DMG MORI
COMPANY LIMITED

ADDITIVE MANUFACTURING

DIGITIZATION

AUTOMATION

dynamic

EXCELLENCE

TECHNOLOGY EXCELLENCE

DMG MORI QUALIFIED PRODUCTS

ANNUAL REPORT 2018

Fiscal Year 2018
(January - December)

Mission Statement

As a global corporation continually striving to be the world's largest and most respected international manufacturer of turning centers, machining centers, multi-axis turning centers and grinders, we will:

Enable our customers to maximize their advantages and excel in their respective markets by continually striving to provide innovative, accurate, and trouble-free machines at competitive prices;
Increase our customers' productivity and efficiency through our latest developments in technology as manifested by our increasingly accurate and progressive manufacturing capabilities;
Support our customers with our knowledgeable and responsive sales, applications, and service personnel.

As befits a worldwide corporation, we will:

Foster a fair and open corporate culture, utilizing appropriate management initiatives;
Emphasize company-wide communication with the recognition of earnest and enthusiastic team-oriented efforts;
Respect each other's opinions and continually develop through friendly competition in energetic and cheerful workplaces.

As profitability is a goal of all healthy business organizations and in keeping with the true nature of the machine tool industry, we will:

Work to increase the value of our company, the investment of all shareholders knowledgeable of the true nature of the machine tool industry and the prosperity of our partners;
Always remember that the pricing of our products and services is an integral factor of the prosperity and perpetuity of the corporation;
Generate suitable profits to ensure the cash flow necessary to provide for the healthy operation of our corporation, research and development, stable customer services, employee training and development, and, the maintenance of safe and efficient manufacturing facilities.

As an industry leader and responsible corporate citizen, we will:

Contribute our fair share to our local community and society;
Conserve environmental resources at all times to preserve the global environment;
Incorporate the highest standard of ethics while still encouraging an aggressive approach to our business activities.

Glossary

Below are additional explanations to some selected vocabulary in this annual report.

Descriptions in the annual report	Explanations
DMG MORI DMG MORI Group	The entire DMG MORI Group consisting of DMG MORI CO., LTD, DMG MORI AKTIENGESELLSCHAFT, and other group companies
DMG MORI CO CO DMG MORI CO., LTD.	DMG MORI
DMG MORI AG AG	DMG MORI AKTIENGESELLSCHAFT

Financial Calendar

DMG MORI CO., LTD.

22 March 2019	71st Annual General Meeting of Shareholders
08 May 2019	Release for the 1st Quarter 2019
08 August 2019	Release for the 2nd Quarter 2019 (plan)
07 November 2019	Release for the 3rd Quarter 2019 (plan)

DMG MORI AKTIENGESELLSCHAFT

30 April 2019	Release for the 1st Quarter 2019
10 May 2019	117th Annual General Meeting of Shareholders
30 July 2019	Release for the 2nd Quarter 2019
31 October 2019	Release for the 3rd Quarter 2019

Reporting term

January 2018 – December 2018

Some contents include subjects that occurred outside of this term.

Disclaimer

This annual report contains targets, plans, etc. concerning the future of DMG MORI. All predictions concerning the future are judgments and assumptions based on information available to DMG MORI at the time of writing. There is a possibility that the actual future results may differ significantly from these forecasts, and described plans may not be implemented. There are many factors which contain elements of uncertainty or the possibility of fluctuation for a variety of reasons.

Back row from left	External Auditor , Dr. Eng. Sojiro Tsuchiya	External Director Takashi Mitachi	External Director, Dr. Eng. Tsuyoshi Nomura	External Director, Ph D. Tojiro Aoyama
Front row from left	Executive Director, J.D. James Nudo	Executive Vice President Hirotake Kobayashi	Vice president Christian Thönes	President, Dr. Eng. Masahiko Mori

External Director
Makoto Nakajima

Executive Vice President
Hiroaki Tamai

Corporate Auditor
Toshio Kawayama

Executive Director, Dr. Eng.
Makoto Fujishima

External Auditor
Yoshinori Kawamura

Senior Director
Minoru Furuta

Annual Report 2018

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YouTube

This symbol indicates a video for further information.

Message from group CEO

Dr. Eng. Masahiko Mori

DMG MORI Group CEO
DMG MORI CO., LTD. President
DMG MORI AG Chairman of the Supervisory Board

In 2018, in the 70th year since the company's establishment in 1948, and the 10th year since the start of capital and business collaboration with DMG MORI AKTIENGESELLSCHAFT in 2009, we marked sales revenue of JPY 501.2 bn., surpassing an important milestone of JPY 500 bn. for mid- to long-term growth.

We are in the process of business model transformation. In addition to production, sales, and service of machine tools, we now provide added values directly to customers worldwide. For example, we enhance our product line-up of peripheral equipment on a widespread customer base of CELOS, our operating interface for machining process. We develop more applications and software such as Technology Cycle. We suggest more automation systems to customers to compensate for labor shortage, particularly that of skilled operators. Our new business strategy started to bear fruits in 2018. This will continue to be part of the foundations for our mid- to long-term business growth.

Summary of 2018 business results

We established Tokyo Digital Innovation Center (DIC) to accelerate expansion of 5-axis, mill-turn, and automation technologies and to develop digital products. Moreover, we incorporated all of those technologies and products into our own plant in FAMOT, Poland, and celebrated the Grand Opening of the new facility.

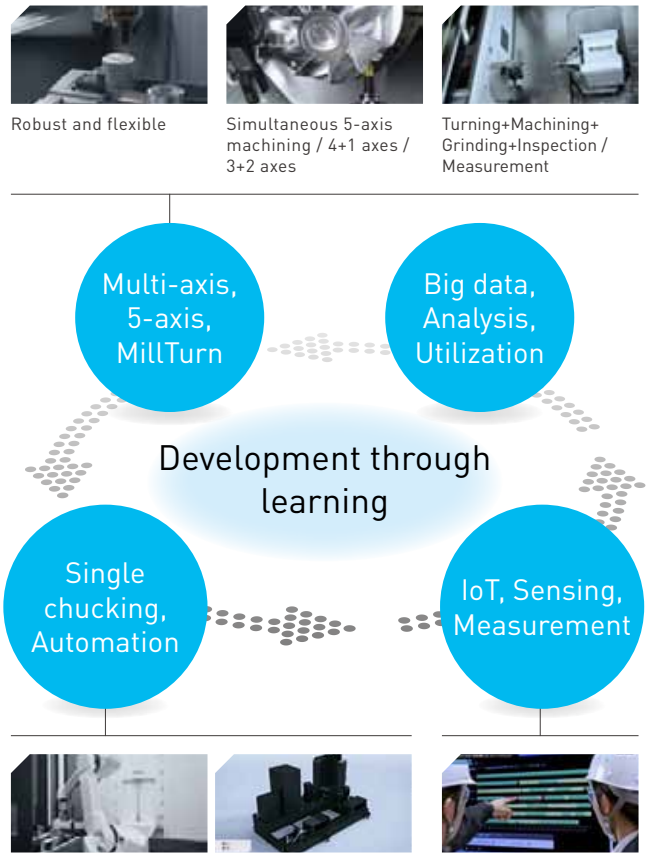
35% of orders we receive from the global market are for 5-axis machines, although they account for only 10% or more in the Japanese market. In the 70th anniversary year, we started loaning out 70 units of the cutting-edge 5-axis machining center "DMU 50 3rd Generation" to Japanese customers. We launched this project to help more customers experience the benefits of 5-axis technology first-hand. We also help them train their own machine operators through private lessons by using installed machines. By the end of 2019, more than 10,000 people will be introduced to 5-axis technology through this program. We exhibited large-sized 5-axis machining centers DMU340Gantry, DMU210Gantry, DMU160Gantry, and other models at IMTS in Chicago in September and JIMTOF in Tokyo in November. We received a lot of inquiries and requests for test cut. We believe that these efforts will contribute to an expansion of 5-axis technology and make significant changes in the manufacturing process in Japan.

In area of automation, we launched new modularized products MATRIS (Module Automation Transfer Robot Intelligence System) and MATRIS mini to reduce initial

investment cost, shorten delivery lead time, and make robot and other programming easier for customers. It is our strength to deliver the entire automation solutions from our own source, starting from design, production, installation, operator training, after-sales service to layout changes of automation systems. Thanks to our customers' trust in DMG MORI, we increased the order ratio with automation from 17% in 2017 to 24% in 2018. This growth has a significant impact on order, sales, and gross margin increases. Our target is to raise the ratio to 80% in 2030.

Multi-axis technology allows us to machine workpieces with one-time clamping. More and more customers introduce automation solutions. Both factors push the demand for digitalization to collect, analyze, and feedback the data during machining and quality control processes. Against this background, we established Tokyo DIC in June 2018. DIC gathers DMG MORI's group companies' knowledge and excellence at one place and facilitates development of more convenient solutions for customers. Four group companies are located at DIC: DMG MORI B.U.G. CO., LTD. develops and upgrades the operating system CELOS; Magnescale CO., LTD. excels in cutting-edge sensing technologies; Saki Corporation is a specialist for quality & feature analysis and image processing by 3D and X-ray technologies; Technium CO., LTD. was established by DMG MORI and Nomura Research Institute to offer solutions for managing machines' data and service history at one stop and for preventive maintenance.

In area of production, we completed the first phase of production capacity increase at FAMOT in October 2018 to catch up with the growing demand for high-accuracy and highly functional machine tools. FAMOT supplies key components of machine tools such as casting parts and spindles to DMG MORI's other plants in Europe. At the same time, FAMOT assembles machines of CLX- and CMX-series. FAMOT embodies the cutting-edge digital solution factory by integrating the group companies' software solutions for maximizing productivity: production planning and management tools by ISTOS GmbH, logistics and inventory management tools by DMG MORI Software Solutions GmbH, and maintenance tools by WERKBLiQ GmbH. FAMOT's role goes beyond



production of machines and components. We present FAMOT as a model factory for customers who would like to build their own cutting-edge digital factory with Industry 4.0 solutions.

Human resources are the most important management assets. In this area, DMG MORI has promoted TQM (Total Quality Management) activities. Today, each department has started to identify issues and take actions for improvement based on the PDCA-cycle. It is gradually yet visibly enhancing our productivity. We will continue TQM activities with a goal to receive a Deming Prize in the future. Leadership training was another key project for human resources development. 60 employees by 2018 and additional 30 employees in 2019 were selected from 13,000 global workforce to participate in the training at different locations. Some parts of the program are held by university professors.

All these efforts resulted in increases of orders by 11% year-on-year to JPY 531.2 bn. and sales revenue by 17% year-on-year to 501.2 bn., both exceeding the threshold of JPY 500 bn. On one hand, we had to bear cost increase due to supply shortage of key components following a surge of demand and the inevitable confusion in supply chain. On the other, we successfully increased operating profit by 23% year-on-year to JPY 36.3 bn. and net profit attributable to the owners of the parent company by 21% year-on-year to JPY 18.5 bn. Free cash flows amounted to as high as JPY 30.4 bn. As a result, we decreased net interest-bearing debt to JPY 82.8 bn. from JPY 105.7 bn. at fiscal year-end of 2017 and increased dividend per share by JPY 10 to JPY 50.

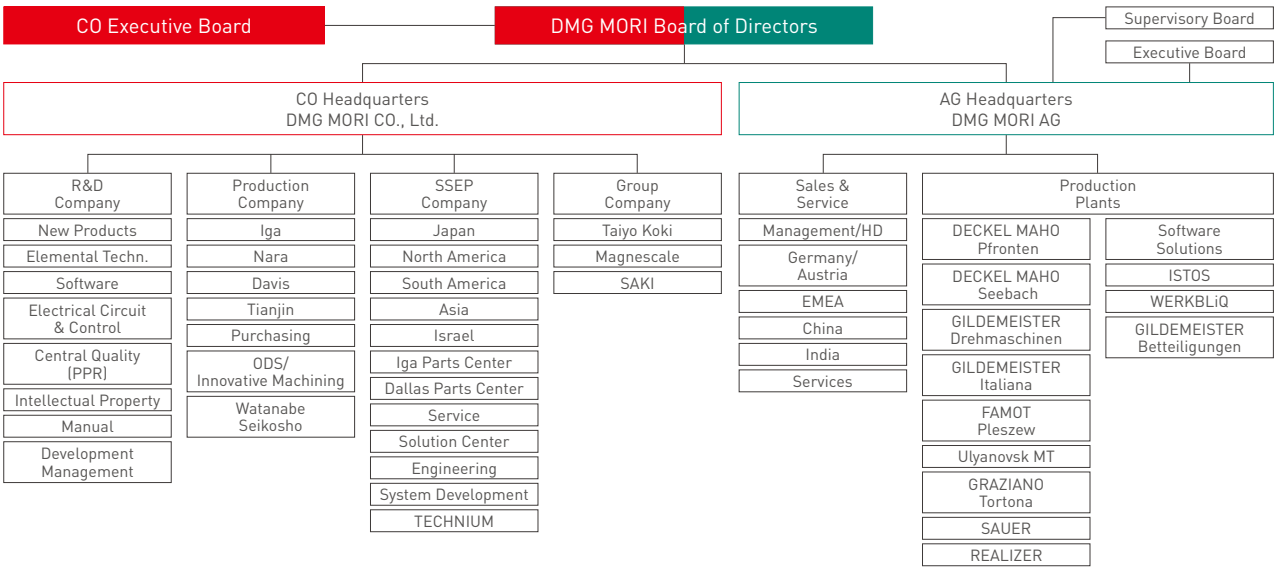
Key focus areas

DMG MORI established a system to provide sales, service, and engineering to customers directly. Moreover, order volume is becoming stable thanks to a successful shift from machine to automation solution including peripheral equipment and software. Nevertheless, we had to endure cost increase due to instability of supply chain in 2018. Although the supply chain network is going back to normal in a short-term, we need to strengthen the delivery system of machine tool components once again to achieve mid- to long-term growth.

In 2019, we introduced an internal Company system to clearly define the role and responsibilities of Development, Production, and Sales. At the same time, we intend to strengthen cooperation between departments and to strictly manage the business process from order, design, procurement, production, sales to collection of accounts receivables. Each Company should not only control its profit and assets, but also maximize cash flows, as they are the most important elements for improving the enterprise value. Each company is headed by Directors and Operating Officers in their 30s and 40s. We would like to develop them as candidates of the future board with experience in general management and financial controlling.

The machine tool demand is expected to decrease by about 10% in 2019. Nevertheless, DMG MORI will commit itself to receiving orders equivalent to 2018 results. We will achieve this goal by making more attractive proposals with multi-axis and automation technologies, and by delivering higher values by on-time service and maintenance through IT solutions of Technium and WERKBLiQ launched last year. Our 2019 business targets are: sales revenue JPY 500 bn.; operating profit JPY 36 bn.; net profit attributable to the owners of the parent company JPY 19 bn. We will generate free cash flows equivalent to 2018 by earlier collection of accounts receivables and inventory reduction and reduce net interest-bearing debt to JPY 65 bn. or less. Dividend payout per share will be JPY 60, up by JPY 10 from 2018.

■ Organization Chart (from January 2019)



Message from CEO of DMG MORI AG

Christian Thönes

DMG MORI AKTIENGESELLSCHAFT
Chairman of the Executive Board
DMG MORI CO., LTD. Vice President

DMG MORI can look back on a very successful, eventful year 2018. In addition to record figures for order intake, sales revenues, EBIT and free cash flow, we achieved a lot and have shown our innovative power. As "Global One Company", we actively lived our motto "Dynamic . Excellence". **DMG MORI is the sustainable and global innovator in the manufacturing industry.**

DMG MORI continues to see a positive development – technologically, structurally and culturally:
› **technologically**: Dynamically, we drive forward our innovation strategy for our future topics and focus on complete solutions for Automation, Digitization and ADDITIVE MANUFACTURING.
› **structurally**: Through the appointment of Dr. Eng. Mori as the new Chairman of our Supervisory Board, we have sustainably strengthened our position to actively shape the future together with our customers and partners.
› **culturally**: As "Global One Company", we live a modern company culture and commit ourselves to clear values. DMG MORI is an attractive employer. The health and satisfaction of our employees has also high priority.

Automation is the key to flexible production systems. We have continuously expanded our automation portfolio at all locations. With modern pallet and robot-supported workpiece handling, we enable our customers optimum productivity.

Digitization is changing our world quickly and radically. With **CELOS**, **ISTOS**, **WERKBLiQ** and **ADAMOS**, DMG MORI now has a consistent digitization strategy – "Integrated Digitization" – for customers and suppliers.

ADDITIVE MANUFACTURING is one future area with high growth potential. With a strategic 30% share in INTECH, DMG MORI further expanded its position.

In addition, to our five strategic future topics — Automation, Digitization, ADDITIVE MANUFACTURING, Technology Excellence and DMG MORI Qualified Products (DMQP) — we are focusing on **Quality** and **Service**, **Employees, Global One Business Excellence and Sustainability**. These are further important pillars of our strategy.
› **"First Quality"** – we drive this with numerous measures: For example, since 2018 we have been offering a 36-month warranty period for all motor spindles of the "MASTER" series – without restriction on hours.
› **"Customer First"**: At DMG MORI, the increase of our customers' service satisfaction is a top priority. We also want to become the service champion with excellence for our customers!
› Our **employees** give 100% support to DMG MORI. That's why we do the same for them. We take our responsibility seriously. Together, we want to become even better. At this point, we want to express our special thanks to our employees. For their high commitment and great performance.
› **GLOBE** stands for **Global One Business Excellence**. Excellence in integration, innovation and performance – we apply these principles in our "Global One Company". Every day. The harmonization of systems and processes forms the basis for this.
› As innovation leader, we also think further in terms of **sustainability**: Our complete automation and integrated digitization solutions enable our customers to use their machines, tools and further production factors highly efficiently. With numerous social projects and initiatives, we also show that we live corporate responsibility.

We have a challenging year ahead of us with changing market conditions. We have to adapt to it. With our stable leadership team and our unique combination of dynamic and excellence – as "Global One Company". We have stable structures, a TOP management and great trust in our whole team. Our employees are our biggest asset! All the best!

Management Message

DMG MORI's high-quality and high-efficiency total production solutions generate values for customers and society.

Message from Executive Vice President

Hiroaki Tamai

DMG MORI CO., LTD.
Executive Vice President

The employees are the most important management resource for innovation. DMG MORI mixes central management, moderate alignment, and authority delegation policies in recruitment and talent development activities. For instance, the headquarters oversee senior managers of each location, while entry- to mid-level employees are locally managed.

CO makes long-term investment in human resources. In order to mitigate the dependency on our Japanese and German workforce, we started hiring new graduates based in each region and have offered them both task-specific hands-on trainings and group-wide trainings. Since the recruitment system was launched in 2017, 20 local graduates from 5 countries decided to join us by 2019.

The leadership training for selected employees, initiated in the U.S. in 2018, reflects our “moderate harmonization” policy. The training was later made available to those who work/live in Europe and Asia, and now the number of applicants surpasses 200. 60 were chosen and have completed the course so far and another 30 will participate this year, hopefully bringing back leadership skills and making a change in their home bases.

Hirotake Kobayashi

DMG MORI CO., LTD.
Executive Vice President

In FY 2018, DMG MORI generated more profit than in the previous term: sales revenue of JPY 501.2 bn. (up by 16.7% year-on-year), operating profit of JPY 36.3 bn. (up by 23.4% y-o-y), and net profit attributable to owners of the parent company of JPY 18.5 bn. (up by 21.3% y-o-y). Free cash flows exceeded JPY 30 bn. for 2 years straight so that we successfully decreased net interest-bearing debt to JPY 82.8 bn. at fiscal year-end 2018. Equity ratio attributable to owners of the parent company as of December 31st amounted to 21.0%, up by 2.0% y-o-y.

In FY 2019, we expect a shift towards an adjustment phase, although the overall order volume will remain high. Considering also the impact from weak Euro, our business targets for FY 2019 are: sales revenue of JPY 500 bn.., operating profit of JPY 36 bn.., and net profit attributable to owners of the parent company of JPY 19 bn.

Annual dividend payout in FY 2018 increased by JPY 10 to JPY 50 per share with the dividend payout ratio being 34.7%. In FY 2019, we will once again increase dividend payout to JPY 60 per share for the sake of stable shareholder return.

We will further strengthen our financial structure, share the generated values with our shareholders and investors, and build sound relationships based on constructive dialogue and mutual trust. We appreciate your continued support for our business.

Financial Highlights

Financial Highlights

DMG MORI Group adopts IFRS since fiscal year 2015 to improve international comparability of financial information in the capital market, and to consolidate accounting policy throughout the group.

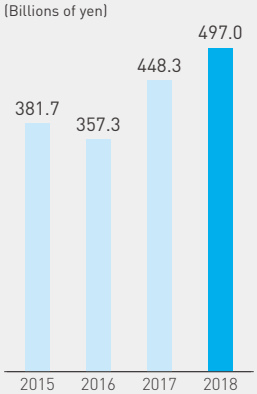
	In billion JPY				In million EUR			
	2018	2017	Changes	Changes in %	2018	2017	Changes	Changes in %
Order intake	531.2	478.4	52.8	11.0	4,072	3,776	296	7.8
Sales revenue	501.2	429.7	71.6	16.7	3,844	3,391	452	13.3
Operating profit / EBIT	36.3	29.4	6.9	23.4	278	232	46	19.8
(Operating profit margin)	7.2%	6.8%			7.2%	6.8%		
Profit before taxes / EBIT	31.3	24.8	6.5	26.1	240	196	44	22.5
Net profit	19.4	15.7	3.7	23.6	149	124	25	20.0
Net profit attributable to the owners of the company	18.5	15.3	3.3	21.3	142	120	21	17.8
Cash flow from operating activity	49.4	31.4	18.0		379	248	131	
Cash flow from investment activity	−19.0	−1.4	−17.6		−146	−11	−135	
Free cash flow	30.4	30.0	0.3		233	237	−4	

January – December 2017: 1 EUR = 126.7 JPY (average rate for the period)
January – December 2018: 1 EUR = 130.4 JPY (average rate for the period)

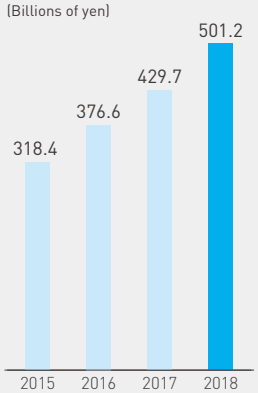
	2018	2017	Changes
Employees	13,042	12,375	667

*Employees at the end of each period

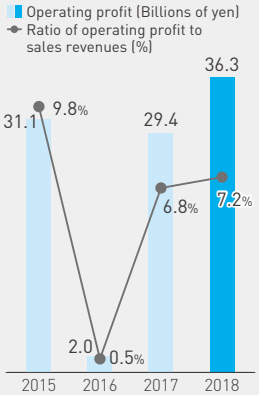
■ Machine tool related order intake



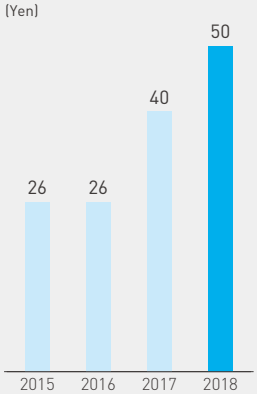
■ Sales revenues



■ Operating profit
Ratio of operating profit to sales revenues



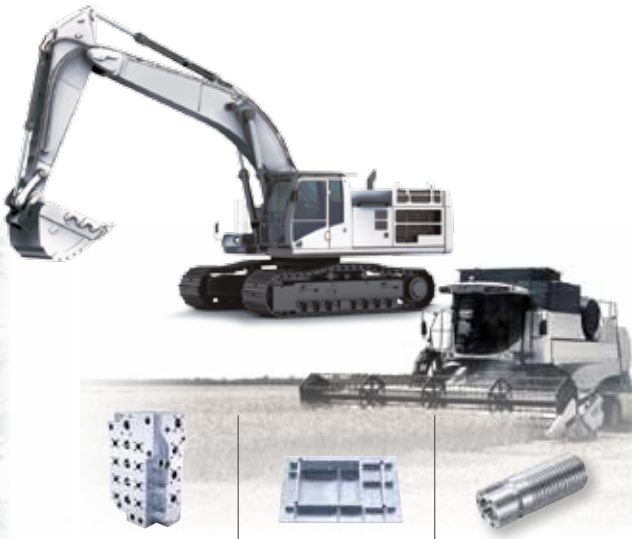
■ Dividends per Share

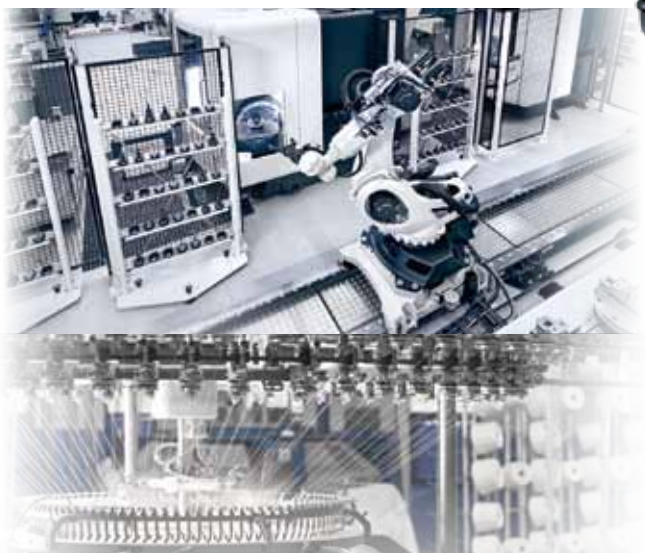


Machine tools involved in our life

Machine tools are fundamental to technological advancement in all the industries including automotive, aerospace, medical, and IT & communication industries. They are even an integral part of the production of daily-use commodities. Evolution of machine tools makes our lives richer.

Machine, Robot, Social infrastructure





Control valve

Seat frame

Connector

Construction machine parts

Pump housing

Spool

Aerospace

High pressure compressor housing

Powder nozzle holder

Compressor disc

Fan disk

Torque link

Blisk

Automobile, Motorcycle, EV


Gearbox housing

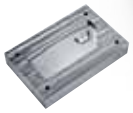

Cylinder block


Wheel hub


Crankshaft


CVJ inner race


Mold for Engine cover


Mold for Glove box lid

Resources and Energy


Turbine blade


Drill head


Ring


Hydroelectric turbine

Semiconductor, IoT, Sensor


Optical communication slide sleeve


Scroll

Die & Mold, Precision parts

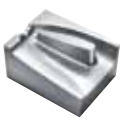

for Hobby


for Training shoes


for PET bottle


for Railway model


for Mobile phone


for Handy cleaner

Medical


Knee joint


Hip joint


Denture


Socket


Bone screw


Bone plate

Transition of materials and technological innovations

With the continuous industrial development, we are often requested to machine new materials, which require more sophisticated technologies than conventional materials such as simple metal or alloy. DMG MORI has been generating breakthrough technological innovations to machine tools almost every 10 years and will continue making efforts to machine all the materials with high-accuracy.

