4,365	4,565	187	200
	Operating Profit	299	234	337	37	103
	Ratio	6.8%	5.4%	7.4%	0.5%	2.0%
● Asia	Net Sales	1,869	1,983	2,040	170	57
	Operating Profit	79	171	210	130	39
	Ratio	4.2%	8.6%	10.3%	6.1%	1.7%
● America & Europe & Others	Net Sales	1,423	1,452	1,395	-28	-57
	Operating Profit	-31	-5	-47	-15	-42
	Ratio	-2.2%	-0.3%	-3.4%	-1.1%	-3.0%
Total	Net Sales	7,669	7,800	8,000	330	200
	Operating Profit	346	400	500	153	100
	Ratio	4.5%	5.1%	6.3%	1.7%	1.1%

### Vs. May forecast

#### ● Japan

Despite the slowdown in the automotive-related business, including suspension springs and seats, the sluggishness of the leisure sector, and the burden of upfront costs for metal substrates, strong performance in HDD-related components and semiconductor process components and profit gains from yen depreciation are expected to contribute to higher sales and profits.

#### ● Asia

Although there are expected to be effects from the decline in automobile production in Thailand and the integrated metal substrates business in Malaysia is projected to experience lower volumes compared to the plan, higher-than-anticipated demand for HDD suspensions is expected to drive increased sales and profits.

#### ● America & Europe & Others

Due to factors such as a decrease in sales volume in North America, increased costs due to a change in the supply base for the suspension spring business, and a deterioration in the product mix in the seat business, as well as increased expenses associated with the launch of new products in Mexico, the forecast is for results to fall below the initial plan.

18

This slide shows the performance forecast by region.

In Japan, although the automotive-related business, including automotive suspension springs and seating, is slowing down, and the leisure-related and integrated metal substrates businesses remain sluggish, the strong performance of HDD-related components and semiconductor process components is expected to drive growth. Sales and profits are forecast to increase compared to both FY2023 results and the initial forecast.

In Asia, while factors such as reduced automobile production volumes in Thailand and lower integrated metal substrates volumes in Malaysia are anticipated, the significant growth in HDD-related components is expected to result in strong performance compared to both FY2023 and the initial forecast.

In the America and Europe, the forecast is below both FY2023 and the initial forecast. This is due to volume declines in North America, increased costs from supply base changes in the automotive suspension springs business, adverse product mix changes in the automotive seating business, and additional costs associated with launching new products in Mexico.

Next, we'll examine the performance forecast by business segment.

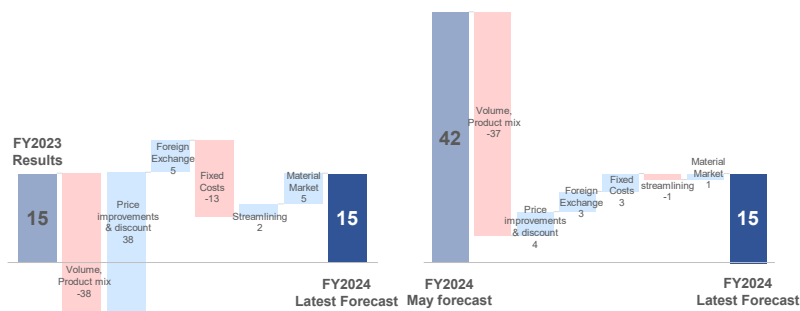
## Automotive Suspension Spring

	FY2023 Results	FY2024		Vs. FY2023 Results	Vs. May forecast
		May forecast	Latest Forecast		
Net Sales	1,711	1,800	1,700	-11	-100
Operating Profit	15	42	15	0	-27
Ratio	0.9%	2.3%	0.9%	-0.1%	-1.5%

### Variable Factor Analysis for Operating Profit

(Vs. Previous year)

(Vs. May forecast)



#### Vs. FY2023

Although sales price improvements, particularly in the U.S., are anticipated, factors such as reduced volumes and increased costs related to the launch of new products in Mexico are expected to result in operating profit remaining at a similar level to the previous year.

#### Vs. May forecast

In addition to the impact of a decrease in global sales volume, there were also additional costs in Mexico and increased costs due to a change in the supply base for North America, and the forecast is expected to fall below the initial forecast.

First, the automotive suspension springs business.

The impact of volume declines and additional costs in Mexico is significant, and sales and operating profit are expected to remain at approximately the same level as FY2023.

Compared to the initial forecast, the business is expected to fall short of the plan due to global volume declines, additional costs in Mexico, and increased costs from supply base changes for North American operations.

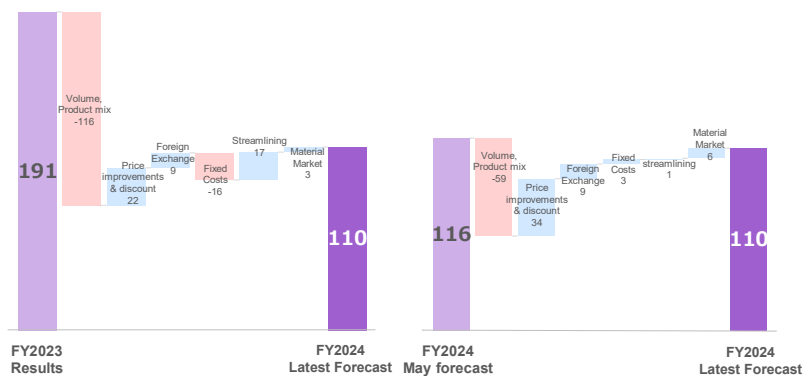
## Automotive Seating

	FY2023 Results	FY2024		Vs. FY2023 Results	Vs. May forecast
		May forecast	Latest Forecast		
Net Sales	3,241	3,100	3,050	-191	-50
Operating Profit	191	116	110	-81	-6
Ratio	5.9%	3.7%	3.6%	-2.3%	-0.1%

### Variable Factor Analysis for Operating Profit

(Vs. Previous year)

(Vs. May forecast)



### Vs. FY2023

Sales volumes declined compared to the previous term due to factors such as the slowdown in the automobile markets in Thailand and Japan. Additionally, factors such as a decrease in development cost recovery, adverse product mix changes in the U.S., are projected to result in lower sales and profits.

### Vs. May forecast

While efforts to improve sales prices and incorporate higher material costs into pricing are included, the slowdown in Thailand's automotive market, product mix changes in North America, are expected to lead to lower sales and profits.

Next, the automotive seating business.

Similar to the first half, factors such as a decline in production volumes in Thailand and Japan, reduced recovery of development costs, and adverse changes in the vehicle and product mix in North America are expected to result in lower sales and profits compared to the previous fiscal year.

Against the initial forecast, the business is also projected to see a slight decrease in profits, impacted by lower production volumes in Thailand and worsening profitability in North America.

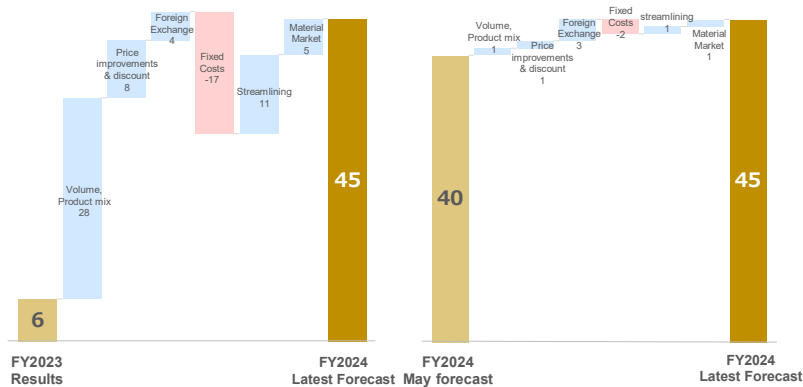
## Precision Springs & Components

	FY2023 Results	FY2024		(100 million yen)	
		May forecast	Latest Forecast	Vs. FY2023 Results	Vs. May forecast
Net Sales	945	990	1,010	64	20
Operating Profit	6	40	45	38	5
Ratio	0.7%	4.0%	4.5%	3.8%	0.4%

### Variable Factor Analysis for Operating Profit

#### (Vs. Previous year)

#### (Vs. May forecast)



#### Vs. FY2023

HDD mechanical components performed better than initially expected. In addition, sales growth and productivity improvements in the domestic motor core business, along with the positive effects of yen depreciation, have contributed to higher sales and profits.

