



President Akira Yamamoto

Nippon Piston Ring (6461)



NIPPON PISTON RING CO.,LTD.

Company Information

Market	TSE 1st Section
Industry	Machinery (Manufacturing)
President	Akira Yamamoto
HQ Address	5-12-10, Honmachi Higashi, Chuo-ku, Saitama City, Saitama, Japan
Year-end	March
HOME PAGE	https://www.npr.co.jp/english/index.html

Stock Information

Share Price	Shares Outstanding	Total market cap	ROE (Act.)	Trading Unit	
1,371 yen	8,374,157 shares	11,480 million	6.0%	100 shares	
DPS (Est.)	Dividend yield (Est.)	EPS (Est.)	PER (Est.)	BPS (Act.)	PBR (Act.)
75.00 yen	5.5%	194.54 yen	7.0 x	3,789.58 yen	0.4 x

*The share price is the closing price on May 29, 2019. The number of shares outstanding was taken from the latest brief financial report.

ROE and BPS are the values for the previous term.

Earnings Trend

Fiscal Year	Net Sales	Operating Income	Ordinary Income	Net Income	EPS(¥)	DPS(¥)
Mar. 2015 (Actual)	51,657	1,946	2,172	2,173	264.45	6.00
Mar. 2016 (Actual)	52,199	2,549	2,442	1,605	195.28	60.00
Mar. 2017 (Actual)	52,121	3,238	2,898	2,415	293.66	65.00
Mar. 2018 (Actual)	55,932	3,890	4,189	2,286	277.98	70.00
Mar. 2019 (Actual)	57,066	3,420	3,363	1,888	229.65	75.00
Mar. 2020 (Forecast)	56,000	2,600	2,600	1,600	194.54	75.00

*Unit: million yen. The forecast is from the Company. The definition for net income is net income attributable to owners of parent.

*EPS has been adjusted to reflect the reverse stock split of 1 for 10 conducted on October 1, 2015.

*The DPS ¥6.00 for FY March 2015 includes the ¥1.00 dividend for commemorating the 80th anniversary of the Company's establishment.

This Bridge Report provides Nippon Piston Ring Co., Ltd.'s earnings overview for fiscal year 2018, an interview with President Yamamoto and so on.

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Key Points

- **The sales for the fiscal year 2018 were 57.1 billion yen, up by 2.0% year on year, marking a record high for two consecutive years. As for the performance of each product, the sales of the mainstay products, piston rings and valve seat inserts were healthy mainly for non-Japanese automobile manufacturers. Domestic sales were 23.2 billion yen, down by 3.1% year on year. Overseas sales were 33.8 billion yen, up by 5.8% year on year, and overseas sales ratio was 59%. Although the sales increased, operating income was 3,420 million yen, down by 12.1% year on year due to the rise in raw materials costs, increase in personnel expenses, etc. Ordinary income was 3,363 million yen, down by 19.7% year on year due to the decline in operating income, foreign exchange loss, etc.**
- **In FY 2019, under the assumption of yen appreciation with foreign exchange rates being 105 yen per US dollar and 120 yen per euro, sales are forecasted to be 56 billion yen, down by 1.9% from the previous year. Domestic sales are forecasted to be 22.2 billion yen, down by 4.4% from the previous year. Overseas sales that increased in the previous year is forecasted to be 33.8 billion yen, down by 0.1%. Operating income is forecasted to be 2.6 billion yen, down by 24.0% year on year. Despite cost reduction to offset the rise in personnel expenses and fluctuation of the unit price, profit is projected to decrease due to the appreciation of the yen, etc. The dividend amount is projected to be a total of 75 yen per share, 20 yen for the interim and 55 yen for the year-end. Payout ratio is estimated at 38.5%.**
- **We asked President Yamamoto about the review of the performance in FY 2018, the forecast for FY 2019 and the progress of the mid-term business plan. "We forecasted that sales and income would decrease considering the effects of the yen appreciation in FY 2019, however, the order receipt environment in overseas markets overall will continue to be firm. We will proactively promote sales that is oriented to making and using technical proposals and pursue activities that reduce costs in order to accumulate sales and income," he said.**
- **Sales and income are expected to decrease in FY 2019 due to mainly external factors such as the effect of the foreign exchange rate. In the current term, which is the middle of the 7th mid-term business plan, the company is burdened by the risk of an economic downturn due to the deceleration of the Chinese economy, etc. and the future continues to hold uncertainties, however as mentioned in the interview with the company president, we will observe how much revenue the company can accumulate by proactively promoting sales that is oriented to making and using technical proposals and pursuing activities that reduce costs.**

1. Company Overview

Nippon Piston Ring manufactures and sells piston rings and valve seat inserts which are important functional parts for automobile engines. The Company boasts of a market share just under 30% of piston rings and just under 40% of valve seat inserts supplied to Japanese automobile manufacturers. It supplies its products not only to all Japanese automobile manufacturers but also to many prominent non-Japanese automobile manufacturers.

Nippon Piston Ring boasts of strengths in metallic materials, surface quality improvement and precision processing technologies. Development of new products and business expansion to non-automobile engine parts realms such as METAMOLD (metal injection molding products) and medical products are being strengthened.

【1-1 Corporate History】

Nippon Piston Ring was founded by Tomonori Suzuki in 1931 in Kawaguchi City, Saitama Prefecture just prior to the start of mass domestic production of automobiles by manufacturers such as Toyota and Nissan, following the Government program for “establishment of an automobile industry” adopted in August 1935. The company name Nippon Piston Ring Co., Ltd. was officially adopted along with the establishment of the factory in Kawaguchi City in 1934.

During the Second World War, the Company began mass production of chrome plated piston rings for airplanes. At the end of the War in 1945, the factory was temporarily closed, but the Company began operations along with the listing of its shares on the Tokyo Stock Exchange in 1949.

Nippon Piston Ring’s earnings expanded rapidly along with the rapid expansion in Japanese automobile exports, and the strong demand for vehicles due to economic growth in the post-war reconstruction within Japan.

Beginning to provide products to German and American automobile manufacturers in the 1970s, the Company has continued organizing a global manufacturing and sales structure, establishing production bases in Thailand, Indonesia, United States, China and India since 2000.

The metal injection molding products business and dental implants business were acquired in 2014 as part of the strategy of expanding its product lineup outside of the automobile engine parts realm, and the Company has started to operate the business by its own facility since 2015.