1952 | 1970s | 1980s | 1990s | 2000s

Technical innovations every 10 years

Numerically Controlled Lathes

Vertical Machining Centers

Horizontal Machining Centers

Multi-axis Machines

Change of material

Aluminum

Steel

Casting

Titanium alloy

Aluminum alloy

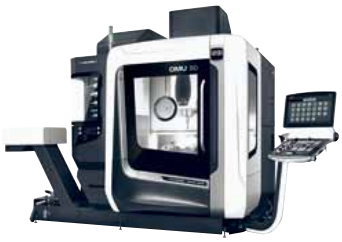
Copper alloy

Common metal | Diverse alloy

Lasertec

2010s

2020s



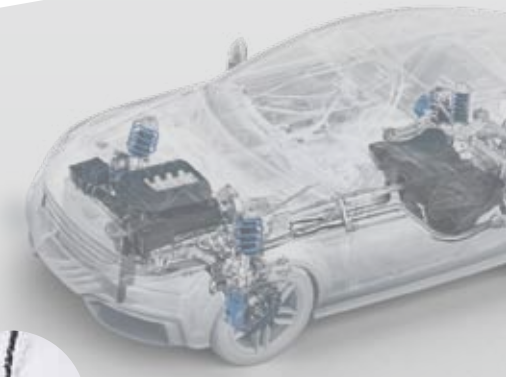
5-axis Machining Centers

Additive Manufacturing

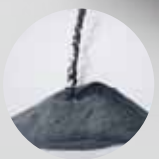
Ultrasonic

Future

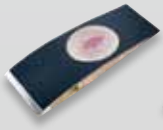
Brittle materials



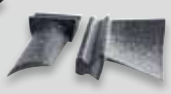
Composite materials



Admixture materials



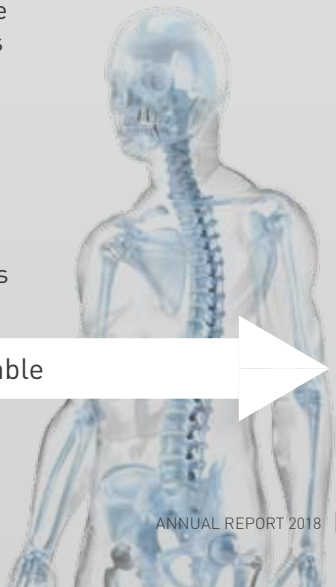
Carbon Fiber Reinforced Plastics (CFRP)



CMC (Ceramic Matrix Composite)

Different materials

Zerodur / Glass

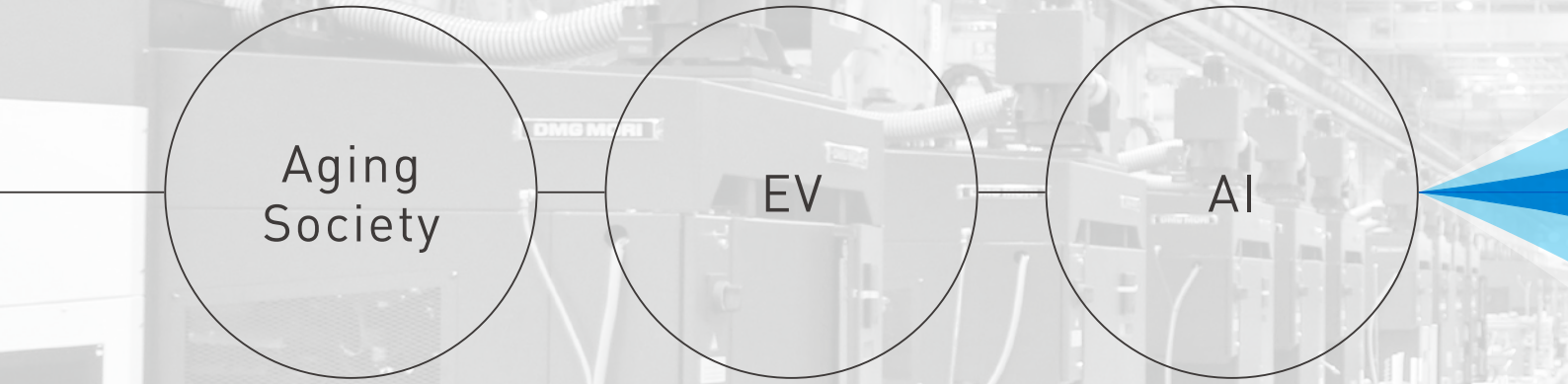


New materials:light-weight, highly heat-resistant and durable

Our solutions toward changes in the society

DMG MORI keeps pace with changes in our society – such as shift to EV (electric vehicle), development of AI (artificial intelligence), and aging society. Our group responds promptly to ever-changing requirements.

Current trends



Aging society will boost demand for production of medical parts. Moreover, it will change the production sites by bringing process integration and automated workpiece handling to the shopfloor in compensation for limited human resources.

EV-shift will diversify materials of automobile components and expand the fields to apply cutting, ultrasonic, and laser technologies. Even prior to a complete shift to EV, hybrid cars will increase the number of components of engines, motors, batteries, and other parts. This will positively affect the machine tool industry.

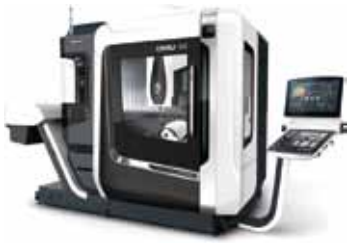
AI-shift will lead to increased demand of semiconductor components and the production equipment with ultra-high precision parts. AI technologies integrated in machine tools will continuously make advancement to improve productivity of our customers, for example by compensating vibrations of spindles, the heart of machine tools, and thermal displacement, or performing preventive maintenance through learning machine history and sensor data.

Direct

DMG MORI's Solutions

STEP1

Multi-axis / Integrated solutions



STEP2

Automation

STEP3

Digitalization

Service

One-stop Service

Our solutions toward produ

DMG MORI provides all kinds of solutions for both process segmentation and process aggregation in response to fluctuations in production volume in the manufacturing industry.

In-machine travelling robot

Round pallet system

Carrier pallet pool

Number of users

Large

MATRIS

5-axis/Mill-turn

Pro
segme

DMU

NLX

Additive manufacturing

NTX

CTX-TC

NVX

Small

Multi-type, small-quantity production

Medical

Aerospace

High pressure compressor housing

Fan disk

Blisk

Mold

for PET bottle

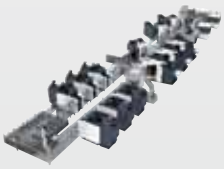
Wheel hub

Auto, Motorcycle

ction volume fluctuation

Linear pallet pool

Gantry loader



Full-sized turnkey solutions

cess
ntation

CMX

NHX

Full automation/
turnkey solutions

Multi Sprint

ALX+Bar feeder

Mass production

Resources and Energy

Ring

Turbine blade

Semiconductor

Optical communication
slide sleeve

Auto, Motorcycle

Connector

Construction machinery

Scroll

Joint

Cylinder
block

Crankshaft

DMG MORI's value creation

Management resources

Human

- Management leadership
- Diversity in workforce: approx. 13,000 employees in 46 countries

Intellectual

- Business knowhow as the market leader
- Total skills in development, production, engineering and software

Manufactured

- 14 production sites across the globe
- In-house production and internal supply of key components

Social and relationship

- Global branding
- Global supply chain
- Overseas direct-sales network

Financial

- Cash generation for global M&A projects
- Proactive capital investment
- Profit generation by proposing value to customers (sales revenue and operating profit)

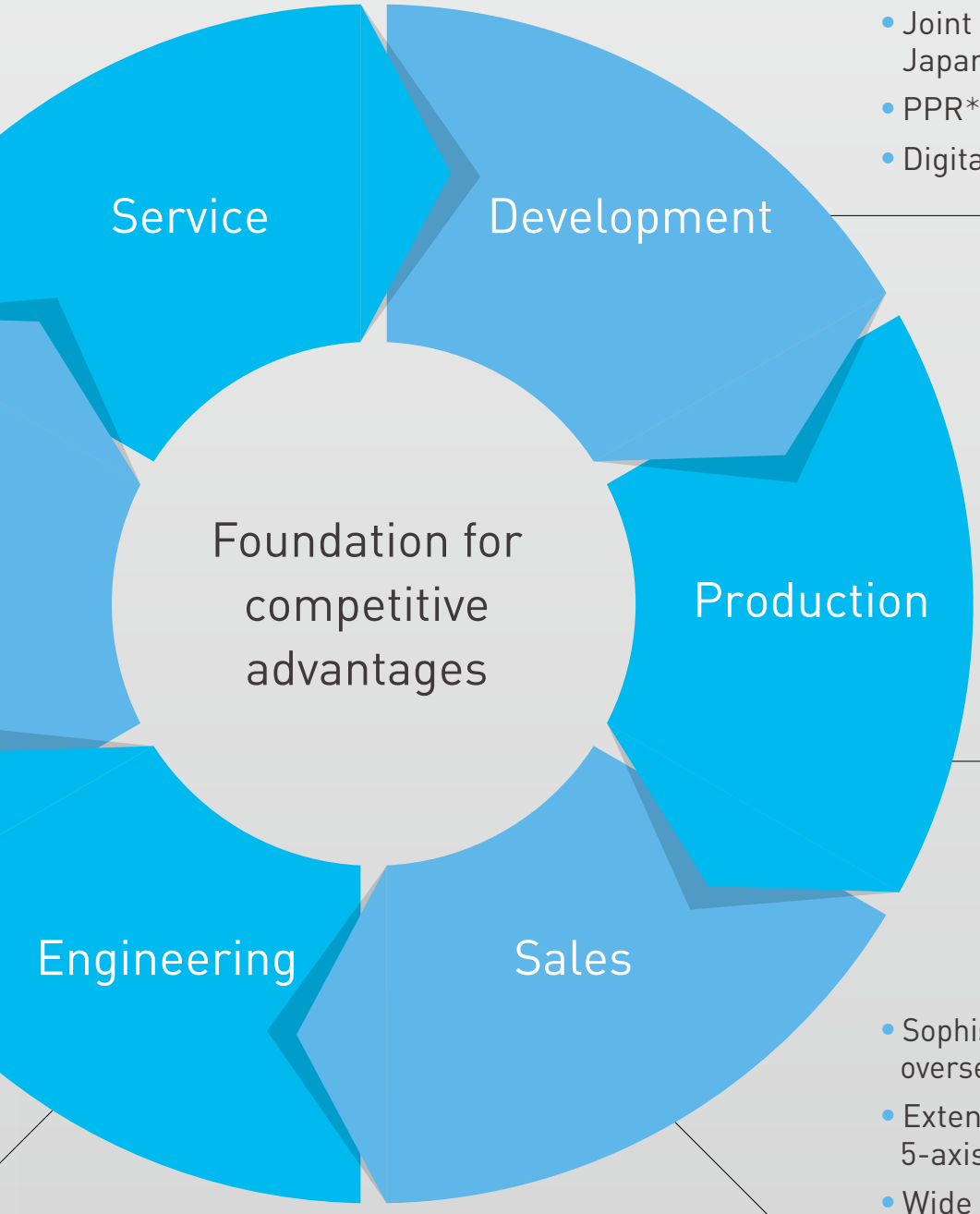
- 3 global parts centers
- Qualified spare parts inventory
- Service center with 24/7 operation
- Long-term warranty service
- Operator training
- Hospitality to visitors

- Connectivity to any IoT platform
- Performance improvement of universal machines (Technology Cycles)
- Predictive maintenance

- Automotive, Medical, Aerospace, and Die & Mold Excellence Centers
- Extensive machining solutions
- Turnkey system from own source

model

High value-added and single sourced solutions from production to after-sales service



- Joint development by Japan and Germany
- PPR*
- Digital Innovation Center

* Please see page 44

- Geographically optimized production
- In-house production of key components
- Joint procurement by Japan and Germany
- TQM activities

- Sophisticated solutions from overseas direct-sales network
- Extensive product lineup of 5-axis machines
- Wide coverage of peripheral equipment (DMQP)

Four companies supporting value creation

Development

Production

Mission

Construction of a prosperous

Develop safe and environmentally-friendly products and solutions that increase customers' profits and strengthen DMG MORI's competitive advantage

Produce and ship high-quality products on schedule and efficiently by combining optimized procurement and advanced in-house manufacturing

Overview

The Development Company is responsible for strengthening DMG MORI'S competitive edge. To achieve this goal, it identifies customers' needs and transforms them into products that increase customers' profit, improve operators' usability, create safe working conditions, and fulfill environmental requirements. The priority tasks include: new product development to meet target customers' needs; development of basic techniques and elemental technology; product upgrading; troubleshooting; sales support; production support. Our strength lies in the successful and productive joint development system with Japanese and German contributions. Both sides successfully cooperate in research and development of new functions and software, as well as integration of mechanical and electrical components and machine models, to further improve the efficiency of production and development activities.

The goal of the Production Company is quick delivery of high-quality machine tools by an integrated production approach from machining of components, such as bed and column, to assembly and product inspection. Another important task of the Company is purchasing from the best-fitting partners that fulfil our requirements for production capacity, financial situation, and commitment to compliance. DMG MORI has 14 production locations worldwide, and each of them is specialized in certain machine models. This is one of the strengths of DMG MORI next to its global supply chain network and in-house production of key components including spindles. DMG MORI utilizes its digital solutions at its own plants to improve production efficiency.

Management messages

Executive Director,
Dr. Eng.

Makoto Fujishima

Demographic changes accelerate the trend for replacing human operators by machines. The demand for automation solutions is expanding from medium-mix & medium-volume to high-mix & low-volume production sites. DMG MORI will respond to customers' requests promptly with innovative machine tools, peripheral equipment, machining technologies, and software. To deliver such products, we integrate our development activities for new models, functions, custom designs, and quality improvement with those of elemental technology. Our joint development system with Japanese and German contributions will reduce the total number of new and existing machine models to 130 by 2020 to improve production efficiency. In addition, we will grow software sales by enhancing product lineup of Technology Cycles, which makes complex machining easy and quick by universal machine tools and standard tools and fixtures.

Senior Director

Minoru Furuta

In 2018, we successfully increased production volume thanks to a strong market demand. On the other hand, some of our customers were burdened with shipment delays and prolonged delivery times. We have prepared ourselves to achieve our targets in 2019; we will launch in-house production of key components using our own products and technologies. At the same time, we will review the entire business process from order intake to shipment and eliminate unnecessary cost and time lags to deliver high-quality products on-time. By uniting the strengths of all employees responsible for production, namely custom design, procurement, machining, suppliers, assembly, and product inspection, we aim for significant and visible improvement in our factories as well as in our financial results.

Sales/ Service/ Engineering/ Parts (SSEP)

Headquarters

industrial society

As an engineering trading company, provide the whole package from machine tools, peripheral equipment, systems, software, to lifecycle services

Construct business environment by allocating personnel, goods, and capital according to the DMG MORI Group's business strategies and manage risks

The SSEP Company provides high-end solutions to customers from a single source. It's the strength of DMG MORI to cover the entire processes from technology proposal, quotation, sales contract, runoff at plant, shipment, acceptance, to after service. Approx. 1,000 skilled employees in sales, 1,500 in service, 1,000 in engineering, and 500 in spare parts department work together for even higher customer satisfaction. SSEP has 157 locations in 42 countries. By joining forces with Development and Production, SSEP is committed to delivering solutions promptly to any kind of inquires from customers, regardless of their location, industry, and size of business.

Our Headquarters accommodate administrative departments accountable for compliance, governance, corporate branding, HR development, finance and business controlling, IT infrastructure, etc. of the entire group. They lay the foundations for DMG MORI to be the first choice of customers and to continue creating values. For this purpose, our Headquarters focus on diversity, risk control of business operations, financial soundness, appropriate relationships to stakeholders to fulfil a wide range of requirements as a global company.

Executive Officer

Keiichi Ota

Globalization, high-mix & low-volume production, and a lack of skilled human resources are part of the challenges our customers are facing today. DMG MORI has been enhancing solutions for these issues with 5-axis and mill-turn technologies, automation, and digitization. The next request from industries will be lifecycle services for higher machine availability by smartly connecting all solutions. This requires a profound understanding of the customers' situations and sophisticated engineering skills to combine different solutions. DMG MORI will strengthen its engineering team with external partnerships and internal trainings to continue developing leading-edge solutions.

Executive Vice President

Hiroaki Tamai

Export control, compliance, and IT security are the key areas of risk management for global business operations. The entire group recognizes the importance of export control regulations and strictly follows the rules of countries where each plant is located. As for compliance, we made careful preparations with AG to conform with GDPR (General Data Protection Regulation), which came into effect in the European Union in 2018. Specialized committees for each business area and product take necessary actions to ensure IT security. In addition to strengthening IT infrastructure and control regulations, we pay utmost attention to preventing human errors and cyber attacks by third parties.

DMG MORI- Global One Company

Status of sales

With approx. 10% (estimated), DMG MORI has the highest market share in the global market. In other words, DMG MORI has approx. 150,000 customers with 300,000 installed machines worldwide. This large business foundation allows us to develop unique, sophisticated, and comprehensive solutions, combining machines, engineering and software.

Global share **about 10%**

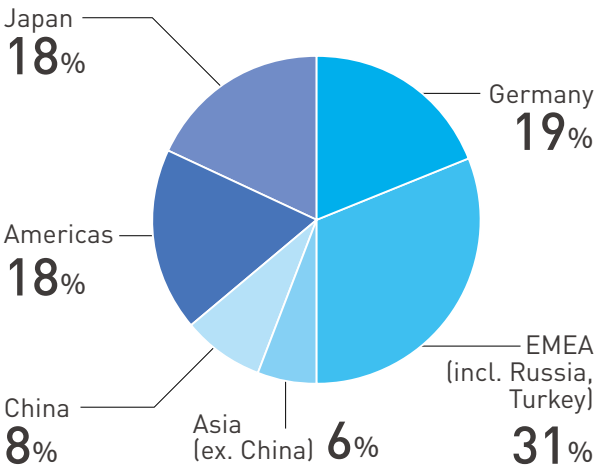
Number of units delivered **about 300,000**

Number of customers **about 150,000**

Order composition by region

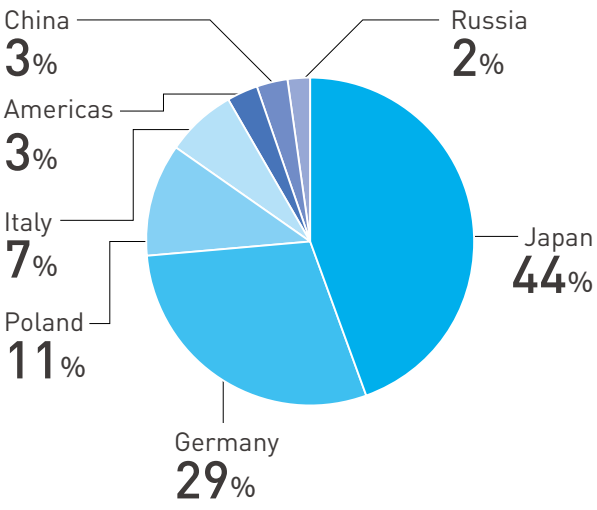
The machine tool industry is susceptible to macro-economy and capital investment trends, and the market demand constantly fluctuates. Nonetheless, DMG MORI group successfully sustains a stable demand and order intake with its customer bases in four major markets. Most importantly, around half of the turnover comes from Europe, where the capital investment cycle varies from country to country.

Our machines are designed to create added value for customers in the most advanced economies, but they also contribute to strengthening the manufacturing industry in China, India, and other evolving markets.



Production by region

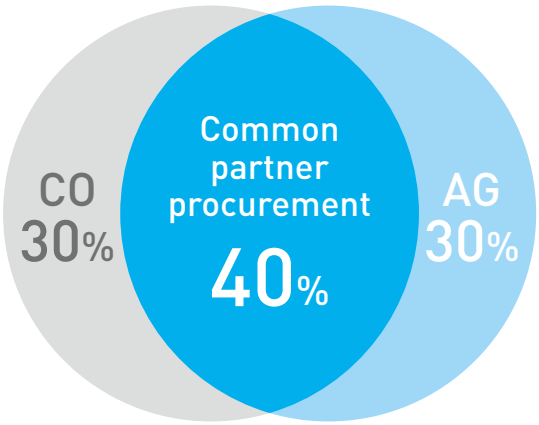
DMG MORI has 14 production facilities in Japan, Germany, the United States, China, Italy and Russia; this facilitates transportation and secures short delivery times while meeting the diverse local needs. In addition, it allows us to reach flexibly to the recent trend towards protectionism.



Procurement

DMG MORI has an efficient global supply chain network consisting of approx. 3,200 suppliers of DMG MORI AG and 1,100 suppliers of DMG MORI CO. They deliver parts and components to our factories in Japan, Europe, the United States, and China.

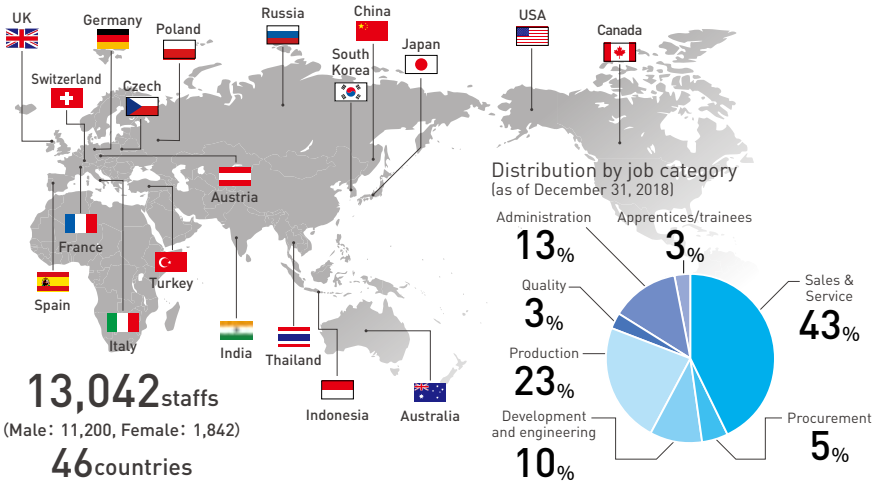
About 40% of goods are delivered from 160 joint suppliers of DMG MORI CO and AG. Usage of common parts at the same prices based on joint evaluation standards and the resulting higher purchasing volume contributed to stronger relationships with suppliers and increased benefits for the company.



Procurement amount base

Human resources development

We believe that the diversity in the workforce leads to dynamic culture and sustainable growth. DMG MORI has approx. 13,000 employees with different mother language, nationality, gender and specialization. DMG MORI makes the best use of its diverse employee base to satisfy the various requirements that we face from customers and business partners.



Support for research

DMG MORI proactively supports research activities worldwide through the Mori Manufacturing Research and Technology Foundation and MTTRF (Machine Tool Technologies Research Foundation). We loan out our machine tools to 11 universities and 1 research institute in- and outside of Japan to support development of machine tool technology.

University and research institute we donated or lend machines	
USA	University of California, Davis
	University of North Carolina Charlotte
	MTTRF Berkeley Institute
Ireland	University College Dublin
Switzerland	Swiss Federal Institute of Technology Zurich

University and research institute we donated or lend machines	
Italy	University of Florence
Austria	Vienna University of Technology
Belgium	Katholieke Universiteit Leuven
Japan	Kobe University
	Kanazawa University
	Osaka Institute of Technology
	Toyohashi University of Technology

Total: 11 universities + 1 research institute

Events in 2018

January

Start of 3-year warranty for MASTER-series spindles

Pfronten Open House

Establishment of TECHNIUM

February

Disclosure of financial results 2017

March

Sales start of MATRIS robot system

Sales start of NTX 2000/2500/3000 2nd Generation

2018

April

Welcome ceremony for new employees

Opening of DMG MORI Child Care Centers

May

Iga Innovation Days 2018

Establishment of Die & Mold Excellence Center in Iga

Appointment of Dr. Masahiko Mori, President of DMG MORI Co., Ltd., as Chairman of the Supervisory Board of AG

Sales start of NHX 4000/5000 3rd Generation

June

Opening of Tokyo Digital Innovation Center

Service start of TECHNIUM

August

Establishment of 5-axis Technology Study & Research Group

Introduction of minimum rest period of 11 hours between working days

July

Annual General Meeting of MTTRF

September

IMTS (Chicago)

Sales start of ALX series

October

70th anniversary of DMG MORI Co., Ltd.

Grand Opening of FAMOT (Poland)

Establishment of DMG MORI SAILING TEAM

November

JIMTOF2018 (Tokyo)

Sales start of DMU200/340 Gantry in Japan

December

Extension of minimum rest period to 12 hours between working days

CORE COMPETENCE

Core Competence

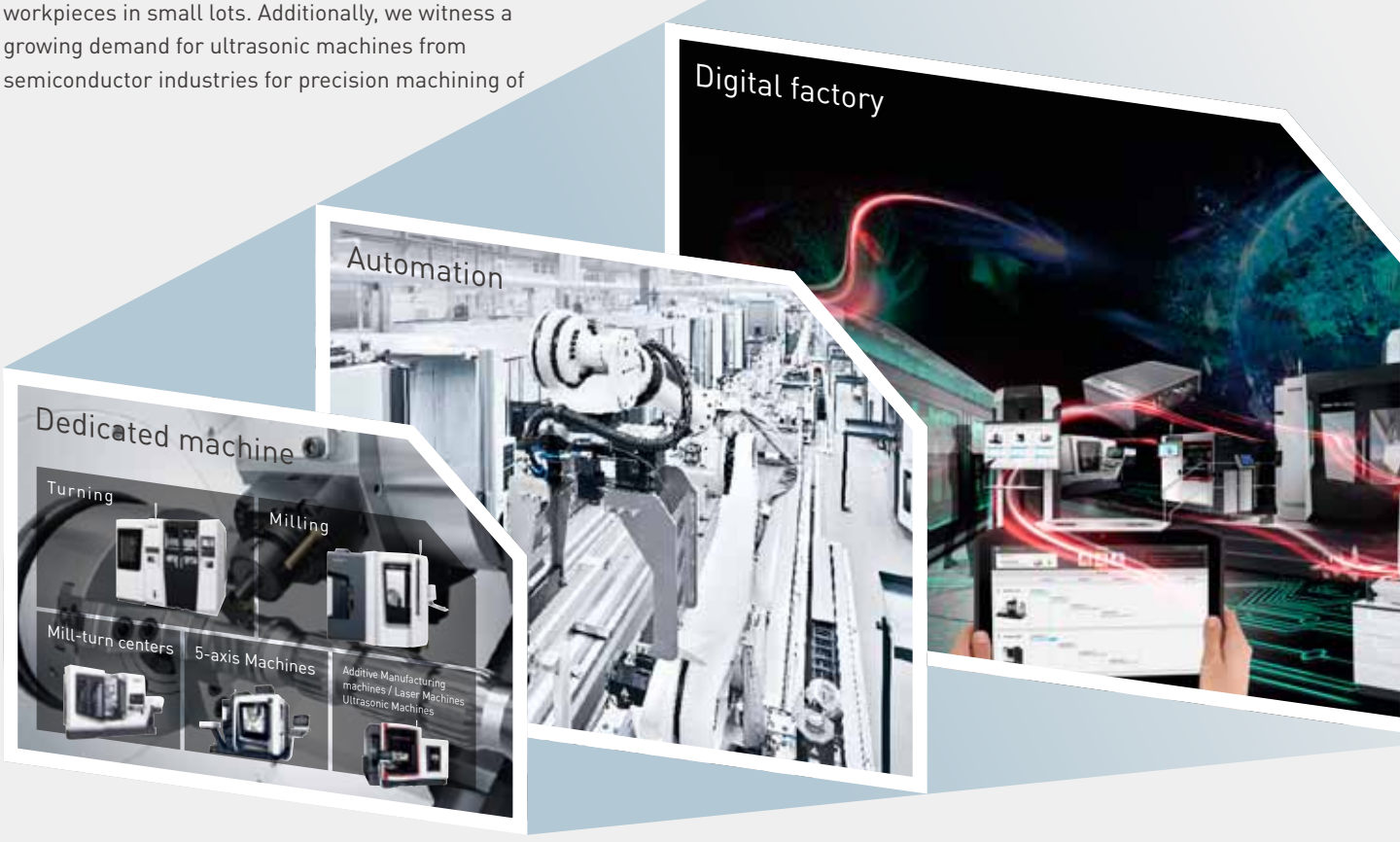
Foresight of machine tool market

DMG MORI's unique business model facilitates further growth in the expanding machine tool and its related market.

Our group differentiates itself from other machine tool manufacturers by a unique business model to deliver the entire production systems including peripheral equipment and software in addition to machines. As a total engineering company, we provide these systems to the global market from our own source. We established a new business model to provide holistic solutions by our own employees from development, procurement, production, sales, installation, to operator training.

Currently, we estimate the global market value of cutting machine tools as JPY 5 trillion. However, there is also an increasing number of specialized machines such as transfer machines and gear-manufacturing machines being replaced by multi-axis machines equipped with application software and newly developed cutting tools. Furthermore, the segment of additive manufacturing, in which we already entered as a group, attracts the attention from manufacturers of complex-shaped workpieces in small lots. Additionally, we witness a growing demand for ultrasonic machines from semiconductor industries for precision machining of ceramics. These areas extend the value of our potential market to approx. JPY 8 to 10 trillion. In addition, there is a rapidly growing demand for automation systems consisting of machine tools and attached peripheral equipment such as robots and pallet changers due to the global shortage of labor and high-skilled operators. The average price for these types of automation systems is at least 1.5 times higher than the stand-alone machines. This leads to an assumption that the market potential including automation systems and Digital Factory solutions will be at least JPY 15 trillion or more.

Based on the above assumptions, we are convinced that our unique business model of providing holistic solutions from our original source in a single step sets us in a superior position in our industry and acts as a driver to increase our market share and underpin sustainable growth for mid to long term.



A trend for more axes and technology integration

Competitive advantage based on accumulated knowledge and experience, technology excellence, and extensive product lineup

As the shape of workpieces used in aerospace, medical, automotive, die & mold, and precision machinery industries become more and more complex, we observe a growing demand for highly accurate and productive machine tools. Mill-turn machines accommodating features of both turning and machining centers, and 5-axis machines composed of 3 linear axes and 2 rotational/swiveling axes open doors for more flexible machining operation.

