The Specialist in Filtration
YAMASHIN

Continued Strong Performance
in YoY Growth in Earnings and Profits
of Existing Business

- Record sales and profits expected in FY2018

YAMASHIN-FILTER CORP.
Financial Results for the Second Quarter of
the Fiscal Year Ending March 2019

First Section of
Tokyo Stock Exchange

6240

November 19, 2018

Contents

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Q2 Business Performance and Full-year Forecasts for FY2018

FY2018 Q2 Business Performance (July - September)

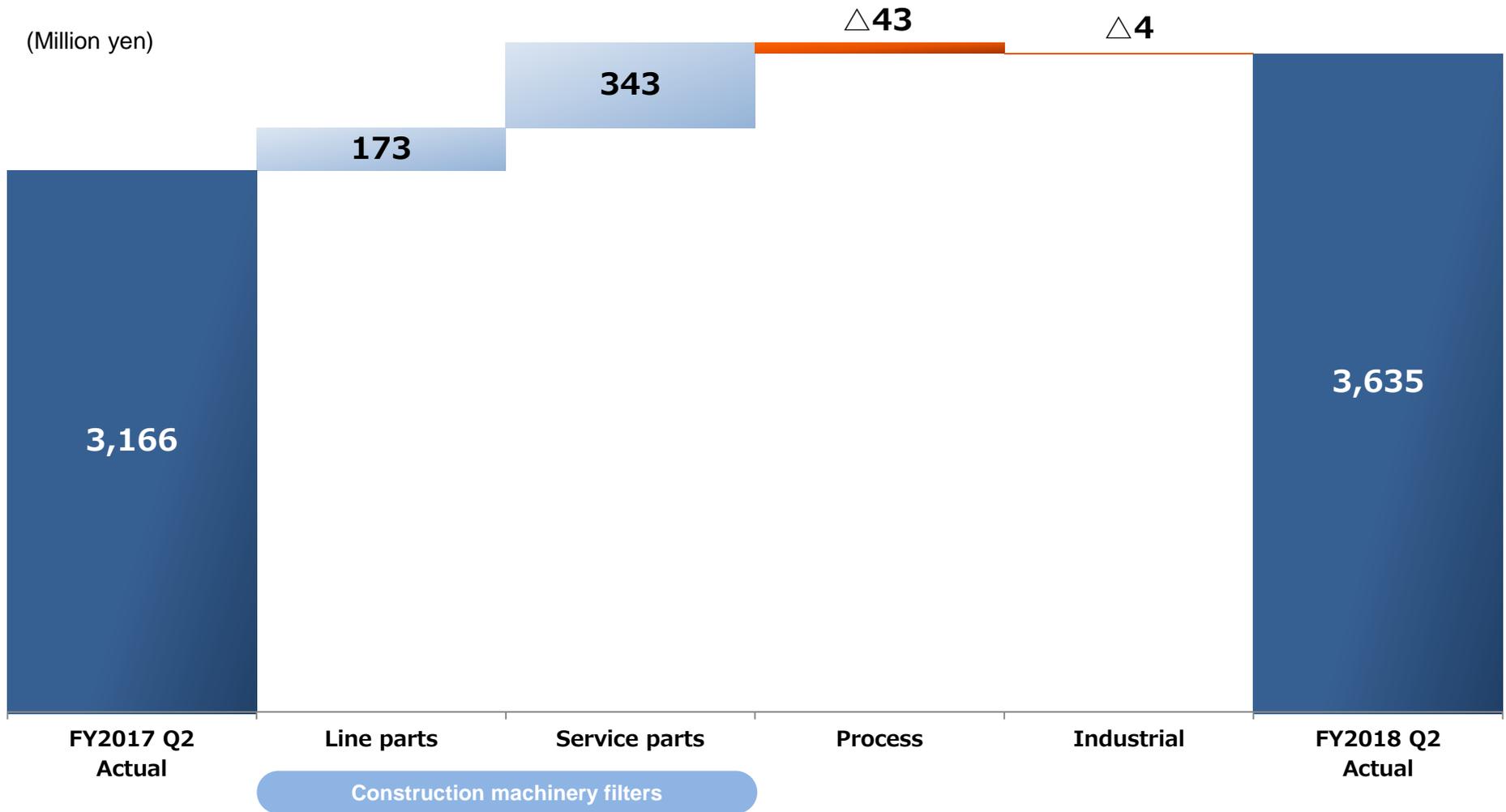| (Million yen)	FY2017 Q2 Actual	FY2018 Q2 Actual	YoY change	
	Amount	Amount	Amount	%
Net sales	3,166	3,635	468	14.8%
Operating income	455	564	108	23.8%
Operating income margin	**14.4%**	**15.5%**	**1.1Pt**	
Ordinary income	449	551	102	22.9%
Ordinary income margin	**14.2%**	**15.2%**	**1.0Pt**	
Net income	253	386	133	52.4%
Net income margin	**8.0%**	**10.6%**	**2.6Pt**	
Exchange rates AR* USD	111.0	111.5	0.5	0.5%
EUR	130.4	129.6	△0.8	△0.6%

*Average rate for 6 months from April to September

(Million yen)	FY2017 Q2 Actual	FY2018 Q2 Actual	YoY change	
	Amount	Amount	Amount	%
Construction machinery filters	2,775	3,290	515	18.6%
Line parts	1,215	1,388	173	14.2%
Service parts	1,559	1,902	343	22.0%
Industrial filters	146	142	△4	△2.7%
Process filters	245	202	△43	△17.6%
Total sales	3,166	3,635	468	14.8%

(Million yen)	FY2017 Q2 Actual		FY2018 Q2 Actual		Change	
	Amount (Million yen)	Composition ratio（%）	Amount (Million yen)	Composition ratio（%）	Amount (Million yen)	Composition ratio（%）
Japan	1,544	48.8%	1,716	47.1%	172	11.2%
North America	529	16.7%	643	17.7%	113	21.4%
China	368	11.6%	436	12.0%	67	18.3%
Other Asian countries	409	12.9%	434	12.0%	25	6.1%
Europe	303	9.6%	402	11.1%	98	32.6%
Others (Middle East, etc.)	11	0.4%	1	0.1%	△9	△82.2%
Total sales	3,166	100.0%	3,635	100.0%	468	14.8%

Note: The amounts of sales by region here are calculated based on the locations of corporations to which invoices are sent.
So actual regional market trends may be different from the numbers shown.

(Million yen)

△175

△94

15

65

△81

81

10

194

455

564

645

Operating income margin 14.4%

Operating income margin 15.5%

Operating income margin 17.7%

【Major factors driving up sales costs】

■ **Expenses other than those for future investment: 94 M**
・Increase in number of employees and hiring costs: 48 M
・Air freight costs accompanying increased sales and production: 46 M

【Major factors driving up sales costs】

■ **Future investment in new business: 81** M
・Costs of ERP adoption: 35 M
・Capital increase and shareholder-related costs: 15 M
・Increase in number of employees and hiring costs: 15 M
・Increase in YAMASHIN nano filter development personnel: 12 M
・Equipment depreciation: 4 M

| Operating income FY2017 Q2 Actual | Increase in operating income due to increase in sales | Effect of exchange rates | Effect of reduction in manufacturing cost through PAC18 | Effect of reduction in SGA through PAC18 | Decrease in operating income due to the increase in SG&A | Operating income FY2018 Q2 Actual |

Operating income excluding increased costs for future growth investment

*PAC (Promptly Activated Cost reduction): Company-wide cost reduction project

FY2018 H1 Business Performance (April - September)

(Million yen)	FY2017 Q2 Actual	FY2018 Q2 Actual	YoY change	
	Amount	Amount	Amount	%
Net sales	6,239	7,127	888	14.2%
Operating income	967	1,085	117	12.1%
Operating income margin	**15.5%**	**15.2%**	**△0.3Pt**	
Ordinary income	939	1,076	136	14.6%
Ordinary income margin	**15.1%**	**15.1%**	**0.0Pt**	
Net income	609	808	198	32.6%
Net income margin	**9.8%**	**11.3%**	**1.5Pt**	
Exchange rates AR* USD	111.1	110.2	△0.8	△0.7%
EUR	126.3	129.9	3.6	2.8%

*Average rate for 6 months from April to September

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H1 Sales by Product Type (YOY)

(Million yen)	FY2017 Q2 Actual	FY2018 Q2 Actual	YoY change	
	Amount	Amount	Amount	%
Construction machinery filters	5,516	6,446	930	16.9%
Line parts	2,464	2,900	435	17.7%
Service parts	3,052	3,546	494	16.2%
Industrial filters	275	272	△3	△1.2%
Process filters	446	408	△38	△8.6%
Total sales	6,239	7,127	888	14.2%

H1 Sales by Region (YOY)

	FY2017 Q2 Actual		FY2018 Q2 Actual		Change	
	Amount (Million yen)	Composition ratio （%）	Amount (Million yen)	Composition ratio （%）	Amount (Million yen)	Composition ratio （%）
Japan	3,138	50.3%	3,345	46.9%	206	6.6%
North America	997	16.0%	1,164	16.3%	167	16.8%
China	736	11.8%	1,001	14.1%	265	36.1%
Other Asian countries	762	12.2%	918	12.9%	156	20.6%
Europe	568	9.1%	694	9.7%	125	22.1%
Others (Middle East, etc.)	36	0.6%	1	0.1%	△34	△94.6%
Total sales	6,239	100.0%	7,127	100.0%	888	14.2%

Note: The amounts of sales by region here are calculated based on the locations of corporations to which invoices are sent.
So actual regional market trends may be different from the numbers shown.