#### Vs. May forecast

Although sales of existing products in the automotive sector are expected to decline, the company is forecasting increased sales and profits thanks to factors such as improved productivity in the production of motor cores, strong sales of mechanical components for HDDs, and the boost to profits from the depreciation of the yen.

In the precision springs and components business, sales and profits are expected to increase compared to FY2023. This is driven by volume growth in HDD mechanical components, profitability improvements in the motor core business, and the positive effects of yen depreciation.

Compared to the initial forecast, while traditional automotive products are expected to see volume declines, productivity improvements in motor cores, strong performance in HDD mechanical components, and favorable effects of yen depreciation are anticipated to result in increased sales and profits.

Forecast for the year ending March 2025 : Analysis by Business Segment  
**DDS (Disk Drive Suspension)**



	FY2023 Results	FY2024		Vs. FY2023 Results	Vs. May forecast
		May forecast	Latest Forecast		
Net Sales	671	740	<b>1,100</b>	428	360
Operating Profit	64	116	<b>245</b>	180	129
Ratio	9.6%	15.7%	<b>22.3%</b>	12.7%	6.6%

**Variable Factor Analysis for Operating Profit**

(Vs. Previous year)

(Vs. May forecast)



**Vs. FY2023**

Demand for HDDs, which was sluggish in the previous term, has recovered, leading to a significant increase in sales of HDD suspensions.

Additionally, profit boosts from yen depreciation are expected to contribute to higher sales and profits.

**Vs. May forecast**

Demand for HDD suspensions is projected to increase beyond initial expectations. Combined with volume growth and profit contributions from yen depreciation, significant increases in both sales and profits are anticipated.

The DDS business is expected to maintain strong performance, with operating profit forecasted at 24.5 billion yen.

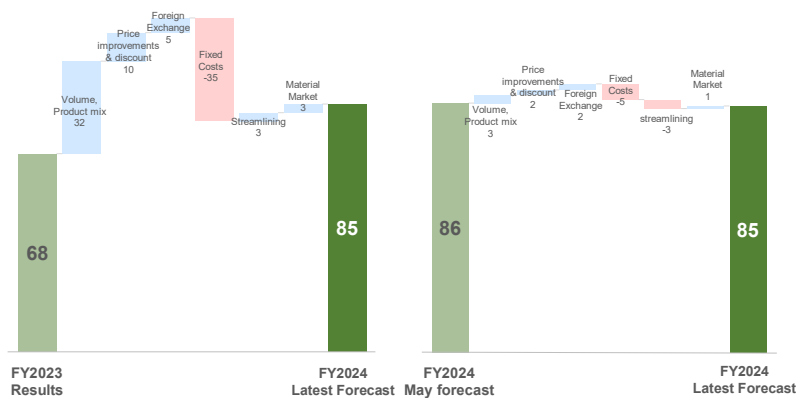
## Industrial Machinery & Others

	FY2023 Results	FY2024		(100 million yen)	
		May forecast	Latest Forecast	Vs. FY2023 Results	Vs. May forecast
Net Sales	1,099	1,170	1,140	40	-30
Operating Profit	68	86	85	16	-1
Ratio	6.2%	7.4%	7.5%	1.3%	0.1%

### Variable Factor Analysis for Operating Profit

(Vs. Previous year)

(Vs. May forecast)



#### Vs. FY2023

Despite upfront costs associated with increasing production of integrated metal substrates, a decrease in the volume of existing products, and a decline in volumes in the leisure sector, strong performance in semiconductor process components and the positive effects of yen depreciation are expected to contribute to higher sales and profits.

#### Vs. May forecast

While increases in semiconductor process component volumes and the effects of yen depreciation are expected, the impact of a decrease in profits in integrated metal substrates and a decrease in volume in the leisure sector is projected to result in operating profits slightly falling short of the initial target.

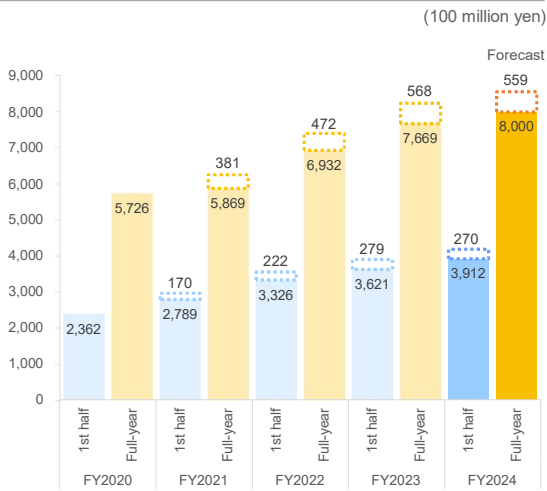
Finally, industrial machinery and other businesses.

Although the IMS (integrated metal substrates) business faces upfront costs for sales expansion, reduced volumes of existing products, and sluggish market conditions in the leisure sector, strong performance in the semiconductor process components business and profit boosts from yen depreciation are expected to result in higher sales and profits compared to FY2023.

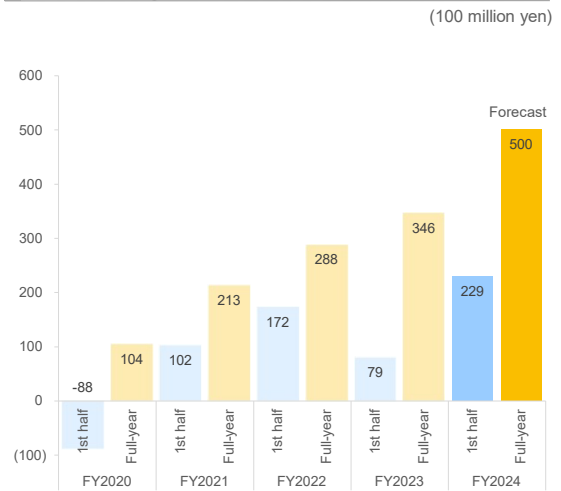
However, against the initial forecast, significant impacts from lower profits in the IMS business and the continued slump in the leisure sector are expected to lead to a decline in sales.

# Results Trends

## Net Sales



## Operating Profit



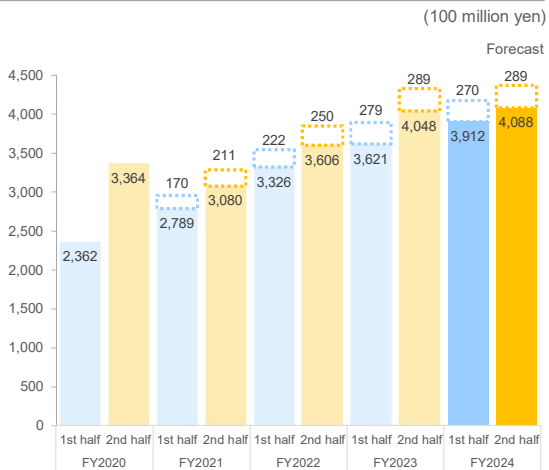
As a result of the adoption of the "Accounting Standard for Revenue Recognition (Revised ASBJ Statement No. 29)," the amount paid by customers, which was previously recorded as net sales, is offset against the cost of sales from the fiscal year ended March 31, 2022.