5-axis technology became popular in Germany prior to Japan. Thanks to more than 30 years of experience in 5-axis machining, accumulated knowhow, technology excellence, and extensive product lineup, DMG MORI has a clear competitive edge in the machine tool industry. Some of the advantages of 5-axis machines are process integration and machining of complex-shaped workpieces. That is why we expect a growing demand for 5-axis machining centers to produce complex workpieces in small lots for semiconductor, aerospace, and medical industries. Moreover, 5-axis machines reduce the number of set-up changes and special tools and fixtures. This will save the machining cost and improve the machining quality and accuracy of conventional workpieces as well.

More than 40% of orders from Europe, the United States, and China are 5-axis machines. In these areas machine tools' user base is widespread compared to Japan, where automotive and its related industry dominates the market and prioritizes process division for the sake of efficient mass-production to process integration. Less than 15% of the Japanese machine tool users own 5-axis machining centers. Against this background, DMG MORI engages itself in bringing 5-axis machines and technologies closer to the Japanese customers by lending free of charge 70 units of DMU 50, a representative model of 5-axis machining centers, in association with the 70th anniversary of DMG MORI. The company provides 30 training sessions (private lessons) by using the machines installed in customers' factories with a goal to develop more than 10,000 operators with 5-axis machining skills per year.

At JIMTOF 2018, one of the worldwide largest machine tool exhibitions held in Tokyo, DMG MORI celebrated the Japan Premiere of DMU 200 Gantry and DMU 340 Gantry. Both are XXL 5-axis machining centers made in Pfronten, Germany, and were launched to the domestic market in November 2018.

YouTube

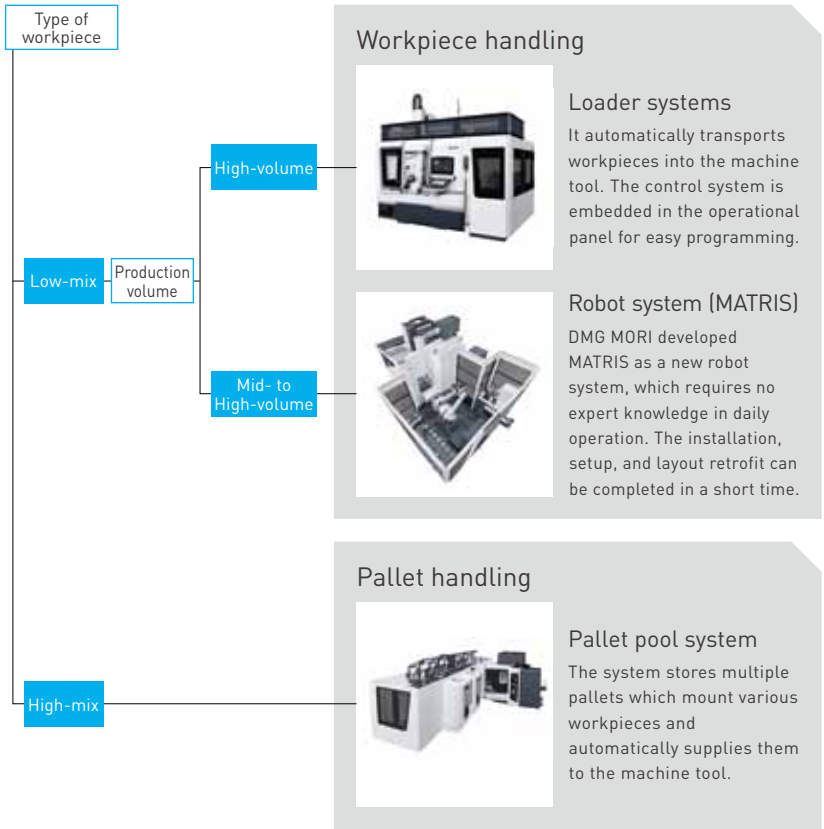
Automation system

Automation reduces workload of humans by assuming high-risk processes and repetitive work. Automation extends the hours of unmanned production and improves productivity.

Currently, our group makes preparation for providing automation systems to all our machines as standard to load and unload workpieces without human intervention by using attached peripheral equipment to supplement machining. Automation provides us a variety of advantages: higher productivity and machine's availability through unmanned or nighttime production, better quality and process stability by eliminating human operation, by better work environment for workforce by allocating high-risk processes to machines and saving the number of operators.

In FY 2018, 24% of our order intake were related to automation. It increased from 17% in FY 2017. In response to the growing demand from manufacturing industries, we strengthen direct sales, in-house engineering and direct service. We expect our commitment will lead to further growth of automation-related orders to eventually reach 30% in FY 2020. Investment in the expansion of production capacity has cyclicality similar to macroeconomic trends. Nevertheless, we observe strong demand for investment in productivity improvement even during economic recession.

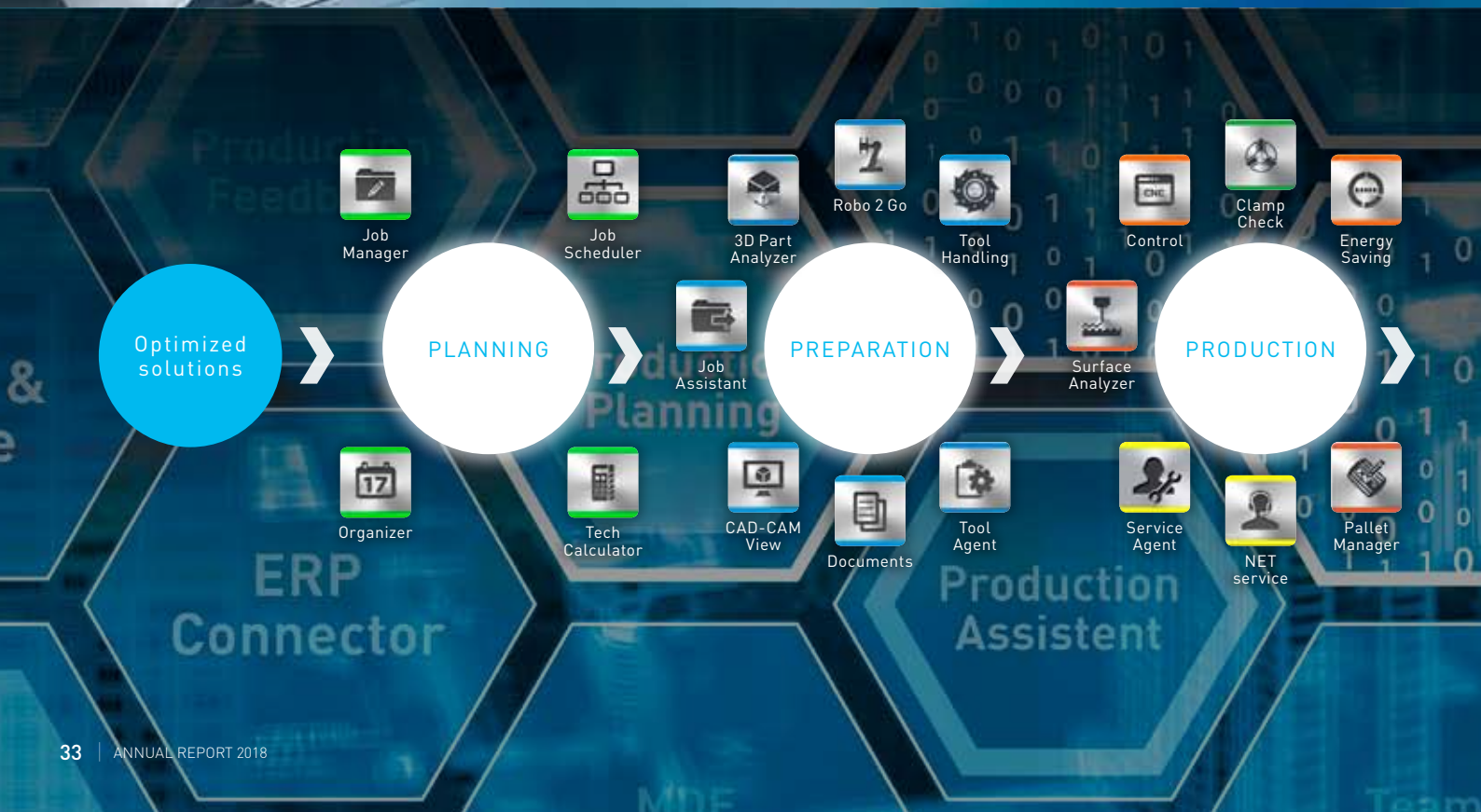
Automation systems can be roughly classified into 3 groups, depending on the type of workpiece and the production volume.



YouTube

Digitization

From a shingle machine to large manufacturing lines, we optimize production by connecting entire factory.



There is a growing demand from today's production sites for connecting machines in a network in order to properly manage material supply, machine operation and process control. The number of machines connected to the network is increasing from a single machine tool to whole production lines, and even to the entire factory. Efforts for improving machine availability are advancing day by day, for example by remote maintenance and status monitoring of every machine tool used all around the world, as well as by precise malfunction forecasting by utilizing network connection, software and sensors.

In 2013, we developed the application-based operating system CELOS as the foundation of factory digitalization. By using on-machine sensors and the CELOS applications, customers can monitor and analyze machine status, calculate overall equipment efficiency, and manage machines appropriately by preventive maintenance while machining is in progress. The multi-touch monitors of CELOS enable intuitive operation of machine tools just like smartphones and tablet PCs. The applications will be activated with just one touch from the application menu. Furthermore, CELOS connects machine tools to the company's internal systems. Integrated management of production plan, progress, schedules and more becomes possible by Job Manager (Job Assistant) and Job Scheduler functions. We have already shipped more than 10,000 machines equipped with CELOS that can handle big data internally and externally. The CNC (numerical control) used on our machines is provided by multiple suppliers. Thanks to this diversity in the choices of CNCs, the software we develop possesses a high degree of compatibility with different types of signals and programs. As a result, our customers have more options for IoT (Internet of Things) platforms to connect their machine tools.

YouTube

CELOS

CELOS was developed as an operating system to quickly and easily transform ideas into products. CELOS covers a wide range of areas with its unique functionalities. For example, a variety of applications tailor-made for every process, multi-touch operation panel that is innovatively easy to use, and security control by DMG MORI SMARTkey to define individual access rights.

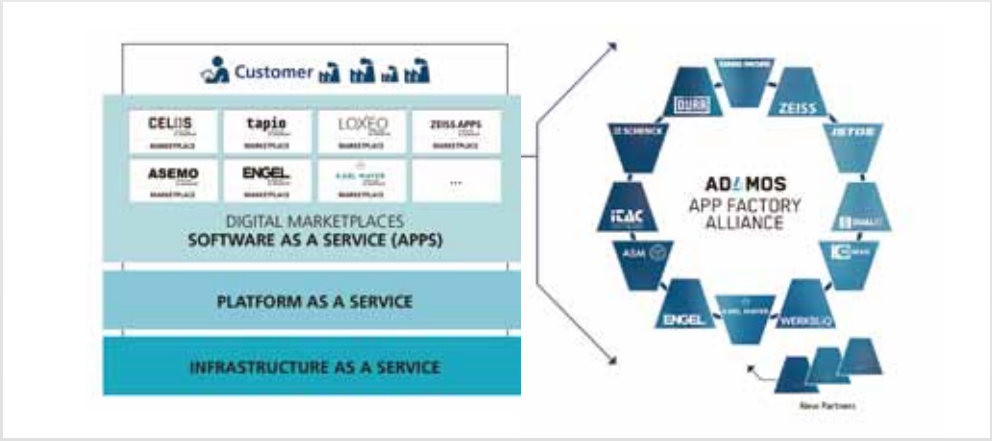
CELOS connects applications for production with other software including CAD/CAM, and visualizes all data related to production, for example the real-time status of assembly and shipment. Customers can monitor all production facilities by connecting CELOS machines with the company's production systems, and by doing so, build a global production network.

Technology Cycles

Technology Cycles are solutions to make complex machining easy and quick. Technology Cycles integrate machine tools such as 5-axis and mill-turn machines with cutting tools, peripheral equipment, and HMI (Human Machine Interface) including CELOS by embedded software. They make it possible to replace specialized machines, specialized programs, and special cutting tools by standard machines, cutting tools, and fixtures in machining, set-up, and measurement processes. With Technology Cycles, anyone can start production easily and quickly and achieve high quality. Currently, DMG MORI offers in total 34 Technology Cycles in 4 categories – handling, measurement, cutting, and monitoring.

ADAMOS

In 2017, DMG MORI launched ADAMOS (ADAptive Manufacturing Open Solutions), a new industrial IoT platform. This is a joint initiative with partner companies from different fields to facilitate standardization and development of digitalization as a machine tool manufacturer. ADAMOS is an open and neutral IoT platform that links machines, peripheral equipment, measurement devices, ERP, and software from any manufacturer. It allows one to improve quality of maintenance and production plans and to analyze the data for optimized production. ADAMOS will be especially beneficial to SMEs – our most important customers.



WERKBLiQ

WERKBLiQ networks machine operators, service partners, manufacturers, suppliers and distributors for a quicker transfer of knowledge and more productive business processes. It increases the availability of machine operators' machines with intelligent maintenance processes and reduces the amount of administrative work involved in everything from creating service orders, through documentation, to spare parts procurement.

ISTOS

ISTOS with its PLANNING SOLUTIONS products enables users to take the first crucial step towards digitization and to achieve more efficiency and agility in production along with their entire added value. Planning, controlling and feedback are the foundation for optimized production across vendors, applications and process boundaries and form the basis to integrate further compatible applications as required.

ISTOS GmbH and WERKBLiQ GmbH are DMG MORI AKTIENGESELLSCHAFT's sister companies to provide digital solutions.

DMG MORI's digital solutions

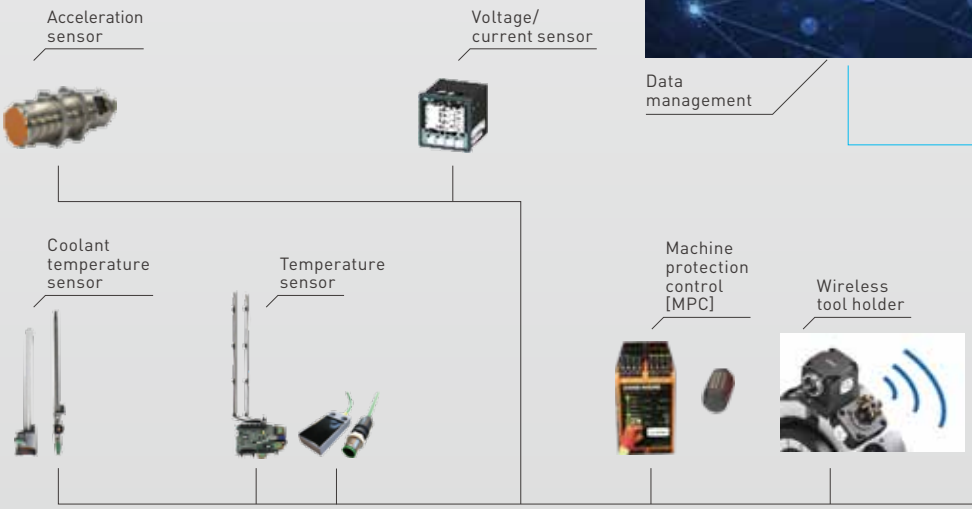
CELOS has all the necessary applications to control the entire production process. Using DMG MORI's products with network connection, IoT Connector can communicate information in all the new and old machines in customers' plants to the network, and even expand the connection to an IoT platform of a third party. IoT Connector supports all the major protocols including OPC UA and MT Connect.

Connected Industries

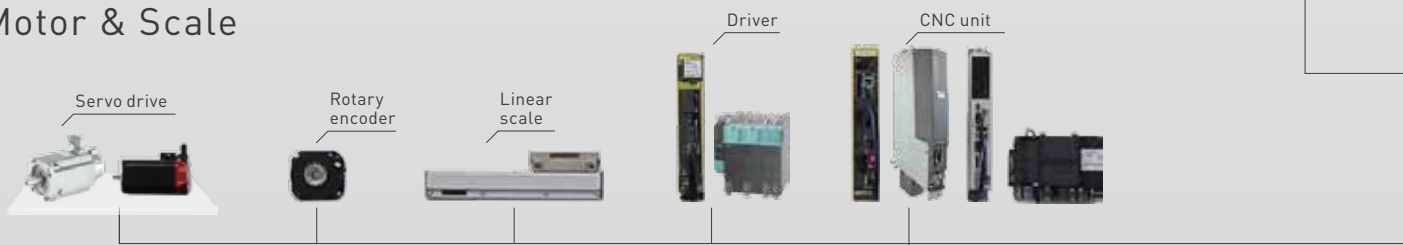
YouTube

Data management

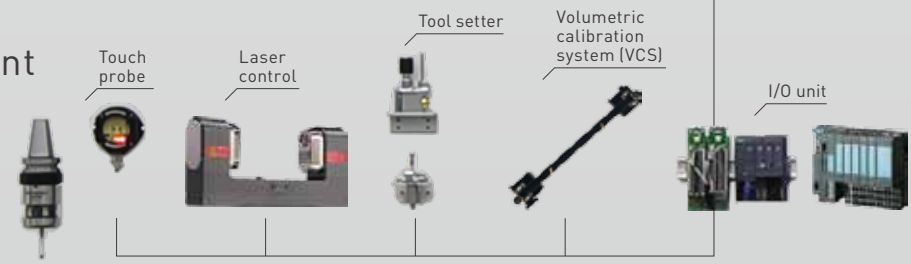
Sensors



Motor & Scale



Measurement



Different IoT platforms

Security

Automation controller

Edge heavy process / AI

Communication

IoTconnector

Supplementary machines

Robot

Loader

LPP

Washing machine

Tool presetter

Bar feeder

CELOS

Retrofit & 3rd party machine

DMG MORI's processing technology

Turning — more than a century of experience

In turning, a bar-shaped workpiece is fixed in a machine tool and spins continuously at a high rate of speed, while the tool is applied to the proper position and excess material is removed from the workpiece.

As the innovation leader in metal cutting, DMG MORI has worked to perfect the craft of turning since its foundation. The company offers a comprehensive product portfolio, encompassing machines for all industries and practically all materials. One driver of DMG MORI's innovations was the growth of the automotive industry. They required a cost-effective means of producing components on a mass scale. Most workpieces are further refined after turning, but to complete the process without changing machines, over recent decades DMG MORI has continuously improved and adapted its turning machines to the latest requirements. Most of the DMG MORI's turning centers can be extended with additional milling spindles to produce parts with even more complex geometry.

Milling — machining on all axes

In general, machine tools have 2 different approaches to machine workpieces – turning or milling. When the workpiece in a machine tool rotates, we call it turning. When the tool in a machine rotates, it is milling. In milling, the tools, of which there are dozens to choose from, and the workpiece made of a metal block or any other materials currently being processed, are moved in relation to each other along at least three axes to remove exactly the desired portion from the workpiece to create the intended form. In 5-axis machines, turning and swiveling movements are included as well, which enables the creation of highly complex geometries including curved surfaces by one machine. In other words, 5-axis machines achieve process integration and higher machining efficiency. From pure milling applications, 5-axis simultaneous machining, turn & mill machining to the integration of grinding, DMG MORI has played a major role in the development of the technology.

Advanced Technologies — the future of production

The ULTRASONIC technology of DMG MORI enables economical machining of complex-shaped workpieces made of hard-to-cut advanced material, such as ceramics, glass, corundum, tungsten carbide, cemented carbide, or fiber-reinforced material. The kinematic with tool rotation and ultrasonic oscillation in Z-axis direction reduces process forces by up to 40% in comparison to conventional machining. This leads to longer tool life and significantly better surface finishes of materials easily affected by problems, such as tool wear and damage to the material's internal structures. We further enhanced our lineup of ULTRASONIC machines to meet any kind of demand. The lineup includes the ULTRASONIC 10, a compact machine with a footprint of only 2m² suiting the medical / dental industry. Another machine, the ULTRASONIC mobileBLOCK, enables quick repair of fiber-reinforced material used on aircrafts directly inside the hanger, which had previously mostly been done manually.

Laser machining refers to technologies to cut, engrave, or mark on materials not by cutting tools but by irradiation of laser beam generated by optical devices.

Customers of DMG MORI's LASERTEC series can select the right laser source with different machining characteristics from diode, fiber, pico-second, or other laser sources. 3D laser machining technology is applied to injection molding, geometrical texturing on press mold, complex pocket machining, fine engraving, marking, and lettering. 5-axis laser precision cutting technology is required by manufacturing process of precision components of watches and medical devices. 5-axis laser drilling technology is used to drill cooling holes on jet engine parts of aircrafts and gas turbine parts. In area of diamond machining, laser machining is appreciated as green technology that require no consumables. It is regarded an alternative to conventional machining technologies such as grinding and electric discharge machining.

Additive Manufacturing — beyond cutting-edge

Additive manufacturing, also known as 3D printing, is technology to create desired shapes by depositing metal powder, melting it by laser, and eventually building workpieces designed as 3D model. DMG MORI offers two different additive manufacturing technologies. In selective laser melting (SLM) —also referred to as a powder bed method — laser melts metal powder and builds layers step by step. This is how delicate geometries such as lattice and honeycomb structures, as well as any other imaginable shapes, are created in one piece without seams. In additive manufacturing of metal components, selective laser melting has a market share of 80 percent. Another additive manufacturing technology is a powder nozzle method. In this method, metal powder is applied by the argon gas flow through a nozzle and melted by laser into a strand of liquid metal.

DMG MORI is the first player worldwide to offer the two most important additive manufacturing technologies of metal components.

REALIZER GmbH

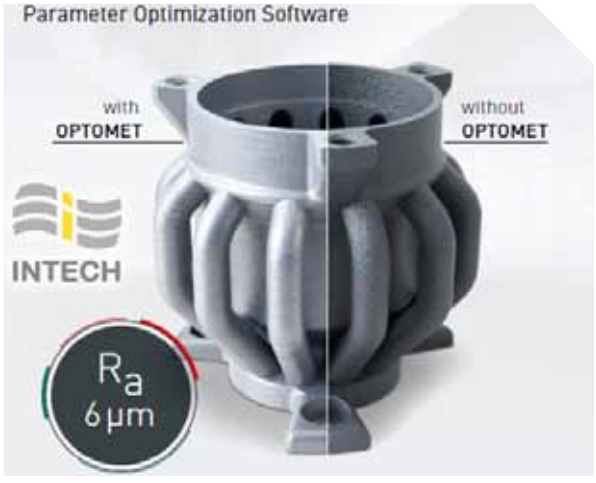
REALIZER GmbH in Borchen, Germany, has more than 20 years of experience and knowhow in selective laser melting (SLM), or a powder bed method. In 2017, REALIZER joined the DMG MORI Group and launched LASERTEC 30 SLM.

Sauer GmbH & Co.

Sauer GmbH in Stipshausen, Germany, produces ULTRASONIC and LASERTEC. The group company of DMG MORI offers holistic support to its customers from consultations on machine selection and optimization of production processes to turnkey solutions. Sauer has more than 30 years of experience in ultrasonic technology, and more than 25 years in laser precision machining. Some models of LASERTEC series employ 5-axis laser machining technology.

INTECH DMLS Pvt. Ltd.

In November 2018, DMG MORI AG acquired a 30% stake in INTECH in Bengaluru, India to strengthen its knowhow in additive manufacturing. OPTOMET, a new software of INTECH, makes it possible to achieve the best build quality without additional surface finishing. OPTOMET creates optimized process parameters automatically from data input of chemical composition and particle size distribution of the powder material. This approach is quickly adaptable to changes in customers' requirements and composition of powder material. Moreover, increased usage of recycled powder can reduce the material cost by 20%.



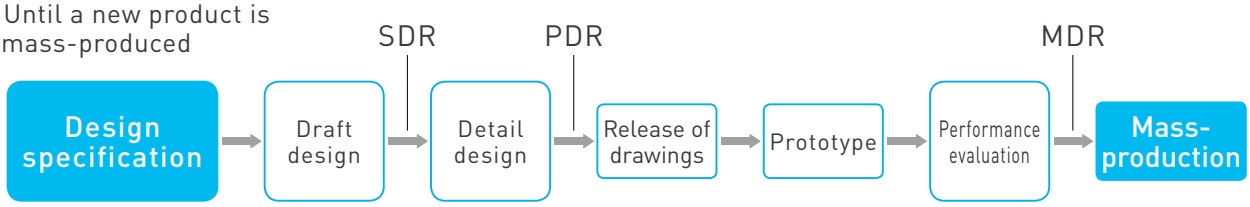
Development

Germany & Japan— Fusion of innovative concepts & workmanship

New product development process

We start development of new products by defining design specifications, and proceeds through concept design, detailed design, release of drawings, production of prototypes, performance evaluation to finally reach at mass-production. In general, this process will take 3 years, which means designers need to look ahead how customers' requirements and industry trends will change in a near future. The accumulated customers' information from 300,000 DMG MORI machines installed in 150,000 customers' sites is an important foundation to develop new machines. Prior to detailed design, DMG MORI holds a specification design review (SDR) to verify the concept against market requirements. The next gates are production design review (PDR) and mass-production design review (MDR). MDR takes place after finishing performance evaluation and before starting mass-production. Besides the machine and its performance, the management checks carefully if all the necessary items are ready for the machine to start operation at customers', such as sales catalogues, operation manuals, and development of service engineers with necessary skill sets.

■ Until a new product is mass-produced



Optimization of development

CO and AG have been driving integration of machines and components forward. Expanded usage of peripheral products and software made it possible to meet the various needs from customers, even with a downsized machine portfolio. The number of machine types was cut by half from more than 300 before integration to 152 by the end of December 2018. This number will further decline to about 130 by 2020. At the same time, we aim to reduce the variety in components of machine tools by 50% from about 270 thousand, including spindles, turrets, chip conveyors, ball screws, and measurement equipment. Using standardized units leads to reduction of development lead time and spare parts inventory, as well as material cost due to higher procurement volume.

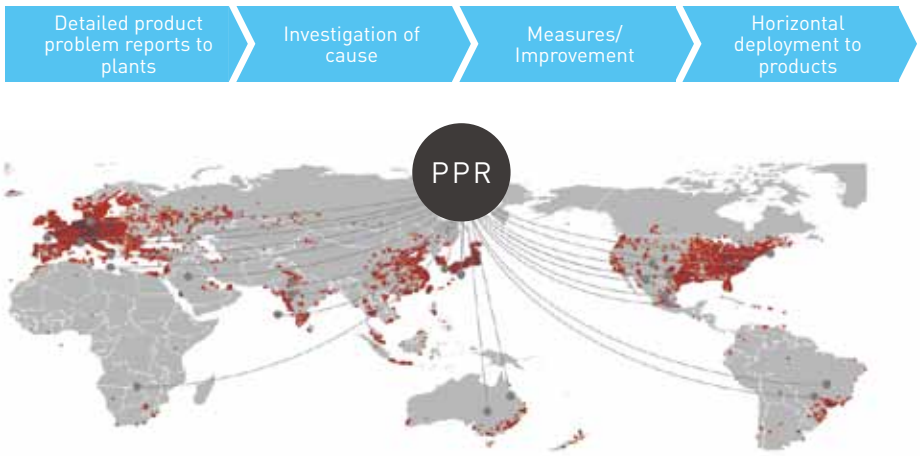
Joint development system

A total of some 1,000 employees work in various development bases in Japan, Germany, Italy, the U.S., and China. At the annual Global Development Summit (GDS), design engineers meet each other face-to-face and have vibrant discussions about the development of new technologies. After confirming the future development strategy by all participants, they separate in groups and continue detailed discussions on new technologies, integration of machine types, or standardization of components in each area. In October 2018, 198 employees joined the 5th GDS at the newly-renovated plant in FAMOT, Poland, and discussed on topics including peripheral equipment and automation in 12 groups.

Product Problem Report (PPR)

Since over 20 years before the integration, CO has collected and promptly shared any information about product problems occurred at customers' and made improvements in design and production processes with a system called PPR (Product Problem Report). This system was extended to AG to accelerate the resolution of quality-related issues with AG products.

In order to utilize ever-evolving AI, we need to analyze causes and status of past malfunctions. The accuracy of AI depends on the amount of past data. DMG MORI has also been accumulating information about machine malfunctions and their causes by using PPR (Product Problem Report). Therefore, we have a competitive edge in future innovation against our competitors.



Manufacturing

Digital factory

DMG MORI's production sites are as clean as plants designated for semi-conductor production. DMG MORI is committed to turning its production sites into digital factories, fully compatible with Connected Industries / Industry 4.0. In the renewed facilities, the assembly progress is visualized and updated in real time. Assembly workers input the daily assembly status into the BHT (Barcode Handy Terminal) and send the data to computers through wireless LAN. The data is used for controlling delivery times and working hours. Large monitors in the production halls show the real-time data input by the BHT. We combine the assembly data of all the group's plants to grasp the group-wide assembly status.