(Million yen)

			△38	△3	
6,239	435	494			7,127
FY2017 Q2 Actual	Line parts	Service parts	Process	Industrial	FY2018 Q2 Actual

Construction machinery filters

△427

20

70

△225

56

399

△202

202

(Million yen)

967

Operating income margin 15.5%

【Major factors driving up sales costs】
■ **Expenses other than those for future investment: 225 M**
・Increase in number of employees and hiring costs: 117 M
・Air freight costs accompanying increased sales and production: 108 M

【Major factors driving up sales costs】
■ **Future investment in new business: 202 M**
・Costs of ERP adoption: 85 M
・Capital increase and shareholder-related costs: 56 M
・Increase in number of employees and hiring costs: 30 M
・Increase in YAMASHIN nano filter development personnel: 23 M
・Equipment depreciation: 8 M

1,085

Operating income margin 15.2%

1,287

Operating income margin 18.1%

| Operating income FY2017 Q2 Actual | Increase in operating income due to increase in sales | Effect of exchange rates | Effect of reduction in manufacturing cost through PAC18 | Effect of reduction in SGA through PAC18 | Decrease in operating income due to the increase in SG&A | Operating income FY2018 Q2 Actual | Operating income after excluding increased costs for future growth investment |

*PAC (Promptly Activated Cost reduction): Company-wide cost reduction project

Capital Investment, Depreciation & Amortization, and R&D Expenses

(Million yen)	FY2013 Actual	FY2014 Actual	FY2015 Actual	FY2016 Actual	FY2017 Actual	FY2018 Full-year forecast	FY2018 H1 Actual
Net sales	10,530	10,703	9,458	10,007	13,168	14,300	7,127
Capital investment	243	288	207	448	816	1,194	285
Composition ratio	2.3%	2.7%	2.2%	4.5%	6.2%	8.3%	4.0%
Depreciation & amortization	466	407	393	294	303	386	186
Composition ratio	4.4%	3.8%	4.2%	2.9%	2.3%	2.7%	2.6%
R&D expenses	212	254	225	172	250	386	148
Composition ratio	2.0%	2.4%	2.4%	1.7%	1.9%	2.7%	2.1%

Net sales and capital investment and depreciation & amortization

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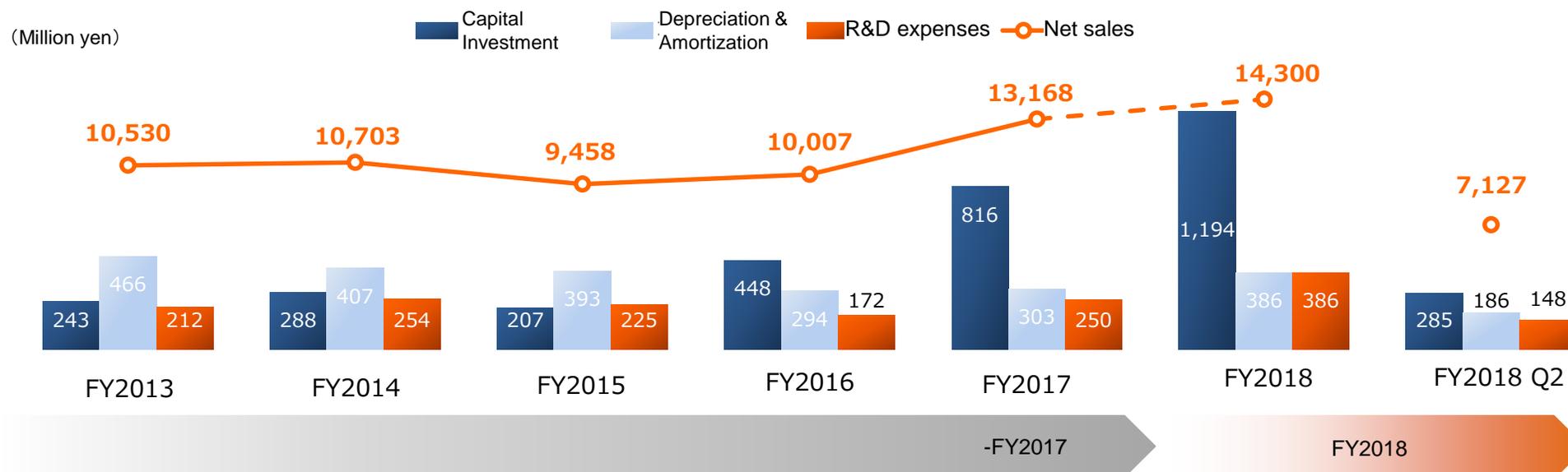
To share target figures related to improving our corporate value, in both management (administrative) and other operating departments.

What is MAVY's? (ROIC – WACC)

M aximizing

A dded

V alue of

Y amashin Filter

S pread

The key goal indicator (KGI), based on which each relevant department sets its KPI and KSF, and works on measures to attain targets, with the goal of maximizing return on invested capital.

Meet the expectations
from stakeholders by improving
MAVY's number (key goal indicator)

Assign KPIs to relevant
departments who are responsible for
target setting and implementing
actions for achieving the targets
in a company-wide coordinated effort

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Key Goal Indicators (KGI)

*Assumption for KPI calculation
Prv: Actual value of FY2017
Cur: Forecasts of FY2018

MAVY's
Prv: 4.1%
Cur: 1.4%

ROIC
Prv: 7.0%
Cur: 9.2%

WACC
Prv: 2.9%
Cur: 7.8%

ROE
Prv: 10.6%
Cur: 9.6%

ROA
Prv: 8.1%
Cur: 8.1%

Operating income margin
Prv: 14.5%
Cur: 16.8%

Investment capital turnover rate
Prv: 0.8
Cur: 0.8

Key Performance Indicators (KPI)

Gross profit ratio
Prv: 46.1%
Cur: 48.5%

SG&A ratio
Prv: 31.6%
Cur: 31.7%

Operating capital turnover rate
Prv: 4.1
Cur: 3.9

FA turnover rate
Prv: 3.7
Cur: 3.4

KPI detail	Prv	Cur	Key Success Factors (KSF)	Relevant departments	Management Policies	Targets for FY2018 (action plan)
Sales growth ratio	31.6%	8.6%	New product development / Enhance genuine products market share	Sales/Development	Expand business portfolio / Deepen existing businesses	•Sales of filters with new materials •Increase shares by conducting seminars •Identify new markets
Sales cost ratio	53.9%	51.5%	Enhance purchase capacity / Improve yield ratio	Production/ Procurement	Improve profitability	•PAC18, review suppliers •Cost reduction through SAP utilization
Depreciation and amortization ratio	2.3%	2.7%	Investment plan	Management planning/ Finance and accounting	Expand business portfolio	•Develop mid-term business plan •Investment recovery effect
R&D expense ratio	1.9%	2.7%	Narrowing down themes / Prioritization	R&D	Expand business portfolio	•Develop new materials •Actions to achieve IoT •Other technological development
Personnel expense ratio	12.8%	13.1%	Optimal staffing	HR and General Affairs	Establish HR systems	•Establish and implement the talent management system
AR turnover rate	4.5	4.3	Credit management	Sales/ Finance and accounting	Strengthen governance	•Credit management
Inventory turnover rate	8.1	7.6	Set appropriate inventory level	Production Sales	Strengthen governance	•Monitor working capital •Manage appropriate inventory level
AP turnover rate	5.4	5.0	Debt management	Procurement	Strengthen governance	•Improve working capital
Tangible FA turnover rate	9.0	6.6	Equipment plan (R&D, production)	Management planning Administration/Production/Development	Expand business portfolio	•Optimize investment recovery effect
Intangible FA turnover rate	37.3	31.7	Investment plan	Management planning/ Finance and accounting	Expand business portfolio	•Optimize investment recovery effect •Utilize SAP

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KPI:
Operating income margin
Gross profit ratio
Sales growth rate

Key Success Factor (KSF)	Relevant departments	Management policies	Targets for FY2018 (action plan)
- New product development - Enhance genuine products market share	Sales/ Development	- Expand business portfolio - Deepen existing business	- Sales of filters with new materials - Increase shares by conducting seminars - Identify new markets

Targets for this period

	Specific initiatives	
	FY2018 H1	**FY2018 H2/FY2019 onwards**
Begin sales of filters with new materials	Install new equipment for producing new materials	Launch the supply of hybrid filters
Increase shares by conducting seminars	Organize seminars to increase rate of use of genuine products	
Identify new markets	Air filters: Prepare samples → Mass production target date	Agricultural insulating materials: Begin supply

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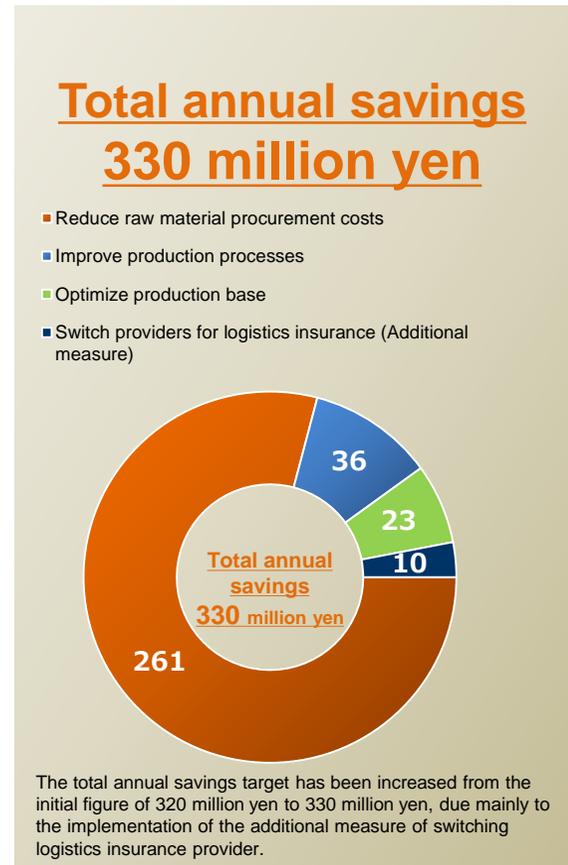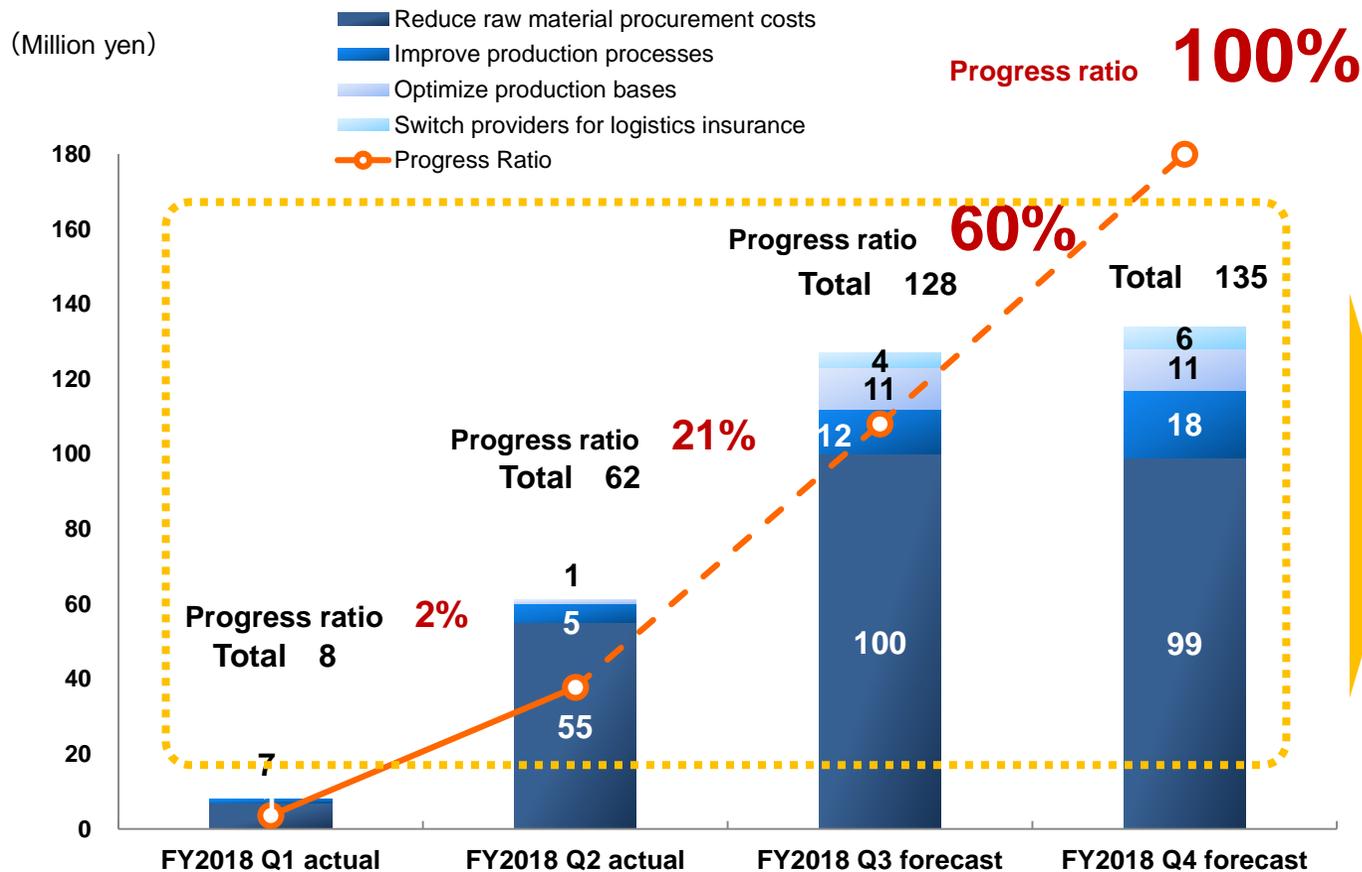**YAMASHIN**

- Implement comprehensive improvements in production technology, operation management and systems to strengthen the profit structure.