This graph illustrates the results trends, including the first-half results and full-year forecast.



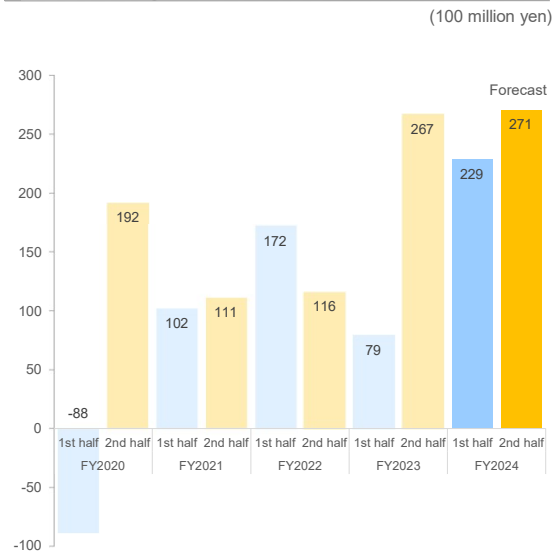
# Results Trends (Semi-Annual Basis)

## Net Sales



As a result of the adoption of the "Accounting Standard for Revenue Recognition (Revised ASBJ Statement No. 29)," the amount paid by customers, which was previously recorded as net sales, is offset against the cost of sales from the fiscal year ended March 31, 2022.

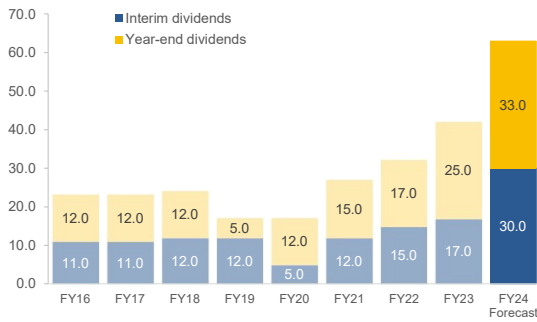
## Operating Profit



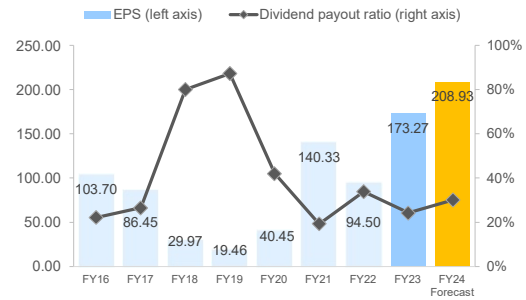
This slide shows the results trends on a semi-annual basis.

# Dividends

## Dividend Per Share (DPS)



## Earnings Per Share (EPS)



	End of Q2	Year-end	Total	Dividend payout ratio
Result for the year ended Mar. 2024	17.0 yen	25.0 yen	<b>42.0 yen</b>	24.2%
Forecast for the year ending Mar. 2025	30.0 yen	33.0 yen	<b>63.0 yen</b>	30.2%

As announced on August 7, the interim dividend is set at 30 yen, and the year-end dividend forecast is 33. The dividend payout ratio is expected to be 30.2%.

# Management Indicators

## Trends in Key Management Indicators

(100 million yen)

		21.3	22.3	23.3	24.3	25.3 (Forecast)	27.3 Mid-term plan
Profitability	<b>Net Sales</b>	5,726	5,869	6,932	7,669	<b>8,000</b>	8,500
	<b>Operating Profit</b> Ratio	104 1.8 %	213 3.6 %	288 4.2 %	346 4.5 %	<b>500</b> 6.3 %	520 6.1 %
	<b>Ordinary Profit</b> Ratio	145 2.5 %	306 5.2 %	373 5.4 %	478 6.2 %	<b>550</b> 6.9 %	570 6.7 %
	<b>Net Income</b> Ratio	93 1.6 %	319 5.5 %	215 3.1 %	391 5.1 %	<b>450</b> 5.6 %	430 5.1 %
Investment Efficiency	<b>ROE</b>	3.4 %	10.5 %	6.4 %	10.4 %	<b>10.8 %</b>	Over 10%
	<b>ROIC</b>	2.4 %	4.4 %	5.5 %	6.1 %	<b>7.9 %</b>	Over 7%
Soundness	Stockholder's Equity to Total Assets Ratio *	50.6 %	54.9 %	57.6 %	58.7 %	<b>60.5 %</b>	Over 50%

This slide shows the trends in management indicators.

ROE is forecasted at 10.8%, and ROIC at 7.9% for the full year.

This concludes the explanation of the second-quarter financial results and the full-year performance forecast for the fiscal year ending March 2025.

## About DDS

President & COO  
Representative Member of the Board

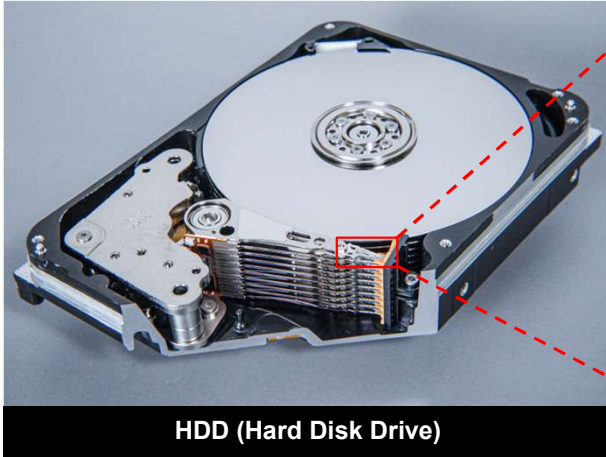
Kazuhisa Uemura

From this fiscal year, we have separated the DDS business segment from the precision springs and components segment.

Let me explain the background of this segmentation.

Previously, the precision springs and components segment primarily included precision spring products for automotive applications and DDS products for the information and communication field. However, since these products serve distinct markets, we received feedback that this segmentation was difficult to understand. Furthermore, we believe that separating the segments allows for more effective communication of each segment's strengths.

## DDS



HDD (Hard Disk Drive)



DDS (Disk Drive Suspensions)

**A tiny leaf spring that controls the position of the magnetic head that reads magnetic data on a disk**

Now, let me explain DDS. DDS stands for "Disk Drive Suspension."

It is a tiny leaf spring installed inside HDDs that holds the magnetic head, which reads and writes data on the HDD, while ensuring its precise positioning. On the slide, the red section inside the HDD represents the DDS. One DDS is used on each side of a disk, so, for example, an HDD with 10 disks would use 20 DDS units.

## HDDs at Data Centers

HDDs for storing data are used in large quantities in data centers, which support video services, etc. NHK Spring's products are used for reading and writing HDD data.