【1-2 Corporate Philosophy】

Corporate Philosophy	<ol style="list-style-type: none"> 1. We pursue every business operation on the principle of placing the No. 1 priority on customers. 2. We respond with flexibility to changes in the environment and secure appropriate levels of profits to reflect our appreciation of our shareholders, suppliers, and business partners. 3. In harmony with society, we contribute to the progress of human beings by securing the position of a global comprehensive parts manufacturer. 4. We strive for the prosperity of the corporation and welfare of its employees through perpetual efforts for innovation and improvement in performance.
Our Corporate Action Guideline	<p>We strive for the prosperity of our company and our welfare by combining our ingenious attempts and diligence through close teamwork of the employees in the realms of manufacturing, sales, and engineering.</p>

【1-3 Market Environment】

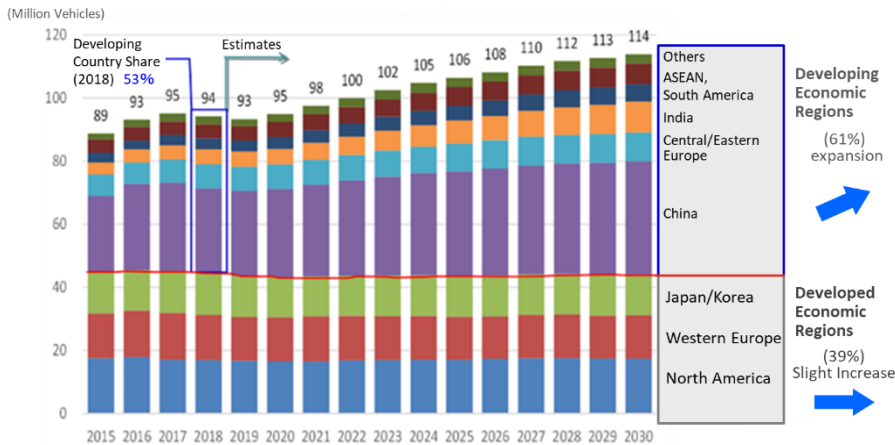
◎Global Automobile Production Volume

The worldwide number of manufactured vehicles of less than six tons will temporarily decrease during the period from 2018 to 2019 due to the recession in its largest markets, China and North America, however, from 2020 onwards it will continue to increase and will reach 114 million by 2030.

Looking at the details of these estimates, vehicles of less than six tons manufactured in Europe, North America, Japan and other developed economic regions are expected to see the same level. However, the share of vehicles of less than six tons manufactured in China, ASEAN countries, South America, India and other developing economic regions is expected to continue to expand from 53% in 2018 to 61% in 2030.

Regional Production Volume (Vehicles of less than six tons)

Source: IHS (5/2019 Data)



(Source: Nippon Piston Ring)

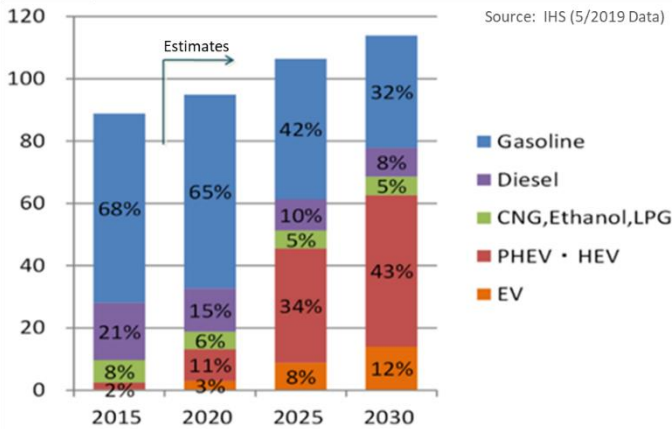
◎ Production Volume by Powertrain (Drive System)

It is projected, regarding the production volume forecast by powertrain (drive system), that the growing environmental awareness will result in a reduction in the share of gasoline and diesel engines, while the share of electric vehicles (EVs), which don't require engines, will account for 12% in 2030, however, the share of hybrid vehicles (PHEVs, HEVs) will increase significantly, mainly in developing economic regions. It means that demand for piston rings and valve seat inserts is expected to continue to show healthy growth.

Production Volume by Powertrain (Vehicles of less than 6 tons)

(Million Vehicles)

Source: IHS (5/2019 Data)



(Source: Nippon Piston Ring)

◎ Competitor Comparisons

Stock Code	Company Name	Sales (¥bn)	YY Growth	Operating Income (¥bn)	YY Growth	Operating Margin	ROE	Market Cap (¥bn)	PER (x)	PBR (x)
6461	NPR Co., Ltd.	56,000	-1.9%	2,600	-24.0%	4.6%	6.0	11,480	7.0	0.4
6462	Riken Corp.	85,000	-5.9%	5,300	-23.5%	6.2%	6.9	48,557	12.5	0.6
6463	TPR Co., Ltd.	187,700	-2.6%	15,400	-15.9%	8.2%	11.0	65,990	6.0	0.6

* Sales and operating income are estimates of the respective companies. ROE is based upon actual data. Market capitalization, PER, and PBR are based upon closing share prices of the respective companies as of May 29, 2019.

There are three publicly traded companies in Japan that manufacture piston rings, including Nippon Piston Ring. Riken Corporation (6462) boasts of a top share of the piston ring market of close to 50%, but TPR Co., Ltd. (6463) boasts of much larger scale, earnings and market capitalization than the other two companies.

Sales and profit are estimated to decrease for the 3 companies in the current term. PBR is below 1, thus improving ROE, etc. and achieving a performance that exceeds the investors' expectations are desirable.

【1-4 Business Description】

◎Main Products

As reflected in the Company name, piston rings are one of the main products manufactured. In addition, valve seat inserts and various other automobile parts are manufactured and sold. In fiscal year 2018, automobile related parts accounted for 85.8% of total sales.

At the same time, development of new product and business expansion to non-automobile engine parts realms such as METAMOLD (metal injection molding products) and medical products including dental implant products, which were acquired in 2014 are being strengthened.



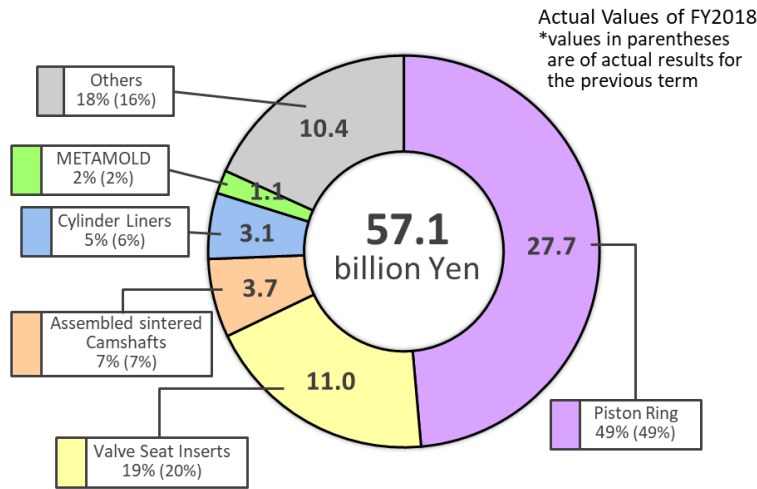
(METAMOLD)



(Dental Implant)