Efforts to promote high accuracy

The temperature in our plants is kept constant at ±0.5°C to maintain high accuracy of machined parts and to enhance efficiency by reducing adjustment work during assembly. We evaluate product quality before shipment from our customer's point of view; the inspection routine includes measurements for spindle's thermal displacement, coolant leakage, and spindle bearing, as well as 100 hours of continuous running. High-accuracy measuring equipment is used throughout the process. DMG MORI's precision is sustained not only by the advanced digital technology, but also by our experienced workers. As a result of their daily practice, our workers received the Yellow Ribbon Medal and the Contemporary Master Craftsman award.

Key components

Machine tools is a source for all products, and allow us to produce a variety of components. Any player in the machine tool industry needs to constantly have an image of next-generation products and adjust product development and their production system to fit the market needs. DMG MORI has promoted in-house production in pursuit of better quality, shorter delivery time, as well as shorter development time. For example, the Heat Treatment Plant, Sheet Metal Plant, and Casting plant were established in Iga Campus during 2005-2006 and have greatly contributed to the reduction of lead time and prototype development time. Another commitment, unique and unprecedented in the machine tool industry, is the in-house production of components critical to the machine tool's accuracy. We started producing ball screws by ourselves and established the Spindle Plant, where all processes from component machining, assembly to testing come together. Our in-house production strategy reaches beyond Japan, as we manufacture components in our own facilities all around the world, such as spindles in Pfronten (Germany), casting parts in FAMOT (Poland), and sheet metal in Davis (USA). In-house production of prototype machines reduces our development time, and that of key components shortens delivery time while letting us meet customers' requests. We are committed to utilizing these advantages to satisfy our customers as a reliable partner.

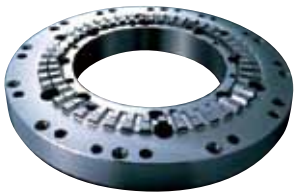
Ballscrew

Scale

Spindle

ATC

CELOS



Coupling

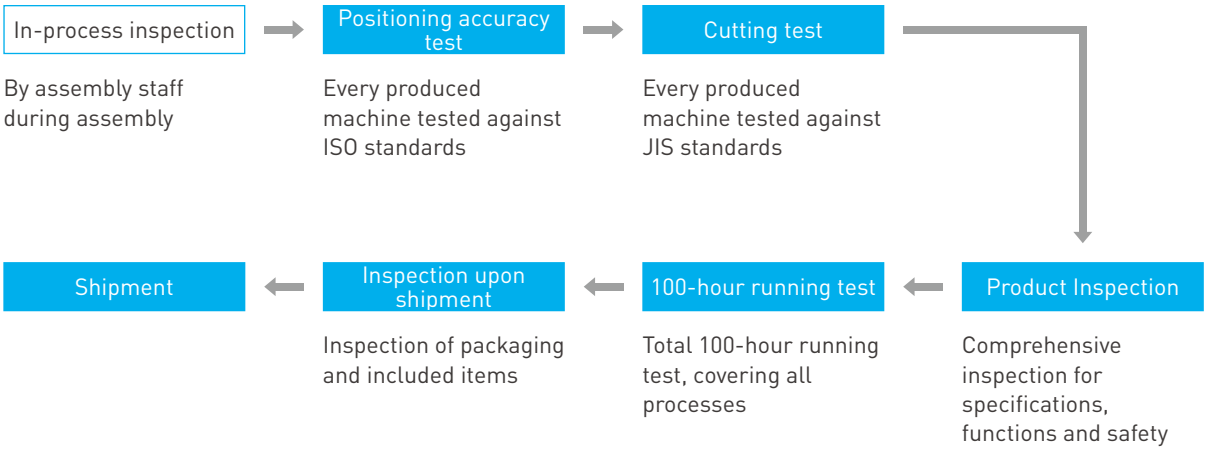
Direct Drive Motor

Commitment towards quality

Our customers purchase machine tools to manufacture products and sell them. Therefore, machine-downtime is a critical issue with potential loss of income. DMG MORI defines high quality as surpassing customers' expectations with our products and services. Based on this principle, we not only measure the accuracy of all functions, but also regularly check the validity of those measurement processes, in the before-shipment quality control. In the after-shipment quality control, we monitor if the products meet our customers' expectations. We put every produced machine through a sequence of inspections prior to shipment, including an ISO-based positioning accuracy test, a JIS-based cutting test and 100 hours of running test.

ISO standards for quality management (ISO9001: 2015), environment management (ISO14001: 2015), and labor safety and health management (OHSAS18001: 2007 (ISO4001: 2018 to be introduced in January 2020)) are the pillars of our management system. We also conduct internal audits and external audits by DNV GL regularly on an annual basis.

～Sequence of product inspection～



TQM activities

At DMG MORI, we always strive for consistent product quality and continuous improvements in every aspect of our work, including customer service and internal processes. Therefore, we introduced TQM (Total Quality Management) with the support of external advisors, a group-wide effort in quality improvement activities derived from the Toyota Group and other organizations.

In 2018, all departments in Japan, including general management departments, completed TQM activities as a general rule, and conducted a company-wide TQM tournament at the year-end. We will continue these activities in the future to improve the quality of our products, services and customer service.

Supply chain management

DMG MORI expects its suppliers to make a binding commitment to comply with its ethical and principle requirements, to adhere to its guiding principles on procurement, and to pass on these requirements in their own supply chains. DMG MORI generates synergy effects by joint purchasing between CO and AG, while paying utmost attention to be compliant with environmental standards such as energy-saving and environment-friendly procedures, and to meet expectations from the society. When selecting a supplier for global sourcing, in particular in emerging countries in Asia, our evaluation criteria include working hours, employee wages, environmental certificates such as ISO14001, and clear rejection of child labor.

To assess the risk of existing direct suppliers, we use our early warning system that informs us not only on credit, supply and quality risks, but also sustainability risks such as violation of labor practices and human rights. DMG MORI will further strengthen the effectiveness of risk scoring and evaluation system to reduce procurement risks by using IT solutions.

Dojo – Training area

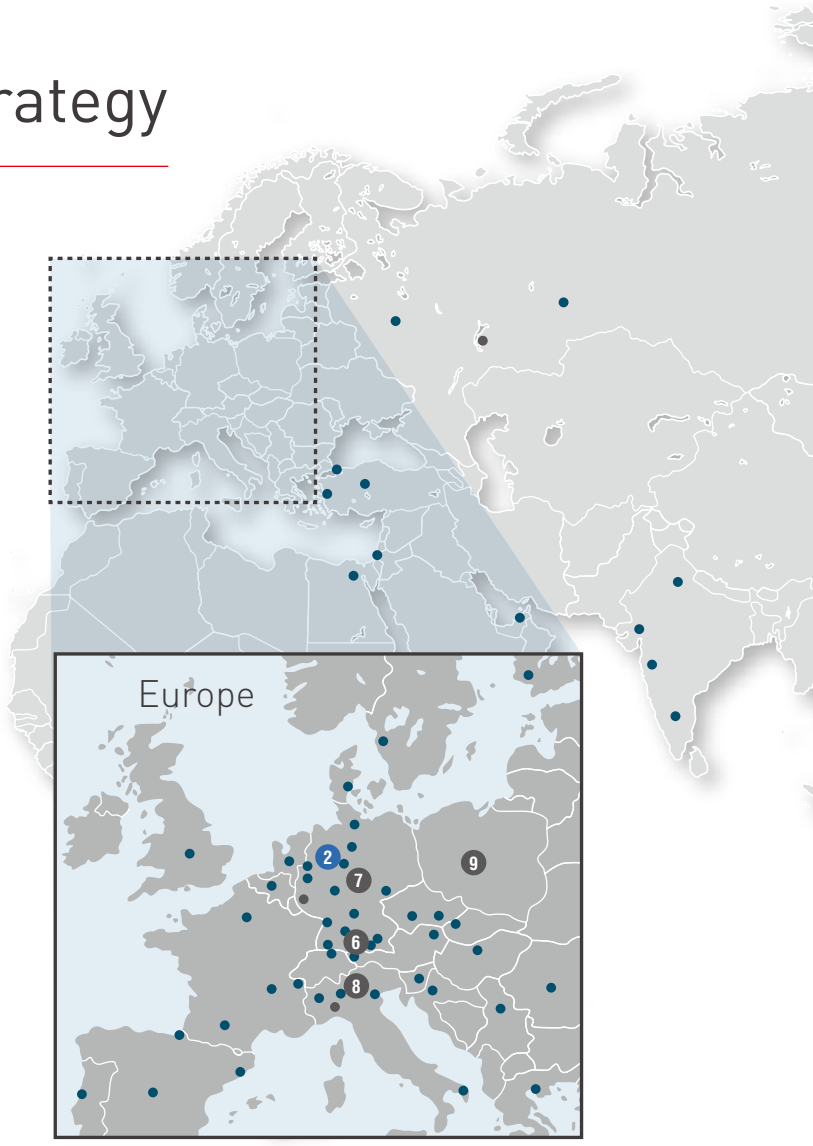
Passing on technological knowledge and thus educating the next generation are among the most significant challenges for the manufacturing industry. The machine tools of DMG MORI are the outcome of not only the most recent technology, but also many years of experience and proficiency of our technicians. We established Dojos (training areas) at our domestic production hubs in Iga and Nara Campuses, where skilled workers train younger colleagues. Dojos for scraping, safety and maintenance help us preserve the techniques and provide products of the highest quality to our customers.

Global Production Strategy

Our group owns 14 production facilities in Japan, Germany, the United States, China, Italy and Russia; this facilitates transportation, and secures short delivery time while meeting the diverse local needs. In addition, it allows us flexible movement in the recent trends towards protectionism.

Each main production base has responsible machine types in line with the geographical and technical strengths. For example, Iga Campus, our largest production site in Japan, specializes on production of middle and large-sized turning centers and machining centers, whereas production at Pfronten Factory (Germany) focuses on middle and large-sized 5-axis machines. This helps us improve production efficiency.

Since the integration of CO and AG, we have gradually standardized machine types and components. Using common spindles, electric parts and key components has led to cost reduction and strengthened the relationships with suppliers due to higher procurement volume. Integrated usage of machine bodies, peripheral products and software made it possible to meet the various needs from customers. It also enhanced our production efficiency, as we could reduce the number of machine types from 300 at the beginning of the integration to 152 at of the end of 2018.



Global Headquarters

Centrally manage DMG MORI's global sales, service, marketing, finances, accounting and human resources

❶Tokyo

National Headquarters

❷Bielefeld

Germany

Function as the head offices of DMG MORI CO

❸Nagoya

Japan

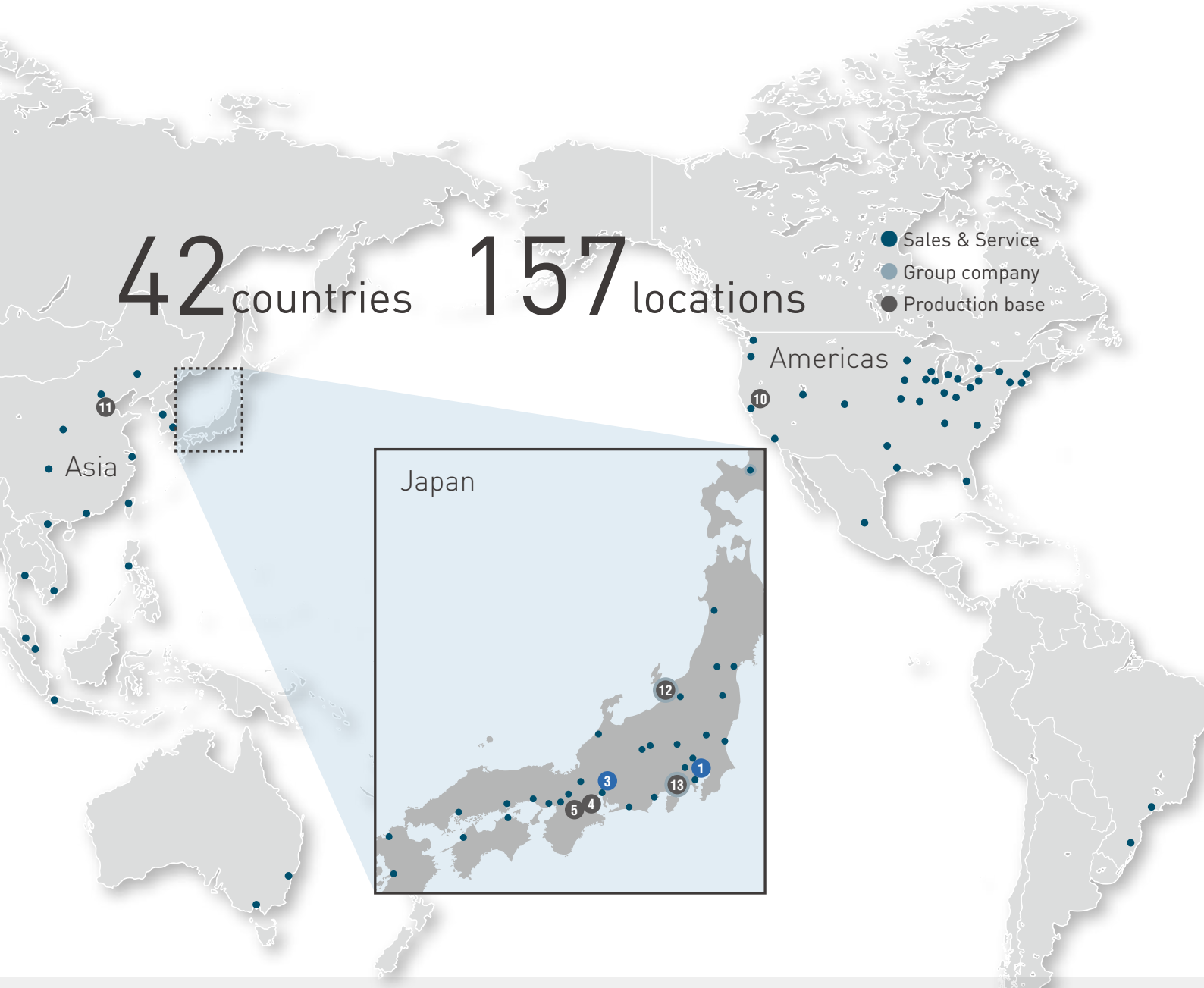
Function as the head offices of DMG MORI

Development and production bases (Japan)

❹Iga

❺Nara

Nara System Solution Plant



Production and development bases (Germany, Italy, Poland, The United States, China, Group companies)

❻Pfronten (Germany)

❼Seebach (Germany)

❽Bergamo (Italy)

❾Pleszew (Poland)

❿Davis (USA)

⓫Tianjin (China)

⓬TAIYO KOKI (Niigata)

⓭Magnescale (Kanagawa)

*Major development and production bases, several others

Our Major Plants

IGA (Japan)

Iga Campus was established in 1970, and has supported DMG MORI's manufacturing as one of the biggest production sites for machine tools in the world. With approx. 1,600 employees, it is also the largest facility inside the DMG MORI Group. Iga Campus functions as an all-round production site for state-of-the-art manufacturing, development, service, production technology, education and in-house production of key components. The monthly production capacity is as high as 250 units. Apart from its Assembly Plant, as clean as a semi-conductor production plant, Iga Campus also contains the Bed / Column Precise Processing Plant, where the whole process from machining, hardening to grinding finishing of large casting components are carried out; the Spindle Plant for production of spindles, the core component of machine tools; the Ball Screw Plant for the in-house production of ball screws, unique to DMG MORI; the Casting Plant capable of producing up to 100 tons of castings per month with a 5-ton electric furnace; and the Heat Treatment Plant for carburizing, ion nitriding and high-frequency induction hardening of machine tool components.

In Iga Campus, 250 developers work at the Development Center. The Service Center is in operation 24/7, and DMG MORI Academy provides training and educational activities to both our staff and customers.

60 cutting-edge machines and peripherals are exhibited in the world's largest permanent machine tool showroom of 3,500㎡. We provide customers with total solutions including the latest machining methods, automation systems and software.

Currently, the Global Parts Center is located inside Nara Campus, but will be relocated to Iga Campus in 2019.

Opened in	1970
Site area	577,000 ㎡
Core competencies	Turning centers & milling centers
Excellence Center for Die & mold	
Assembly capacity of over 3,500 machines per year	
Approx.	1,600 employees at the location
Products	NLX, NTX, NZX, CMX V, NVX, NHX, NMV

NARA (Japan)

Nara Campus is the birthplace of the former Mori Seiki established in 1948. The campus is located about 1 hour and 20 minutes away from Kansai International Airport by car, and 1 hour from Osaka, Kyoto and Iga Campus. This place with a profound tradition is home to approx. 600 employees. Most of its activity focuses on development and production of machining centers and turning centers, but it also covers proposal and development of automation systems to suit our customers' requirements, from standard automation systems where loaders are linked to one or multiple machines to large-scale automation systems for mass production. We also develop machine models dedicated to mass production lines for automotive and other industries.

In 2016, we opened the System Solutions Plant with a size of approx. 9,000㎡ to deliver TURNKEY solutions or complete and pre-assembled automation systems to allow the immediate start of mass-production. We installed 4 assembly lines of 80m length to build up production lines of mainly automotive components. With this new facility, we support the construction of large production systems at our customers' sites.

Nara Campus also contains the Global Parts Center, where over 100,000 parts are stored and approx. 1000 parts are shipped to our customers every day. This center will be further equipped with cutting-edge technology and relocated to Iga Campus in 2019.

Founded in	1948
Site area	60,000 ㎡
Core competencies	Turning centers, milling center and automation
Excellence Center for Automotive	
Assembly capacity of up to 2,000 machines per year	
Approx.	600 employees at the location
Products	ALX, NLX, G/GG, A/AA, NZX-S, J/JJ, NRX, CMX V, i-Series, NMV

PFRONTEN (Germany)

In 1920, five engineers founded a young and ambitious company in Pfronten, named Maho. In 1970, the company went public, merged with Deckel, and ultimately became a group company of today's AG in the year 1994. Pfronten Plant is a production hub to 5-axis machines, the group's largest production base in Europe, and home to approx. 1,500 employees. They annually produce about 1,500 machines of 50 kinds, applicable to DMG MORI's fields of expertise: Die & Mold, Aerospace and Medical. The location also houses the headquarters of Sauer, the leading manufacturer of laser and additive manufacturing machines. Every year Pfronten Plant holds its in-house trade fair, the Pfronten Open House. In January 2018, 63 state-of-the-art machines were exhibited on the floor space of 8,240㎡.

With approx. 10% of the production workers being female, the factory also implements safety measures for handling of heavy material. To meet the growing demand for 5-axis machines, the factory is currently being expanded by 24,000㎡. The expansion is scheduled to be completed in January 2021. It will increase our production efficiency and expand our production capacity of in-house spindles from 4,000 to 5,000 units per year.

Founded in	1920
Site area	149,000 ㎡
Core competencies	More than 50 machine types in the milling segment (Deckel Maho) LASERTEC (Shape, PrecisionTool, PowerDrill) and Additive Manufacturing (Sauer)
Excellence Center Aerospace and Die & Mold	
Assembly capacity of up to 1,500 machines per year	
More than 1,500 employees at the location	
Products	DMU/DMC monoBLOCK, DMU/DMC duoBLOCK, DMU P/DMC U Portal, DMU Gantry, NHX, DMC H linear

FAMOT (Poland)

The FAMOT plant in Poland was founded in 1877 as a small agricultural machinery manufacturer and joined the DMG MORI group in 1999. The plant is one of DMG MORI's most important production bases in Europe, which supplies main components including large machine tool casting parts to other bases as well as being a production site of the 5-axis machining center CMX Series and the turning center CLX Series. In October 2018, it was renovated to the most innovative digital factory among all of DMG MORI's production sites. With 700 employees working, FAMOT will expand the production capacity of the CMX/CLX Series to 2,000 units per year.

We successfully started centralized management in FAMOT plant by uniting systems for planning, set up, production, monitoring and maintenance information. Starting from programming by CAD/CAM and set up before machining, such centralized management system controls production planning and the execution with seamless connection to ERP, as well as predictive maintenance and maintenance management. Our group incorporates ISTOS, a developer of software for production planning and execution, and WERKBLiQ, a developer of software for predictive maintenance and maintenance management. The cooperation of the above two companies with DMG MORI Software Solutions, who develops and operates the application software CELOS and Technology Cycles as the foundation for digitization strategies, accomplished the digitization of FAMOT as a prime example of Industry 4.0/Connected Industries.

Founded in	1877
Site area	130,000 ㎡
Core competencies	Turning centers & milling centers
Assembly capacity of up to 2,000 machines per year	
Approx.	700 employees at the location
Products	CLX, CMX V, CMX U

DAVIS (USA)

In 2012, DMG MORI opened a new plant in Davis, California - a university town approx. 100km northeast to San Francisco. About 180 employees are working in this location of approx. 110 thousand sqm to produce NHX-series, a representative horizontal machining center of DMG MORI, or to develop customized specifications and systems. In 2019, the Davis plant will start production of a new turning center model, ALX series. The in-house production of sheet metal started in July 2018 to support increasing production volume for North American market and to shorten lead time of special designs.

Almost all the machine tools made in Davis are delivered to customers within the United States, while the products made in Japanese and German plants are shipped to various countries. The products from Davis are less susceptible to trade policy of any country.

In July 2018, DMG MORI established a new Technical Center in Silicon Valley. This made the State of California once again an important location for DMG MORI's R&D, production, and sales activities to approach customers with cutting-edge IT technologies.

Opened in	2012
Site area	110,000 ㎡
Core competence	milling machines
Assembly capacity of up to 1,200 machines per year	
More than 180 employees at the location	
Products	CMX V, NHX

TIANJIN (China)

After its opening in 2013, we celebrated the 5th anniversary of our Tianjin Plant last year. Similar to our Davis Plant (USA), Tianjin focuses on the local market and produces horizontal machining centers (NHC series) and vertical machining centers (CMX series), with an output of 40 machines per month. Additionally, some casting parts are manufactured in-house. Tianjin is committed to developing and retaining high-skilled staff by hiring prospective graduates as factory interns and preparing them for a full-time job upon graduation. The facility was awarded a prize for the canteen's quality and cleanliness among the 4,000 companies located in the Tianjin Economic-Technological Development Area (TEDA). We aim to offer a comfortable working environment to our employees.

The demand for high-end machine tools is expected to rise in the Chinese market, alongside the growing number of hybrid cars and EVs, and the implementation of The Belt and Road Initiative. Also, we will begin production of CMX Vc for the Indian market in the summer of 2019.

Opened in	2013
Site area	90,000 ㎡
Core competence	milling machines
Assembly capacity of up to 1,200 machines per year	
More than 120 employees at the location	
Products	CMX Vc, NHC

Spreading value

Showcasing new machines, machining technology and beyond

Every year, we invite customers to exhibitions and seminars all over the world to directly experience our products and technologies. It is a good opportunity for us to present practical and technical know-how and industry trends with the latest technologies and live-demonstrations. We invest a lot of efforts in each event from private shows at major regional cities to big international exhibitions across the world. This maximizes the opportunities to interact with customers.

Apart from external exhibitions, we focus on Open House events at each production plant worldwide. The Global Solution Center in Iga is one of the world's largest permanent show rooms of machine tools with a floorspace of 3,500㎡. Our engineers utilize this environment to perform tests and demonstrations for our customers, to verify solutions for their machining-related challenges, and to test state-of-the-art technology at any time. Approx. 10,000 customers visited Iga Innovation Days in May 2018. We also invited customers to our overseas production sites at Open House events in Pfronten (Germany) in January, FAMOT (Poland) in October, and other locations to present our safe and innovative production lines.


OMO MOBI

Sales / Service / Engineering / Parts

One-stop service

The current advanced manufacturing technology allows us to machine components with not just a machine tool, but in the combination with peripheral equipment, software and others. In case of trouble, customers generally have to consult the manufacturer of the machine tool, the peripheral equipment and the software individually, before the problem can be located and finally solved. However, this often causes a long waiting time for detection of the cause through resumption of normal operation.

DMG MORI aims at solving these inconveniences. Therefore, we utilize our direct-sales network, in-house engineering and direct-service system to address our customers' complex needs or troubles. We offer, for example, process integration by 5-axis machines and mill turns, or automation and digitalization driven by peripheral equipment such as robots (DMQP) and application software (Technology Cycles). In addition to solution offering, we install machines and automation systems by ourselves, provide operator trainings, machining condition upgrades, after-sales service, and supply spare parts. This one-stop service differentiates us from our competitors. We sell products mainly via qualified distributors in Japan, but operate our direct-sales network overseas.

Diverse customers

DMG MORI groups the world into 800 different areas and assigns Area Sales Manager (ASM) to each. When defining each area, we take the number of customers, diversity in customers' industries, and area size into consideration.

The machine tool industry is susceptible to macro-economy and capital investment trends, and its market demand constantly fluctuates. The integration of the two companies has brought the DMG MORI group a stable demand and order intake, as it gained customer bases in four major markets. Most importantly, around half of the group's turnover comes from Europe, where the capital investment cycle varies from country to country. Our business is also stabilized by the newly-gained diversity in customers' industries; it covers not only the automotive and general machineries industry, but also the aerospace, semiconductor and medical industry. Particularly in Europe and North America, where a number of SMEs (small and medium-sized enterprises with 100 employees or less) with sophisticated machining technology work in the aerospace, automotive, and semiconductor production equipment industries, we have introduced 5-axis machines and other cutting-edge machines to develop further advanced machining methods.

DMG MORI Qualified Product (DMQP)

DMG MORI offers a wide range of peripheral equipment and machinery attachments perfectly suiting our machine tools in the 4 main fields: shaping, handling, measuring and monitoring. The DMQP (DMG MORI Qualified Product) program certifies machine tool's peripheral equipment that meets DMG MORI standards in quality, performance and maintainability. Over 5,000 kinds of equipment and software from 60 companies in the world have been qualified. We provide customers with total support, from proposals of our reliable DMQPs to the delivery and maintenance, ensuring long-term and comfortable operating environments for them. As a one-stop service provider, we also handle any kind of customer request about the equipment. Because DMG MORI gradually standardizes internal processes and provides comprehensive products, we can further generate additional values for our machines. Procurement in large quantities from our carefully-selected partners allows us better purchasing conditions. On the other hand, our partners are benefitted, too, from having their products introduced to customers along with our machines. This gives them advantages to save on their sales activities and focus on production instead.

Excellence Centers

DMG MORI operates excellence centers in Iga, Nara, Pfronten and Seebach, each specialized in 4 major industries, “Aerospace”, “Automotive”, “Medical”, and “Die & Mold”. Engineers with specialized knowledge and expertise in the specific requirements and machining processes of each industry make suggestions for optimized solutions. They also work closely with DMG MORI’s 1,000 application engineers all over the world to offer the best solutions for every customer’s requirement.

Lifecycle service

Machine tools are constantly evolving towards multi-axis machining, process integration, automation and digitalization. However, it is also important to keep an eye on everyday operation. Many customers of DMG MORI are SMEs, whose main target is to maximize the productivity of their machine tools. In the future, digitalization will bring huge growth in productivity, but in the short-term, we regard spindle and spare parts service, as well as service support as more crucial factors of everyday production. DMG MORI has greatly invested in the availability of spare parts, and has a constant stock of at least 1000 spindles. To ensure long and proper running of the spindle, the machine's heart, we need to utilize our expertise as a manufacturer. Normally, we offer 2 years of free-of-charge warranty for repair and maintenance service of machines sold in Japan. However in January 2018, DMG MORI started 3-year warranty service for all the MASTER-series spindles mounted on DMG MORI's machine tools regardless of locations of production and sale. This is to guarantee safer and better usability of our products by our customers worldwide. DMG MORI applies a service system consisting of 3 organizations: Service Centers, which handle repair- and spare parts-related requests 24/7; Spare Parts Centers, where needed parts are sent immediately to our customers, with more than 95% of the items shipped within 24 hours; and Technical Centers, where field service engineers are dispatched to our customers' locations. More than 3500 service employees work together to provide speedy support to our customer's needs.

Customers First 2.0-
Our 5 Service Promises with Even More Commitments

1

Fulfilling spare parts

2

World-class spindle service

3

More service experts, faster support

4

DMG MORI Full-Seivice, 100% guaranteed

5

Immediate support thanks to service centers and Netservice

Service centers supporting customers' production 24/7

More than 75% of the problems are solved by telephone support

(as of March, 2019)

All service call functions are centralized in service centers, which is in 24/7 operation. Information of delivered machines and repair service history are all stored in a secure database on a daily basis so that our staffs can provide customers with optimal solutions in the shortest possible time.

In some cases of machine troubles, our employees can remotely operate the machine from the service center for quick recovery.