HDD suspensions

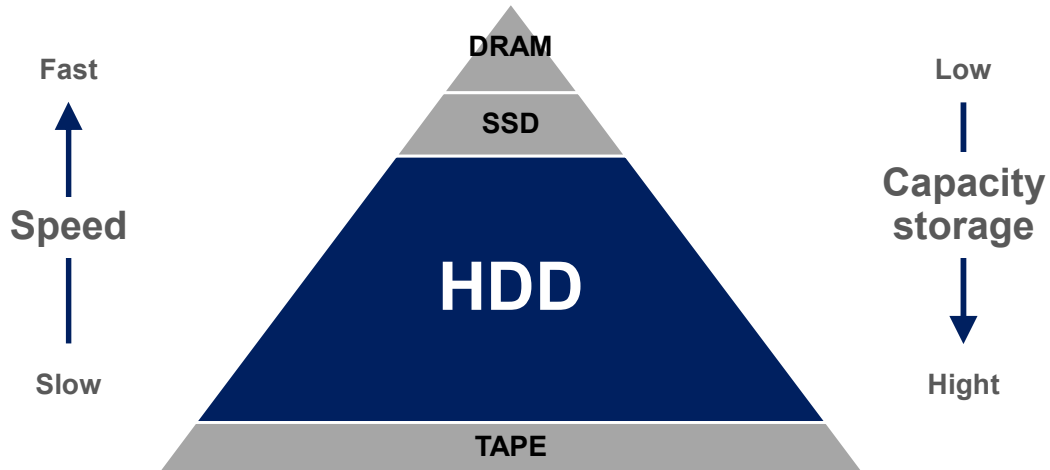


**HDDs are used in key data storage equipment at data centers**

In recent years, DDS has been widely used in HDDs for data centers.

Data centers, supporting cloud services such as video streaming and social media sites, are now extensively used not only by individual users but also by businesses. The scale of data centers continues to expand.

## Configuration of Storage at Data Centers



**Nearline HDDs, which offer an excellent balance of capacity, speed, cost, and quality, are responsible for key storage areas at hyperscale data centers**

This slide schematically illustrates the storage composition of a data center.

Devices such as DRAM, SSDs, HDDs, and tape drives are used, each with distinct functions and characteristics. The diagram shows differences in data read/write speed and storage capacity. Each device is utilized in ways that suit its specific strengths. HDDs, with their balanced combination of capacity, speed, cost, and quality, remain a primary storage option. The expansion of data centers is expected to drive further growth in HDD usage.

The component that controls the position of the read/write head in these HDDs is the DDS.

# Strengths of NHK Spring

- Original design
- High-precision
- High-speed mass production

Production equipment development

Product development

- Development of next-generation products
  - ✓ Design proposals
  - ✓ Elementary technology
  - ✓ Supporting parts supplier development

- One Quality
- One Standard

Quality

Evaluation technology

- Original evaluation technology
  - ✓ Suspension level
  - ✓ HDD level
- Supporting customer product development
  - ✓ Failure analysis
  - ✓ Developed component evaluation

- Multiple production sites (Japan, China, Thailand)
- BCP adaptation

Global production

Analysis technology

- Vibration characteristics
- Shock-resistance characteristics
- Electrical signal transmission characteristics
- Presswork analysis
- Thermal deformation analysis

I will explain the six strengths of our DDS business.

First is product development. For next-generation product development, we provide comprehensive support, including design proposals, elemental technologies, and development assistance for component suppliers. This allows us to quickly bring products tailored to customer needs to market.

Second is evaluation technology. Using proprietary evaluation technologies, we can perform high-precision evaluations at both the drive suspension and HDD levels. We also provide comprehensive support for customers' product development, including failure analysis and evaluation of the developed components.

Third is analysis technology. Our company has diverse analysis technologies that enhance product performance and allow us to deliver better products to customers.

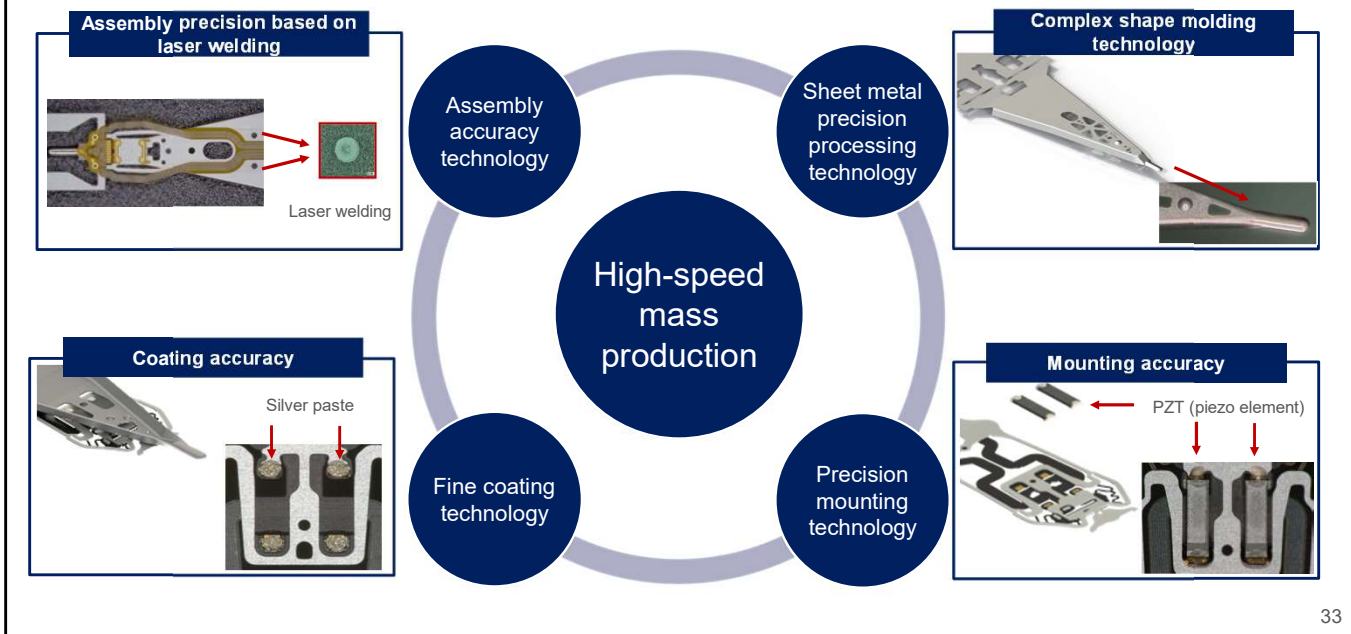
Fourth is global production. We have production sites in Japan, China, and Thailand, which also support our BCP. Beyond merely having production facilities, the long-term operation of these bases has enabled us to cultivate talented local human resources, which we consider another strength.

Fifth is quality. Under the motto "One Quality & One Standard," we deliver consistent high quality across all production sites, ensuring reliable products for our customers.

Sixth is production equipment development. We develop proprietary production equipment, enabling high-precision, high-speed, and large-scale production. This capability allows us to respond to customer needs quickly and accurately, which is a core strength.



# Core Technology for Suspension Manufacturing



33

Here, we introduce our core technologies developed using proprietary production techniques.

First is our sheet metal precision processing technology, which relies on advanced die design and manufacturing.

Next is the technology for mounting piezo elements, which play a vital role in the operation of suspensions, as well as fine adhesive coating technology.

We also excel in laser welding technology for joining components, enabling mass production at the micron level.

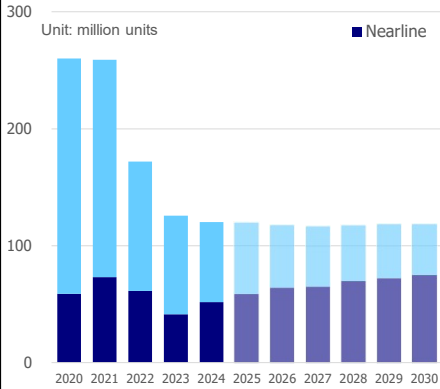
Lastly, we have developed and operate continuous production lines capable of high-speed, large-scale production of these precision components.