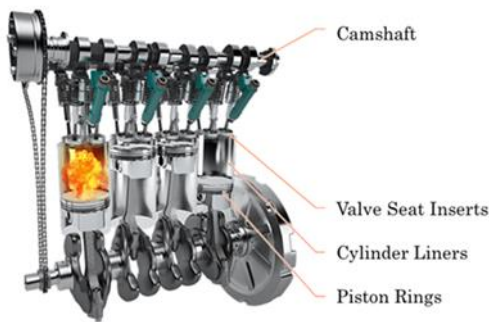
(Source: Nippon Piston Ring)

<Product Sales Composition>



(Source: Nippon Piston Ring)

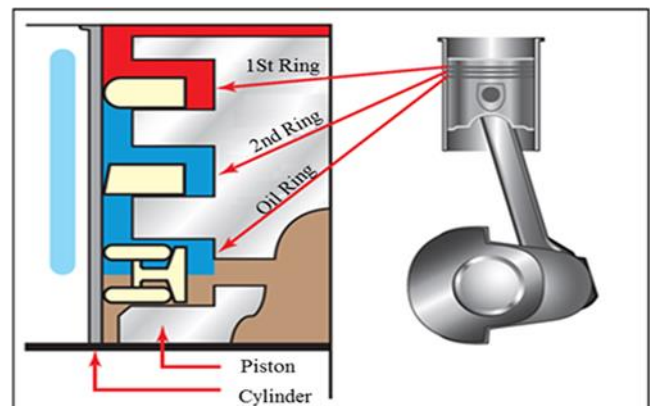
<Engine Cutaway Diagram>



(Source: Investment Bridge modified the data from NPR)

<Piston Rings>

Piston rings are fitted in grooves that run around the circumference of pistons and have spring-like characteristics to act as a seal for ideal combustion within the combustion chamber of the engine cylinders and control lubrication of the piston and cylinder walls by forming precise circles. Moreover, three piston rings are normally used, to form a seal to prevent leakage of oil, allow heat to escape and reduce both friction wear and baking. Smooth movement of pistons will be impeded and fuel consumption will be negatively impacted should the tensional force of the piston ring placed on pistons be too high. Conversely, loss of power and increased oil consumption will result if the tensional force of the piston ring placed on pistons is too low.



(the Source: Investment Bridge modified data from NPR)

Consequently, optimization of the tensional forces of piston rings is crucial in ensuring the optimum performance of internal combustion piston engines.

An oil film is formed between the cylinder wall and pistons to reduce friction wear and baking, which could be caused by the high-speed movement of pistons within a high-heat condition of cylinders. However, it's not thicker the better; piston oil rings need to be designed to ensure that an optimal thickness of oil film is formed.

Piston rings are required to provide wear resistance, material strength, heat resistance, heat conductivity, and oil retention capacity to ensure the optimal performance and durability of engines.



(Piston Rings)

In recent years, with the rapid rise in awareness of environment issues, a swift response is vital to adjust to a system that certifies vehicles with low output levels of nitrous oxides and hydrocarbons, and regulations to enforce reductions in a carbon dioxide emission. Consequently, the need for high-performance piston rings that respond to these developments and the need for improvements in fuel consumption are on the rise.

With regards to the characteristics required to piston rings, development of piston rings with low friction construction, thinner width, new surface treatment processes, highly durable and low-cost materials is being conducted. At the same time, development and proposal of optimal design technologies using its tuning technic are also being promoted.

Nippon Piston Ring is one of only few companies that have the ability to stably manufacture and supply piston rings, which, as you may see, require extremely advanced technological capabilities, and are able to consistently develop revolutionary technologies.

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<Valve Seat Inserts>

Valve seat inserts are parts which are press-fitted into the valve seating portion of cylinder heads. Valve seat inserts are a very important part made from sintered alloys that boast of high resistance to wear and deterioration under high heat conditions and ensure that a tight seal is formed for clean and efficient combustion. Nippon Piston Ring boasts of quality valve seat inserts that meet the needs of automobile manufacturers at a high level, using a wide range of material variation, leveraging its superior materials development capabilities. Consequently, the Company boasts of a top share of slightly less than 40% of valve seat inserts provided to Japanese automobile manufacturers and it is further expanding its sales to both Japanese and overseas motor vehicle manufacturers.



(Valve Seat Inserts)

BRIDGE REPORT



<Camshafts>

Camshafts are a part designed to open and close the valves for each cylinder in piston engines. Nippon Piston Ring has the original technology for a special camshaft called assembled sintered camshafts, which are lightweight, highly resistant to contact pressure and capable of adopting a wide variety of designs. They are used by SUBARU in all of its self-manufactured engines, as well as used by truck manufacturers, which require highly durable products.



(Assembled Sintered Camshafts)

< METAMOLD (Metal injection molding products) >

In recent years, various processing technologies and methods, including machine processing, precision casting (lost wax), die casting, and press sintering, have been selected and used for molding metallic parts based on functions and costs required for parts. “METAMOLD,” which was developed as a completely new 5th-generation processing technology, is a resource-saving and energy-saving technology that was developed based on the metallurgical technology that the Company has cultivated over years. It has made it possible to manufacture the same complicated shape as plastic products and die-cast products. The Company has expanded the lineup of product groups by strengthening its material and manufacturing technology and expanded its business to not only automobile engine parts but also non-automobile engine parts including industrial machinery and office automation parts. Especially, demand for circulation piece for ball screws is increasing.



(METAMOLD)

◎Customers

Nippon Piston Ring supplies piston rings and valve seat inserts to all Japanese automobile manufacturers.

The products supplied by the Company are extremely important in improving the performance of engines and require high levels of technical expertise. In recent years, the need to improve fuel consumption and to seek alternative fuels due to the growing importance of environmental issues has contributed to expanded sales to non-Japanese automobile manufacturers such as European, American and Chinese local automobile manufacturers.

Main Customers	Products Supplied	
	Piston Rings	Valve Seat Inserts
Japanese		
Toyota	○	○
SUBARU	○	○
Isuzu Motors	○	○
Hino Motor	○	○
Honda	○	○
Nissan	○	○
Mazda	○	○
Daihatsu	○	○
Kubota	○	○
Suzuki	○	○
Mitsubishi Fuso	○	○
Yamaha Motor	○	○

Main Customers	Products Supplied	
	Piston Rings	Valve Seat Inserts
Non-Japanese		
Daimler	○	○
BMW	○	○
Audi/VW		○
Renault	○	○
FCA	○	
GM	○	○
Ford	○	
Harley Davidson	○	
Hyundai Motor		○
Hero MotoCorp		○
Ashok Leyland		○
Guangzhou Automobile	○	○
Shanghai Automotive Industry	○	○
First Automobile Works		○
Dongfeng Motor Corp.	○	

【1-5 Production and Sales Bases】

<Japan>

Nippon Piston Ring maintains four production bases and seven sales bases (Tokyo [head office: Saitama City], Nagoya, Osaka, Hiroshima, Fukuoka, Sendai, Sapporo) within Japan.