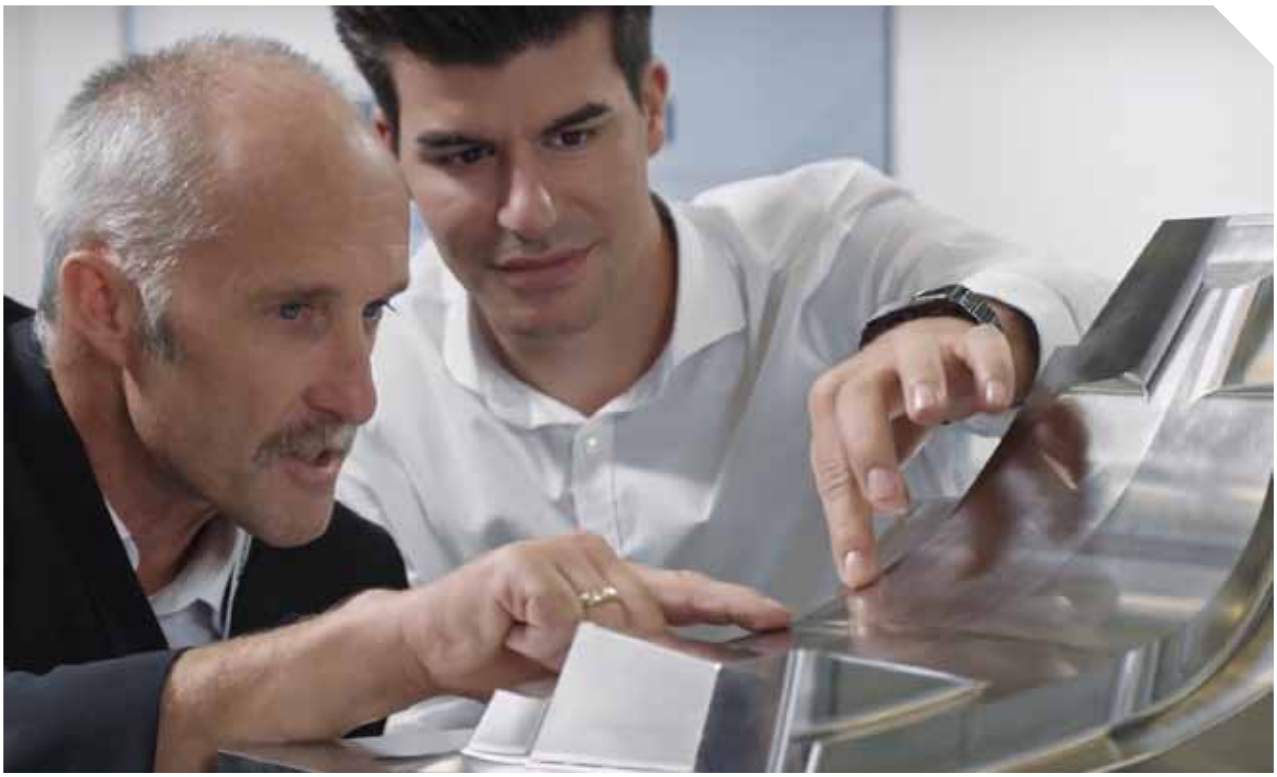
Substantial service and support with 157 bases in 42 countries / regions

Technical centers are our bases to provide field service to customers. We have built a system for a service engineer to go straight to the customer in the shortest possible time for on-site repair when in need on a call from the service center. Our highly skilled engineers listen to our customers' needs face-to face and offer them meticulous and speedy service.

DMG MORI as a total engineering company

There is a long process to go through before DMG MORI's machine tools start operation at customers' plants – we propose machining technology, cutting tools, and test cuts; get customers' verification for machine's performance including accuracy and machining time; install the machines at customers' sites and receive acceptance. DMG MORI is a total engineering company that provides not only machine tools but also machining and software technologies to make complex machining possible. DMG MORI's engineers are working worldwide together with sales and development teams to deliver the best solutions for customers to achieve required productivity and accuracy. DMG MORI also offers resident engineering services by dispatching highly qualified machining specialists to work at customers' locations. Customers' requests collected by resident engineers are useful inputs for the next generation product development, and will ultimately lead to the development of more attractive products.

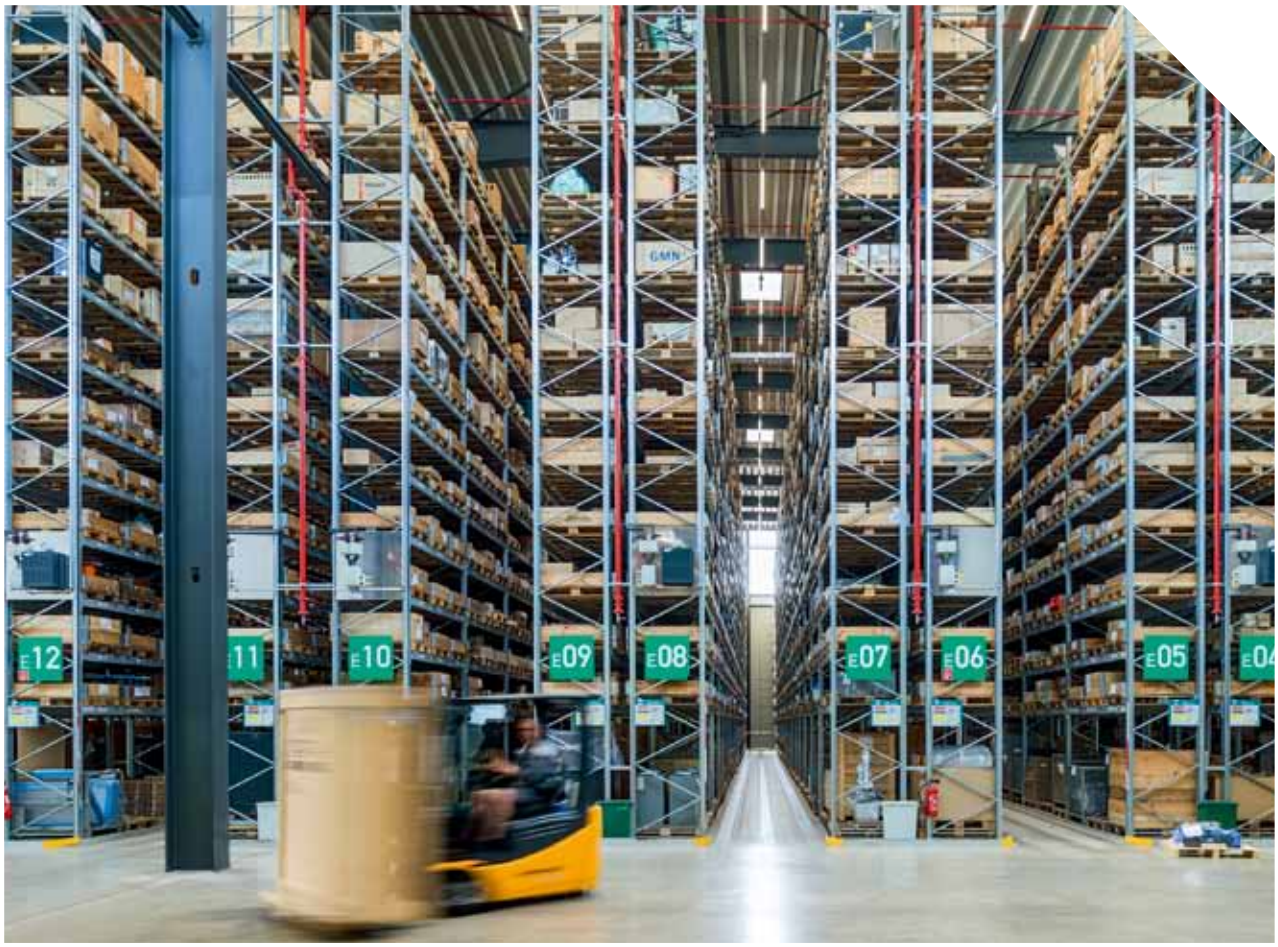
In February 2016, DMG MORI started operation of a machining technologies database "technology monitor". All the information necessary for machining is accumulated in this database, including the latest machining technology, cutting tools, fixtures, and materials. In this way, engineers from all over the world share the machining knowhow.



Parts centers

A new machine tool of DMG MORI is made of about 5,000 components. We guarantee stock availability of all the parts for 10 years, and in some cases even up to 20 years. DMG MORI has established 3 global parts centers around the world to provide reliable post-sales services for customers. Global parts centers in Nara (Japan) and Geretsried (Germany) store more than 100,000 parts, while the one in Dallas (USA) has over 50,000 parts in stock. This ensures prompt parts shipment across the world. In Japan, 95% of the parts are shipped within 24 hours.

The parts center in Nara (Japan) will be relocated to Iga Campus in 2019. The new automated warehouse contains state-of-the-art logistics equipment such as pallet stacker and case conveyor lines. We will strengthen our spare parts system by fully utilizing the latest equipment and IT technology.



YouTube

YouTube

DMG MORI

×

Front Runner

YouTube

YouTube

YouTube

Dynamic.

Excellence

Group Companies

TAIYO KOKI

http://www.taiyokoki.com/

Since its foundation in 1985, TAIYO KOKI specializes in grinding technology for automotive and general machinery parts. In 1989, TAIYO KOKI developed the first vertical grinding machine. TAIYO KOKI's machines are well-recognized by worldwide customers as high-precision, high-rigidity, space-saving, and flexible products compatible with automation. The company's wide range of product lineup from small machines for mass-production parts to large machines for high-mix, low-volume production is another ground for its very positive reputation. In October 2005, TAIYO KOKI brought innovation to machining process of medium- to large-sized workpiece by vertical internal / external grinding machine (NVG series) and turret-type vertical multi-process grinding machine (NVG-T series). NVGH series is a vertical multi-process grinding machine for large-sized tough-to-cut material launched in October 2008. Currently, the company focuses on strengthening machining technology by improving usability of its applications.

TAIYO KOKI CO., LTD.

221-35, Seiryo-machi, Nagaoka City,Niigata, Japan

TAIYO KOKI's head plant has been reaching at its full production capacity for some time. By June 2021, the company will enlarge its production site in Nagaoka-city by approx. 105,000 sqm to triple its production volume at its maximum. The new facility plant is dedicated to production of small and medium machines for automotive industry, while the existing head plant will specialize in large machines for aircraft engine parts production.

Magnescale

http://www.magnescale.com/mgs/language/english/

Ever since its establishment in 1969, Magnescale's fundamental principle is to contribute to advancement and development of manufacturing industry by ultra-precision measurement technology. The product "Magnescale" originated from magnetic recording technology of tape recorders. It has been applied to machine tools as well thanks to its robustness, high accuracy, and high resolution. "Laserscale" was born from optoelectronics technologies applied to optical disks. Assuming the requirements for ultra-precision in electronics industry would be more demanding in the future, the company has offered the product to upgrade cutting-edge high-density production equipment of semiconductors and disk media. In 2017, Magnescale started integrated production of "SmartSCALE," a new product accommodating the cutting-edge high resolution of 5nm and bearing-less non-contact structure at the same time.

To produce parts by machine tools, material should be machined from different angles, and that requires repeated movements of linear and rotational axes. Controlling the movement of multiple axes of machine tools quickly and precisely, or in other words, controlling the positioning accuracy is the key to achieve higher productivity and machine's accuracy.

Measurement devices such as scales and sensors are key components for machine tools to achieve high accuracy. It will become even more important in the future to capture the status of every part of machine tools, for example by attached sensors to measure position, pressure, temperature, and vibration, to feedback the measured data to machine's control, and to utilize the data for optimized control and preventive maintenance.

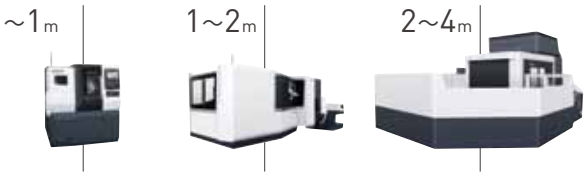
In April 2010, Magnescale became a wholly-owned subsidiary of DMG MORI. DMG MORI is gradually increasing the number of machine models with SmartSCALEs equipped as standard.

Isehara Plant
Research and Isehara Plant Development Base

Iga Plant
Vibration-free precision plant

Magnescale Co., Ltd

45 Suzukawa, Isehara City, Kanagawa, Japan



ALX1500 / 300 NHX 10000 DMC 340 FD

SmartSCALE

The world's first water and dust proof, open-type, high-accuracy, high-resolution absolute Magnescale that requires no air-purging was launched. Featuring the simple structure with the head and the scale separated, it achieves a high resolution of 0.005 µm despite the large mounting tolerance of ±0.1 mm.

- Achieved a protection class of IP67 for dustproofing and waterproofing
- Max. resolution of 0.005 µm
- Max. response speed of 200 m/min
- Vibration resistance of 250 m/s²

DMG MORI B.U.G.

http://www.bug.co.jp/

DMG MORI B.U.G. CO., LTD. was established in 1980 in Sapporo as an IT start-up company of Hokkaido University. Since then, DMG MORI B.U.G. has been developing cutting-edge computer technologies by utilizing its extensive technical expertise in both hardware and software.

In 2008, DMG MORI B.U.G. joined the DMG MORI group. DMG MORI B.U.G. makes significant contributions to improving operator-friendliness and increased productivity of machine tools through the development of the next generation operation software such as CELOS and MAPPS V. Both products were jointly developed with DMG MORI, and they are easy to operate and highly competitive.

DMG MORI B.U.G. CO., LTD.

1-1-14, Shimonopporo Techno Park, Atsubetsu-ku,
Sapporo City, Hokkaido, Japan

Moreover, DMG MORI B.U.G. strongly promotes research and development projects for IoT, as demand for such technology is expected to grow further. DMG MORI B.U.G. is a key part of the group for achieving that goal, given its abundance of experience in the development of network devices and embedded software.

Saki Corporation

http://www.sakicorp.com/

With a solid foundation in automatic visual-inspection technology, Saki Corporation has developed automatic inspection equipment for electronic parts mounting processes, utilizing two-dimensional, three-dimensional and X-ray CT images, since its initiation in 1994.

Internal development of hardware and software allows high-resolution, high-speed and high-accuracy inspection in line with technology advancement of electronic equipment. With the recent smart factory trend in electronic parts mounting process, Saki Corporation will further promote worldwide M2M collaborations with major manufacturing equipment producers and continuously provide pioneering total solutions.

Saki Corporation

3-1-4, Edakawa, Koto-ku, Tokyo, Japan

TECHNIUM

https://www.technium.net/

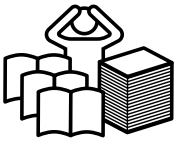
In January 2018, DMG MORI and Nomura Research Institute (NRI) have jointly established a new company TECHNIUM Co., Ltd. to improve customers' productivity by DMG MORI Group's sophisticated production technology and NRI's robust IT technology. DMG MORI offers its cutting-edge technology on machines, machining, and software. NRI brings in expertise in planning, development and implementation of advanced services and schemes by combining consulting services and reliable IT technologies. By uniting both parties' strengths, TECHNIUM makes it possible for customers to manage all the production-related information such as production equipment, human resources, machining knowhow, etc. through their own webpage in members' website. In addition, TECHNIUM provides state-of-the-art software and trainings to fully utilize customers' machine tools according to their available equipment and operators' skills. Furthermore, DMG MORI will help create optimized machining programs based on its database of machining technology. All these solutions support customers to fully utilize their machines' potential.

TECHNIUM

Tokyo Digital Innovation Center, 3-1-4 Edagawa Koto-ku, Tokyo, Japan

Main services

Customer dedicated website
Reduce the trouble of finding information by centralized management of possessed machine information



Tons of paper manuals/Inconvenience

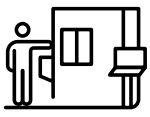
Time reduction by centralized management on the web

Training service
Quick development of human resources who can master advanced equipment

No time for basic training

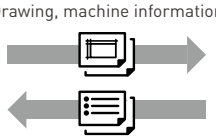
High efficiency learning with actual machine operation and e-learning

Process engineering service
Eliminate difficult issues when beginning production



Customer's production site

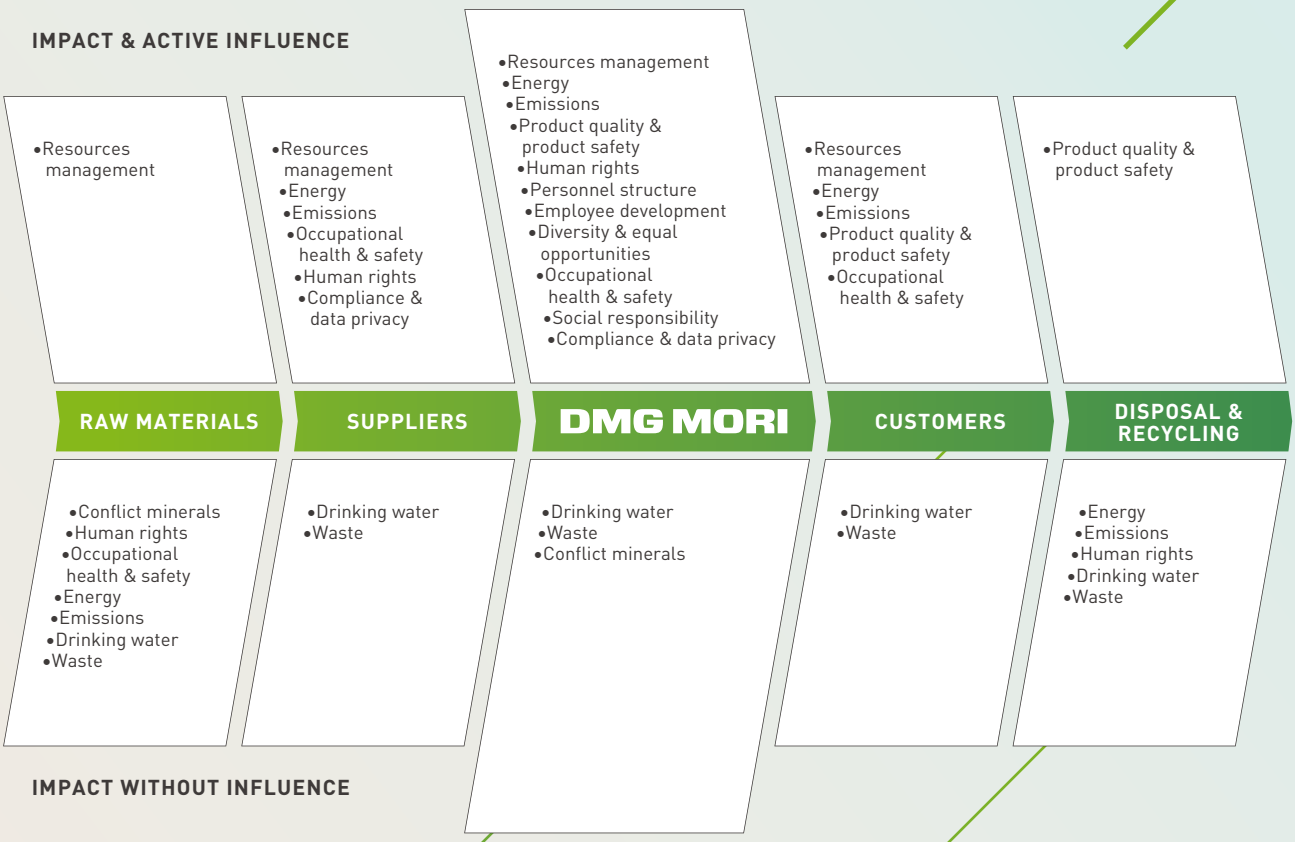
Drawing, machine information



Resolution about process, programing and tools

Engineering

CORPORATE SOCIAL RESPONSIBILITY


IMPACT & ACTIVE INFLUENCE
•Resources management
•Resources management •Energy •Emissions •Occupational health & safety •Human rights •Compliance & data privacy
•Resources management •Energy •Emissions •Product quality & product safety •Human rights •Personnel structure •Employee development •Diversity & equal opportunities •Occupational health & safety •Social responsibility •Compliance & data privacy
•Resources management •Energy •Emissions •Product quality & product safety •Occupational health & safety
•Product quality & product safety
RAW MATERIALS
SUPPLIERS
DMG MORI
CUSTOMERS
DISPOSAL & RECYCLING
•Conflict minerals •Human rights •Occupational health & safety •Energy •Emissions •Drinking water •Waste
•Drinking water •Waste
•Drinking water •Waste •Conflict minerals
•Drinking water •Waste
•Energy •Emissions •Human rights •Drinking water •Waste
IMPACT WITHOUT INFLUENCE

CSR activities of DMG MORI

DMG MORI's CSR-guideline sets goals for sustainable growth based on long-term business perspective.
As a globally operating company, DMG MORI commits itself to contribute to achieving the Sustainable Development Goals (SDGs).

Approach to SDGs

	Contributions to SDGs
Environment	
Risk Management	
Human Capital	
Social Contributions	

SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD

At "The United Nations Sustainable Development Summit" held in New York at the UN Headquarters from September 25 to 27, 2015, countries adopted "Transforming our world: the 2030 Agenda for Sustainable Development" - an action plan with goals and declarations for the human being, the planet and prosperity. Following the Millennium Development Goals (MDGs), "The Sustainable Development Goals (SDGs)" consist of 17 goals and 169 targets.
DMG MORI commits itself to make contributions to achieve these goals for sustainable development.

Social challenges	DMG MORI's efforts
• Reduce CO_2 emissions from customers' factories • Reduce CO_2 and other emissions from manufacturing processes	• Used machine sale • Less energy consumption by GREENmode • Emission monitoring at production sites
• Prevent production of weapons of mass destructions	• Ensure peaceful usage of our products through stringent export control regulations
• Empowerment of women • Create jobs at business locations • Prevent long working hours and improve productivity	• Working conditions which meet women's needs • Diverse workforce • Work & life balance, productivity improvement
• Give opportunities for high-quality technical education • Promote innovation and efficient resource usage	• Contributions to the DMG MORI Scholarship Fund • Supporting universities and technical colleges • R&D through collaborations with scientific institutions

Corporate Governance

1. Our Basic Approaches to Corporate Governance

Enhancing corporate governance and management monitoring functions is the first priority for DMG MORI, because it would lead to even higher transparency of our business to the entire society including our shareholders, investors, customers and business partners, employees, and members of the community, and to make our business operations fair and efficient.

We will continue to work on improving our corporate value with consistency for long term, and continuing business based on even higher standard of corporate ethic.

2. Corporate Governance Structure

DMG MORI applies an audit system by Auditors.
Our basic approach is to execute top-down business decisions quickly and efficiently, founded on the prevailed audit system exercised by appointed Auditors.

3. Board of Directors

Out of 11 members of the Board of Directors, 4 are External Directors (Ratio of External Directors being 36%) as of March 22, 2019. We have been coping with quick changes in the market environment and technology trend that are unique to the machine tool industry. Against this background, our management structure consisted of a limited number of Directors supported by Operating Officers to enable quick decision making. Since 2015, however, we increase the number of Directors by appointing External Directors. The number of External Directors increased from 2 out of in total 7 Directors to 4 out of in total 9 Directors in 2017. Their presence provides increased transparency and objectiveness to company's business. All of the 4 External Directors have professional management experience. They bring in a wide range of insights based on their specialized knowledge in engineering and other areas.

The Board of Directors discusses on important business strategies for the future of the company. Discussions on daily business operations are conducted at the meetings of Management Committee and Operating Officers. This structure enables extensive discussions by the Board of Directors and at the same time quick actions in business operations.

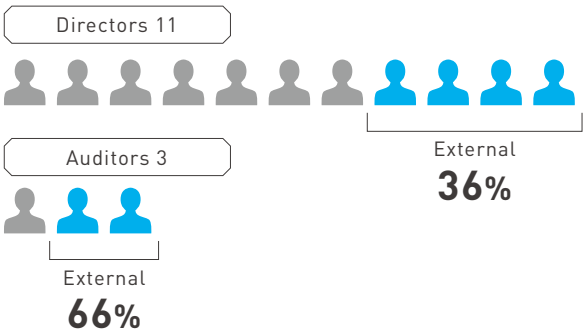
4. Audit and Supervisory Board

The Board of Auditors consists of a full-time Corporate Auditor, a former Executive Officer with extensive knowledge in company's operations, and External Directors, who are more independent from company's business. In accordance with the audit principles, each Auditor attends and makes comments at meetings of the Board of Directors, Operating Officers and departments, and other important meetings. They inspect documents for important decision making and conduct strict audit over the headquarters, departments, campuses, technical centers, and subsidiaries in and outside of Japan. To conclude, DMG MORI's corporate governance structure is efficient; it makes the company's management fair and transparent, because management reforms such as establishing a compliance system are made possible by quick decision making of a small number of Directors and by productive discussions at meetings of the Board of Directors.

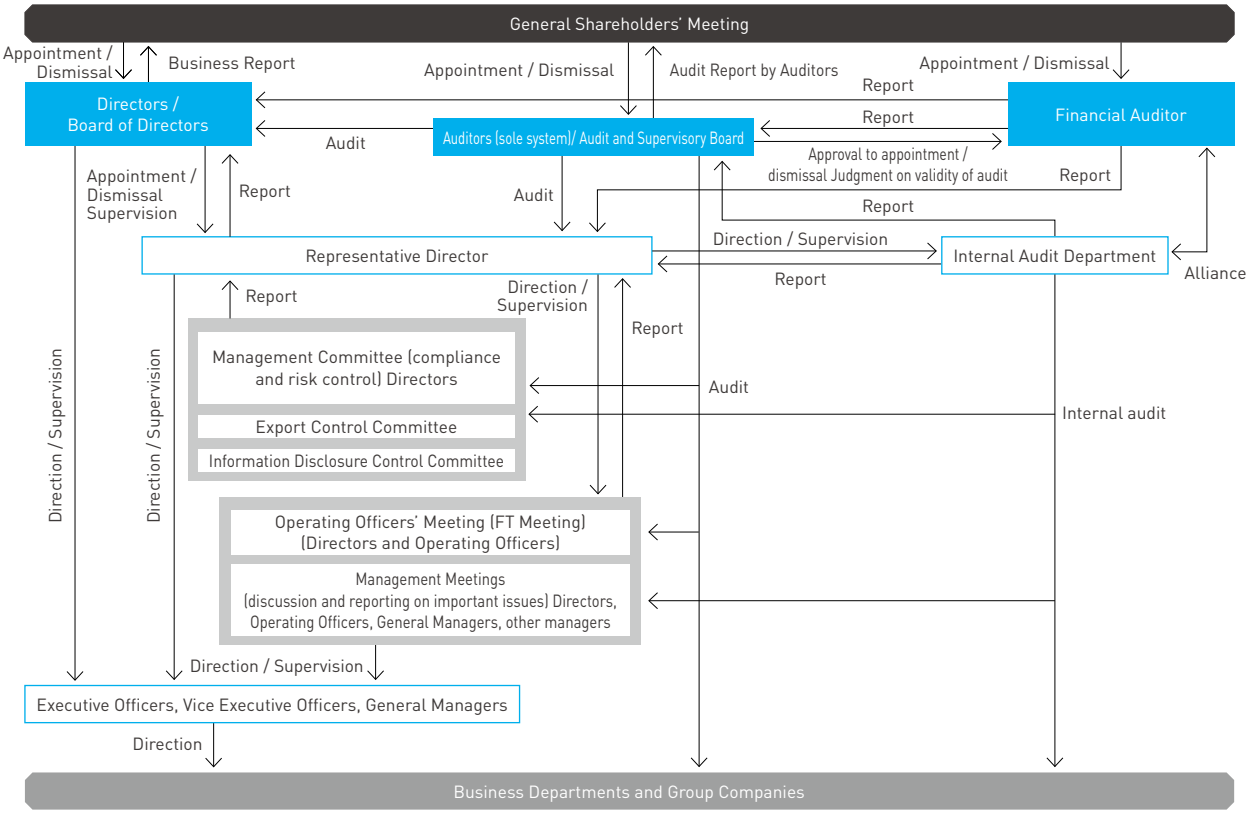
5. Governance at AG

AG, as a Germany company, has a governance system different from the Japanese. At AG, appointment of Directors and approval of business and investment plans are determined by the Supervisory Board, which exercises control over the Board of Directors. Therefore, controlling the Supervisory Board is crucial to appoint Directors who are appropriate to realize an integrated business and finance of CO and AG. While none of the members of the Audit and Supervisory Board of CO comes from AG, Dr. Masahiko Mori, President of CO, was appointed as the Chairman of the Supervisory Board of AG in May 2018. This has further strengthened governance over AG. Joint meetings of Dr. Mori and executives of CO and AG are held once a month to discuss and manage the status of everyday operations at the group's sales and production bases. The result is joint decision making as one global company.