By leveraging our advanced technical capabilities and global production system, we deliver products and services that meet the diverse needs of our customers.

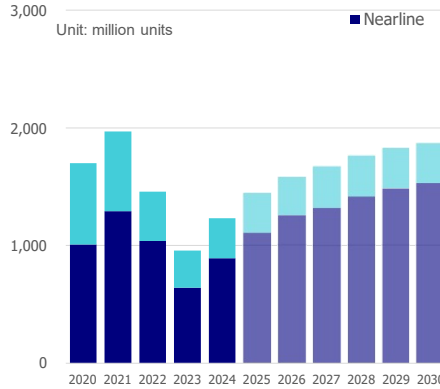
# Market Environment



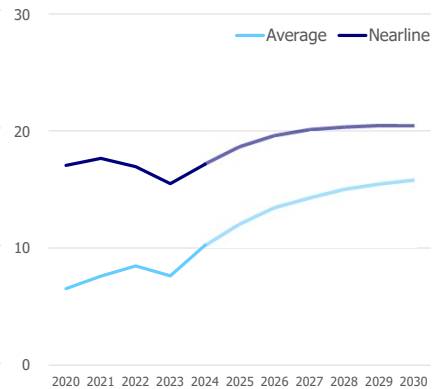
Number of HDDs shipped



Total amount of suspensions



Number of suspensions used



Source: Created by NHK Spring from various materials

**The overall number of HDDs produced is forecast to remain stable in the future, but after bottoming out in CY23, Nearline data center demand will increase from CY24 onward**  
**High capacity = increase in number of disks -> Suspension demand will increase further**

Let me now explain the market environment.

The graph on the left shows the global shipment trends of HDDs. Overall HDD shipments are expected to remain stable at approximately 120 million units globally. However, nearline HDDs for data centers are expected to continue growing.

Since nearline HDDs have higher capacities, they require more disks, which in turn increases the demand for suspensions. The graph on the far right shows the average number of suspensions per HDD.

The light blue line represents the overall average, while the dark blue line represents the average for nearline HDDs. The number of suspensions per HDD is increasing year by year, currently averaging about 18 units per drive, and this trend is expected to continue.

# Outlook for HDD Suspension Business

## Market Environment

HDD suspension demand is forecast to keep increasing in the future as data centers expand.

The HDD and HDD suspension markets have already become an oligopoly.

## NHK Spring's Initiatives

Offering products and services that enable the development of high-capacity HDDs (customer focus)

Maximizing production output and enhancing cost competitiveness by pursuing automation

**Maintaining and expanding market share**

**Enhancing sales and profits**  
**Supplying key parts that support information infrastructure in advanced digital societies**

Next, I will explain the outlook.

As explained earlier, in the current market environment, the demand for HDD suspensions is expected to continue increasing in line with the expansion of data centers.

At the same time, the HDD and HDD suspension markets are already highly consolidated.

To address this, our strategy is to support our customers' product development and manufacturing to meet the evolving demands of high-capacity HDD technology. We aim to provide customer-centric products and services.

As part of our 2026 mid-term plan, we are committed to implementing automated transport systems to reduce labor needs, leveraging digital transformation (DX) to further stabilize quality, and advancing toward smart factories.

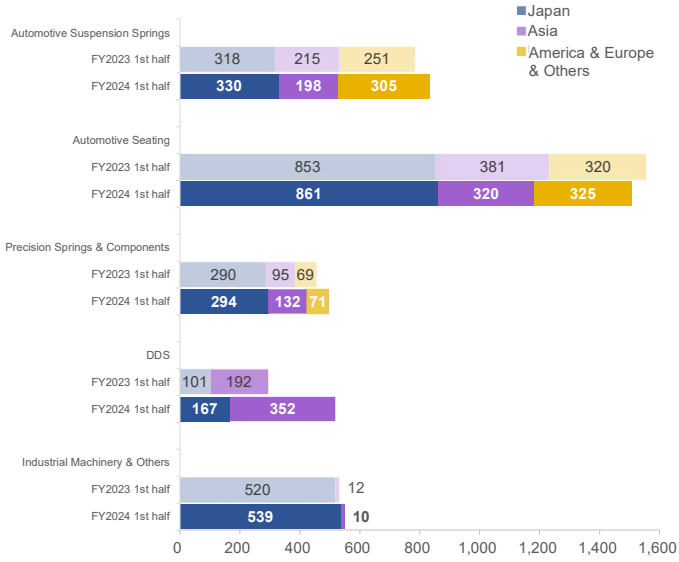
In parallel, we will further enhance our core technologies to maximize productivity and promote automation, thereby strengthening cost competitiveness.

Through these efforts, we aim to maintain and expand our market share, provide indispensable key components that support the information infrastructure of the advanced digital society, and contribute to society while achieving revenue growth.

This concludes our explanation of the DDS business.  
Thank you for your attention.

# Supplementary Materials

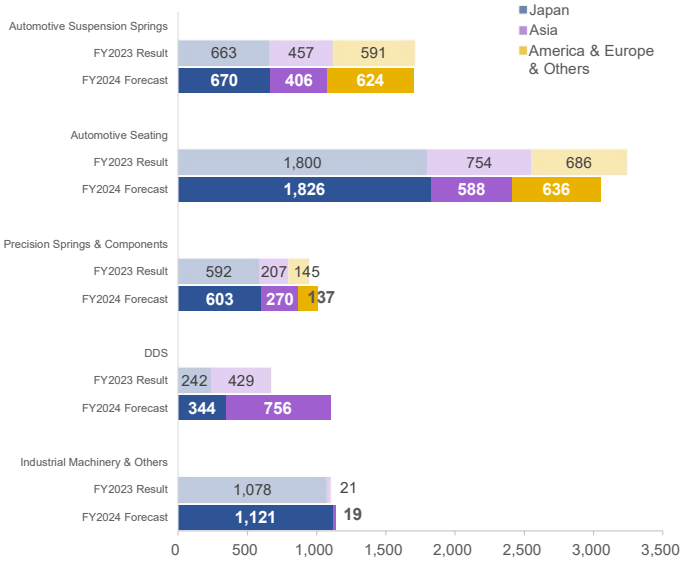
# Details of Net Sales (1st Half)



(100 million yen)

		Japan	Asia	America & Europe & Others	Total
<b>Automotive Suspension Springs</b>	FY2023 1st half	318	215	251	786
	FY2024 1st half	330	198	305	835
<b>Automotive Seating</b>	FY2023 1st half	853	381	320	1,555
	FY2024 1st half	861	320	325	1,508
<b>Precision Springs &amp; Components</b>	FY2023 1st half	290	95	69	454
	FY2024 1st half	294	132	71	498
<b>Disk Drive Suspension</b>	FY2023 1st half	101	192	-	293
	FY2024 1st half	167	352	-	519
<b>Industrial Machinery &amp; Others</b>	FY2023 1st half	520	12	-	532
	FY2024 1st half	539	10	-	550
<b>Total</b>	FY2023 1st half	2,084	896	640	3,621
	FY2024 1st half	2,194	1,014	702	3,912