PAC18 | **P**romptly **A**ctivated **C**ost reduction 20**18**

| Background	Cost category	Action plan	Reduction targets (Annual targets)	Q1 Actual	Q2 Actual	Achievement ratio (of annual target)
Establish strong foundation and a profit making structure	Manufacturing cost	To streamline production To strengthen supply chain, etc.	330 million yen	6,349 (1K yen)	65,107 (1K yen)	21%
	SG&A	To reduce sales and general administrative cost	46 million yen	4,821 (1K yen)	15,208 (1K yen)	44%

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PAC18	Reduce raw material procurement costs	Change suppliers of main raw materials, and change raw materials purchased and cut unit costs through VA proposals
	Improve production processes	Reduce raw material volumes and labor requirements through improved production technologies
	Optimize production bases	Optimize production sites by contracting to overseas producers
	Switch providers for logistics insurance	Reduce costs by carefully selecting new insurance provider for supply chain and logistics for procured materials

（Million yen）

Legend:
- Reduce raw material procurement costs
- Improve production processes
- Optimize production bases
- Switch providers for logistics insurance
- Progress Ratio

Progress ratio **100%**

Progress ratio **60%**
Total **128**

Progress ratio **21%**
Total **62**

Progress ratio **2%**
Total **8**

Total **135**

FY2018 Q1 actual: 7 — Total 8
FY2018 Q2 actual: 55, 5, 1 — Total 62
FY2018 Q3 forecast: 100, 12, 11, 4 — Total 128
FY2018 Q4 forecast: 99, 18, 11, 6 — Total 135

Total annual savings
330 million yen

- Reduce raw material procurement costs
- Improve production processes
- Optimize production base
- Switch providers for logistics insurance (Additional measure)

Total annual savings
330 million yen

36
23
10
261

The total annual savings target has been increased from the initial figure of 320 million yen to 330 million yen, due mainly to the implementation of the additional measure of switching logistics insurance provider.

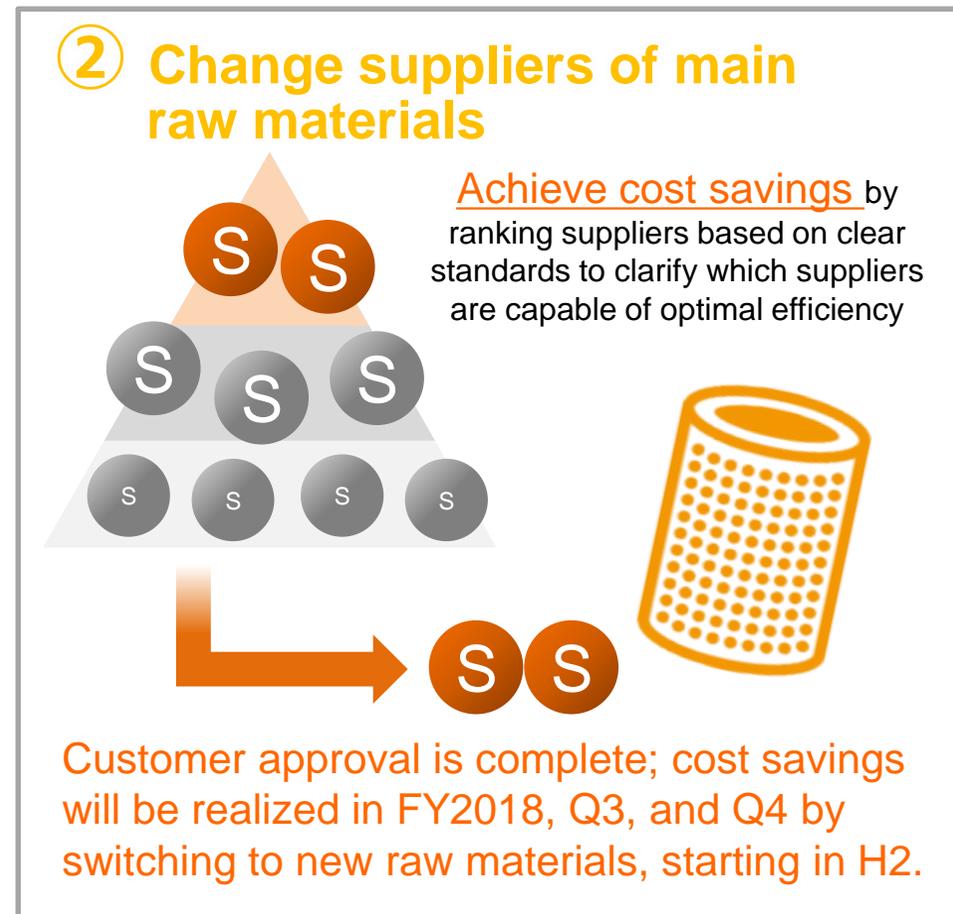**The Specialist in Filtration**
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Reduce raw material procurement costs

◆ Change materials procured and cut unit procurement costs, by VA proposals and changing suppliers for main raw materials

S upplier

Produce products using raw materials procured from a wide range of suppliers
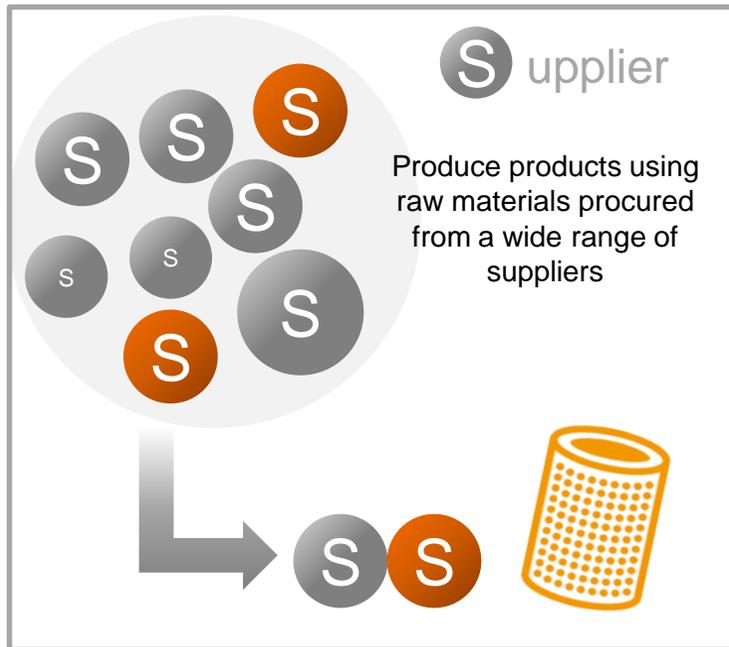
① VA proposals

Value analysis (VA) proposals:

Propose cost improvements based on fine-tuned combinations of raw materials and other aspects without reducing the quality of products delivered to customers

② **Change suppliers of main raw materials**

Achieve cost savings by ranking suppliers based on clear standards to clarify which suppliers are capable of optimal efficiency

Customer approval is complete; cost savings will be realized in FY2018, Q3, and Q4 by switching to new raw materials, starting in H2.

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● PAC18 measures will contribute significantly to profits in H2.

| Improve production processes | ◆ Reduce labor requirements and raw material volumes via mechanization and changes in product designs |

| Optimize production bases | ◆ Reduce manufacturing costs and procurement unit costs by optimizing production sites |

| Switch providers for logistics insurance | ◆ Reduce freight costs by contracting with carefully selected logistics vendors and insurers for imported raw materials starting in H2 |

| FY2018 | 1Q | 2Q | 3Q | 4Q |

Preparatory period | Changes involving raw materials | Cost savings effects

Full-year Forecasts for FY2018

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(Million yen)	FY2016 Actual	FY2017 Actual	FY2018 Initial forecasts	FY2018 Revised forecasts	FY2018 Initial forecasts vs. Revised forecasts
	Amount	Amount	Amount	Amount	Amount
Net sales	10,007	13,168	14,000	14,300	300
Gross profit	4,463	6,074	6,740	6,940	200
Gross profit ratio	44.6%	46.1%	48.1%	48.5%	0.4Pt
SG&A	3,505	4,163	4,390	4,540	150
SG&A ratio	35.0%	31.6%	31.4%	31.7%	0.3Pt
Operating income	957	1,910	2,350	2,400	50
Operating income margin	9.6%	14.5%	16.8%	16.8%	-
Ordinary income	934	1,824	2,340	2,370	30
Ordinary income margin	9.3%	13.9%	16.7%	16.6%	△0.1Pt
Net income	640	1,249	1,600	1,700	100
Net income margin	6.4%	9.5%	11.4%	11.9%	0.5Pt
Exchange rates AR USD	108.4	110.9	110.0	110.0	
EUR	118.8	129.7	135.0	135.0	

(Million yen)	FY2018 Q1 Actual Amount	FY2018 Q2 Actual Amount	FY2018 H1 Actual Amount	FY2018 H2 Revised forecasts Amount	FY2018 Revised forecasts Amount
Net sales	3,492	3,635	7,127	7,172	14,300
Gross profit	1,662	1,713	3,375	3,564	6,940
Gross profit ratio	**47.6%**	**47.1%**	**47.4%**	**49.7%**	**48.5%**
SG&A	1,141	1,148	2,290	2,249	4,540
SG&A ratio	**32.7%**	**31.6%**	**32.1%**	**31.4%**	**31.7%**
Operating income	521	564	1,085	1,314	2,400
Operating income margin	**14.9%**	**15.5%**	**15.2%**	**18.3%**	**16.8%**
Ordinary income	524	551	1,076	1,293	2,370
Ordinary income margin	**15.0%**	**15.2%**	**15.1%**	**18.0%**	**16.6%**
Net income	421	386	808	891	1,700
Net income margin	**12.1%**	**10.6%**	**11.3%**	**12.4%**	**11.9%**
Exchange rates AR USD	109.1	110.2	110.2	110.0	110.0
EUR	130.1	129.6	129.9	135.0	135.0