■ Ratio of External Directors and Auditors (as of March 22, 2019)

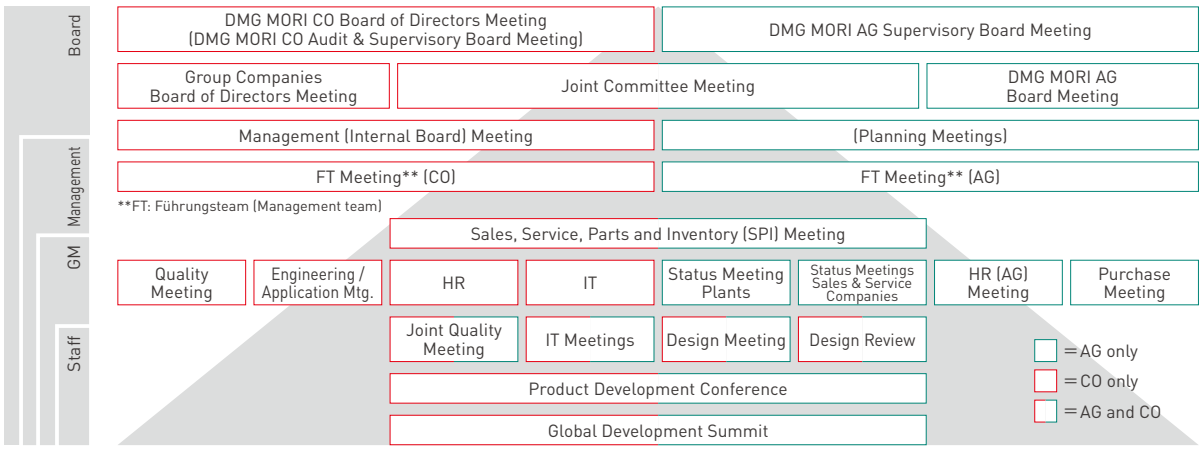


Corporate Governance Structure of DMG MORI



DMG MORI Meeting Structure

*Regular meetings where top managements of CO and AG meet in one place. Report the progress of each project and promote decision-making of each company.



Introduction of Board of Directors As of March 22nd, 2019

Name	Brief personal history
 Masahiko Mori President, Dr. Eng.	Dr. Mori was born in Nara in 1961. After graduating from Kyoto University, Engineering Faculty, Department of Precision Engineering in 1985, he started his career at ITOCHU Corporation. Later in 1993, he joined Mori Seiki Co., Ltd. (current DMG MORI CO., LTD.) In 1999, he became President at the age of 37 by succeeding his father Yukio. Aside from his professional career, he gained a doctorate in Engineering at the University of Tokyo. He was appointed as a member of the Supervisory Board of GILDEMEISTER Aktiengesellschaft (current DMG MORI Aktiengesellschaft) in November 2009, and the chairman of the said board in May 2018. Dr. Mori is Vice Chairman of the Japan Machine Tool Builders' Association, Fellow of CIRP (The International Academy for Production Engineering), and Director of KYOTO UNIVERISITY INNOVATION CAPITAL Co., Ltd.
 Christian Thönes Vice president	After studying business management at the University of Münster, he joined DMG MORI (then GILDEMEISTER AKTIENGESELLSCHAFT) in 1998. He became Head of Global Business Development, Sales and Marketing in 2000, and Managing Director of SAUER GmbH in 2001 to establish Advanced Technologies: ULTRASONIC, LASERTEC, and ADDITIVE MANUFACTURING. In 2009, he led DECKEL MAHO Pfronten GmbH as Managing Director. In 2012, he became a member of the Executive Board of AG in charge of production and product development, and its Chairman in 2016. Throughout the cooperation with CO, he drives technological, organizational, and cultural integration as "Global One Company".
 Hiroaki Tamai Executive Vice President	After graduating from Doshisha University, Faculty of Commerce in 1983, he started his career as an accounting specialist at DMG MORI CO., LTD. (then Mori Seiki Co., Ltd.). He was transferred to the U.S. sales company in 1984 and learned machine tool business and accounting in the U.S. Upon his return to Japan in 1988, he gained further experience in accounting, tax and finance. For a decade since 1992, he acquired management skills by supporting President from Management Planning Office. In August 2002, he led the partial business acquisition from Hitachi Seiki Co., Ltd. and establishment of a new company. Since 2009, when CO started business collaboration with AG, he leads business culture integration and talent development as Director in charge of human resources.
 Hirotake Kobayashi Executive Vice President	Mr. Kobayashi graduated from Keio University, Faculty of Economy in 1997. He also studied PMD at Harvard Business School. He started his career at Kirin Holdings Company, Limited (then Kirin Brewery Co., Ltd.) and was engaged in planning and executing overseas business growth strategy. He led negotiations on investment in a brewery company in Australia and other domestic and international M&As. He became Representative Director and Managing Director of Kirin Holdings in 2012, responsible for business investment, collaboration and information strategy. After joining DMG MORI CO., LTD. in 2015, Mr. Kobayashi facilitates the group's integration in accounting and financial fields. He will be continuously committed to cultivating a solid accounting and financial basis for business expansion to meet shareholders' and investors' expectations.
 Makoto Fujishima Executive Director, Dr. Eng.	After graduating from the Department of Electronic Engineering, Faculty of Engineering, Doshisha University in 1981, he started his career at DMG MORI Co., Ltd. (then Mori Seiki Co., Ltd.) In 1997, he developed control systems such as Human Machine Interface as manager of Control Technology Department. He earned his PhD in Engineering at Kyoto University in 2002. He was appointed as Director in 2003 and Executive General Manager of Development Headquarters in 2005. In 2008, he moved to the United States as CEO of Digital Technology Laboratory. After his return to Japan, he led procurement for 2 years, before again took responsibility in development to head business collaboration with AG. He was appointed as R&D Company's President in 2019. He re-organized the company's development system from machine models-based to elementary technology-based structure. He promotes the development of innovative products and elementary technology.
 James Nudo Executive Director, J.D.	After graduating from Loyola University, Chicago in 1981 with a Juris Doctor degree, Mr. Nudo became licensed to practice law in the State of Illinois and in U.S. Federal Court. In 1992, he joined YAMAZEN INC., the U.S. subsidiary of YAMAZEN CORPORATION. In 2000, again from Loyola he received a Master of Science, Organization Development degree. In 2003, he joined DMG MORI CO., LTD (then Mori Seiki Co. Ltd.) initially as General Counsel of its U.S. subsidiary until relocating to the parent company in Japan in 2005 with responsibility for international legal matters. During his tenure in Japan, he was involved with the business cooperation with AG and is still involved in the integration of the companies. Since 2017, he has been in the U.S., as President of DMG MORI USA, INC. In 2018, he became a member of the Supervisory Board of AG.
 Minoru Furuta Senior Director	He joined DMG MORI Co., Ltd. (then Mori Seiki Co., Ltd.) after graduating from the Faculty of Business and Commerce, Kansai University, in 1995. He gained general experience in Accounting Department, before leaving Japan in December 1997 to spend 2 years in the USA and Germany, respectively, and study overseas accounting and IT. After his return to Japan in 2002, he took charge of export control, consolidated accounting, tax management and management accounting. In 2006, he introduced SAP's accounting system, before he moved to Europe in 2007 for the second time. During the 11 years spent abroad, he led business collaboration with AG and sales of Japanese machines in Europe. In 2018, he returned to Japan to lead business operation and accounting. Since 2019, he heads production and procurement and commits himself to optimizing material procurement and building an efficient production system with cutting-edge technologies.

Introduction of External Director As of March 22nd, 2019

Name	Brief personal history	Relationship with our company
 Tojiro Aoyama External Director, Ph D.	He obtained a bachelor's degree in 1974, a master's degree in 1976 and an engineering doctorate in 1979 from the Department of Mechanical Engineering, Faculty of Engineering, Keio University. His doctorate thesis themed "Dynamic behavior of hydrostatic thrust bearings and the optimum design method." He became an assistant of the said department in April 1979, and after serving as a fulltime lecturer and an associate college professor, he was promoted to a professor. During his tenure as an assistant, he studied tribology for one year at RWTH Aachen University in Germany. He was assigned to the dean of the Faculty of Science and Technology and the chair of Graduate School of Science and Technology in July 2009, and to a professor emeritus in April 2017. He has been the vice-president of Keio University since May 2017. He specializes in production engineering and his scope of researches includes sophistication of constituent elements of machine tools, development of functional materials and monitoring of machining process. He is a fellow for CIRP (The International Academy for Production Engineering), the Japan Society of Mechanical Engineers and the Japan Society for Precision Engineering. He has been in DMG MORI as an external director since June 2015, utilizing his academic expertise and experiences in university management to advise on technology development and trainings, in pursuit of further contribution to machine tool technology around the world.	Dr. Tojiro Aoyama is a Vice-President of Keio University and has served in roles such as professor at the Faculty of Science and Technology of Keio University and Dean of that Faculty. Whereas DMG MORI engages in transactions with Keio University, the transaction amount is negligible, with the maximum annual value being JPY 9 mil. in the past three years (0.00 % as a percentage of the consolidated net sales), and we have determined that this is not something that affects the independence of Dr. Tojiro Aoyama. As of March 22, 2019, 23 graduates from Keio University are employed in DMG MORI.
 Tsuyoshi Nomura External Director, Dr. Eng.	He obtained a master's degree from the Department of Precision Engineering, Graduate School of Engineering, Kyoto University in 1978. Upon the graduation, he joined Kobe Shipyard & Machinery Works, Mitsubishi Heavy Industries, Ltd. and designed nuclear power plants. He moved to Production Engineering Laboratory, Matsushita Electric Industrial Co., Ltd. (currently Panasonic Corporation) in 1990. In 2000, he earned a qualification for Professional Engineer. He practiced analysis simulation technology (CAE), as well as measuring, inspection, kinematics, control, and material process technology, after which he joined a fuel cell project and Jisso Core Engineering Lab. He was assigned to President of Advanced Production Systems Development Company, Limited, which scope includes production facility, die and mold, and software businesses, and later to Executive Officer of Manufacturing Innovation Division to lead the production technology and manufacturing projects of the whole group. He became Director in 2009, Managing Director in 2013, and Managing Executive officer of Manufacturing Innovation Division in charge of manufacturing innovation, quality, logistics and procurement, and environment. He earned an engineering doctorate in 2013 from Osaka University. After retiring from Panasonic, he founded Nomura Techno Co., Ltd. to provide venture companies with support for manufacturing and management, utilizing industry-academia network. He contributes to further growth of DMG MORI with his long-term management experience, first-hand practices in production technology, quality, procurement and environment, and the wide range of technical knowledge.	Dr. Tsuyoshi Nomura has served in roles such as Managing Director of Panasonic Corporation during his career. Whereas DMG MORI engages in transactions with Panasonic Corporation, the transaction amount is negligible, with the maximum annual value being JPY 109 mil. in the past three years (0.03 % as a percentage of the consolidated net sales), and we have determined that this is not something that affects the independence of Dr. Tsuyoshi Nomura.
 Makoto Nakajima External Director	After graduating from the Faculty of Law, University of Tokyo, he joined Ministry of International Trade and Industry. He was assigned as a responsible official for commercial negotiation and industrial cooperation at the Mission of Japan to the EC/ Embassy of Japan in Belgium for 3 years since May 1984. Upon his return to Japan, he proceeded through Trade Policy Bureau, Industrial Policy Bureau (where he founded Intellectual Property Policy Office, using the word "intellectual property" for the first time, protected trade secrets with Unfair Competition Prevention Act, and introduced stock options to promote business innovations of companies and ventures), Secretary to the Minister, Director of Policy Evaluation and Public Relations Division, Trade Bureau (where he promoted trade insurance system), Director of Industrial Machinery Division and Director of Budget and Account Division. He became Director General of Kinki Bureau of Economy, Trade and Industry in 2001, and Director General of Trade and Economic and Cooperation Bureau (where he reached Japan-Mexico Economic Partnership Agreement). In 2005, he assumed office as Commissioner of Japan Patent Office, committed himself to acceleration of patent examination process, globalization and alignment with other countries' patent system. He also started the five-nation commissioner meeting with the U.S., EU, China and Korea during his tenure. He joined Sumitomo Electric Industries, Ltd. In 2008. He was registered as attorney in 2009, and practiced law in management planning, legal affairs, intellectual property, public relations and export control. In June 2016, when he was Representative Senior Managing Director of Sumitomo Electric, he retired from the company and soon after he joined Japan Institute of Invention and Innovation as Vice Chairman and Senior Executive Managing Director, where he has promoted invention and raised awareness of intellectual property system. He has been DMG MORI's External Director since March 2017.	Mr. Makoto Nakajima has served in roles such as Commissioner of Japan Patent Office and Representative Director of Sumitomo Electric Industries, Ltd. during his career. Whereas DMG MORI engages in transactions with Sumitomo Electric Industries, the transaction amount is negligible, with the maximum annual value being JPY 537 mil. in the past three years (0.14 % as a percentage of the consolidated net sales), and we have determined that this is not something that affects the independence of Mr. Makoto Nakajima.
 Takashi Mitachi External Director	He earned a bachelor's degree from the Faculty of Letters, Kyoto University in 1979, and MBA from Harvard Business School with Baker Scholar in1992. He had been engaged in management consulting for directors of major companies in The Boston Consulting Group for 24 years. He served as Japan Co-chair of the said company and a member of Global Executive Committee for a long term, and is experienced in management of global company himself. He advises the government from business point of view, as Vice Chairman of KEIZAI DOYUKAI (Japan Association of Corporate Executives) and a member of several panels of experts. He is also a member of Global Agenda Council of World Economic Forum, and he proposes solutions to Global Agenda Council in his duty. He continuously contributes to enhance the corporate value of DMG MORI by supporting management internationalization with his rich experiences.	Mr. Takashi Mitachi has rich experience and expertise based on his many years having acted as a managerial consultant and is currently Senior Advisor at The Boston Consulting Group. Whereas DMG MORI engages in transactions with The Boston Consulting Group, the transaction amount is negligible, with the maximum annual value being JPY 408 mil. in the past three years (0.08 % as a percentage of the consolidated net sales), and we have determined that this is not something that affects the independence of Mr. Takashi Mitachi.

Introduction of Auditors As of March 22nd, 2019

Name	Brief personal history	Relationship with our company	External board members
 Toshio Kawayama Corporate Auditor	After graduating from Meiji University's School of Law in 1984, Mr. Kawayama started his career in NTN Corporation (former NTN Toyo Bearing Co., Ltd.). First, he gained experiences in accounting of headquarters and manufacturing cost. While stationed in the United States from 1992 to 1998, he earned a global viewpoint and deepened his expertise through introduction of an accounting system and trouble-shooting of trade-related issues. Back in Japan, he was assigned as Deputy General Manager of Finance Headquarters / General Manager of Budgeting Department, mainly responsible for budget management. In January 2009, Mr. Kawayama joined DMG MORI CO., LTD. (former Mori Seiki Co., Ltd.) and has been engaged in various fields from headquarter accounting, factory accounting, to budget management. He introduced the International Financial Reporting Standards (IFRS) and the Advance Pricing Agreement (APA) for transfer pricing taxation, and also accelerated the vitally-important accounting integration with DMG MORI AG by handling complicated accounting procedures and unified accounting standards. He was appointed to Operating Officer in 2011 and Executive Officer in 2015, and has greatly contributed to DMG MORI's accounting as a supervisor of Accounting / Finance Headquarters. In March 2019, Mr. Kawayama became a member of Audit & Supervisory Board. With the accounting experience and knowledge cultivated over many years, he will further strengthen DMG MORI's global corporate governance system.		
 Sojiro Tsuchiya External Auditor, Dr. Eng.	After graduating from the Graduate School of Engineering at Nagoya University, he joined Nippondenso Co., Ltd. (currently, DENSO CORPORATION) in 1975. As a production engineer, he developed production systems of precision parts of cars, including development and utilization of machining technologies such as cutting and grinding. Later, he was responsible for productivity improvement of the whole factory through CIM (Construction Information Modeling / Management) and FA (Factory Automation). In 2001, he earned a PhD in Engineering from Gifu University by his research in precision control of hydraulic technology. In 2002, he was appointed as Executive Director and Member of the Board to lead the entire production engineering and manufacturing departments at DENSO. In 2011, he became Executive Vice President to lead the production globally. In 2013, he left the position, but continued to provide advice on production engineering as Executive Advisory Engineer / Advisor until 2016. In March 2017, he was appointed as External Auditor of DMG MORI. At the same time, he serves as External Director of Toyoda Gosei Co., Ltd. and NISSEI CORPORATION, as well as Chairman of Japan Institute of Plant Maintenance. He engages himself pro-actively in management and development of production engineering. As External Auditor of DMG MORI, he provides insights from customers' point of view as a long-time user of machine tools, and exercises control over the company's management based on his knowledge in management and production engineering.	Dr. Sojiro Tsuchiya has served in roles such as Executive Vice President of DENSO CORPORATION. Whereas DMG MORI engages in transactions with DENSO CORPORATION, the transaction amount is negligible, with the maximum annual value being JPY 1,024 mil. in the past three years (0.27 % as a percentage of the consolidated net sales), and we have determined that this is not something that affects the independence of Dr. Sojiro Tsuchiya.	○
 Yoshinori Kawamura External Auditor	In 1975, he joined The Sumitomo Bank, Limited (today Sumitomo Mitsui Banking Corporation). He acquired expertise in international business and investment banking. In area of international business, he spent 16 years in the United States; he managed the financial crisis in the 1990s, and led strategic sales, integrated risk management, and compliance with financial control regulations as Managing Director and Head of the Americas Division. In area of investment banking, he focused on M&A and project finance. In 2006, he became a member of the management board. As Managing Director for international business, he led the bank's overall strategy for globalization. Also, as Managing Director for corporate finance, he worked out business and risk management strategies for client companies. In 2011, he became President of Sumitomo Mitsui Finance and Leasing Company, Limited. He expanded business and strengthened management before his resignation in 2017. As President of the company, he took initiatives in aircraft leasing and large-scale acquisition of GE's leasing business in Japan. He also directed relocation of the Headquarters. Based on his experience in overseas business, mainly in the United States, as well as in acquisition of foreign companies' leasing business, he well recognizes challenges in effective risk management and construction of the governance system of global companies. He brings in such expertise as an Auditor of DMG MORI.	Mr. Yoshinori Kawamura has served in roles such as President of Sumitomo Mitsui Finance and Leasing Company, Limited and is currently Special Adviser of Sumitomo Mitsui Finance and Leasing Company, Limited. Whereas DMG MORI engages in transactions with Sumitomo Mitsui Finance and Leasing Company, the transaction amount is negligible, with the maximum annual value being JPY 2,432 mil. in the past three years (0.65 % as a percentage of the consolidated net sales), and we have determined that this is not something that affects the independence of Mr. Yoshinori Kawamura.	○

Message from an External Director

Takashi Mitachi
External Director

One of the characteristic natures of machine tool business is the vulnerability to the world's economy. In accordance with economic fluctuation, the machine tool demand swings up and down in several- to about a dozen-year cycle.

DMG MORI has flexibly managed the ever-changing conditions, outperformed the competitors, and eventually become a leading player in the global market. The flexibility, however, will be further tested in the following years.

In the mid- to long-term, we expect solid growth in the machine tool demand, particularly in automated solutions with high-end machines and services. The manufacturing industry will be desperately lacking in human resources as working population shrinks, not only in Japan, China, South Korea, and the neighboring countries in the "World's Factory" East Asia, but also in other advanced countries. This trend works positively to our end.

On the other hand, the ongoing digitalization will transform industrial structure and change our customers' business landscape. The current U.S.-centered world will be gradually polarized, bringing geopolitical and trade-conflict risks. We will thus see a sharp drop in demand several times, even during the mid- to long-term growth. The keys to survive through the hardships are the foresight to stay ahead of competitors and the robust operation management to generate cash and control cost.

DMG MORI has shown a great tolerance against economic fluctuation. As one of the external board members, I will fully utilize some 25 years of experiences with global companies to further enhance the resilience.

Message from an External Auditor

Sojiro Tsuchiya
External Auditor, Dr. Eng.

Recently, terms such as CSR and Corporate Governance have increasingly gained public attention. Needless to say, it is a company's responsibility as a member of society to follow laws and regulations, and to contribute to environment and safety. Governance is the mechanism or system of controlling and monitoring companies to ensure their compliance with laws and regulations and efficient operation; such system also referred to as Corporate Governance Guidelines. Our company also follows this principle, as we evaluate ourselves and maintain an appropriate system. However, the benefits of Corporate Governance are more profound than mere legal compliance and prevention of scandals, as it is crucial for growth and prosperity based on healthy management. A machine possesses a control unit (controller), a regulation unit for adjusting variable elements to a specific level (regulator), and a unit for governing equipment (governor). Different from the controller and the regulator, the governor works autonomously to efficiently use the machine's potential and protect it from malfunction and damage. This applies to Corporate Governance just the same. Rather than simply regulating and enforcing rules onto employees, they need to share its principles and the company must make them a customary practice. This is key to autonomously protecting the company and its actions, and meeting shareholder expectations. Ensuring legal compliance of the company's actions at any time is crucial for both; safe and efficient operation, as well as avoiding unpredictable risks.

Remuneration of Corporate Officers

The amount of compensations, etc. of DMG MORI's Corporate Officers and the principle for its calculation method are determined within the compensation framework approved by the Annual General Meeting of Shareholders. In case of Directors, compensations are determined by taking each Director's contributions to business and the status of business execution into account. In case of Auditors, compensations are determined by discussions of Auditors.

Please find below the status of compensations in 2018.

■ Amount of Compensations, etc. of Directors and Auditors (January-December, 2018)

Title	Right of representation	Name	Headcount	Basic compensation (mil. JPY)	Performance-based compensation (mil. JPY)	Total compensation amount (mil. JPY)
Total: Directors (excluding External Directors)			5	379	321	700
* Directors whose total compensations, etc. exceed 100 mil. JPY						
Director and President	Yes	Masahiko Mori	-	144	96	240
Director and Executive Vice President	Yes	Hiroaki Tamai	-	68	72	140
Director and Executive Vice President	Yes	Hirotake Kobayashi	-	68	72	140
Total: External Directors			4	94	—	94
Grand total: Directors			**9**	**473**	**321**	**794**
Compensation framework of Directors						**1,000**
Total: Auditors (excluding External Auditors)			2	37	10	47
Total: External Auditors			3	33	—	33
Grand total: Auditors			**5**	**70**	**10**	**80**
Compensation framework of Auditors						**100**

Attendance at board meetings by each Director

The Board of Directors convened 11 meetings with the attendance of External Directors and External Auditors to plan management strategies, and to enhance appropriate and efficient business execution by each Director.

Furthermore, the Management Committee consisting of Directors and full-time Corporate Auditor convened 13 meetings, and Operating Officers convened 11 meetings, to understand and manage the risks of the entire business operation. Please find below the status of attendance by each Director and Auditor at meetings of the Board of Directors.

■ Status of attendance at meetings of the Board of Directors (January-December, 2018)

	Name	Status of attendance	Note
Directors	Masahiko Mori	Attended 11 out of 11 meetings	
	Christian Thönes	—	Appointed at the General Meeting of Shareholders on March 22, 2019
	Hiroaki Tamai	Attended 11 out of 11 meetings	
	Hirotake Kobayashi	Attended 11 out of 11 meetings	
	Makoto Fujishima	—	Appointed at the General Meeting of Shareholders on March 22, 2019
	James Nudo	—	Appointed at the General Meeting of Shareholders on March 22, 2019
	Minoru Furuta	—	Appointed at the General Meeting of Shareholders on March 22, 2019
	Tojiro Aoyama	Attended 11 out of 11 meetings	
	Tsuyoshi Nomura	Attended 11 out of 11 meetings	
	Makoto Nakajima	Attended 11 out of 11 meetings	
	Takashi Mitachi	Attended 11 out of 11 meetings	
Auditors	Toshio Kawayama	—	Appointed at the General Meeting of Shareholders on March 22, 2019
	Sojiro Tsuchiya	Attended 11 out of 11 meetings	
	Yoshinori Kawamura	—	Appointed at the General Meeting of Shareholders on March 22, 2019

(Note) Auditors Mr. Hisao Sato and Mr. Yoshito Kato retired on March 22, 2018. They attended 3 out of 3 meetings and 2 out of 3 meetings, respectively.
Directors Mr. Naoshi Takayama and Mr. Kenji Oishi, as well as Auditors Mr. Tatsuo Kondo and Mr. Yasuyuki Kimoto retired on March 22, 2019. Each of them attended 11 out of 11 meetings.

Risk Management

DMG MORI manages risks with various approaches: a management system for environment, labor safety and health, and quality risks; initiatives to ensure the credibility of financial reports; a risk management program for export control; and a workflow system for controlling daily risks.

We have also established Management Councils chaired by President, who assigned a director for overall risk management and directors for each risk category. The council aims for comprehensive and thorough management over group-wide risks.

Compliance

DMG MORI defined criteria for specific actions of Directors, Operating Officers and other employees by speculating rules in Mission Statement, Employee Handbook, Compliance Handbook, Export Control Program, Information Security Policy, and Management System for environment, labor safety and health and quality, and secures compliance by accordingly implementing them.

We also organize compliance trainings for new employees and other staffs, depending on their level, as well as associated e-learning and other learning opportunities. In case of sexual harassment and other problems where special considerations to the privacy of employees are needed, an external third-party institution takes the lead.

GDPR

As a company with major bases in Europe, we promptly adjusted ourselves to comply with the GDPR (General Data Protection Regulation) after the enforcement in May 2018. CO concluded Standard Contractual Clauses (SCC) for data protection with the European group companies and assigned a person in charge of data security in each company, in order to establish a sound management system for customers' and employees' personal information. External audits help us further improve the system, too.

Compliance team

In DMG MORI, Auditors and the Internal Auditing Office secure compliance of each group company. In 2018, we additionally established the Compliance Promotion Team as a group-wide approach. Compliance Officers assigned by region instruct and oversee Local Compliance Officers of each company, based on the unified rules across the group. The target is to improve our compliance literacy and proactively share the best practices within the group.

Risk assessment

In addition to the Compliance Promotion Team, we also started compliance risk assessment of group companies. We apply same indicators and evaluation tools to objectively assess the compliance system of each company and utilize the result to improve our trainings and organizations.

BCP
(Business Continuity Plan)

Since the Great East Japan Earthquake in March 2011, DMG MORI has continuously updated the manuals for disaster management. The Disaster Management Plan assigns disaster management staff by department and by affected area in all the group companies. As part of disaster prevention activities, the company checks the inventory of disaster prevention goods and tests the connectivity of satellite phones, in addition to the regular updates of the manuals.

Our 14 global production bases help us promptly react to our customers' needs, and also sustain our business in case of disaster.

Information Security

To safeguard continuous and stable business operations, DMG MORI gives special priority to appropriately protecting and controlling its technology information, which is an important business asset of the company, as well as various kinds of information received from customers and business partners. We announced the Basic Policy for Information Security in 2015 and established the Information Security Committee in 2016 to strengthen the information control system. By strictly implementing the Basic Policy for Information Security, we will safeguard the security of our products and protect the customers' information, while offering manufacturing solutions mainly through machine tools. Furthermore, we will continue to provide ever increasing value and unlimited possibilities of machine tools to customers worldwide while following international laws and regulations.

Control security

In addition to the Information Security Committee which manages information assets, DMG MORI launched the Control Security Committee to ensure safety in machine tool operation and IT environment at customers' sites. In collaboration with CNC manufacturers, suppliers for machine tool safety, and external security consultants for IT security, we are fully committed to protecting digitized factories.

Basic Policy for Information Security:

1. In order to protect all of its information assets from unauthorized access, theft, destruction, manipulation, and leaks, the Company will appoint a person with overall responsibility for information security management. Further, the Company will establish the Information Security Committee to construct an appropriate management structure.

2. The Company will continuously implement educational programs which are necessary to raise awareness of the importance of information security for all employees and persons involved in its business operations.

3. The Company will strictly follow laws and regulations, code of ethics, and internal rules, carefully monitor social and technological trends, and continuously review its internal rules, structures, and systems. In this way, the Company will strive to evaluate, maintain, and improve its information security management system.

4. Any violation of the Basic Policy of Information Security and its related rules will be consistently pursued.

Export Control

DMG MORI's basic approach is to follow Foreign Exchange and Foreign Trade Act (hereinafter referred to as "Foreign Exchange Act") when exporting goods, supplying technologies, and conducting agency transactions. Our Export Control Committee consists of all the board members and is chaired by President & Representative Director. The Committee stipulates and amends internal rules, such as the "DMG MORI Export Control Program", and appoints persons in charge of operation. Export Control Office is responsible for operation of the program. They evaluate customers and make applications for export licenses to the Ministry of Economy, Trade and Industry (hereinafter referred to as "METI"). In DMG MORI's export control system, every item to be exported or technology to be supplied to overseas must obtain an approval by Export Control Office. In addition, Human Resources Department makes training plans on export control and the Internal Audit Department audits the operation.