(Production Bases)

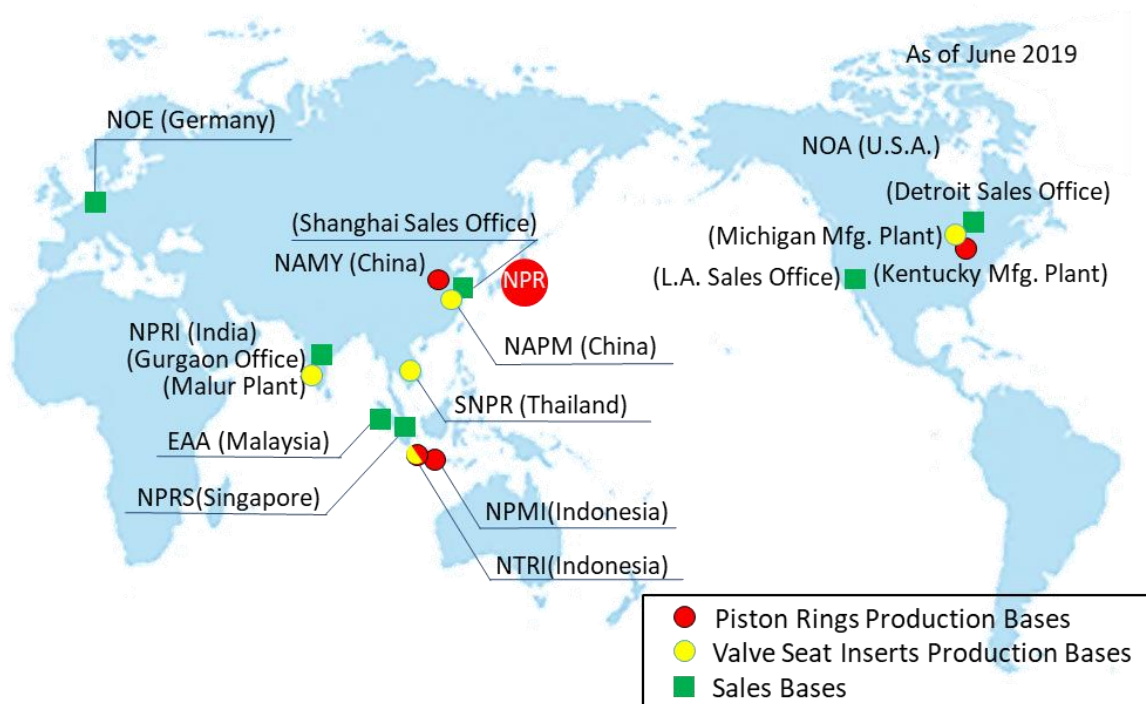
Facility, Plant Name	Main Products Manufactured
NPR Iwate Co., Ltd., Ichinoseki Plant	Automobile, Land, Marine and Other Engine Use Piston Rings
NPR Iwate Co., Ltd., Senmaya Plant	Automobile, Land, Marine and Other Engine Use Cast Piston Ring
NPR Fukushima Works Co., Ltd.	Valve Seat Inserts, Cylinder Liners, etc.
Nippon Piston Ring Co., Ltd., Tochigi Plant	Assembled Sintered Camshafts, Marine Engine Use Piston Rings, METAMOLD, etc.

<Overseas>

Nippon Piston Ring maintains both manufacturing and sales bases for piston rings, valve seat inserts and other products in the United States, China, ASEAN countries, and India. The Company has sales bases in Germany, Singapore and Malaysia, too.

(Overseas Bases)

Facility, Plant Name	Location	Voting Rights Ratio	Main Products Manufactured
NPR of America, Inc. (NOA)	US	100%	(Kentucky Mfg. Plant) Piston Rings (Michigan Mfg. Plant) Valve Seat Inserts (Detroit Sales Office, L.A. Sales Office) Sales bases
NPR Auto Parts Manufacturing (Yizheng) Co., Ltd. (NAMY)	China	100%	Piston Rings (Shanghai Sales Office) Sales base
NPR ASIMCO Powdered Metals Manufacturing (Yizheng) Co., Ltd. (NAPM)	China	50%	Valve Seat Inserts
PT. NT Piston Ring Indonesia (NTRI)	Indonesia	NPR Group 100%	Piston Rings, Valve Seat Inserts
PT. NPR Manufacturing Indonesia (NPMI)	Indonesia	NPR Group 100%	Cast Piston Rings
Siam NPR Co., Ltd. (SNPR)	Thailand	NPR Group 100%	Valve Seat Inserts
NPR Auto Parts Manufacturing India Pvt. Ltd. (NPRI)	India	NPR Group 100%	(Malur Plant) Valve Seat Inserts (Gurgaon Office) Sales base
NPR of Europe GmbH (NOE)	Germany	70%	Sales base
NPR Singapore Pte. Ltd. (NPRS)	Singapore	90%	Sales base
E.A Associates Sdn. Bhd (EAA)	Malaysia	NPR Group 81%	Sales base



(Source: Nippon Piston Ring)

【1-6 Characteristics and strengths】

Nippon Piston Ring’s highly advanced technologies and ability to consistently supply highly reliable functional automobile parts maintained throughout its history over 80 years of operations has allowed it to become the choice of both Japanese and overseas automobile manufacturers. In recent years, development of major products, which can contribute to reductions in exhaust gases, low output levels of carbon dioxides and the achievement of “over 50% thermal efficiency rates” in internal combustion engines, is being conducted.

(Nippon Piston Ring’s Three Main Technology Categories)

Technologies	Details
Metallic Materials	Technologies for developing materials with high functionality demanded for various automobile parts including wear resistant alloy cast iron, high functional steel and sintered alloy metal. Holding technology of titanium tantalum alloy as medical supplies having superiority in bio compatibility and corrosion resistance.
Surface Processing (Surface Improvements)	Technologies for increasing the added value of materials by giving necessary functions including heat & wear resistance, lubricating property, and low friction such as thermal spray, plating, nitriding, PVD, DLC and other material surface processing.
Precision Processing	Technologies for molding various precise forms and dimensions through machine processing, plastic forming and other processes.

With regards to product development, the ability to combine the said technologies and its simulation technologies applied to engines is one of Nippon Piston Ring’s strengths.

In addition, automobile manufacturers, to whose business the Company’s high levels of technological expertise are critical, are what the Company calls its “client assets,” which are an important part of its corporate value.

【1-7 ROE Analysis】

	FY2014	FY2015	FY2016	FY2017	FY2018
ROE (%)	7.9	5.4	8.2	7.4	6.0
Net Profit Margin (%)	4.21	3.07	4.63	4.09	3.31
Total Asset Turnover (x)	0.80	0.80	0.80	0.84	0.87
Leverage (x)	2.34	2.20	2.21	2.14	2.09

Despite the rise in total asset turnover, the ratio of net income to sales declined, and ROE of FY 2018 fell behind that of FY 2017 by 1.4%.