# Details of Net Sales (full-year)



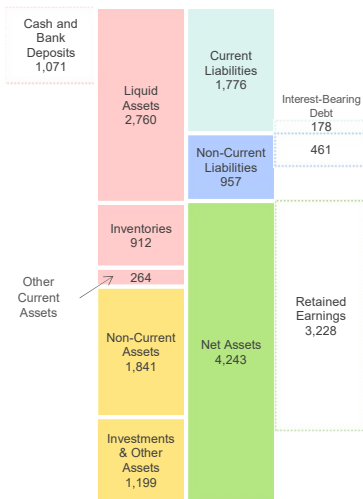
		(100 million yen)			
		Japan	Asia	America & Europe & Others	Total
<b>Automotive Suspension Springs</b>	FY2023 Result	663	457	591	1,711
	FY2024 Forecast	670	406	624	1,700
<b>Automotive Seating</b>	FY2023 Result	1,800	754	686	3,241
	FY2024 Forecast	1,826	588	636	3,050
<b>Precision Springs &amp; Components</b>	FY2023 Result	592	207	145	945
	FY2024 Forecast	603	270	137	1,010
<b>Disk Drive Suspension</b>	FY2023 Result	242	429	-	671
	FY2024 Forecast	344	756	-	1,100
<b>Industrial Machinery &amp; Others</b>	FY2023 Result	1,078	21	-	1,099
	FY2024 Forecast	1,121	19	-	1,140
<b>Total</b>	FY2023 Result	4,377	1,869	1,423	7,669
	FY2024 Forecast	4,564	2,039	1,397	8,000

(100 million yen)

	FY2020 Results	FY2021 Results	FY2022 Results	FY2023 Results	FY2024 1st half results	Increase/ Decrease
<b>Total Assets</b>	5,607	5,880	6,060	6,902	<b>6,976</b>	74
<b>Stockholder's Equity</b>	2,839	3,226	3,492	4,050	<b>4,092</b>	42
<b>Stockholder's Equity to Total Assets Ratio</b>	50.6%	54.9%	57.6%	58.7%	<b>58.7%</b>	-0.0%
<b>Cash and Bank Deposits</b>	793	921	729	1,032	<b>1,071</b>	39
<b>Interest-Bearing Debt</b>	697	505	500	474	<b>640</b>	166
<b>Net Cash</b>	95	416	229	558	<b>431</b>	-127

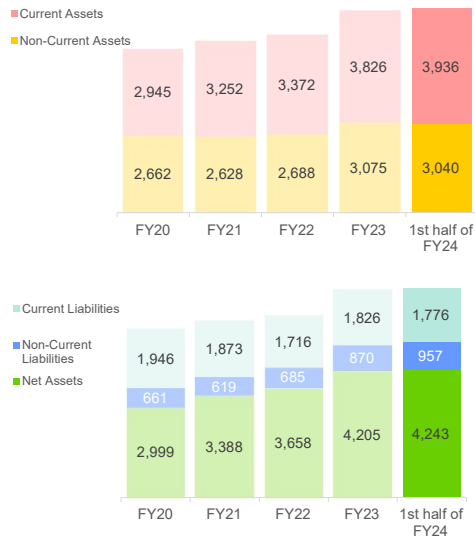
## FY2024 1st half results

(100 million yen)



## Balance Sheet Trends

(100 million yen)



### ▼ Assets

Although investment securities decreased due to market valuation adjustments, the yen-converted value of assets held by overseas subsidiaries increased due to exchange rate fluctuations. Additionally, property, plant, and equipment assets increased as a result of higher capital expenditures.

### ▼ Liabilities

While income taxes payable decreased due to tax payments, overall liabilities increased due to a rise in long-term borrowings.

### ▼ Net Assets

Despite a reduction from the acquisition of treasury shares, net assets increased due to the accumulation of retained earnings from interim profit attributable to the owners of the parent company.



(100 million yen)

	FY2022 Results	FY2023 Results	FY2024		
			May forecast	Latest Forecast	Variance
<b>Capital Investments</b>					
Automotive Suspension Springs	45	58	88	101	13
Automotive Seating	46	49	61	69	8
Precision springs & components		107	84	125	41
DDS	121	45	74	64	-10
Industrial Machinery & Others	58	82	163	95	-68
Company-wide sharing	9	27	42	34	-8
Total	280	370	512	488	-24
Vs. Previous year	20.7%	31.8%	38.4%	31.9%	
<b>Depreciation &amp; Amortization</b>					
Automotive Suspension Springs	66	63	66	58	-8
Automotive Seating	55	56	48	49	1
Precision Springs & Components		47	53	53	0
DDS	113	63	68	66	-2
Industrial Machinery & Others	35	35	45	42	-3
Company-wide sharing	17	19	27	25	-2
Total	288	286	307	293	-14
Vs. Previous year	2.0%	-0.7%	7.1%	2.2%	

## Capital Investment/Depreciation &amp; Amortization by Region Segment

(100 million yen)

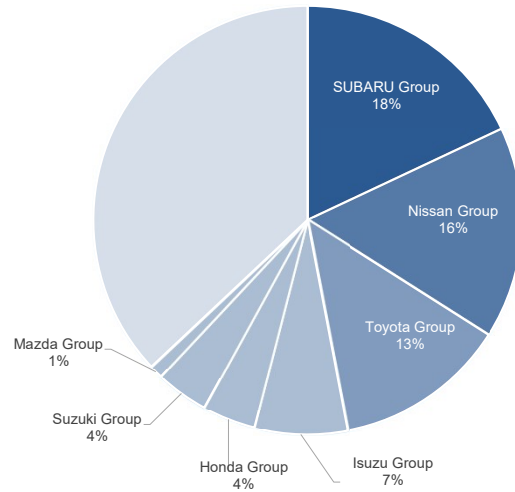
		FY2022 Results	FY2023 Results	FY2024		Variance
				May forecast	Latest Forecast	
<b>Capital Investments</b>	Japan	178	259	280	298	18
	Asia	61	75	172	92	-80
	America & Europe & Others	40	34	60	98	38
	Overseas total	102	110	232	190	-42
	Total	280	370	512	488	-24
<b>Depreciation &amp; Amortization</b>	Japan	149	146	178	168	-10
	Asia	86	92	88	83	-5
	America & Europe & Others	52	47	41	42	1
	Overseas total	139	139	129	125	-4
	Total	288	286	307	293	-14

# Cash Flow Status (Semi-Annual Basis)



## Sales Breakdown to Each of the Major Car Makers

Major car makers	FY2022	FY2023
SUBARU Group	16%	<b>18%</b>
Nissan Group	15%	<b>16%</b>
Toyota Group	14%	<b>13%</b>
Isuzu Group	7%	<b>7%</b>
Honda Group	4%	<b>4%</b>
Suzuki Group	4%	<b>4%</b>
Mazda Group	1%	<b>1%</b>
<b>Top 3 Companies</b>	<b>45%</b>	<b>47%</b>



(Note) The percentages show share versus total net sales.