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● Plan to improve profitability by achieving PAC18 targets

▬ Operating income
─○─ Operating income margin ░░ PAC18 effects
（Million yen）

18.3%

15.2%

263 →**PAC18 effects**

70 →**PAC18 effects**

1,314

1,085

**FY2018
H1 actual**

**FY2018
H2 revised forecast**

*PAC (Promptly Activated Cost reduction): Company-wide cost reduction project

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	FY2017 Actual		FY2018 Initial forecasts		FY2018 Revised forecasts		FY2018 Initial forecasts vs. Revised forecasts	
	Amount (Million yen)	Composition ratio (%)	Amount (Million yen)	Composition ratio (%)	Amount (Million yen)	Composition ratio (%)	Amount (Million yen)	Change in ratio (%)
Construction machinery filters	11,768	89.4%	12,564	89.7%	12,906	90.2%	342	2.7%
Line parts	5,342	40.6%	5,567	39.7%	5,718	40.0%	151	2.7%
Service parts	6,425	48.8%	6,996	50.0%	7,187	50.2%	191	2.7%
Industrial filters	526	4.0%	537	3.8%	566	4.0%	29	5.4%
Process filters	873	6.6%	898	6.5%	827	5.8%	△71	△7.9%
Total sales	13,168	100.0%	14,000	100.0%	14,300	100.0%		

Forecasts for Segment Information (by Region)

	FY2017 Actual		FY2018 Initial forecasts		FY2018 Revised forecasts		FY2018 Initial forecasts vs. Revised forecasts	
	Amount (Million yen)	Composition ratio (%)	Amount (Million yen)	Composition ratio (%)	Amount (Million yen)	Composition ratio (%)	Amount (Million yen)	Change in ratio (%)
Japan	6,443	48.9%	6,545	46.8%	6,753	47.3%	207	3.2%
North America	2,201	16.7%	2,468	17.6%	2,491	17.4%	22	0.9%
China	1,753	13.3%	2,149	15.4%	2,048	14.3%	△100	△4.7%
Other Asian Countries	1,522	11.6%	1,771	12.7%	1,850	12.9%	79	4.5%
Europe	1,204	9.2%	1,064	7.5%	1,153	8.1%	88	8.3%
Others (Middle East, etc)	42	0.3%	0	0.0%	2	0.0%	2	
Total sales	13,168	100.0%	14,000	100.0%	14,300	100.0%	300	2.1%

Note: The amounts of sales by region here are calculated based on the locations of corporations to which invoices are sent.
So actual regional market trends may be different from the numbers shown.

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The annual dividend will be increased to 6.0 yen per share,
including an interim dividend of 2.5 yen and year-end dividend of 3.5 yen per share.

	FY2016	FY2017	FY2018 Initial forecasts	FY2018 Revised forecasts
Dividend per share	2.4 yen*1	3.6 yen*1	5.0 yen	6.0 yen
DOE	2.3%	1.9%	1.9%	2.4%
Total return ratio*2	25.6%	21.6%	23.8%	26.5%

Note） The Company conducted a 5-for-1 stock split that became effective on December 1, 2017.

*1　For the dividends for FY2016 and FY2017, the amounts shown as a reference value are calculated based on the above stock split.

*2　Total return ratio = (Total dividend + Treasury stock acquired + Shareholder benefit) ÷ Net income

II
Conditions in the Construction Machinery Market

【Overview】
- The current favorable market conditions are expected to continue for several years.
- US-China trade frictions will have minimal impact on the company.
- We expect the results of midterm elections in the US to have a positive impact on our external environment.

	Past	**Current**	**Future outlook**
China	Significant production cutback due to slowdown of real estate investment	Demand is growing considerably driven by public investment intended to boost the economy	Growing investment in the infrastructure is expected to result in continuing growth in demand.
Southeast Asia	Investment in mining machinery is sluggish, but investment in infrastructure is strong.	Demand is growing overall, centered on Indonesia.	Favorable trends are expected here, as in China.
North America	Demand recovery due to infrastructure investment	Demand is expected to increase further as resource energy development and infrastructure investment progress.	The midterm elections are expected to result in increased public investment.
Japan	Demand increase due to strong domestic infrastructure investment	Backed by strong corporate earnings, demand is growing.	Favorable trends are expected to continue.
Europe	Business was sluggish.	Demand increase in major countries centered on Germany	Strong demand is expected

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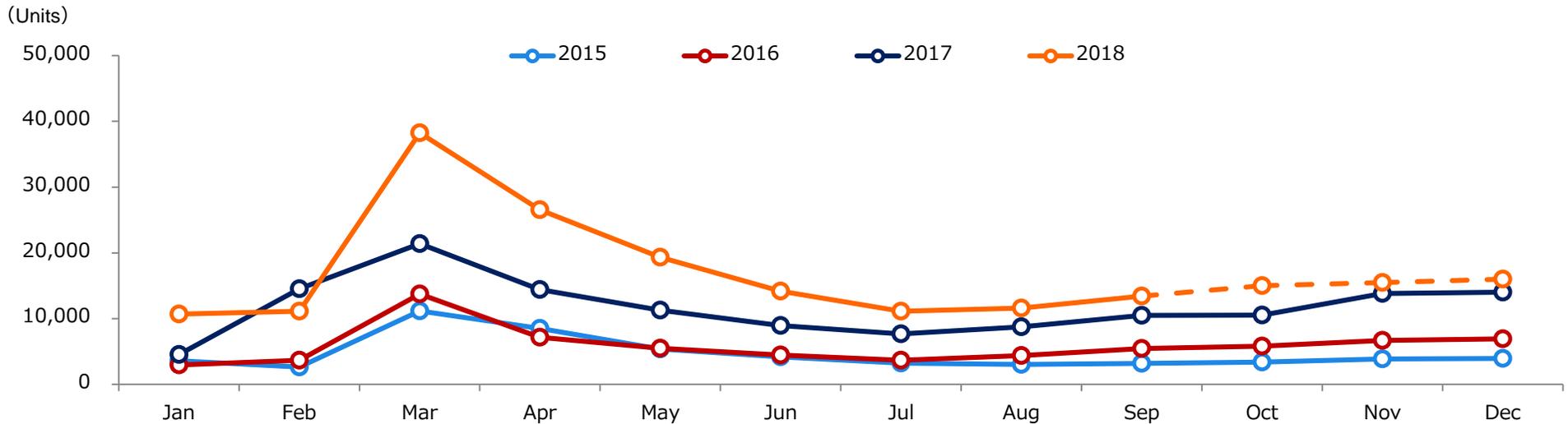**YAMASHIN**

Sales by fiscal year (annual total)

Note: Total figures from January through December

Units sold in the China market are expected to
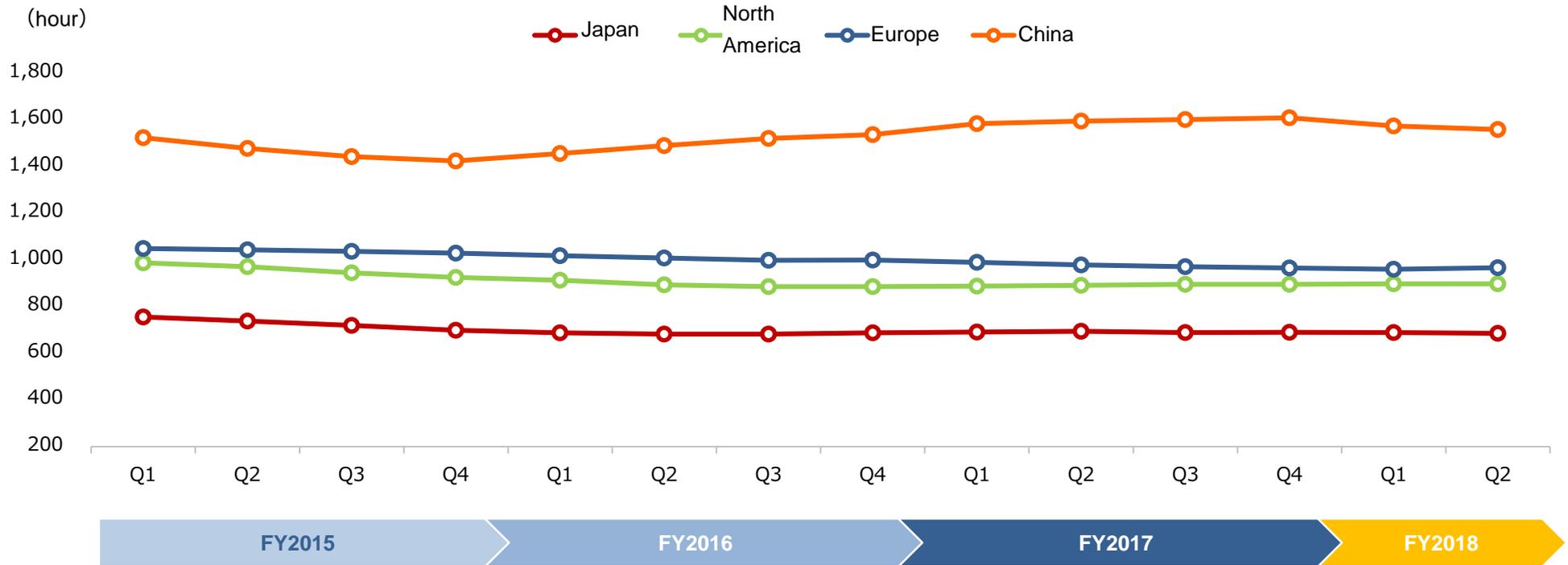**Significantly exceed last year's figure.**

(Units)
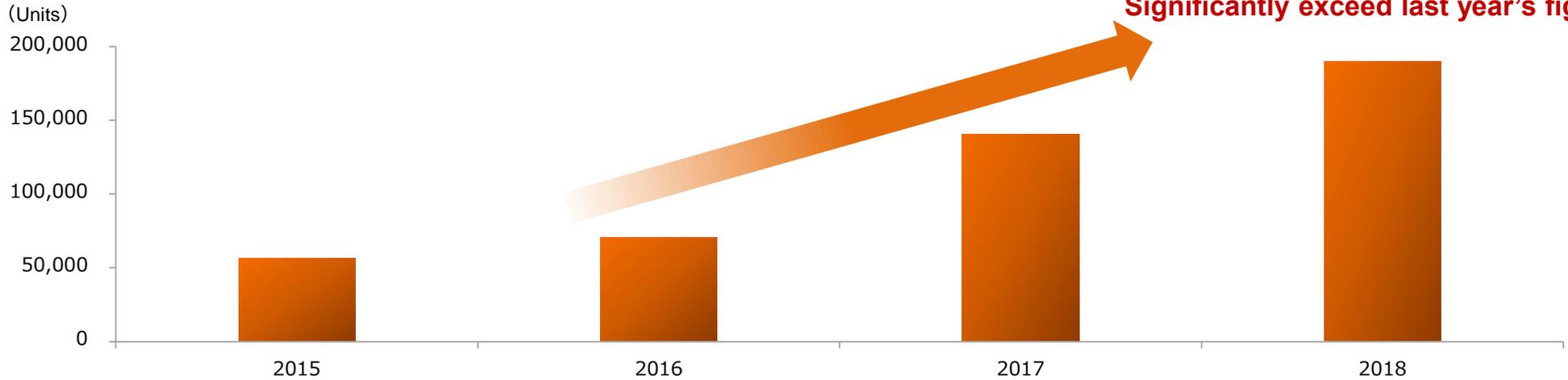
Sales by fiscal year (monthly)

(Units)

Legend: 2015, 2016, 2017, 2018

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Continued infrastructure investment in China is expected to increase demand for construction machinery.