The ratio of net income to sales in FY 2019 is expected to be 2.9%. We would like to expect ROE to grow, as profitability improves in the next year onwards.

2. Fiscal Year 2018 Earnings Overview

(1) Consolidated Business Overview

	FY2017	Ratio to sales	FY2018	Ratio to sales	YOY	Compared with the initial forecast	Compared with the revised forecasts
Net Sales	55,932	100.0%	57,066	100.0%	+2.0%	+0.1%	+1.0%
Gross margin	13,526	24.2%	13,178	23.1%	-2.6%	-	-
SG&A expenses	9,635	17.2%	9,757	17.1%	+1.3%	-	-
Operating income	3,890	7.0%	3,420	6.0%	-12.1%	-16.6%	+0.6%
Ordinary income	4,189	7.5%	3,363	5.9%	-19.7%	-18.0%	+1.9%
Net income	2,286	4.1%	1,888	3.3%	-17.4%	-21.3%	+4.9%

* Unit: million yen. The definition for net income is net income attributable to owners of parent (Hereinafter the same apply).

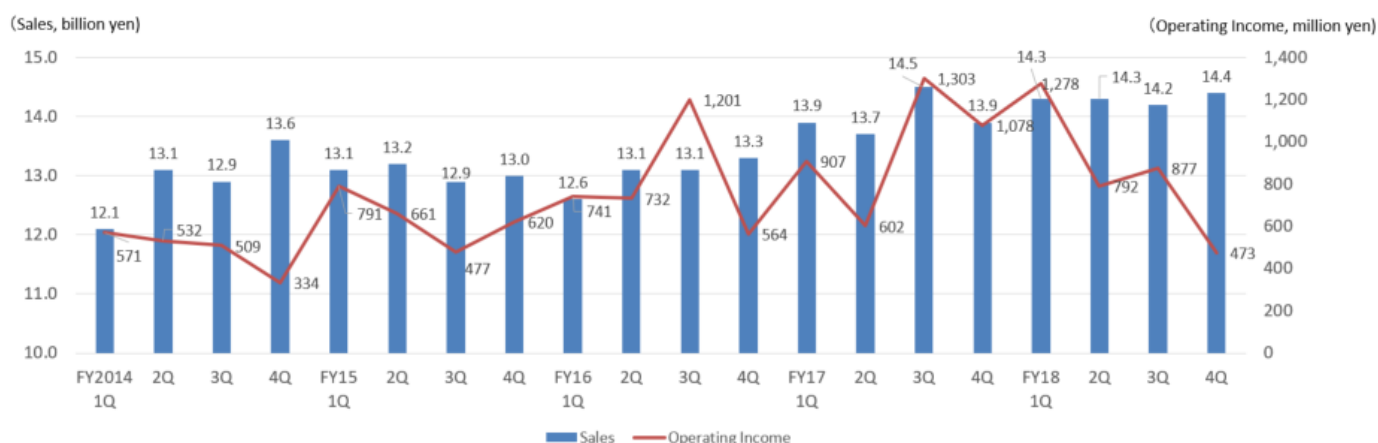
Sales increased, but income decreased. Income was less than the initial forecast

Sales were 57.1 billion yen, up by 2.0% year on year, marking a record high for two consecutive years. As for the performance of each product, the sales of the mainstay products, piston rings and valve seat inserts were health mainly for non-Japanese automobile manufacturers, and thus net sales increased by 1.0% and 1.4% year on year, respectively.

Domestic sales were 23.2 billion yen, down by 3.1% year on year. Overseas sales were 33.8 billion yen, up 5.8% year on year, and overseas sales ratio was 59%. Although the sales increased, operating income was 3,420 million yen, down 12.1% year on year due to the rise in raw materials costs, increase in personnel expenses, etc.

Ordinary income was 3,363 million yen, down by 19.7% year on year due to the decline in operating income, foreign exchange loss, etc. Net income was 1,888 million yen, down 17.4% year on year.

Considering the influences of the decline in automobile production by some domestic and overseas automobile manufacturers, etc., the company made a downward adjustment of its performance on February 13, 2019.



BRIDGE REPORT



(2) Sales by Products

	FY2017	FY2018	YOY
Piston Ring	275	277	+1.0%
Valve Seat Insert	109	110	+1.4%
Assembled Sintered Camshaft	38	37	-4.2%
METAMOLD	10	11	+5.5%
Others	127	135	+6.4%
Total	559	571	+2.0%

*Unit: 100 million yen.

For both piston rings and valve seat inserts, orders from non-Japanese automobile manufacturers was favorable. However, for assembled sintered camshafts, the sales decreased by 4.2% year on year due to the decreased automobile production by some of the domestic automobile manufacturers.

(3) Financial Condition and Cash Flow

◎Main BS

	End of March. 2018	End of March 2019		End of March. 2018	End of March 2019
Current assets	27,355	28,489	Current liabilities	21,947	23,001
Cash and deposits	4,911	4,386	Trade payables	7,667	8,663
Trade receivables	11,953	12,821	Short-term interest-bearing debts	7,569	8,277
Inventories	9,267	9,983	Non-current liabilities	11,666	10,296
Non-current assets	38,741	37,304	Long-term interest-bearing debts	8,845	7,395
Property, plant and equipment	30,425	29,840	Total liabilities	33,614	33,298
Intangible assets	726	815	Net assets	32,482	32,495
Investments and other assets	7,589	6,648	Shareholder's Equity	28,918	30,189
Total assets	66,097	65,793	Retained earnings	13,533	14,599
			Total liabilities and net assets	66,097	65,793

*Unit: million yen. Trade payables include electronically recorded accounts payable.

*Interest-bearing debts include lease obligations.

* From FY 2018, a partial amendment to the accounting standards related to tax-effect accounting was adopted, and the figures released at the end of March 2018 retrospectively reflect the relevant standard.

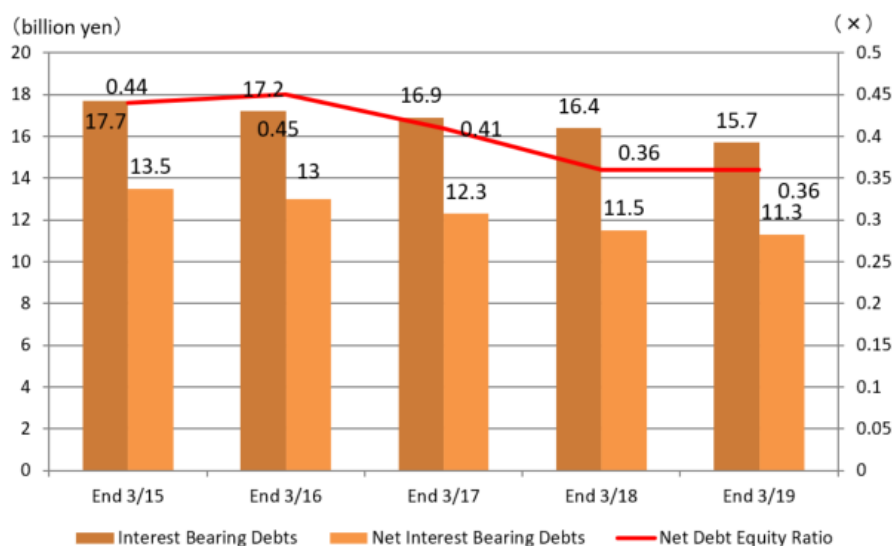
Current assets rose 1.1 billion yen from the end of the previous fiscal year, due to the rise in inventories, etc. Non-current assets decreased by 1.4 billion yen year on year, due to the decline in investment securities, etc., and total assets decreased to 65.8 billion yen, down 300 million yen year on year.