## Quarterly Sales Trends (Motor Core, Semiconductor Process Components, Integrated Metal Substrates, Leisure Sector)

(100 million yen)

		FY2023							FY2024				
		1Q	2Q	1st half	3Q	4Q	2nd half	Full-year	1Q	2Q	1st half	2nd half	Full-year
Precision Springs & Components	Motor Core	28	28	57	28	33	62	119	29	31	61	69	131
Industrial Machinery & Others	Semiconductor process components	31	40	72	39	41	81	154	37	47	84	117	202
	Integrated metal substrates	21	21	42	22	19	41	84	19	19	39	34	73
	Leisure Sector <small>(Golf Shafts, Marine Products, etc.)</small>	40	40	81	34	33	67	148	34	32	66	72	139

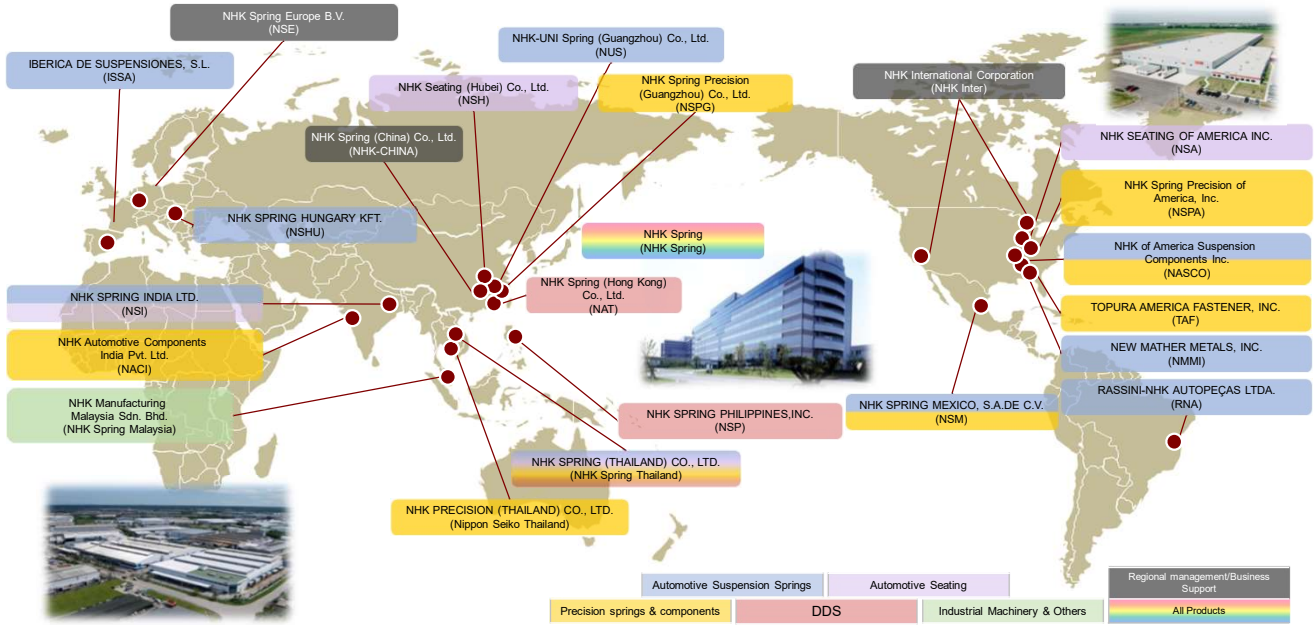
### ROIC by business segment

(100 million yen)

		Automotive Suspension Spring	Automotive Seating	Precision Springs & Components	Disk Drive Suspension	Industrial Machinery & Others	Total
FY2024	Operating Profit	15	191	6	64	68	346
	ROIC *	1.1 %	20.2 %	0.6 %	10.9 %	6.2 %	6.1 %
FY2025 (Forecast)	Operating Profit	15	110	45	245	85	500
	ROIC *	0.9 %	11.5 %	3.3 %	37.0 %	6.5 %	7.9 %

\*ROIC by business segment is calculated simply by aggregating non-current assets and inventories from the perspective of management efficiency

# Major Overseas Operations



## Reportable segment classification

The classification of reporting segments has been changed from the existing "Automotive Suspension Springs Business", "Automotive Seating Business", "Precision Springs and Components Business", and "Industrial Machinery and Equipment, and Other Operations" to "Automotive Suspension Springs Business", "Automotive Seating Business", "Precision Springs and Components Business", "DDS (Disk Drive Suspension) Business", and "Industrial Machinery and Equipment, and Other Operations", effective from the beginning of the year ending March 31, 2025.

Prior to the previous consolidated fiscal year

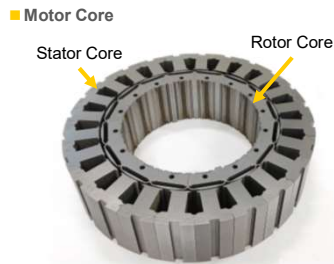
Reportable segments	Major products
<b>Automotive suspension springs</b>	Coil springs, leaf springs, stabilizer bars, accumulators, torsion bars, stabilizer links, stabilinker and others
<b>Automotive seating</b>	Seats, mechanical seating components, trim parts and others
<b>Precision springs and components</b>	HDD suspensions and mechanical components, wire springs, flat springs, motor cores, LCD/semiconductor testing probe units, fastener (screw), precision machine components and others
<b>Industrial machinery and equipment, and other operations</b>	Semiconductor processing products, ceramic products, spring mechanisms, pipe support systems, polyurethane products, metal substrates, automatic parking systems, security products, lighting equipment, golf club shafts and others



From the current consolidated fiscal year onwards

Reportable segments	Major products
<b>Automotive suspension springs</b>	Coil springs, leaf springs, stabilizer bars, accumulators, torsion bars, stabilizer links, stabilinker and others
<b>Automotive seating</b>	Seats, mechanical seating components, trim parts and others
<b>Precision springs and components</b>	HDD mechanical components, wire springs, flat springs, motor cores, fastener (screw), precision machine components and others
<b>Disk Drive Suspension</b>	HDD suspensions, LCD/semiconductor testing probe units and others
<b>Industrial machinery and equipment, and other operations</b>	Semiconductor processing products, ceramic products, spring mechanisms, pipe support systems, polyurethane products, metal substrates, automatic parking systems, security products, lighting equipment, golf club shafts and others





NHK produce Motor Cores, which are laminated iron cores used in the motors—drive motors and/or power generators—for EV and HV vehicles.

They are made by some hundred layers of 0.25 to 0.35 mm thickness electromagnetic steel sheets which are stamped out one by one, and are fastened together by caulking or welding.

The motor core consists of the Rotor Core, which has a magnet inserted and serves as the rotating part of the motor, and the Stator Core, which is the fixed winding part.

Electric power from battery is supplied to the motors through inverters, and Rotor Cores—which contains magnets—are pulled and repelled by rotating magnetic field generated in the Stator Cores—which are wound with coils—, causing Rotor Cores high speed rotation.

Thin plate laminated iron cores can easily pass through magnetic field lines, and have ability to generate stronger magnetic force.

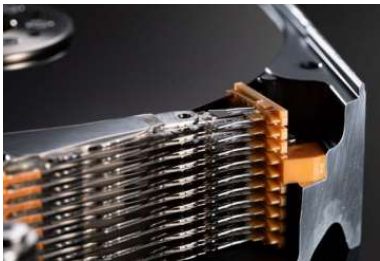
NHK Motor Cores are diameter of around 200 mm and height of around 150 mm, which is a relatively large size for the precision stamped products that NHK produce; but NHK has built up an ability over the many years, to produce dimensional accuracy as micron level, through our production of automotive parts and HDD (hard disk drive) parts, to be able to produce this kind of large, ultra-high precision stamped products.

The press dies essential for motor core production are designed, manufactured, and maintained entirely in-house, enabling the production of the same quality motor cores in our global operations in Mexico and China as well as our Atsugi Plant in Japan.

■ HDD suspensions



■ HDD suspension placement



Suspensions for HDD are unique spring products, holding read-write head in Hard Disk Drive devices.

In recent years, HDDs are increasingly used for data centers, such as those supporting social media and video-sharing sites, rather than for personal computers. Data centers store massive gigabyte-sized files, with hundreds of thousands of large-capacity HDDs aligned in racks. Each of these HDDs contains many HDD suspensions. As shown in the image to the left, 20 suspensions are used in a single HDD, and data centers utilize an enormous number of suspensions in total.

Large-capacity HDD suspensions feature ultra-small actuators that finely control the tiny components used for reading and writing data. These actuators enable higher-density data reading and writing on the disk.