Utilization of construction machinery in hours (annual total)

（hour）

Japan — North America — Europe — China

1,800
1,600
1,400
1,200
1,000
800
600
400
200

Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2

FY2015   **FY2016**   **FY2017**   **FY2018**

Source: Prepared by YAMASHIN based on a report by Nomura Securities analysts

With global expansion in infrastructure development investment, growth in the construction machinery market is expected to continue.
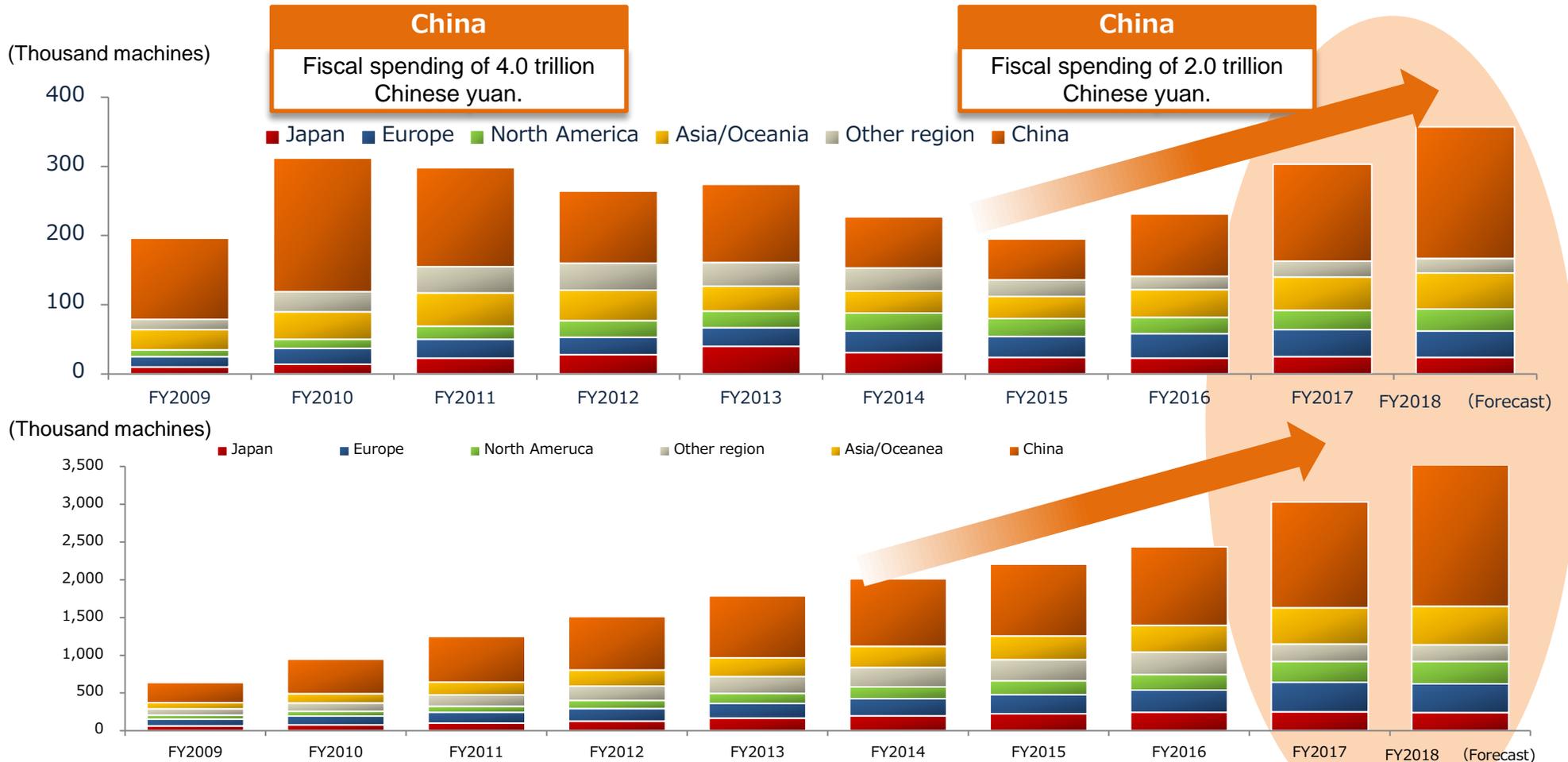
(YAMASHIN's estimates based on the data published by construction machinery manufacturers and industry associations)

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		Major actions	Progress
Construction machinery filters	Line parts	Propose failure prediction features, IOT and ICT technology	Pitching SWIFTROCK and Life Sensor installation to major manufacturers; testing in actual equipment continues.
		Propose a return filter made from new materials	Starting mass production of return filters with new materials
		Expand sales to construction machinery manufacturers in China	Proposing filters with new materials to quality-oriented companies
	Service parts	Recapture market share lost due to counterfeit products by holding seminars	Enriching and strengthening seminar activities tailored to market characteristics (Southeast Asia and China)
Industrial filters		Expand and strengthen product lineups	Developing and proposing products with new materials (Proposing SWIFTROCK installation, etc.)
Process filters		Expand and strengthen product line-ups	Identifying new partners
New fields		Launch the YAMASHIN Paradigm Shift project	Making proposals to players in new industries, including air filters, agriculture, construction materials and apparel.

III
Future Strategies

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YAMASHIN

The construction machinery market will be strong in the next 3 to 5 years.
We will proactively develop business to achieve the goals by utilizing the 10 billion yen capital funds.

Expand business portfolio

By raising the next growth pillars needed to address a dependence on construction machinery

Establish a more robust corporate structure

By establishing multiple production bases
By reconfiguring the global supply chain

[3 pillars]
Construction machinery filters ✕ Process and industrial filters ✕ Expansion of new materials

Cost reduction through PAC18
Large-scale investment plans for the R&D facilities
Investment to launch production facilities in the major markets

Establish a new R&D center

Mass produce new materials and increase the productivity of existing products

Capital and business tie-ups, including M&As

3 billion yen

3 billion yen

4 billion yen

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Proposal and design capabilities
that drive the evolution of construction machinery

Evolution of construction machinery

	1970s	1980s	1990s	2000s	2010 –
	Upsizing of hydraulic excavators				
	Performance enhancement	Multi-functionalization		Compliance with environment-related regulations Low fuel consumption	
			Digitalization		Advancement in ICT technology

Product development by YAMASHIN

Solutions by YAMASHIN that have contributed to the evolution of construction machinery

1970s	1980s	1990s	2000s	2010 –
In-house development of filter materials	Advancement in filtering technology	Longer life	Environmentally-friendly technology	Advancement in educational activities
Improvement of basic performance	Cost compatibility	Downsizing	Development of products targeted at the aftermarket	Accelerating development of filter materials
			Technology development other than hydraulic one	ICT-supported products

Fabric

YAMASHIN started off with a sewing business of canvas products.

Paper

YAMASHIN, as a filter manufacturer, developed a filter material by itself.

Hybrid

Broadened recognition through combination of paper and glass fibers

Glass

YAMASHIN dominated the market with its glass fiber products and obtained a greater market share.

Hybrid

Nano-material

Next-generation global standard combining glass and nano fibers

Supply to begin in FY2018

YAMASHIN Nano Filter Product logo

YAMASHIN Nano Filter

Concept

This logo represents the properties of materials that filter out nanoscale particles. Evoking water and wind, the colors convey the eco-friendly qualities of these products.

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Drawing on mass-production technologies to deploy YAMASHIN Nano Filters in various sectors.

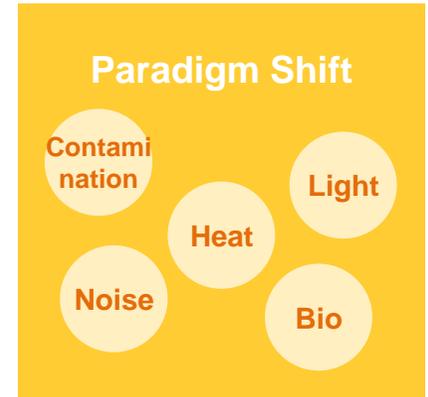**Considering M&A activities in appropriate fields**

Phase 3
Medium term

Deployment to fields like building materials and biosciences (examples)

Phase2
FY2019

Deployment to automotive and apparel

Phase1
Now

Advancing into the fields of construction machinery, air filters, and agricultural materials

Paradigm Shift

Contamination

Light

Heat

Noise

Bio

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Agricultural materials

Use of nanofibers in multilayered thermal insulating materials: Improving thermal insulation
Contributing to global warming solutions through CO^2 emissions reductions resulting from decreased use of fossil fuels

Insulation materials inside vinyl greenhouses

【Current status】
- Samples provided based on specifications
- Assessing match of samples and specifications
- Making arrangements for testing in actual vinyl greenhouses

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Air filters

Control of fiber structures enables mass-production of high-quality precision filters.

① Major customer A
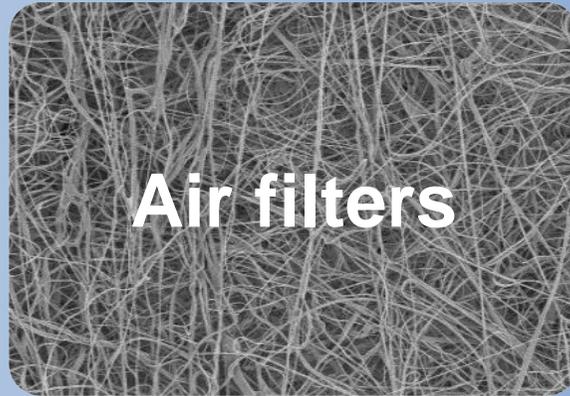
Air filters

【Prospect】
• Replace glass fiber filters
【Current status】
• Now producing samples to meet specification values
• Increasing performance of prototypes in leadup to product introduction
• Improving equipment to enable stable production
• Preparing for mass production next year

② Major customer B

For air purifier use
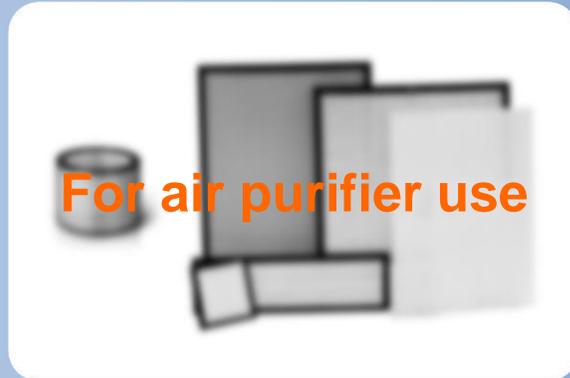
【Prospect】
• Replace glass fiber filters
【Current status】
• Need to further improve fiber density and fineness
• Need to increase ambient temperatures during fiber production
• Separate plans call for evaluation of electret materials for air filters with extended life