Total liabilities fell to 33.3 billion yen, down 300 million yen year on year, as long-term interest-bearing debts, etc. decreased. Interest-bearing debts were 15.7 billion yen, down 700 million yen year on year.

Equity ratio was 47.4% with a slight decline from the previous year as the decrease in foreign currency translation adjustment and the valuation difference on available-for-sale securities exceeded the increase in retained earnings.

Interest-bearing debts, net interest-bearing debts fell below those at the end of the previous term, while net debt-to-equity ratio stayed unchanged from the previous year.

BRIDGE REPORT



◎ Cash Flow

	FY2017	FY2018	Increase/decrease
Operating Cash Flow	6,094	5,129	-965
Investing Cash Flow	-4,856	-4,604	252
Free Cash Flow	1,238	525	-713
Financing Cash Flow	-1,104	-845	259
Term End Cash and Equivalents	4,911	4,386	-525

*Unit: million yen

The surplus of operating CF shrank due to the decline in net income before taxes and other adjustments, the rise in inventories, etc. Since the payments for property, plant and equipment decreased, the deficit of investing CF shrank, and in total, the surplus of free CF shrank. The deficit of financing CF shrank due to the increase in short-term loans payable, etc. The cash position declined due to the significant effects of operating CF.

(4) Topics

◎ Approach to a new product business (METAMOLD)

The company has been strengthening initiatives for the new products business in order to make it its new business pillar from a long term perspective, and intends to nurture it into a business domain that can't be easily rivaled by their competitors.

As mentioned in the market environment above, the share of pure electric vehicles (EVs), which don't require engines, is expected to grow. Thus, the company has been expanding its business to cover non-engine parts realms through METAMOLD, which is one of the new products, utilizing its materials technologies and production technologies that it has been accumulating over the years. Especially, the demand for the circulation piece for ball screws used in production equipment, which is one of the METAMOLD product, is increasing due to shifting from the conventional resin material to ferrous materials. Moreover, the company makes efforts to expand sales of circulation piece for ball screws used in electric power steering and scalar robots, as those market is expected to increase with many inquiries.

The company participated in the "11th Automotive World," which was held at Tokyo Big Sight for 3 days from January 16, 2019 to January 18, 2019, where it exhibited METAMOLD products and other new products such as 3D powder core motors.



(Source: Nippon Piston Ring)



3. Fiscal Year 2019 Earnings Forecast

(1) Consolidated Earnings Forecast

	FY 2018	Ratio to sales	FY 2019 (forecast)	Ratio to sales	YOY
Net Sales	57,066	100.0%	56,000	100.0%	-1.9%
Operating income	3,420	6.0%	2,600	4.6%	-24.0%
Ordinary income	3,363	5.9%	2,600	4.6%	-22.7%
Net income	1,888	3.3%	1,600	2.9%	-15.3%

*Unit: million yen. The forecasts are from the Company. The definition for net income is net income attributable to owners of parent.

Forecast decline in net sales and income.

Under the assumption of yen appreciation with foreign exchange rate being 105 yen per US dollar and 120 yen per euro, sales are forecasted to be 56 billion yen, down 1.9% from the previous year. Domestic sales are forecasted to be 22.2 billion yen, down by 4.4% from the previous year. Overseas sales that performed well in the previous year is forecasted to be 33.8 billion yen, down by 0.1%.

Operating income is forecasted to be 2.6 billion yen, down by 24.0% year on year. Despite cost reduction to offset the rise in personnel expenses and fluctuation of the unit price, profit is projected to decrease due to the appreciation of the yen, etc.

Ordinary income is forecasted to be 2.6 billion yen, down by 22.7% year on year, and net income is forecasted to be 1.6 billion yen, down by 15.3% year on year.

The dividend amount is projected to be a total of 75 yen per share, 20 yen for the interim and 55 yen for the year-end. Payout ratio is estimated at 38.5%.

4. Interview with President Yamamoto

We asked President Yamamoto about the review of the performance in FY 2018, the forecast for FY 2019, and the progress of the medium-term business plan.

Q: "Could you overview the financial results of the fiscal year 2018?"

A: "Income unfortunately declined due to the rise in raw material costs, the steep decline in production in China, production adjustments by Japanese automobile manufacturers, etc. However, it has been a year where the ordering environment has been firm as we actively promoted sales that is oriented to making and using technical proposals and steady progress was made in increasing production lines for innovative manufacturing."

Despite the increase in sales, income declined and was below its initial forecast.

This was mainly because of external factors such as the fact that the rise in raw materials costs was severer than expected, the steep decline of automobile production in China from the fall season onwards, and the production adjustments made by Japanese automobile manufacturers in the 4th quarter. However, the fact that we didn't manage to effectively respond to order fluctuations, including these steep declines of production and the unexpected increase in domestic production in the first half, is internal factors that we are reflecting on.

The order receipt environment was firm. We evaluate this as the result of proactive marketing based on technical proposals, especially technical presentations made for non-Japanese automobile manufacturers.

Furthermore, regarding our innovative manufacturing, which is our source of competitiveness, this year we managed to make steady progress such as launching an innovative production line of piston rings in our production base in North America.

Q: "What is your perspective on FY 2019 forecasts?"

A: "I predict that sales and income will decrease due to the effects of Chinese market trends and the yen appreciation. We will proactively promote the sales that is oriented to making and using technical proposals and pursue activities that reduce costs in order to accumulate sales and income."

We predict that sales and income will decrease given that there are many negative factors including the fluctuations in the Chinese market and the high uncertainty of the market environment. We took into account the effect of the yen appreciation by assuming the foreign exchange rate as 105 yen per US dollar and 120 yen per euro, however, the overall order receipt environment will continue to be firm. We received large orders from Renault, and in order to handle its production, the second line of innovative production lines is planned to start operation this fiscal year in the Ichinoseki plant, the mother plant for piston rings manufacture.

We will proactively promote the sales that is oriented to making and using technical proposals and pursue activities that reduce costs in order to accumulate sales and income.

Q: "Next, please tell us about the progress of the 7th mid-term business plan"

A: "Strengthening sales that is oriented to making and using technical proposals and pursuing innovative manufacturing have been contributing to the expansion of the existing product business. As for strengthening the development of new products, each product development project is progressing steadily. Regarding human resources, we are proactively accepting trainees from the overseas production bases in order to enhance their level of manufacturing capability."