The ultra-small actuators are classified as follows: those integrated into the central section are called DSA, and those embedded in the tip are referred to as CLA. Using a human analogy, DSA corresponds to wrist movement, while CLA represents fingertip motion. To achieve even higher performance, we developed our flagship product, the TSA, which incorporates both DSA and CLA. TSA enables precise yet dynamic movements, significantly contributing to the increasing capacity of HDDs used in data centers.

Our company was the first in the world to mass-produce CLA and TSA, securing a leading global market share.

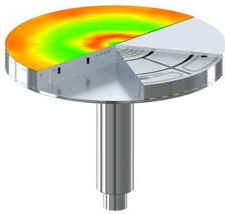
\* DSA stands for "Dual Stage Actuators"

\* CLA stands for "Co-Located Actuators"

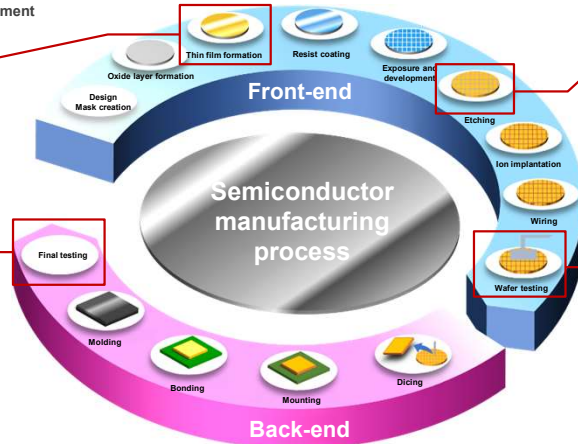
\* TSA stands for "Triple Stage Actuator"

# Semiconductor-Related Products

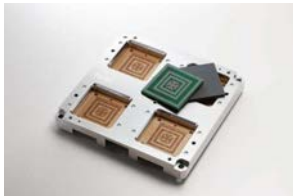
■ Stage heater with multi-zone temperature distribution control function for film deposition equipment



■ Ceramics spray-coated cooling plate for etching equipment



■ Test sockets



■ Probe cards



■ Contact probes (Microcontactors®)



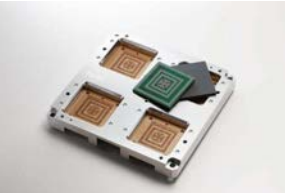
■ Contact probes (Microcontactors®)



■ Probe cards



■ Test sockets



Semiconductor testing involves inspecting semiconductor products by applying electricity to ensure they operate correctly.

Semiconductor testing tools serve as connectors between the semiconductor and the testing equipment. We provide probe cards used in front-end (wafer processing) inspections, test sockets used in back-end (packaging process\*) inspections, and the spring products and contact probes (Microcontactors®) incorporated into these tools to semiconductor manufacturers and their related companies worldwide.

**Microcontactors**

Microcontactors are testing terminals that use fine springs in semiconductor testing. Electrical signals output from the test equipment are transmitted to the semiconductor through the Microcontactors. Each semiconductor terminal requires a uniquely processed tip shape, and we can handle the entire process in-house, from design to manufacturing. We can also propose custom shapes tailored to specific customer requirements.

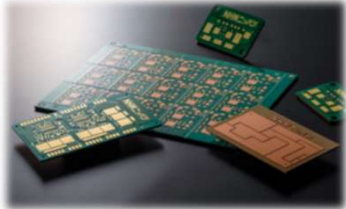
**Probe cards**

Probe cards are tools used in the front-end process. A disc-shaped plate with fine holes contains anywhere from tens to thousands—or even tens of thousands—of Microcontactors. On the wafer being tested, there are countless small semiconductor terminals, and each one must be precisely contacted by the Microcontactors to inspect the electrical characteristics (pass/fail) of individual semiconductors. Accurate and uniform contact requires the use of high-conductivity, high-precision Microcontactors.

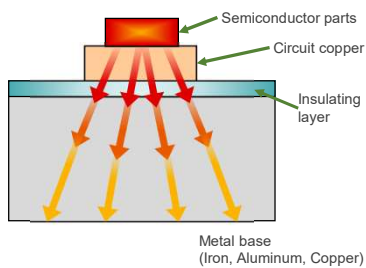
**Test sockets**

Test sockets are tools used in the back-end process. Individual semiconductor packages inserted into the sockets are connected to the testing equipment through the Microcontactors, where their electrical characteristics and reliability are tested.

\* Packaging process (the process of encapsulating ICs, cut from semiconductor wafers, in plastic or ceramic to protect the circuitry and facilitate connection to external peripheral circuits)



■ **Cross-sectional structure of IMS**



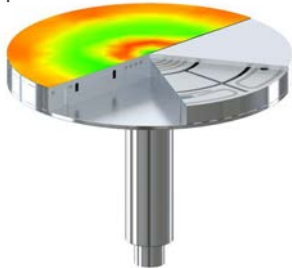
Integrated Metal Substrates (IMS) are circuit plates, circuits are formed via an insulating layer on metal base, such as aluminum or copper, and their excellent heat dissipation are characteristic of IMS. Taking advantage of this heat-radiating performance, IMS is used in the fields of automotive, industrial, and consumer applications, to efficiently dissipate the heat generated by semiconductor components mounted on IMS.

In the automotive field, our products are increasingly used in DC-DC converters and charger modules for electric and hybrid vehicles, and we are aiming to use them in drive inverter circuits in their future. In industrial applications, in addition to general-purpose inverters and inverter circuits for air conditioners, our IMS are widely used as power modules inside power conditioners for renewable energy.

Our IMS is specialized in the development and manufacturing of high heat radiation and highly reliable insulating layers. Our IMS is characterized by our strength in integrated production, from the development of high heat-dissipating and highly reliable insulating layers, to manufacturing and finishing into IMS.

We have been developing IMS since 1980s, and have been leading the industry by introducing high heat dissipation insulating materials to the market successively.

■ Stage heater with multi-zone temperature distribution control function for film deposition equipment



■ Ceramics spray-coated cooling plate for etching equipment



In semiconductors, conductors and insulators are drawn in a fine and complicated pattern on a silicon substrate to form a circuit. NHK's semiconductor process components are used in the key processes of "film formation" and "etching" in semiconductor manufacturing.

NHK's stage heaters are widely used in film formation processes such as CVD and ALD\*. Mainly made of aluminum alloy and stainless steel, advanced joining techniques developed over many years allow for the realization of complex internal structures.

\* CVD stands for Chemical Vapor Deposition

\* ALD stands for Atomic Layer Deposition

In making full use of our own heater element design technology and analysis technology for simulation, it is possible to arrange multiple heater elements, refrigerant channels, and heat insulating space, which enables to realize not only equalize temperature distribution, but also active temperature distribution control, that partially generates a difference in the range of several tens of degrees.

Regarding to etching equipment, we are manufacturing important stage parts called cooling plates, on which silicon wafers are loaded during process. Most of them are made from aluminum alloy; NHK have the strength of integrated production—from material procurement to precision processing and ceramic spray coating—and applying our advanced bonding technology, common to the heater manufacturing.

In these years, in addition to the parts at the bottom of the chamber—heater and cooling plate which support work in process wafers—we have also focused on developing the parts of the upper side of the chamber—called shower heads, for the purpose of supplying required gas in the process—and this sales are also increasing.



- The predictions and plans by NHK Spring Co., Ltd. listed in this document are forecasts related to future results and performance, and contain risks and uncertainties. Please note that the actual results may differ from the forecasts due to fluctuations in important variables, such as economic conditions, market trends, foreign exchange trends, and so forth.
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