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Others

Control of fiber structures enables mass-production of high-quality precision filters.

|		
① Major auto interior parts makers	**Vehicular sound absorbing/ soundproofing materials**	【Prospect】 • Develop higher performance sound absorbing materials (for lower frequencies) compared to products currently found in the market 【Status】 • Collecting data on sound absorption effects and ascertaining related tendencies • Trial production of samples to satisfy required specifications • Considering specific processes and management methods for product development
② Major building materials makers	**Residential building materials**	【Prospect】 • Develop insulating materials thinner and lighter than products currently found in the market 【Current status】 • Investigating building material standards and confirming the performance required • Collecting data on correlations between materials and fiber diameter on the one hand and thermal insulation on the other
② Apparel makers	**Insulated hot and cold bags nanofiber jackets, etc.**	【Prospects】 • Develop thin and light materials (insulating materials to replace down) 【Current status】 • Collecting data on the thermal insulation properties of nanofibers • Producing prototypes and collecting test data • Trial production of mass produced products

- To establish multiple production bases by reviewing and reorganizing production bases and build a safe and optimized supply chain

Before review of production bases

After review of production bases

Philippines

Philippines

Japan

US

China
(Applying EMS)

Before

After
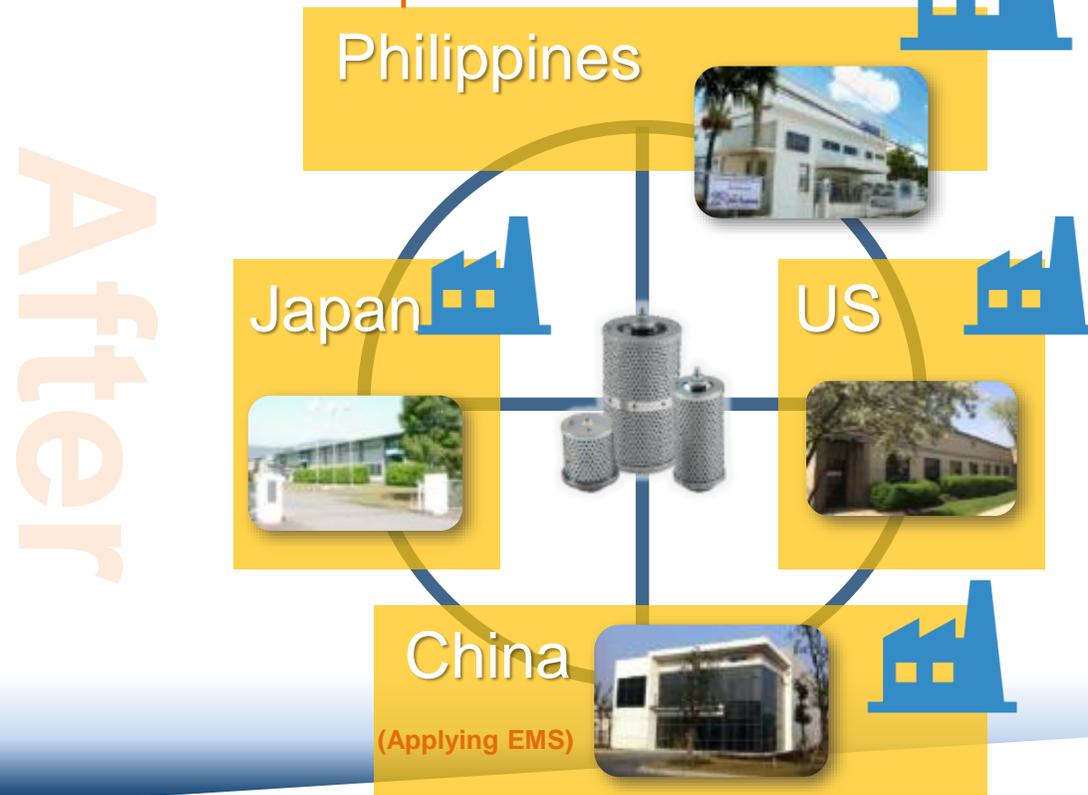
PURPOSES and GOAL

To establish a cross-sourcing productions system

To flexibly respond to customers' needs

To strengthen purchase capacity

To make busines continuity plan (BCP)

We hold a world-leading share in the construction machinery filter business.

Backed by increasing investment in infrastructure improvements and aftermarket strengths in most regions, we expect sustained growth in our construction machinery filter business.

New business is expected to make significant contributions to both sales and profits.

YAMASHIN Nano Filters will drive growth, with emerging use for diverse applications.

Reference Materials
① Basic Company Information

The Specialist in Filtration
YAMASHIN

Overview of Our Corporate Group

Our Corporate Group has continued to yield solid business results consistently as a manufacturer specializing in filters since the foundation.
Our Corporate Group has manufactured filters for construction machinery, industrial filters, and process filters by purchasing glass-fiber and non-woven fabrics to produce filter media (the key component of any filter), and resin goods and processed metal for filter components.
Our Corporate Group provides one-stop filter services, including the development, product design, and manufacture of filter media for various filters. We sell our products to customers active in construction machinery, industrial machinery, and other various field.

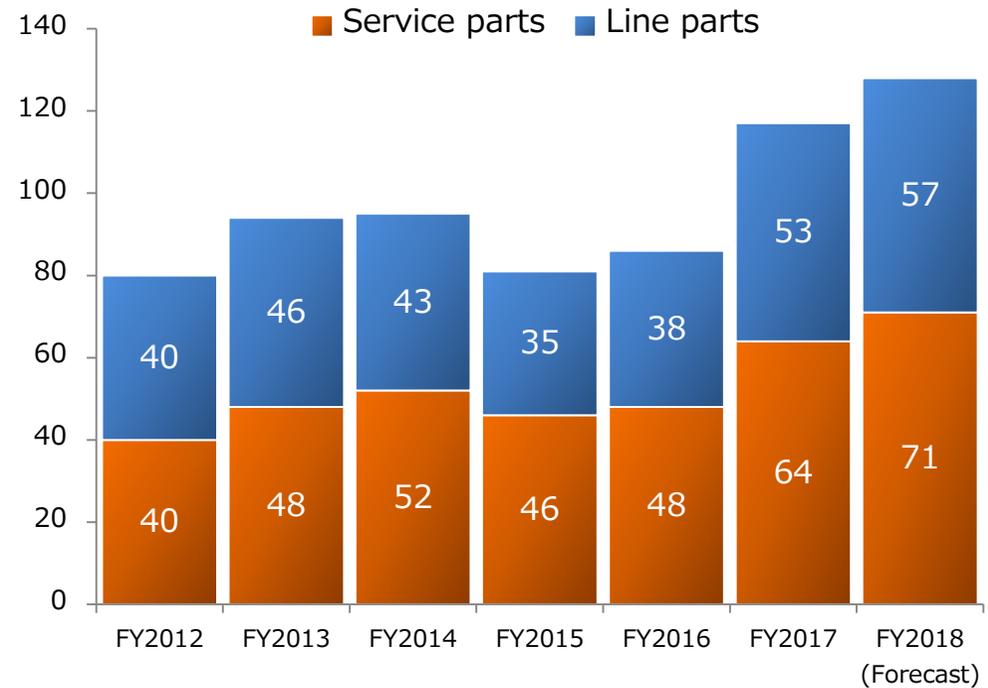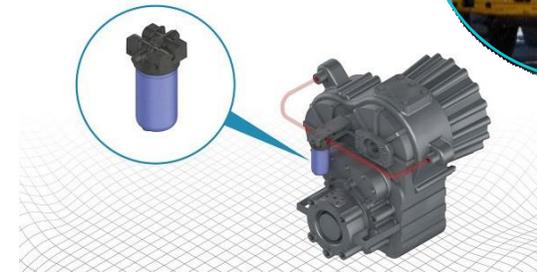| Filters for construction machinery	A construction machinery filter is used to filter the fluids used in the hydraulic circuits central to the operation of construction machinery.	Filter elements (for construction machinery)
Filters for various industrial fields beyond construction machinery	An industrial filter is a filter used for filtrating operating fluid and lubricants of hydraulic units applied in various industries other than the construction machinery industry. This filter is used in multitudinous kinds of industrial machinery, such as machine tools, refrigerating compressors, agricultural machinery, vessels, railway vehicles, airplanes, and helicopters.	Line filters (for vessels)
Filters for process lines	A process filter is used or filtration and separation in processes for manufacturing customer products. These filters are used in various industries, including electronic parts, precision parts, liquid crystal displays, and food.	Non-woven filters (for electronic parts)

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The demand for service parts is expected to expand gradually with increased numbers of construction machines.

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YAMASHIN provides an extensive lineup of filters essential to operating construction machinery.

Return filter

Air breather

Suction strainer

Line filter

For hydraulic systems

These filters are installed at several locations of each piece of construction machinery to protect hydraulic equipment, including cylinders. Some 70% of all malfunctions affecting construction machinery are believed to be caused by dust in oil, the presence of which leads to mechanical breakdowns. We provide filters ideal for every need based on the know-how cultivated since our founding

For fuel

Fuel filters remove particulates from diesel fuel. Increasingly stringent regulations worldwide have strengthened purity requirements for fuel. Demand for this filter is expected to grow, particularly in emerging nations, where fuel quality tends to be lower..

Fuel filter
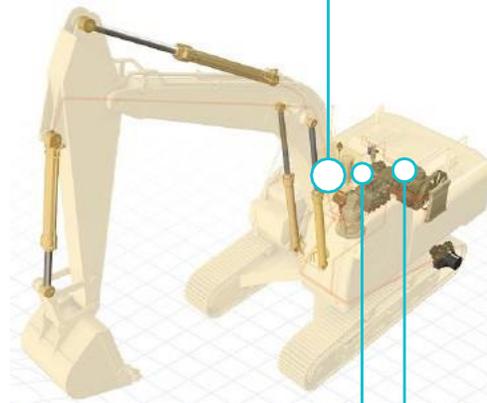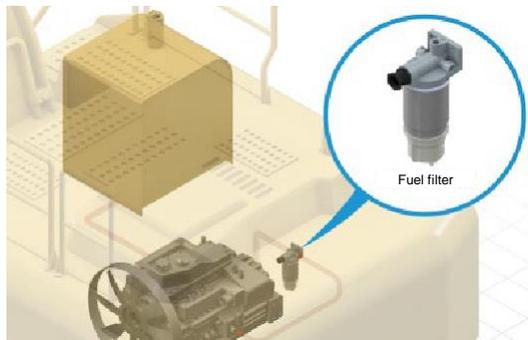
For transmissions

These filters are found in the transmissions of construction machinery. Transmissions are composed of multiple gears. Friction between these gears produces metal powder and particulates. Our company's filters employ proprietary filter elements and materials to remove these particulates and minimize equipment wear.

For engine oil

These filters are in various construction machinery engines. Engines contain pistons and other components moving at high speed that generate power. The engine oil filter removes the metal powders and sludge (sediment), caused by abrasion, that accumulate in engine oil during power generation, mitigating the risk of damage and impaired performance.