Regarding the "Increase sales that is oriented to making and using technical proposals", which is one of the main initiatives, as I already mentioned, we managed to make steady progress, and it is starting to yield results. In 2018, we established the Shanghai sales office, and we will work towards expanding the business in China, the biggest market in the world, through the local delicate technical support including assigning technicians and the introduction of evaluation instruments used to examine products.

Regarding the "Strive for innovative manufacturing", we are implementing measures such as new innovative production lines for piston rings and valve seat inserts, labor-saving production lines for assembled sintered camshafts, etc. We will continue to make efforts to

establish a system that supports efficient manufacturing such as changing the structure of production lines in order to flexibly respond to customer needs. With these means, we will improve our cost-competitiveness in addition to attracting customers with our technical capabilities. .

Regarding “Strengthen new product development”, it is steadily progressing for each product.

As for METAMOLD, we managed to enter new markets of automobile parts other than engine parts, backed by the trust in our technology from automobile manufacturers, which we have been building until now. Furthermore, our technical capabilities are being gradually acknowledged by non-automobile manufacturers, and we started gaining inquiries for parts of robot sensors and in-vehicle. We will continue to expand sales as these parts take advantage of METAMOLD's strengths and have a promising market.

The titanium tantalum alloys (Ti-Ta alloys) developed by our company do not only have high biocompatibility, but also are suitable for magnetic resonance imaging (MRI) diagnosis as they are nonmagnetic and have good X-ray visibility. We are considering their applications as medical equipment residing inside the body for a long time. In addition to the steady progress for releasing the electrode materials, which use this material for treating Parkinson's disease, into the market, we will continuously conduct market research to investigate the uses that require such characteristics.

As for dental implants, we develop and improve our products according to the market needs, for example, we develop surgical instruments to simplify the implant placement surgery.

Regarding “Strengthening human resources development”, we are proactively accepting trainees from the overseas bases in order to enhance their level of manufacturing capability.

Experiencing first-hand the advanced initiatives for innovative manufacturing in the mother plant enhances the motivation for the staff in overseas production bases. We plan to increase number of trainees from China and Indonesia in order to raise the standard of the manufacturing structure in the entire Group and increase the skills and motivation in overseas production bases.

5. Conclusions

Sales and income are expected to decrease in FY 2019 due to mainly external factors, such as the effect of the foreign exchange rate. In the current term, which is the middle of the 7th mid-term business plan, the company is burdened by the risk of an economic downturn due to the deceleration of Chinese economy, etc. and the future continues to hold uncertainties, however as mentioned in the interview with the company president, we will observe how much revenue the company can accumulate by proactively promoting sales that is oriented to making and using technical proposals and pursuing activities to reduce costs.

<Reference1: Overview of the Seventh Mid-Term Business Plan >

◎Overview of the Seventh Mid-Term Business Plan (FY 2018 to FY 2020)

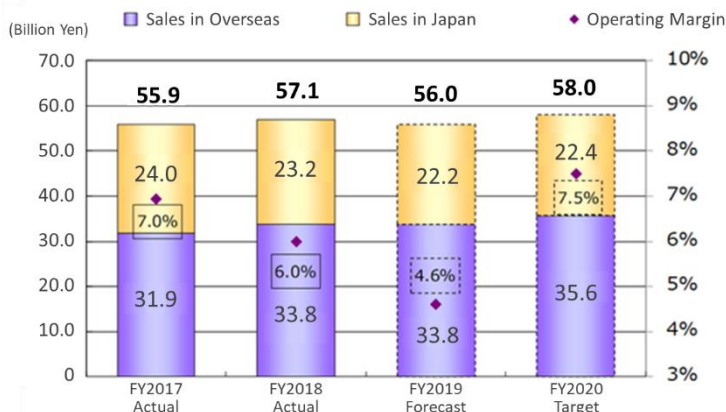
The basic policy, main initiatives and targets of the Seventh Mid-Term Business Plan, which started in 2018, are as follows:

Basic Policy	Improve corporate value through “manufacturing that adapts well to change” ~Establish the foundation for Nippon Piston Ring to prosper for 100 years, through marketing and innovation~
Main Initiatives	(1) Increase sales that is oriented to making and using technical proposals, both domestically and abroad (2) Strive for innovative manufacturing (3) Strengthen new product development (4) Strive for the world’s highest quality, by strengthening human resources development (5) Continue to promote Corporate Social Responsibility activities
Targets (FY2020)	Net Sales of 58.0 billion yen or more and Operating Margin of 7.5% or more

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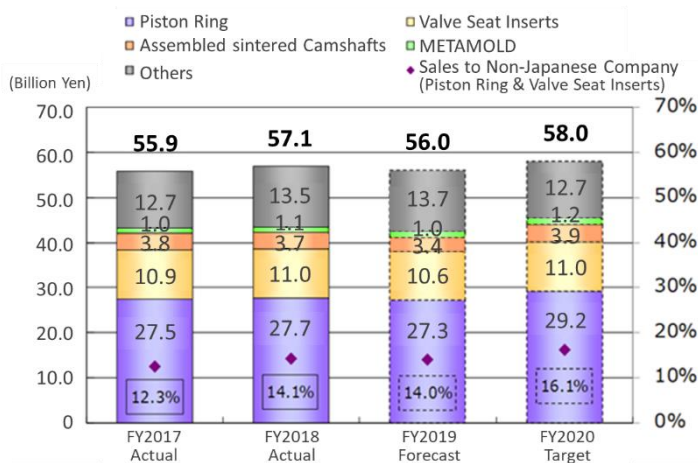
◎Sales and Operating Margin



(Source: Nippon Piston Ring)

The future continues to hold uncertainties because of the risk of an economy’s downward movement due to the US-China trade friction. Also, the number of manufactured automobiles is expected to be less than the previous year, however, the company expects a modest recovery in demand to continue in the overseas markets, mainly in developing economic regions, thus, the company didn't change the sales target of 58 billion yen or more for FY 2020, the final year of the business plan. Regarding profit, the Company aims to achieve an operating margin of 7.5% or more by promoting cost reduction activities including innovative manufacturing.