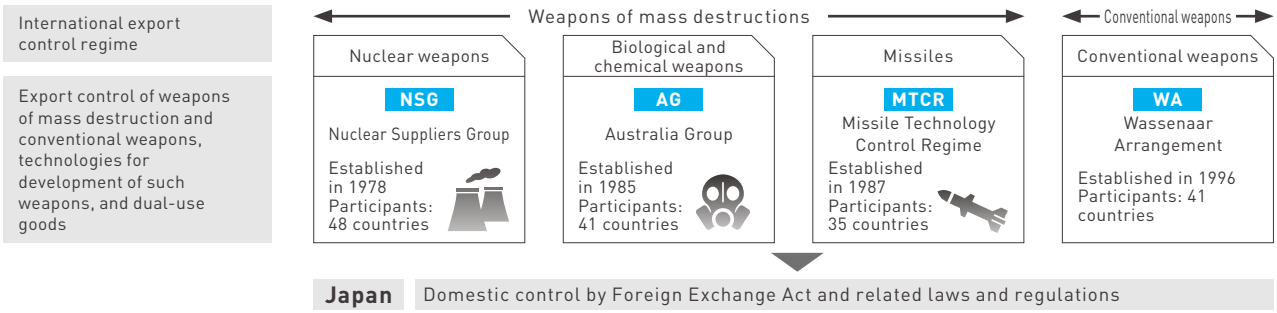
Pre-export assessment

In prior to export, we need to confirm whether the companies or organizations that are going to purchase our products and services plan to utilize DMG MORI's machines only for civil purpose and not for military purpose that will pose a threat to international peace and stability. We first check the content of business of those customers and whether the desired products are subjected to Foreign Exchange Act or other export control regulations. After receiving orders, we perform thorough background investigations based on documents and visits. Thereafter, we apply for export license to METI.

After receiving the license, we conduct final check before shipment of the ordered machines. Recently, we started applying the same procedures to machines produced in the United States and China as well, in addition to those produced in Japan, to ensure compliance with both local and Japanese laws.

If we have any doubt during the above-mentioned process that our products may be used for military purpose, the head of Export Control Office will be informed and Export Control Committee will make the final decision.

■ Outline of international export control regime

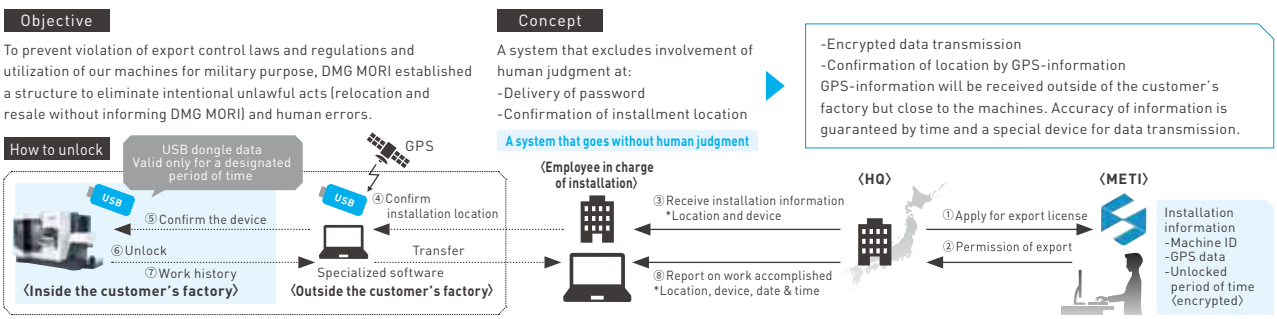


Source: Text of export control seminar hosted by Japan Machine Tool Builders' Association, General Incorporated Foundation

Post-export procedures

Continuous monitoring and control after export is important to guarantee proper usage of our machines. DMG MORI equips all of its machines with GPS-based devices for detection of machine relocation to prevent military usage by third parties through unauthorized sale or after bankruptcy. To unlock the machines, authorized employees responsible for export control must register GPS information of the expected installation location and the name of an employee who will visit the site. When the employee visits the location, he/she must obtain the GPS information once again on-site and confirm that both data are identical. In case of unauthorized relocation, the machine remains deactivated.

■ Outline of GPS-based relocation detection devices



Internal control

DMG MORI CO., LTD. resolved "Internal Control Guidelines" at the Board of Directors' meeting and accordingly implements the policy.

Auditing by auditors

The Audit & Supervisory Board and the Auditors of DMG MORI have regular and irregular exchanges with the President and the Financial Auditors.

Auditors witness resolutions and require reports at key meetings including the Board of Directors' meeting, Management Committee, and Operating Officers' meeting, and if necessary request additional explanations from Directors, Operating Officers and other employees.

If Directors, Operating Officers and other employees witness potential significant damages to the company, they need to immediately report it to the Audit & Supervisory Board or an Auditor, as is stipulated in the "Regulation to ensure the effectiveness of audits conducted by Auditors". It also allows the Audit & Supervisory Board and the Auditors to request reports from Directors, Operating Officers or other employees. DMG MORI prohibits retaliation measures against the employees who inform the Auditors of negative facts and obliges all staff to follow this rule.

Internal audit

DMG MORI has a dedicated team for internal audits, the Internal Auditing Department which directly reports to the President. It oversees optimized and efficient business operation of the entire group. Auditors also monitor the risk management of subsidiaries; reports from subsidiaries are shared with Auditors upon audits or audit liaison meetings with auditors of subsidiaries.

Currently, the Internal Auditing Department, the Administrative Headquarters and the Accounting/Finance Headquarters jointly develop a structure to efficiently discuss and share compliance-related issues and give associated instructions throughout the group. In 2005, we launched the Information Disclosure Control Committee headed by the Executive General Manager of the Administrative Headquarters, an advisory organization for information disclosure as part of the internal control system. The target is to enhance management transparency and soundness.

Management of subsidiaries

For management of subsidiaries, we hold a series of regular meetings on a consolidated basis, occasionally utilizing TV conference systems. The President and the Directors pay regular and irregular visits to subsidiaries and conduct periodic internal audits to better understand and optimize their operation. One or more DMG MORI's Directors are appointed as Directors or Auditors of subsidiaries and attend the Board of Directors' and other key meetings, in order to hear the updated status from the other Directors or Operating Officers of each subsidiary.

J-SOX

DMG MORI has established a J-SOX section under the Internal Auditing Department in October 2005, preceding the governmental regulations for the new internal control report system over financial reporting in accordance with the Financial Instruments and Exchange act (J-SOX). Since then, we have successfully developed and operated an internal control system in line with the legal framework, inside and outside the group.

Our internal audit section operates J-SOX with its AG counterparty. Together with the evaluation results of AG, we are audited by our Financial Auditors and prepare a joint report on the internal control system of the entire DMG MORI group.

Environment

Environmental policy

We will reduce energy consumption in our business activities, use resources effectively and prevent environmental pollution. We will use resources and energy carefully and produce environmentally-friendly products. We will raise our employees' environmental awareness and as a responsible corporate citizen comply with environmental laws and regulations and legal requirements that apply to us, and support environmental policy. We will aim to disclose information relating to environmental protection.

Environmental management system

In pursuit of efficient use of resources and energy and protection of global environment, DMG MORI introduced an environment management system called ISO14001 and earned external certification. With this system for environment preservation, we have successfully reduced energy consumption and industrial waste at the factories promoted recycling, and designed environment-friendly products.

GREENmode

Since September 2017, DMG MORI has standardized GREENmode to save energy consumption. Optimized functions are added in accordance with each machine's application and characteristics, with a focus on 4 viewpoints; shortening lead time, visualizing, eliminating idle time and introducing cutting-edge technology. By combining four different approaches called GREEN control (shortening lead time), GREEN monitoring (visualizing), GREEN idling stop (eliminating idle time), and GREEN device (introducing cutting-edge technology), we support highly-productive and eco-friendly operation at customers' sites. Most significantly we have line-ups of 9 functions in GREEN control, which improves machining conditions and shortens machining time with control technology. With GREENmode, a machine can reduce the annual CO_2 emission by 2,650 kg.

Environmental Data

〈DMG MORI〉

INPUT items			location	unit	2014	2015	2016	2017	2018
Energy input	Production	Electricity (*1)	Japan	thousand kWh	49,333	50,851	46,309	46,612	**48,164**
		Solar power	Japan	thousand kWh	126	123	130	127	**126**
		Heavy oil (*2)	Japan	K ℓ	2,136	2,574	3,187	3,129	**2,218**
		City gas	Japan	thousand ㎥	173	196	175	0	**0**
		LPG	Japan	t	296	279	228	304	**360**
Water consumption	Production	Clean water	Japan	thousand ㎥	117	121	126	138	**139**
		Groundwater	Japan	thousand ㎥	75	74	104	93	**72**

Energy input and water consumption are dependent on production numbers and machine model composition of each fiscal year.

In the following table, we converted energy input to crude oil consumption.

INPUT items			location	unit	2014	2015	2016	2017	2018
Energy input	Production	Converted to crude oil	Japan	K ℓ	15,093	15,906	15,281	15,185	**14,757**

OUTPUT items			location	unit	2014	2015	2016	2017	2018
Greenhouse gas	Production	CO_2 emission (*3)	Japan	t-CO_2	32,498	33,815	32,425	32,197	**29,633**
Industrial waste	Production	Final disposal amount	Japan(Iga)	t	139	153	110	119	**130**
		Final disposal rate	Japan (Iga)	%	4	4	3	3	**4**

【Scope of data】DMG MORI's factories in Japan(Iga, Nara, Chiba (until FY2016))
【Fiscal year period】2014: from April 1st to March 31st of the following year; FY2015-2018: from January 1st to December 31st.
Environmental data are dependent on production numbers and machine model composition of each fiscal year.
(*1)Energy input "Electricity" indicates the volume purchased from power generation companies.
(*2)Energy input "Heavy oil" includes consumption for private power generation.
(*3)Greenhouse gas: Volume of CO_2 emission was calculated by using emission coefficients published by power generation companies.

〈DMG MORI AG〉

ENERGY KEY FIGURES*1,*2,*4

in MWh	2017	2018	Change from previous year
Fuel consumption from fossil energy sources	76,281	**80,506**	4,225
of which natural gas	30,681	**32,491**	1,810
of which liquid gas	325	**364**	39
of which heating oil	0	**55**	55
of which fuel	45,275	**47,596**	2,321
Electricity consumption	46,757	**48,962**	2,205
of which procured from the grid	45,456	**47,489**	2,033
of which self-generation from renewable sources	1,301	**1,473**	172
Energy consumption in total	123,038	**129,468**	6,430

GHG EMISSIONS *1,*3,*4

	2017	2018	Change from previous year
GHG emissions in total (Scope 1, Scope 2) in t CO_2e	38,430	**40,549**	2,119
Direct emissions (Scope 1) in t	18,164	**19,163**	999
Indirect emissions (Scope 2) in t	20,266	**21,385**	1,119

*1: Includes the following sites in Germany: Bielefeld, Pfronten, Seebach; Italy: Brembate di Sopra, Tortona; Poland: Pleszew; Russia: Ulyanovsk.
*2: The conversion factors for liquid gas and heating oil are taken from the Bundesverband der Energie- und Wasserwirtschaft e. V. (BDEW – the federal association of the energy and water industries) 2017. The conversion factors for fuel were taken from the Bundesamt für Wirtschaft und Ausfuhrkontrolle (BAFA – Federal Office for Economic Affairs and Export Control) 2017.
*3: The CO_2e emissions were formed as a product of the energy used and the corresponding emission factor. The factors for calculating direct emissions (Scope 1) of heating oil, diesel, gasoline and natural gas, are taken from the Department for Environment, Food & Rural Affairs (Great Britain). The six main greenhouse gases (carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF6), as defined by the Intergovernmental Panel on Climate Change (IPCC), were taken into account in calculating the CO_2 equivalents (CO_2e). The IPCC factors were used in the conversion. To calculate the indirect emissions (Scope 2) from electricity, country-specific factors were applied. The data was taken from CO_2 Emissions from Fuel Combustion 2017, International Energy Agency, 2017. Other emissions only occur in small quantities and will not be reported individually.
*4: Figures are extracted from Sustainability Report 2018 of DMG MORI AG.

Sales of secondhand machines

DMG MORI reuses resources and saves energy by selling secondhand machines; we retrieve young and well-maintained machines from our showrooms, machining plants, and customers, and replace core components or add requested options before delivering it to a new customer. Machine tools generally run for a decade or two, and we are capable of upgrading the accuracy and reliability of our secondhand machines and allowing them exploit the full lifespan. In this way, we can minimize waste and preserve natural resources.

Development of Zero-Sludge Coolant Tank

Many customers wish to remove cutting chips more easily. In DMG MORI's Zero-Sludge Coolant Tank, several nozzles attached to the tank create optimize coolant flow to collect fine sludge efficiently by high-precision cyclone filters. This new technology has many advantages: less frequent maintenance of the tank, prevention of clogged pipes and coolant nozzles, sustaining pump's performance, extension of coolant's lifetime and reduction of environmental footprint.

Collective transportation

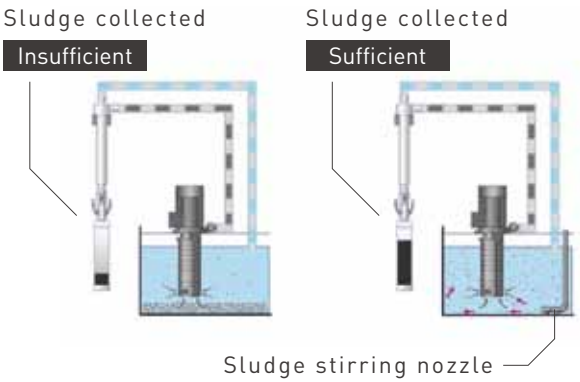
Parts produced by domestic suppliers are gathered at designated points in each area, and are collectively transported by trucks DMG MORI arranges; in this way, CO2 emission was significantly reduced from the previous individual transportation. In 2018, around 20 partner companies from Hokuriku area joined this initiative, in addition to the existing 70 from Kansai, Tokai, and Kanto areas. As a result, CO2 emission reductions were increased from 5,856 tons in 2017 to 10,488 tons in 2018.

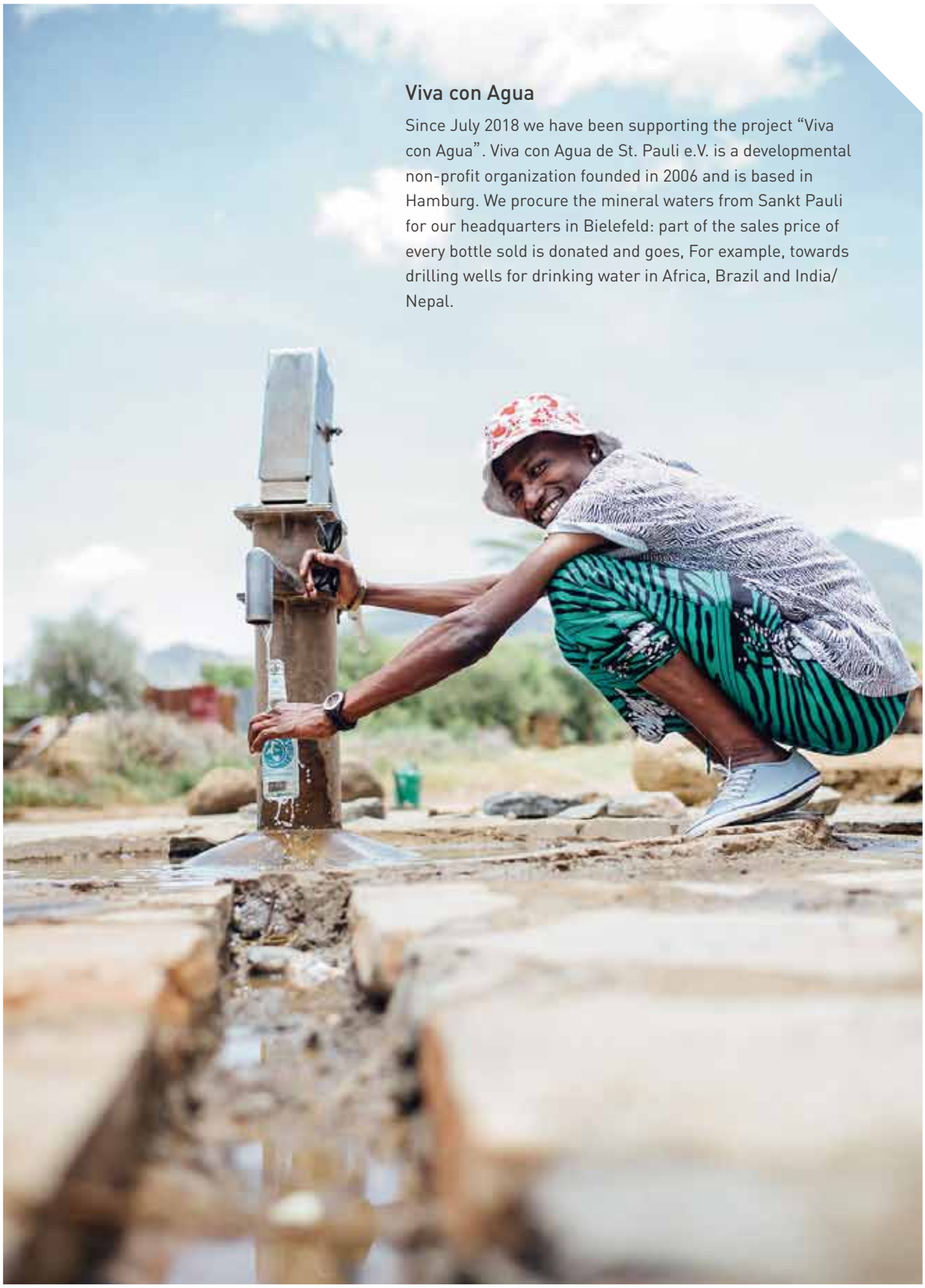
Reusable packaging materials

Previously we used wooden boxes for machine and parts transportation, which were discarded after one-time usage. This approach was reviewed; the wooden containers were replaced with returnable pallets for overseas transportation and steel crates for domestic ones, by which we reduced wood consumption. We carefully wrap our machines with in-house plastic sheets with DMG MORI logo.

DMG MORI ships spare parts and accessories resource-friendly. This packaging is FSC™ certified to support sustainable forestry in raw materials production.

■ Effect of sludge stirring





Viva con Agua

Since July 2018 we have been supporting the project “Viva con Agua”. Viva con Agua de St. Pauli e.V. is a developmental non-profit organization founded in 2006 and is based in Hamburg. We procure the mineral waters from Sankt Pauli for our headquarters in Bielefeld: part of the sales price of every bottle sold is donated and goes, For example, towards drilling wells for drinking water in Africa, Brazil and India/ Nepal.

Human Capital

Human resources development is an important mission of DMG MORI. 1% of the annual turnover is spent for trainings, encouraging each employee to be a global and professional player. We offer level-specific trainings for new employees and managers to Directors, as well as skill-specific trainings to brush-up expertise and management skills at DMG MORI Academy since 2006. TOEIC courses for English learners, open seminars on latest machining technology and industrial trends, and an online education system for machine tool-related topics are also among our extensive lineup.

AG traditionally offers an apprenticeship program to help young talents explore their skills and career paths. In 2018, 397 trainees were enrolled in the program. Job trainings are available in 10 qualified fields, and the trainees can take associated courses at local vocational colleges or at the applied science faculty of universities. The initiative was highly appreciated by German business magazine “Capital,” and AG was appraised as the nation’s most committed enterprise to talent development.

Mori Manufacturing Research and Technology Foundation

https://morifound.dmgmori.co.jp

DMG MORI lends or donates its machine tools worldwide to strengthen alliances with industrial and administrative partners and research institutes at universities, etc. and to support their application research activities. In addition, the company has established a scholarship fund and made donations to nurture talented engineers in Japan and overseas. Mori Manufacturing Research and Technology Foundation was established to conduct such corporate social responsibility activities of DMG MORI continuously by maintaining a designated business volume. The foundation has taken over the responsibility for the said activities from DMG MORI. We believe that the foundation's activities to provide continuous support for technology development and innovation of machine tools will strengthen the basis for sustainable growth of the machine tool industry as a whole. We also believe that human resources development through the alliances with research institutes worldwide will contribute to global industrial development including in emerging countries. Further, as a part of its social contribution activities, the foundation will strengthen the alliance with local communities by extending support for constructing a cultural environment with higher public value.

1) Support for research and development

Support for research and development of machine tools and related technologies is handled by DMG MORI, financial contributor to the foundation, through its joint research and development activities with universities and research institutes worldwide. The main focus areas of the foundation are providing support for international academic conferences, etc.

2) Support for human resources development

The foundation took over responsibility for operation and management of "DMG MORI Scholarship Fund" , which was established by both DMG MORI Co., Ltd. and DMG MORI AG to support technical college students who suffered from the Great East Japan Earthquake in March 2011. In 2017, it made a contribution of 15 million JPY to National Institute of Technology, an independent administrative agency.

In 2018, the foundation plans a scholarship program that will support engineering students (7 students) who enter PhD course at either Kyoto University or Keio University in Japan.

3) Support for local communities and cultural activities

The foundation's support for local communities and cultural activities is centered in Nara Prefecture, where DMG MORI was founded, and Iga City in Mie Prefecture, where company's main plant is located. In Yamato-Koriyama City of Nara, the birthplace of DMG MORI, it planted 140 cherry blossom trees alongside the Bodaisen River which runs close to Nara Campus in Idono-cho, Yamato-Koriyama City, and donated the trees to the city to create a beautiful landscape. In addition, DMG MORI sponsors various local events hosted by local communities in Yamato-Koriyama, Iga, and Nabari such as cherry blossom festivals, summer festivals, fireworks festivals, etc.

Letter of appreciation from National Institute of Technology

Mori Manufacturing Research and Technology Foundation
(General Incorporated Foundation)

DMG MORI Academy

DMG MORI Academy is an internal training institution for machine tool operation. All the trainings focus on practical operation of machines equipped with real cutting tools. At 8 training facilities in Japan, Germany the United States, China, and Italy, DMG MORI Academy offers trainings for employees and customers.

New employee training

All the employees take this course as soon as they join the company. It covers the basic knowledge required for safe operation, and the trainees learn about potential risks in lectures and demonstrations.

Skills training

This training is designed to learn the machining process from tooling, programming, tool compensation, to dimension adjustments by using machine tools to improve product knowledge. Generally, subject employees participate in this training once a year as a continuous learning opportunity.

Service training

Besides acquiring new product knowledge, service engineers review basic service operation to brush up their professional skills, expertise and service quality to provide better services to customers.

Application training

Through the trainings, application engineers gain knowledge, skills and techniques required for the daily duties such as machine operation, machining processes, workpiece fixture, tool selection, CAM programming, CMM and other measuring equipment.

Sales trainings

ASMs (Area Sales Managers) from Japan, Asia and other parts of the world take the trainings. Through programming and operation of turning centers and robots, the attendees can understand DMG MORI products better and enhance their sales skills.

Manufacturing trainings

A variety of trainings are available for manufacturers. One example is a measuring course, which offers learning and practicing opportunities of measuring equipment from micrometers, calipers to CMM. A basic course helps attendees understand hydraulic, pneumatic, electrical and sequence circuits with a circuit assembly practice.

Emerging technologies laboratory

DMG MORI established Emerging Technologies Laboratory in July 2017, in order to develop young talents to lead IoT and other digital transformation in line with the ever-changing customers' and social needs. The new facility offers learning opportunities for selected employees and long-term internships from Kanto area. With a view to decades ahead, we are cultivating human resources with strength in connected industries, including AI and cloud technology.

Leadership program

While DMG MORI Academy provides technical trainings for engineers and sales personnel, our Leadership Program intends to develop talented employees and to strengthen organizations throughout the DMG MORI group. The exclusive program started in 2018 and has been offered to 60 incumbent and potential managers. The attendees from Japan, the United States, Canada, Mexico, Brazil, and India improved their leadership skills through a 200-hour curriculum in Davis, Dallas, Chicago, and Tokyo, and strengthened their group-wide network.

Scholarship fund

The DMG MORI Scholarship Fund started in 2011 to help the recovery from the Great East Japan Earthquake. It pays monthly 50,000 yen (annually 600,000 yen) individually to national technical college students in the affected area for 10 years. In this way, we have supported the growth of young talents for the future of Japan's manufacturing industry. Furthermore in 2008, DMG MORI and the University of Tokyo jointly established the DMG MORI IIT Scholarship Program for students of the Indian Institutes of Technology. We hope to encourage the scholarship recipients to study mechanical, electrical, or aeronautical engineering, or other fields in depth and to play an active role around the world, including India and Japan.

Development of industrial human resources

MTTRF (Machine Tool Technologies Research Foundation)

http://www.mttrf.org/

MTTRF (Machine Tool Technologies Research Foundation) is a non-profit organization accredited by the US government. Since its establishment in October 2002, DMG MORI and other companies worldwide have financially supported the operation. Based in San Francisco, California, the United States, the foundation aims at developing machine tool researchers. Through MTTRF, DMG MORI offers state-of-the-art machine tools, software, and R&D expenses to research institutes. The results of MTTRF's research are widely published via journals and international conferences, including the MTTRF's Annual Meeting which is open to the public and not limited to sponsors or recipients of MTTRF's support, thus fostering the education of young and talented engineers.

CIRP (The International Academy for Production Engineering)

CIRP is the world's most renowned international academic conference on production engineering with 600 members in about 50 countries. It publishes an international academic journal "CIRP Annals — Manufacturing Technology". At the annual general assembly of CIRP, participants attend presentations on some 150 carefully-selected research papers, approx. 10 key note speeches, and STC (Scientific Technical Committee) meetings. In 2018, the general assembly was held in Tokyo with the attendance of Their Majesties the Emperor and Empress of Japan, and DMG MORI supported this event as a platinum sponsor. Other contributions from DMG MORI included: a research paper presentation on thermal compensation of a turning center as the first author; submission of 4 research papers as co-authors; lectures and technical support at 2 STC meetings.

Support for vocational school

For the past 14 years, DMG MORI has supported technical trainings at the German University in Cairo (GUC), as a door opener to African market. We contributed 10 machines by 2018, and a new powder bed-type laser machine upon the establishment of the Technology and Solution Center and the Training Academy in January 2019.

WorldSkills competitions

WorldSkills Competitions take place every 2 years to promote skill development through vocational training in member countries and strengthen friendship among young participants, who represent their countries/regions as winners of pre-competitions. DMG MORI is a long-standing sponsor as a Global Industry Partner since 2007. The company hosted WorldSkills Leipzig 2013 in Germany as a main sponsor. At WorldSkills Abu Dhabi 2017 in UAE, DMG MORI provided 29 machine tools for the 4 metal-cutting sections: CNC milling, CNC turning, Manufacturing team challenge, and Plastic die engineering. DMG MORI will continue its support at the next competition WorldSkills Kazan 2019 in Russia.

The Cutting dream contest

https://www.dmgmori.co.jp/corporate/dreamcontest/

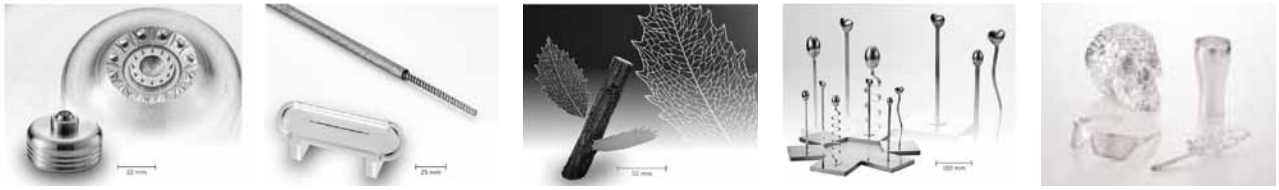
The Cutting Dream Contest has been held 13 times since 2004 to facilitate exchange and development of cutting technologies and techniques of the industry. Users of cutting machine tools at companies, technical colleges, universities, and research institutes in Japan are eligible participants. The contest started also in the U.S. in 2006 and in Europe in 2007.

The event has been well received and appreciated in both regions. The prize winners are selected by category through a rigorous screening process by juries comprised of university professors. The 5 categories of the contest are: Production Parts Machining, Prototype & Test Cut Machining, Die & Mold/Form Machining, Micro Machining and Academic Research. The awarded workpieces are on display at the Iga Global Solution Center of DMG MORI. Every day, a lot of visitors from Japan and overseas enjoy the extraordinary techniques and innovative ideas represented by these workpieces.