Engine oil filter

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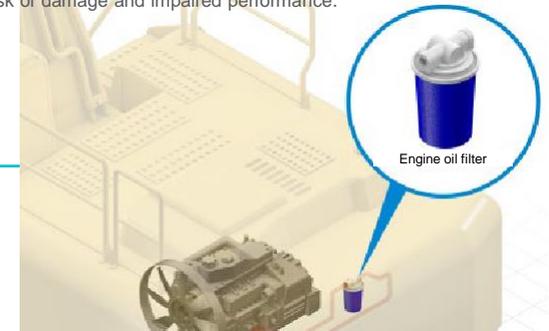
Segments and KPI	- Filters for construction machinery are classified as **"line parts"** or **"service parts"** - Line parts refer to filters installed in new construction machines. The primary indicator is **"the number of new construction machines in demand"** - Service parts refer to replacement filters. The primary indicator is **"the number of units in operation"** × **"hours of operation".**
Sales methods, regional trends, and cost reduction measures	- **Sales format** Filters for construction machinery are sold to construction machinery makers (100%). In principle, we do not sell the products directly to end users. - **Regional trends** Sales calculations are based on invoice destinations. Our data may differ from the actual regional market trends - **PAC18 （Promptly Activated Cost reduction 2018）** Our company-wide cost reduction project.

Term	Formula
MAVY's	ROIC - WACC
ROIC	NOPAT ÷ Capital investment
Rate of return on capital investment	(Ordinary income + Interests paid) ÷ Capital investment
Turnover rate of working capital	Net sales ÷ (Accounts receivable + Inventory asset - Accounts payable)
Turnover rate of fixed assets	Net sales ÷ Fixed assets
Turnover rate of accounts receivable	Net sales ÷ Accounts receivable
Turnover rate of inventory asset	Net sales ÷ Inventory asset
Turnover rate of accounts payable	Sales cost ÷ Accounts payable
Turnover rate of tangible fixed assets	Net sales ÷ Tangible fixed assets
Turnover rate of intangible fixed assets	Net sales ÷ Intangible fixed assets

*The figures in the balance sheet are the averages of the initial and term-end figures.

Before the development of new materials

STRENGTH
- Overwhelming share of market for construction machinery filters
- Advanced R&D capabilities
- Robust management base based on PAC and MAVY's

WEAKNESS
- Limited business domain
- Filters for construction machinery account for 90% of total sales.
- Overconcentration of production sites

OPPORTUNITIES
- To increase our share in the growing Chinese market
- To enhance our presence in the markets for process/industrial filters

THREAT
- Decrease of our market share, due to the proliferation of counterfeit filter products for construction machinery
- Change in the construction machinery market
- Sluggish sales growth of process/industrial filters

Business to be grown

Core business (growth)

Process/industrial filters

STRATEGY MATRIX

Filters for construction machinery

Business to undergo structural reform

Core business (stable)

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After development of new material

STRENGTH
- Overwhelming share of market for construction machinery filters
- **Continuing expansion of market share for new materials**
- Advanced R&D capabilities
- Robust management base based on PAC and MAVY's

WEAKNESS
- Filters for construction machinery account for 90% of total sales.

Plans to obviate the weakness by realizing a comprehensive filter manufacturer

OPPORTUNITIES
- To increase our share in the growing Chinese market
- To enhance our presence in the markets for process/industrial filters
- **Expanding business areas by a leap to status as "comprehensive filter manufacturer"**

THREAT
- Decrease of our market share, due to the proliferation of counterfeit filter products for construction machinery
- Changes in the construction machinery market
- Sluggish sales growth of process/industrial filters
- **Delays in development of new material products**

Eliminates counterfeits by using a new material

Business to be grown

Core business (growth)

Process/industrial filters

STRATEGY MATRIX

Filters for construction machinery

New material business

Business selected as growth target

Core business (stable)

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Reference Materials
② Financial Highlights

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Net sales, Operating income

（Million yen）

■ Net sales　—○— Operating income margin

FY2014	FY2015	FY2016	FY2017	FY2018 Q2
10,703	9,458	10,007	13,168	7,127
8.1%	4.3%	9.6%	14.5%	15.2%

Sales by product

FY2017

Industrial 4.0%
Process 6.6%
Line parts 40.6%
Service parts 48.8%

FY2018 Q2

Industrial 3.8%
Process 5.7%
Line parts 40.7%
Service parts 49.8%

Sales by region

FY2017

Others -0.1%
Europe 9.2%
Asia 11.6%
China 13.3%
North America 16.7%
Japan 48.9%

FY2018 Q2

Europe 9.7%
Asia 12.9%
China 14.1%
North America 16.3%
Japan 46.9%

56
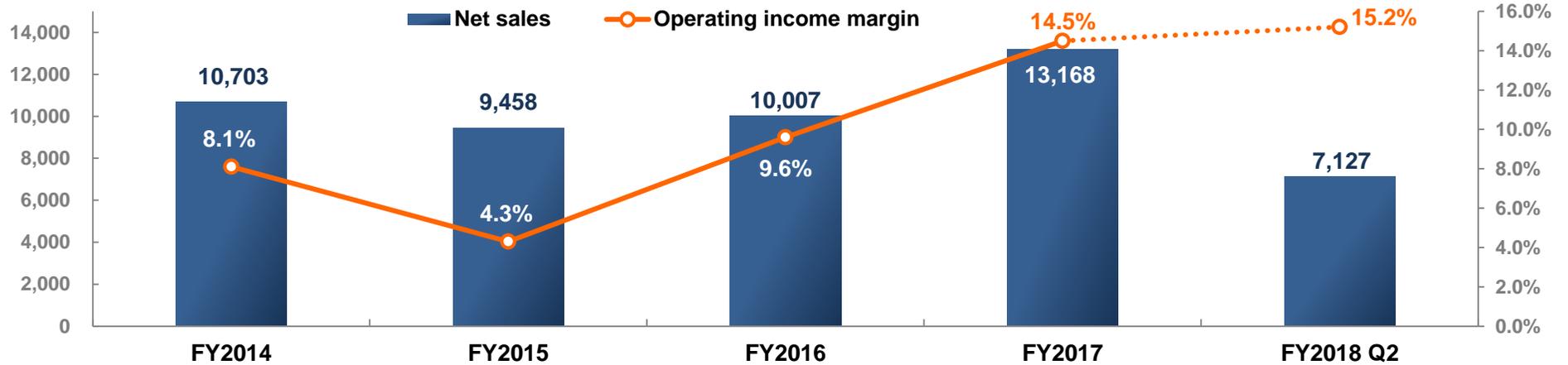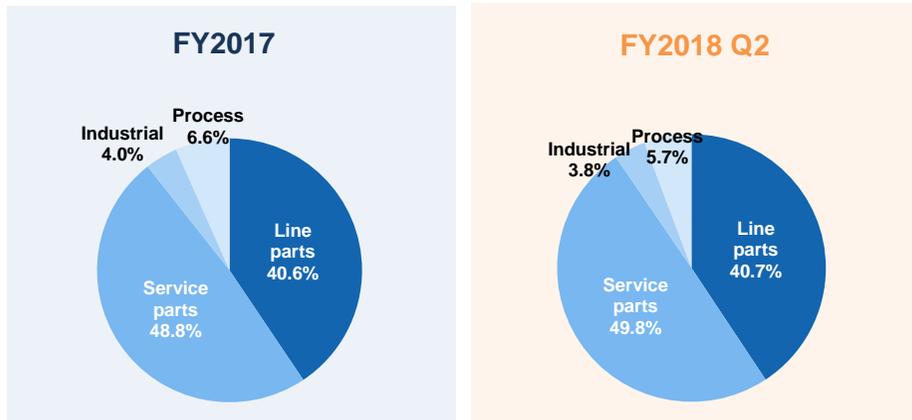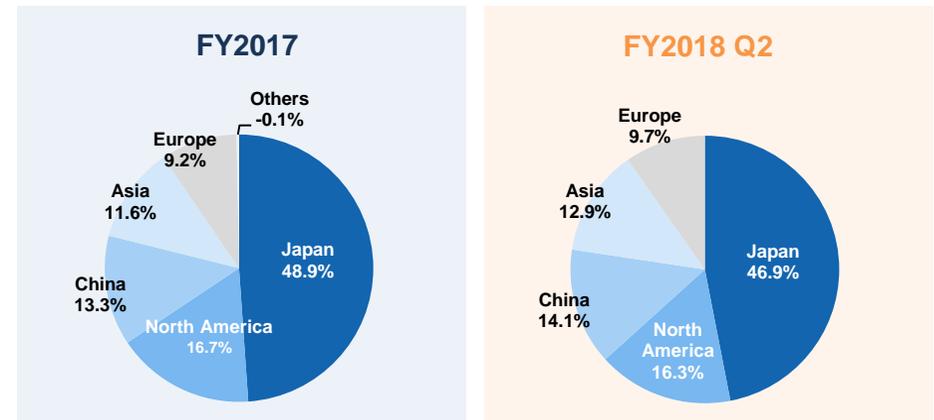
Interest-bearing debt, Cash equivalents, Short-term securities, etc.

（Million yen）
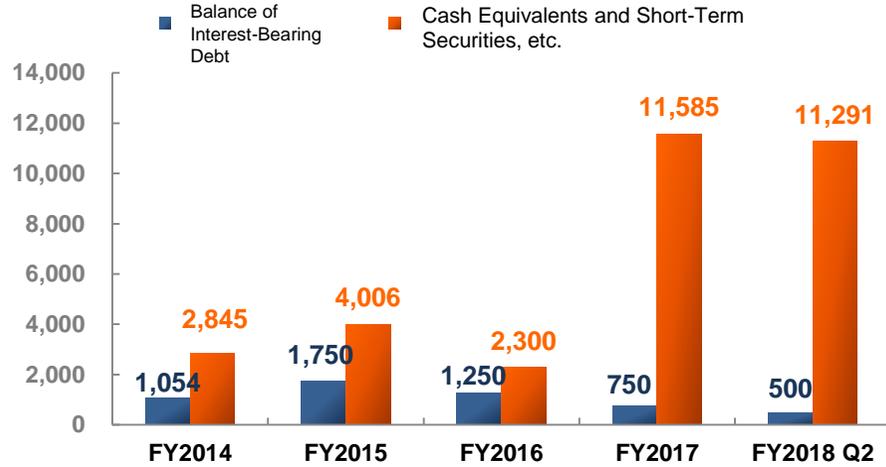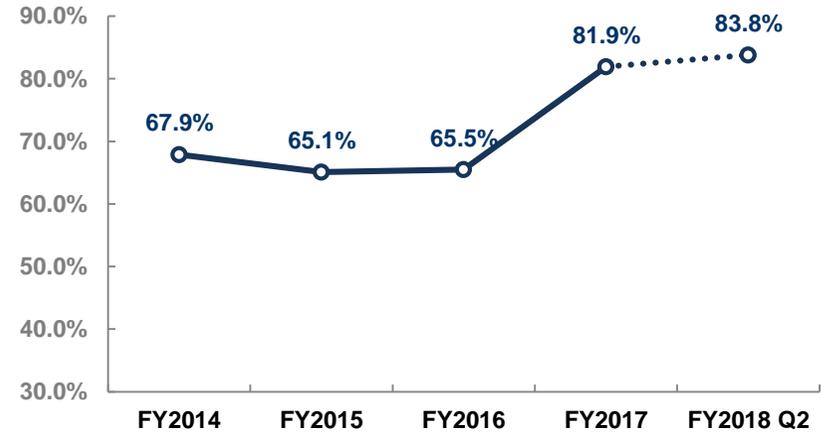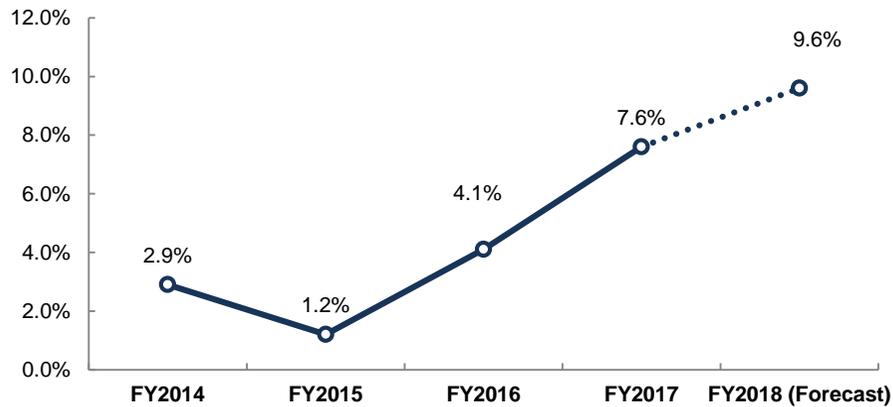
- Balance of Interest-Bearing Debt
- Cash Equivalents and Short-Term Securities, etc.