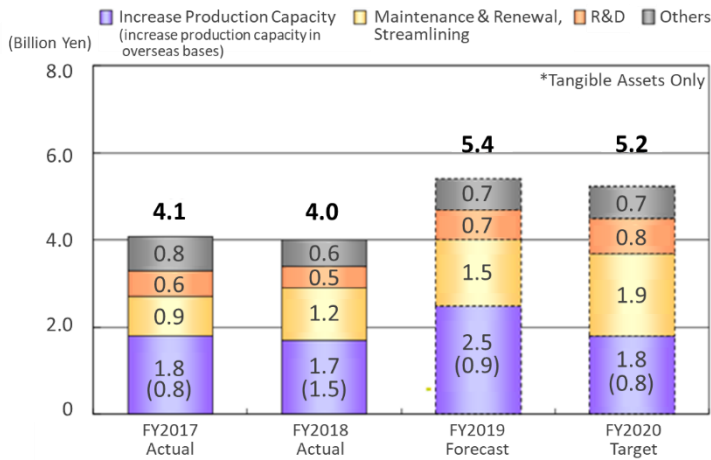
◎Sales by Product



(Source: Nippon Piston Ring)

The forecast for FY 2019 took into account the effect of the yen’s appreciation, which resulted in expecting sales to decrease, however, piston rings and valve seat inserts, the core products that the company globally develops, are gradually increasing sales thanks to the effect of expanding sales to non-Japanese automobile manufacturers.

◎Capital Investment

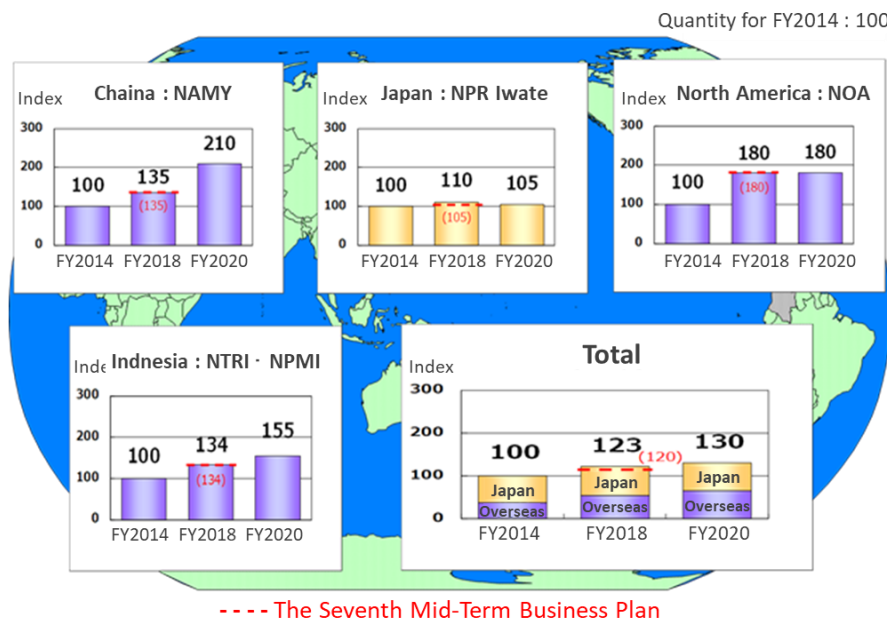


(Source: Nippon Piston Ring)

The company strives to improve profitability by responding to increased new production through the development of innovative production lines domestically and overseas, investment for streamlining, etc.

◎Production Capacity of Piston Ring and Valve Seat Inserts

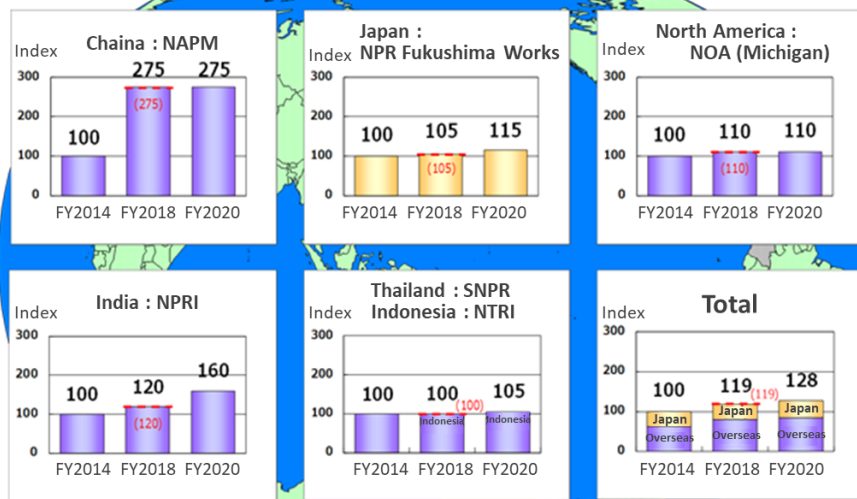
<Piston Ring Production Capacity Comparison>



(Source: Nippon Piston Ring)

< Valve Seat Inserts Production Capacity Comparison >

Quantity for FY2014 : 100



----- The Seventh Mid-Term Business Plan

(Source: Nippon Piston Ring)

More Innovative production lines for piston rings will be established in Japan by FY 2020, and the production capacity is expected to exceed the initial estimates. Furthermore, the company will continue to verify the production capacity of each production base and work to achieve overall optimization.

<Reference2: Corporate Governance>

◎Organization Form, Directors and Auditors

Organization type	Company with auditors
Directors	8 including 2 externals
Auditors	5 including 3 externals

◎ Corporate Governance Report

Last modified: June 28, 2019

<Principles Not Conducted and the Main Reasons>

Principle	Reason of Not Conducting
【 1.2.4 The Electronic Voting Platform, English translations of the convening notices of general shareholder meeting】	With regard to the electronic exercise of voting rights, while paying close attention to the shareholder ratio of foreign corporations, we will continue to examine the creation of an environment where it is easier for foreign shareholders to exercise their voting rights.
【 3.1.2 Publishing and providing information in English】	The Company considers about publishing and providing information in English while monitoring foreign shareholders ratio.

The Company appreciates the need for foreign investors to understand the business models better and continues to plan to proceed with more active publishing in English.

<Main Published Principles>

Principle	Details
【 1.4 Cross-Shareholdings】	<p>1. Policy on Cross-Shareholdings</p> <p>The Company considers that it is indispensable to develop cooperative relations with various enterprises in order to continue sustainable growth. Therefore, in order to operate business smoothly from the mid/long-term viewpoint, the company holds the so-called cross-shareholdings if the company judges that this would contribute to its corporate value while taking into account transaction relations, cooperative relations for business, etc. At the board of directors' meeting, the company checks the necessity of shareholding under the above policy every year, and examine the appropriateness of shareholding while considering benefits, risks, market evaluation of the shares concerned, etc. Subsequently, it considers cutting down securities deemed inappropriate for shareholding.</p> <p>2. Policy for exercising voting rights</p> <p>The Company makes appropriate decisions about the exercise of voting rights from the viewpoint of mid/long-term corporate value, while respecting the managerial policy and strategy of each issuing company.</p>
【 5.1 Policy for Constructive Dialogue with Shareholders】	The Corporate Planning Department serves as IR Department and the Company establishes the system for constructive dialogue with stakeholders by holding the IR meeting and smaller meetings, etc. for them. The Company's basic principles of the Corporate Governance are "Increasing Business Transparency," "Conducting Accountability for Stakeholders" and "Expediting of the Business.," and the Company discloses them in the Corporate Governance Report.

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