FY	Balance of Interest-Bearing Debt	Cash Equivalents and Short-Term Securities, etc.
FY2014	1,054	2,845
FY2015	1,750	4,006
FY2016	1,250	2,300
FY2017	750	11,585
FY2018 Q2	500	11,291

Shareholders' equity ratio

FY2014	FY2015	FY2016	FY2017	FY2018 Q2
67.9%	65.1%	65.5%	81.9%	83.8%

ROE

FY2014	FY2015	FY2016	FY2017	FY2018 (Forecast)
2.9%	1.2%	4.1%	7.6%	9.6%

*Calculated based on the assumption that the capital increase through third-party allotment in FY2017 was implemented from the previous fiscal year.

D/E ratio

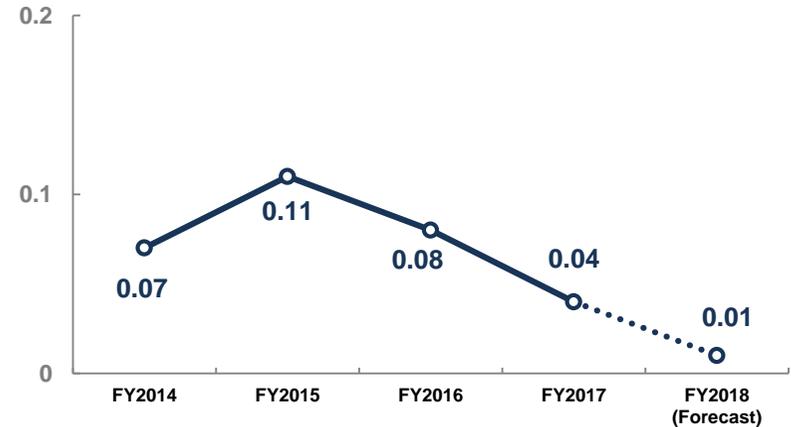| FY2014	FY2015	FY2016	FY2017	FY2018 (Forecast)
0.07	0.11	0.08	0.04	0.01

*Calculated based on the assumption that the capital increase through third-party allotment in FY2017 was implemented from the previous fiscal year.
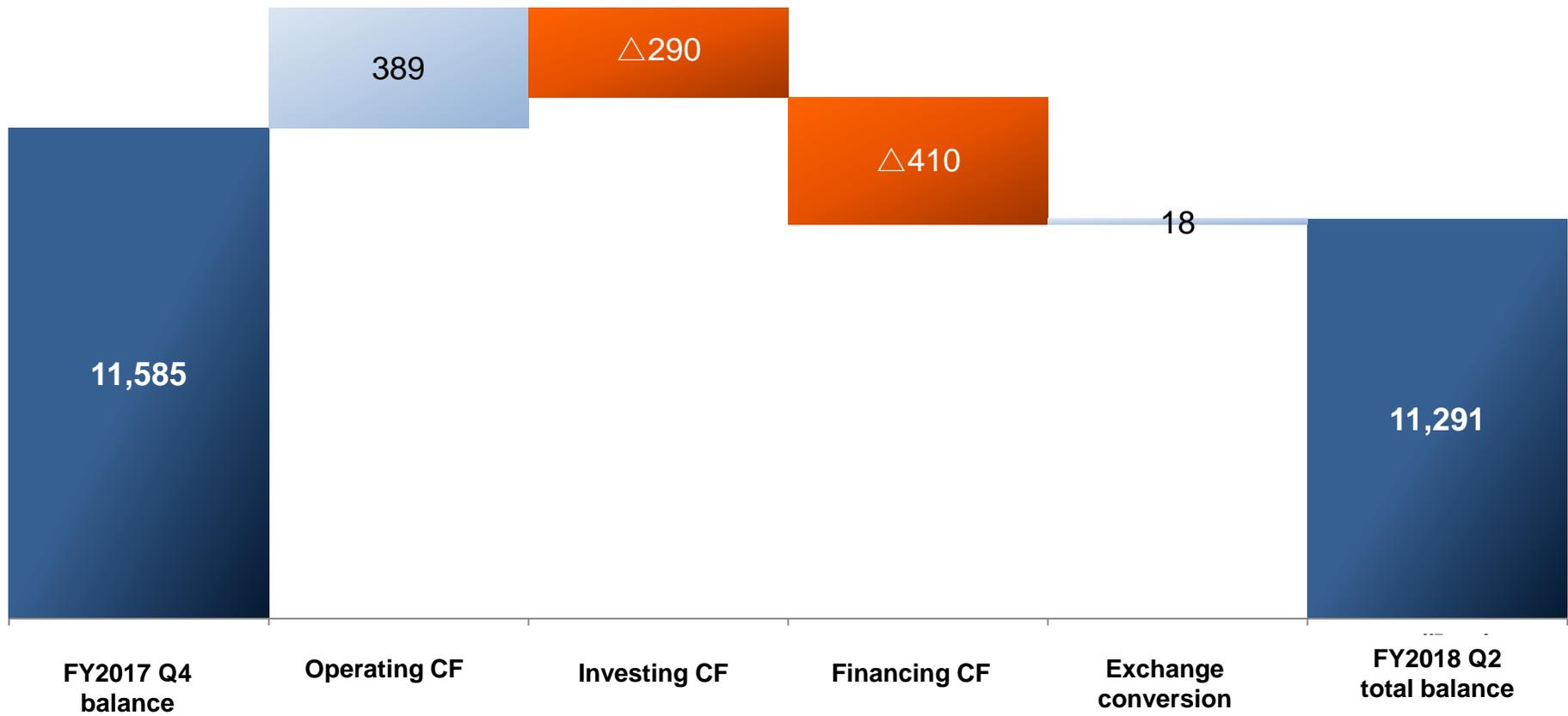
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(Million yen)	End of FY2017	FY2018 Q2	Change amount	Change in ratio		End of FY2017	FY2018 Q2	Change amount	Change in ratio
Current assets	16,977	17,190	213	1.3%	Current liabilities	2,969	2,764	△204	△6.9%
Cash and deposits	11,619	11,325	△294	△2.5%	Notes and accounts payable-trade	1,517	1,707	189	12.5%
Notes and accounts receivable-trade	3,365	3,328	△36	△1.1%	Short-term loans payable, Current portion of long-term loans payable and corporate bonds	350	200	△150	△42.9%
Merchandise and finished goods, Raw materials and supplies*	1,799	2,368	568	31.6%	Other	1,101	856	△245	△22.3%
Other	193	169	25	△13.0%	Fixed liabilities	797	648	△149	△18.7%
Fixed assets	3,787	3,937	149	3.9%	Corporate bonds	400	300	△100	△25.0%
Tangible fixed assets	1,653	1,800	146	8.9%	Net defined benefits liability	175	181	6	3.6%
Intangible fixed assets	412	365	△47	△11.4%	Other	222	166	△56	△25.2%
Investments and other assets	1,721	1,771	49	2.9%	Total net assets	16,999	17,715	716	4.2%
Total assets	20,765	21,128	362	1.7%	Total of liabilities and net assets	20,765	21,128	362	1.7%

* Shareholders' equity ratio   81.9%   83.8%

(Million yen)

389

△290

△410

18

11,585

11,291

| FY2017 Q4 balance | Operating CF | Investing CF | Financing CF | Exchange conversion | FY2018 Q2 total balance |

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● One-yen appreciation against the USD increases operating income by about 1.5 million yen.

Sales

| JPY 71% |
| USD 24% |
| Other 5% |

Sales subsidiaries

HQ

Manufacturing subsidiaries

| JPY 68% |
| USD 23% |
| Other 9% （PHP: 5%） |

Payment of Cost

70% of transaction currency is JPY.

A "marry and netting" operational hedge was achieved for USD.

Conditions of Operational Hedge - "Marry and Netting"

（Million yen）

Currency	Incoming			Outgoing			Net	Average rate during the term (JPY)	In case of yen appreciation (10%)			In case of yen depreciation (10%)		
	Each currency	Yen equivalent (JPY)	Composition ratio	Each currency	Yen equivalent (JPY)	Composition ratio	Each currency		Average rate during the term ▲10% (JPY)	Rate difference	Affected amount (YTD)	Average rate during the term +10% （JPY）	Rate difference	Affected amount (YTD)
JPY	¥9,400.0	¥9,400.0	71%	¥8,700.0	¥8,700.0	68%	¥700.0	-	-	-	-	-	-	-
USD	$28.1	¥3,098.9	24%	$27.0	¥2,977.6	23%	$1.1	¥110.3	¥99.25	¥-11.03	¥-12.13	¥121.31	¥11.03	¥12.13
EUR	€ 4.0	¥519.4	4%	€ 2.8	¥363.6	3%	€ 1.2	¥129.9	¥116.87	¥-13.0	¥-15.58	¥142.84	¥12.99	¥15.58
PHP	PP0.0	¥0.0	0%	PP314.8	¥657.9	5%	PP-314.8	¥2.1	¥1.88	¥-0.2	¥65.79	¥2.30	¥0.21	¥-65.79
THB	฿46.00	¥156.4	1%	฿10.00	¥34.0	0%	฿36.00	¥3.4	¥3.06	¥-0.3	¥-12.24	¥3.74	¥0.34	¥12.24
Total	-	¥13,174.7	100%	-	¥12,733.1	100%	-	-	-	-	¥25.84	-	-	¥-25.84

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Forecasts regarding future performance presented in this material are based on information that was available at the time this material was released. Actual results may differ from the forecasts due to various factors such as market trends and business conditions etc.

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