Prize winners of the 13th Cutting dream contest

Gold Prize Winners

DMG MORI 5-axis Grand Prize

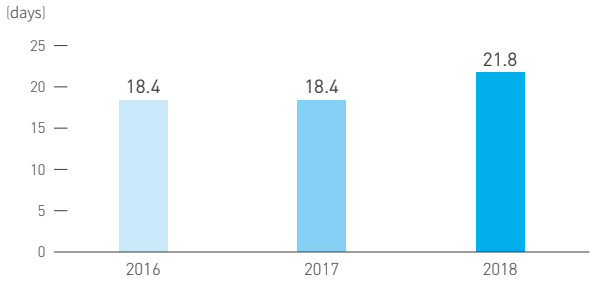


Work style reform

Flexible working hours

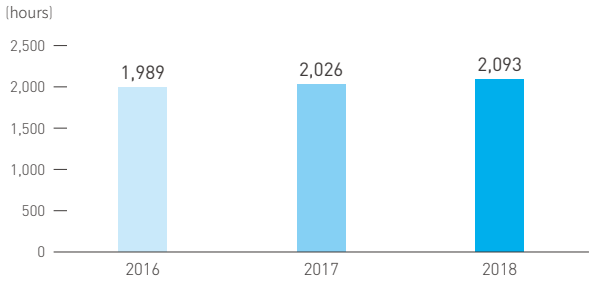
By offering both core time system and shift system, we encourage an efficient working style and less working hours. We prepared independent working day calendar for each department based on the peak seasons and events. To find a better work-life-balance and productive working style, the company sets a goal to consume all the annual paid holidays given to its employees. In 2018, our employees took in average 22.1 days-off by consuming the new and accumulated paid holidays from the past year. The gap between the average annual working hours between CO (2,000 hours) and AG (1,800 hours) is getting smaller.

■ Average number of consumed annual paid holidays



Subject: permanent and contract Japanese employees
Calculated on a basis of 20 annual paid holidays

■ Average annual working hours



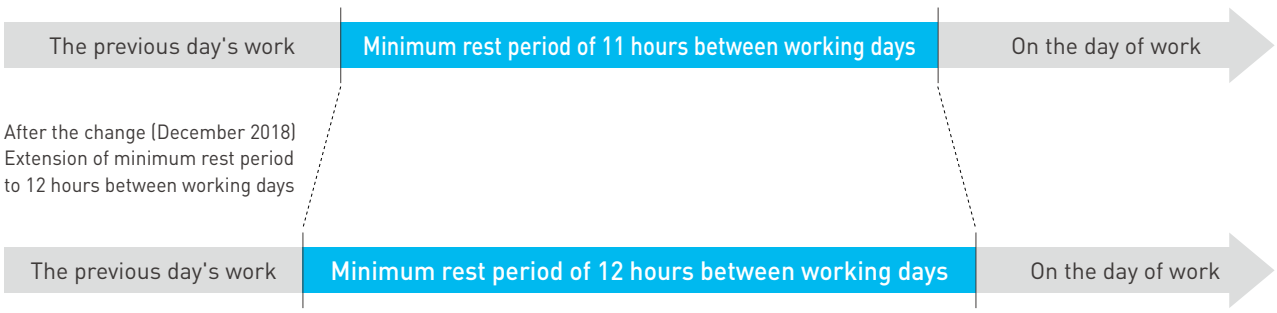
Subject: permanent and contract Japanese employees

Minimum rest period between working days

In August 2018, DMG MORI introduced an interval system, where employees must take at least 11 hours of rest period between working days. In December, the minimum rest period was extended to 12 hours, and employees were banned from staying in their working areas longer than 12 hours. Since January 2019, employees may not log-in the company's IT system for 12 hours after leaving the office. In this way, the company strictly controls the working hours of its employees to avoid overwork.

■ Implementation of minimum rest period between working days

At the time of introduction (August 2018)

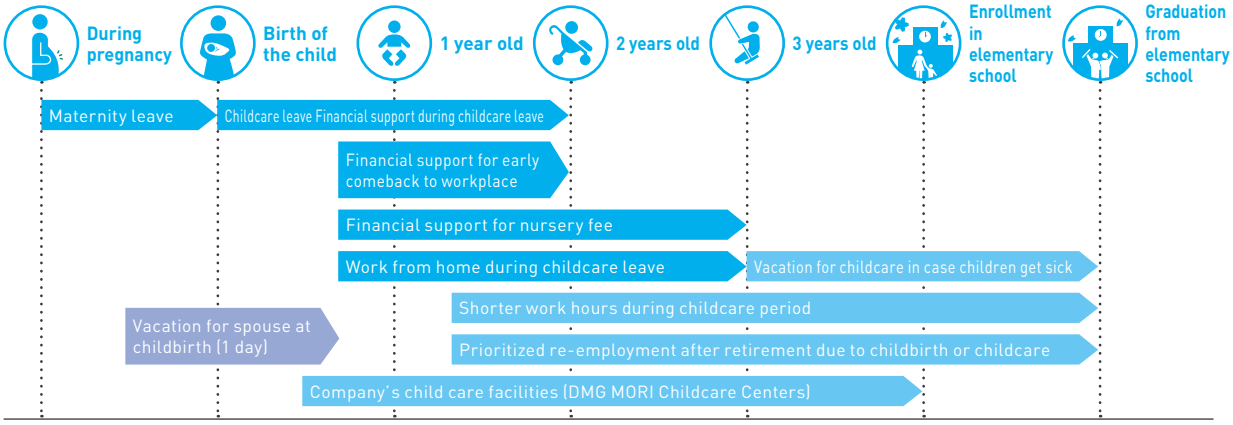


Human Capital

Support for balancing career and family

We encourage employees to pursue their professional careers continuously at DMG MORI over child- or elderly-care leaves. We offer maternity, child- and elderly-care leaves, financial support for early returners from childcare leave and for nursery school, short working hours, as well as telecommuting during childcare leave. Many employees utilize these services to continue working for the company.

■ Overview of company's childcare support



DMG MORI Child Care Centers

In April 2018, the company established DMG MORI Child Care Centers at its main locations in Japan — Iga Campus, Nara Campus, Nagoya National Headquarters and Tokyo Global Headquarters for 120 pre-school children under 6 years old. The child care centers are certified and supported by the Cabinet Office as part of its company-led child care project, and DMG MORI Group employees can receive the child care service virtually for free, thanks to the company's child care support allowance system. The company started in-house childcare service in 2016 limited to working days on weekend. Upon users' requests, the company extended the service and established the permanent child care centers. DMG MORI will continue investment in creating better work environment for employees.

DMG MORI Childcare Center(Iga)

Social Activity

Contributions to communities

Japan

Loaning out cutting-edge machine tools

DMG MORI concluded a “Comprehensive Agreement on Partnership and Cooperation” with Nara Prefecture and a “Comprehensive Partnership Agreement on Industrial Development” with Mie Prefecture to promote advanced technical education and to support engineers and researchers. In 2018, the company loaned out in total 6 units of 5-axis machining centers and turning centers to Nara Suzaku High School, Oji Technical High School, and Gose Industrial High School in Nara Prefecture, an ultrasonic machine to Nara Prefecture Institute of Industrial Development, and a 5-axis machining center to Yokkaichi Technical High School in Mie Prefecture.

DMG MORI YAMATO KORIYAMAJO HALL

In January 2017, DMG MORI acquired the naming rights of the hall that has been familiar to the people of Yamato-Koriyama City, and named it “DMG MORI YAMATO KORIYAMAJO HALL.” Besides support to maintenance and improvement of the hall’s facilities, the company is committed to make it a place for transmitting various cultures and to improve the quality of life of the people in the city. In May 2018, “Nara Piano Friends,” a music event featuring the piano supported by DMG MORI as a special sponsor since 2012, took place in this hall.

©Nara Piano Friends／MBS

Preservation of cultural heritages

DMG MORI supports preservation and renovation of historic monuments of ancient capital Nara, such as Kasuga Taisha Shrine and Kofukuji Temple.

Material credit:
Kasuga Taisha Shrine

Material credit:
Nara City Tourist Association
(Kofukuji Temple)

Germany

We feel an obligation towards the community and invest in the confidence of the public. This forms an integral part of our values and our policy. Many of our employees play a role in giving back to local society. The focus of our social commitment is on our employees, young people, schools, colleges and universities, and charitable associations. DMG MORI sponsors projects in the areas of the community, education, science, the arts, culture, sport and particularly for up-and-coming talent.

In November, we held German-Japanese classical concert in the Rudolf-Oetker-Halle in Bielefeld, and also supported the modernization of the renowned concert venue. This event was a very special part of our local sponsoring approach in the fields of sport, the arts and culture. It also reflected the broad cultural diversity of our "Global One Company".

We support schools and universities through donations and cooperation by exchanging ideas and knowledge. We regularly take part in events such as "Girls Day" and "Future Day" and facilitate visits to our production sites for school children and students. In addition, we are heavily involved at all our sites in local organizations and projects to actively form networks and through these to be able to support the interests of the respective region.

In the reporting period we invested about €450,000 in donations and sponsorships. The focus of donation was primarily on children. The Edith & Alois Berger foundation, which takes care of children in need in Germany and Africa, charitable organization "Hoffnungstern Uganda-Freunde e.V.", and "Fruchtalarm" project for children suffering from cancer, for example. AG has been heavily involved for years in sponsoring the Arminia Bielefeld football club. Additionally, in November 2018, AG acquired shares in the Schüco-Arena, the Arminia Bielefeld stadium. Moreover, we have sponsoring agreements with Bielefeld Marketing GmbH and the Bielefeld Kunstverein (art association).

Illuminated in the company colors: the Rudolf-Oetker-Halle glows in the colors of DMG MORI on the evening of the German-Japanese classical concert.

Investor Relations

DMG MORI's basic approach is to always pay attention to expectations from shareholders and society and to take actions for higher accountability. This is our base for information disclosure and IR activities including communication with shareholders, investors and other parties.

Every year, we invite individual shareholders to our Solution Centers in Iga Campus and Tokyo Global Headquarters (totaling to 2 events per year). Shareholders have opportunities to look at the latest machine tools and to better understand DMG MORI's technologies and efforts. We recognize Fair Disclosure as an integral part of our IR activity. We always publish information for investors both in Japanese and English. Additionally, we release supplemental information as Q&A from investors at quarterly financial disclosures to ensure fairness. We also proactively disclose information from CSR point of view in addition to financial information, which is usually required by regulations.

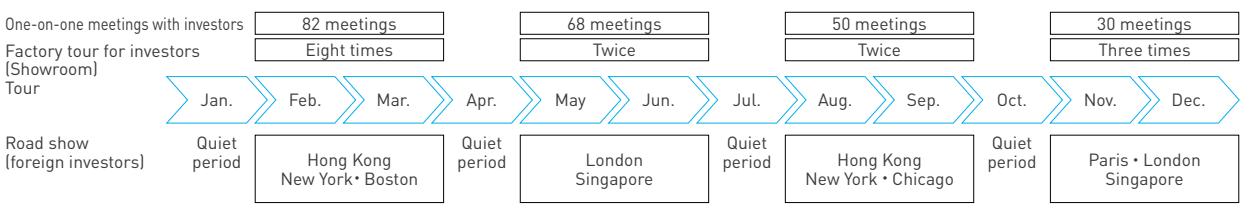
In 2018, we conducted more than 230 meetings with investors.

Individual shareholders visiting DMG MORI

■ Major IR activities in 2018

Activities	Details
Visits by individual shareholders	Every year, we invite individual shareholders to our Solution Centers in Iga Campus and Tokyo Global Headquarters (totaling to 2 events per year). Results are shared in the Shareholders' Newsletter.
Meetings for financial analysts and institutional investors	Twice a year face-to-face meetings following disclosure of mid-term and full-year results. Additionally, twice a year phone-conferences after disclosure of the 1st and 3rd Quarter results.
Meetings for institutional investors outside of Japan	An Operating Officer dedicated for IR holds individual meetings with investors in Europe (twice a year), Americas (twice a year), and Asia (4 times a year).
Disclosure of IR documents on company's website	Disclosure of IR documents in both Japanese and English on company's website (https://www.dmgmori.co.jp/corporate/ir/) after closing of each quarter and as necessary.

■ Communications with institutional investors in 2018

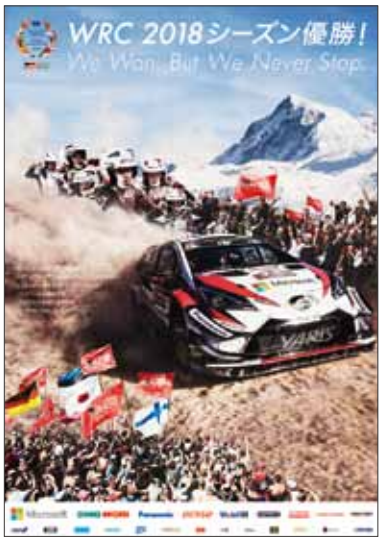


Social Activity

Sports marketing

FIA World Rally Championship (WRC)

In 2017, DMG MORI concluded a partnership agreement with Toyota Motor Corporation in the FIA World Rally Championship (WRC), which is one of the most prestigious motorsport championships like the FIA Formula One World Championship and the FIA World Endurance Championship. Many parts used in the rally car YARiS were machined on DMG MORI's machine tools. In the second year following its return to WRC after 18 years, the Toyota team won the manufacturer's title at WRC 2018. DMG MORI will continue its engineering support to TOYOTA GAZOO Racing World Rally Team at WRC 2019, which will be the largest championship since 2008 with 14 rounds including the new location in Chile.



DMG MORI SAILING TEAM

"Vendée Globe" is a non-stop, solo, round-the-world yacht race held every four years. This event is as popular as the "French Open" tennis tournament or "Tour de France" in the host country of France, as well as in the other parts of Europe. In 2018, we launched the DMG MORI SAILING TEAM, a professional oceanic sailing team, and welcomed a marine adventurer Mr. Kojiro Shiraishi as a team member. In November 2020, the team will join Vendée Globe 2020 to complete the 80-day journey with its robust, high-precision, and state-of-the-art yacht that will survive through tough environment.

Support to Local Sports Clubs

DMG MORI sponsors two sports teams in Nara, the birthplace of the company – "Bambitious Nara", a professional basketball team since 2014, and "NARA CLUB", a JFL soccer team since 2017. We promote sports activities in Nara to make the area further appealing.

Material credit:
Bambitious Nara

Material credit:
NARA CLUB

FINANCIAL SECTION

Financial Summary

The following is an analysis of our financial situation, business results and cash flows during the fiscal year ended December 31st, 2018.

DMG MORI adopted the International Financial Reporting Standards (IFRS) in December 2015 to improve the international comparability of financial information on the capital market, and to standardize accounting within the group.

【Analysis of financial position】

(1) Assets
Current assets totaled 244,029 million yen, mainly due to increase of 8,700 million yen in trade and other receivables, while cash and cash equivalents decreased by 37,605 million yen.

Non-current assets totaled 284,393 million yen, mainly due to decreases of 5,296 million yen in property, plant and equipment, 4,493 million yen in goodwill, and 3,916 million yen in intangible assets.

As a result, total assets stood at 528,423 million yen.

(2) Liabilities
Current liabilities totaled 314,537 million yen, mainly due to increases of 92,124 million yen in other financial liabilities, 61,695 million yen in contractual liabilities, and 32,072 million yen in interest-bearing bonds and borrowings, while advances received decreased by 45,696 million yen.

Non-current liabilities stood at 99,718 million yen. This primarily reflected decreases of 101,749 million yen in other financial liabilities and 94,417 million yen in interest-bearing bonds and borrowings.

As a result, total liabilities stood at 414,256 million yen.

(3) Equity
Equity totaled 114,166 million yen, mainly due to decreases of 8,930 million yen in other components of equity, while retained earnings increased by 11,271 million yen.

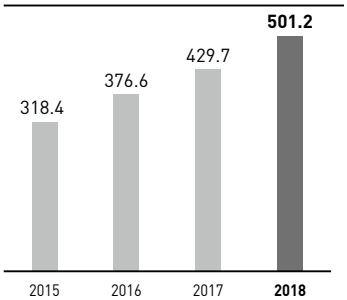
【Analysis of business results】

Sales revenue for the fiscal year 2018 amounted to 501,248 million yen (3,844 million euro) (16. 7% increase from the previous year). Operating profit came to 36,261 million yen (278 million euro) (23.4% increase from the previous year). Earnings before income taxes for the fiscal year amounted to 31,275 million yen (240 million euro) (26.1% increase from the previous year), and income attributable to owners of the parent company totaled 18,517 million yen (142 million euro) (21.3% increase from the previous year).

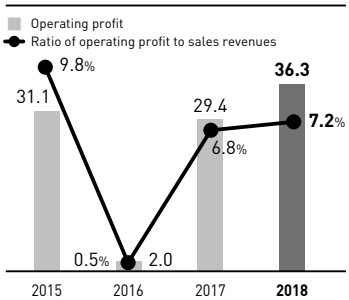
Group-wide order intake value of machine tools amounted to 497 billion yen (11% increase from the previous year), mainly due to the positive result of the first half term (23% increase from the previous year). The second half, while still performing well, only reached the level of the previous year. Demand for automation, including CELOS, Technology Cycles and peripheral equipment, increased and amounted to 24% of our total order intake (compared to 17% in the previous year). Apart from 5-axis machines and mill-turn centers, order intake of advanced technologies, such as Ultrasonic and Additive Manufacturing machines, is growing as well.

Among all regions, Japan grew the most (24% increase compared to the previous year), followed by the Americas (13%), Europe and China (7% each)

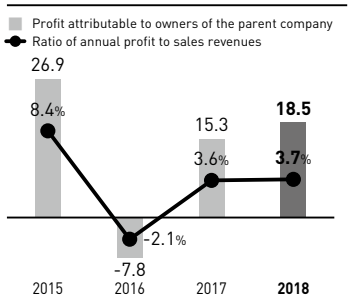
Sales revenues (Billions of yen)



Operating profit (Billions of yen)
Ratio of operating profit to sales revenues (%)



Profit attributable to owners of the parent company (Billions of yen)
Ratio of annual profit to sales revenues (%)



and Asia including India (4%). We recorded high-level order intake numbers for Japan, the Americas and Europe over the course of this term. While the decreasing demand for machining of smartphone housings negatively impacted the industry in the Chinese market, our group remained unaffected, due to not being present in this sector. As a result, orders from manufacturers of transportation equipment, such as buses and trucks, orders from the energy sector and orders from general machinery manufacturers increased over the first three quarters. However, unable to escape the effects of the US-China trade dispute, demands decreased upon entering the 4th quarter. Additionally, difficulties in foreign currency procurement on customer side delayed the collection of down payments, which are required for recording an order. Consequently, order intake in the Chinese market drastically decreased. Order intake shares for each region are as follows: Japan 18%, Americas 18%, Europe 50%, China 8%, Asia including India 6%.

The Japan Machine Tool Builders' Association (JMTBA) expects a decrease of 12% in the industry's order intake for 2019 compared to the previous year, and other effects leading to a correction of the current economic growth. Nevertheless, our group foresees a positive market response to our strategy of process integration in the form of 5-axis machines and mill-turn centers, a growing demand in automation systems, and increasing use of advanced machining technology, such as Ultrasonic machines and Additive Manufacturing machines. We will continuously commit ourselves to further improving the order intake.

【Analysis of cash flows】

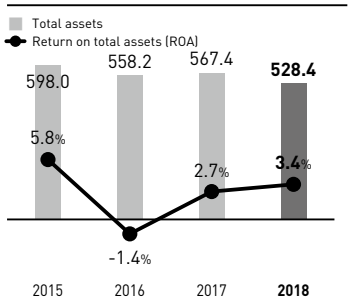
(1) Cash flows from operating activities
Net cash flows from operating activities totaled 49,398 million yen (31,423 million yen in the previous year). The main factors for this positive increase were 31,275 million yen of Earnings before income taxes, 18,499 million yen in depreciation and amortization, an increase of 10,517 million yen in Trade and other payables, an increase of 18,828 million yen in contractual liabilities, and an increase of 5,873 million yen in Provisions. The main negative factors were 3,751 million yen of Other non-cash transactions, an increase of 12,958 million yen in inventories, an increase of 11,782 million yen in Trade and other receivables, 5,002 million yen of interest paid, and 7,269 million yen of corporate income tax paid.

(2) Cash flows from investing activities
Cash flows used for investing activities amounted to 19,020 million yen (1,387 million yen in the previous year). The main negative factors were 13,732 million yen for purchases of property, plant and equipment, and 5,545 million yen for purchases of intangible assets.

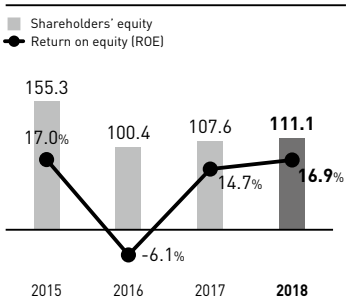
(3) Cash flows from financing activities
Cash flows used in financing activities amounted to 65,433 million yen (37,726 million yen in the previous year). The main positive contributions were 12,240 million yen of net increase in current borrowings, and 4,885 million yen of proceeds from non-current borrowings. The main negative factors were 75,404 million yen in payments for non-currents borrowings, and 6,044 million yen in dividends paid.

As a result, cash and cash equivalents as of December 31st, 2018, stood at 27,368 million yen, a decrease of 37,605 million yen from December 3.

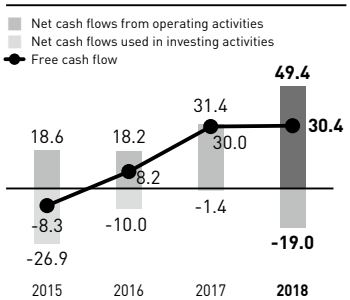
Total assets (Billions of yen)
Return on total assets (ROA) (%)



Shareholders' equity (Billions of yen)
Return on equity (ROE) (%)



Free cash flow (Billions of yen)



Consolidated Statement of Financial Position

	Millions of yen		Thousands of U.S. dollars (Note 2)
	2018 (31st December)	2017 (31st December)	**2018 (31st December)**
Assets			
Current assets:			
Cash and cash equivalents (Notes 7 and 24)	**¥ 27,368**	¥ 64,973	**$ 246,514**
Trade and other receivables (Notes 8, 24 and 25)	**69,441**	60,741	**625,481**
Other financial assets (Notes 12 and 24)	**6,836**	8,652	**61,574**
Inventories (Note 9)	**130,726**	122,981	**1,177,499**
Other current assets	**9,656**	10,629	**86,975**
Total current assets	**244,029**	267,979	**2,198,063**
Non-current assets:			
Property, plant and equipment (Note 10)	**128,686**	133,983	**1,159,124**
Goodwill (Note 11)	**68,854**	73,347	**620,194**
Other intangible assets (Note 11)	**65,399**	69,315	**589,074**
Other financial assets (Notes 12 and 24)	**8,509**	8,996	**76,643**
Investments in associates and joint ventures (Note 13)	**3,331**	2,229	**30,003**
Deferred tax assets (Note 20)	**4,317**	6,082	**38,884**
Other non-current assets	**5,293**	5,476	**47,676**
Total non-current assets	**284,393**	299,431	**2,561,637**
Total assets	**¥ 528,423**	¥ 567,411	**$ 4,759,709**

	Millions of yen		Thousands of U.S. dollars (Note 2)
	2018 (31st December)	2017 (31st December)	**2018 (31st December)**
Liabilities			
Current liabilities:			
Trade and other payables (Notes 14 and 24)	**¥ 56,833**	¥ 47,717	**$ 511,916**
Interest-bearing bonds and borrowings (Notes 15 and 24)	**54,725**	22,653	**492,929**
Advances received (Note 2)	**—**	45,696	**—**
Contract liabilities (Notes 2 and 25)	**61,695**	—	**555,710**
Other financial liabilities (Notes 16, 24 and 34)	**95,982**	3,857	**864,546**
Accrued income taxes	**9,147**	4,002	**82,390**
Provisions (Note 19)	**32,256**	29,886	**290,542**
Other current liabilities	**3,896**	6,144	**35,092**
Total current liabilities	**314,537**	159,958	**2,833,156**
Non-current liabilities:			
Interest-bearing bonds and borrowings (Notes 15 and 24)	**62,289**	156,706	**561,061**
Other financial liabilities (Notes 16 and 24)	**19,158**	120,907	**172,563**
Net employee defined benefit liabilities (Note 18)	**5,159**	6,254	**46,469**
Provisions (Note 19)	**5,633**	3,973	**50,738**
Deferred tax liabilities (Note 20)	**6,133**	7,844	**55,242**
Other non-current liabilities	**1,345**	1,746	**12,114**
Total non-current liabilities	**99,718**	297,433	**898,198**
Total liabilities	**414,256**	457,391	**3,731,363**
Equity (Note 21)			
Subscribed capital	**51,115**	51,115	**460,412**
Capital surplus	**—**	—	**—**
Hybrid capital	**49,505**	49,505	**445,910**
Treasury shares	**(8,571)**	(9,726)	**(77,202)**
Retained earnings	**37,498**	26,227	**337,758**
Other components of equity	**(18,435)**	(9,504)	**(166,051)**
Equity attributable to owners of the parent	**111,113**	107,617	**1,000,837**
Non-controlling interests	**3,053**	2,402	**27,499**
Total equity	**114,166**	110,019	**1,028,337**
Total liabilities and equity	**¥ 528,423**	¥ 567,411	**$ 4,759,709**

See accompanying notes to consolidated financial statements.

Consolidated Statement of Profit or Loss

Fiscal year ended 31st December, 2018

	Millions of yen		Thousands of U.S. dollars (Note 2)
	2018 (31st December)	2017 (31st December)	**2018 (31st December)**
Revenues:			
Sales revenues (Note 25)	**¥ 501,248**	¥ 429,664	**$ 4,514,934**
Other operating revenues (Note 26)	**4,472**	12,028	**40,281**
Total revenue	**505,720**	441,692	**4,555,215**
Costs:			
Changes in merchandise, finished goods and work in progress for sale	**(1,498)**	5,578	**(13,493)**
Costs of raw materials, consumables and goods for resale (Note 9)	**235,972**	189,000	**2,125,490**
Personnel costs (Notes 23 and 28)	**131,426**	120,728	**1,183,804**
Depreciation and amortization (Notes 10 and 11)	**18,499**	18,344	**166,627**
Other operating costs (Notes 10, 11 and 27)	**85,059**	78,650	**766,159**
Total costs	**469,459**	412,301	**4,228,598**
Operating result	**36,261**	29,391	**326,616**
Financial income (Note 29)	**470**	647	**4,233**
Financial costs (Notes 30 and 34)	**5,624**	5,297	**50,657**
Share of profits of associates and joint ventures accounted for using equity method (Note 13)	**167**	62	**1,504**
Profit before income taxes	**31,275**	24,803	**281,705**
Income taxes (Note 20)	**11,900**	9,127	**107,187**
Profit	**¥ 19,374**	¥ 15,676	**$ 174,509**
Income attributable to:			
Owners of the parent	**¥ 18,517**	¥ 15,263	**$ 166,789**
Non-controlling interests	**857**	412	**7,719**
Profit	**¥ 19,374**	¥ 15,676	**$ 174,509**

	Yen		U.S. dollars
Profit per share			
Basic (Note 32)	**¥ 144.09**	¥ 116.44	**$ 1.29**
Diluted (Note 32)	**¥ 143.18**	¥ 115.59	**$ 1.28**

See accompanying notes to consolidated financial statements.

Consolidated Statement of Comprehensive Income

Fiscal year ended 31st December, 2018

	Millions of yen		Thousands of U.S. dollars (Note 2)
	2018 (31st December)	2017 (31st December)	**2018 (31st December)**
Profit	**¥19,374**	¥15,676	**$ 174,509**
Other comprehensive income:			
Items that will not be reclassified subsequently to profit or loss:			
Remeasurements of defined benefit plans	**426**	(129)	**3,837**
Change in fair value measurements of financial assets at fair value through other comprehensive income (Note 2)	**(782)**	—	**(7,043)**
Share of other comprehensive income of associates accounted for using equity method (Note 2)	**(21)**	—	**(189)**
Subtotal	**(377)**	(129)	**(3,395)**
Items that may be reclassified subsequently to profit or loss:			
Exchange differences on translation of foreign operations	**(8,404)**	4,044	**(75,698)**
Effective portion of changes in fair value of cash flow hedge	**157**	(31)	**1,414**
Changes in fair value measurements of available-for-sale financial assets (Note 2)	**—**	(2,602)	**—**
Share of other comprehensive income of associates accounted for using equity method (Note 2)	**—**	18	**—**
Subtotal	**(8,246)**	1,428	**(74,274)**
Total other comprehensive income for the period (Note 31)	**(8,624)**	1,298	**(77,679)**
Comprehensive income	**¥10,750**	¥16,974	**$ 96,829**
Comprehensive income attributable to:			
Owners of the parent	**9,904**	16,566	**89,209**
Non-controlling interests	**845**	408	**7,611**
Total	**¥10,750**	¥16,974	**$ 96,829**

See accompanying notes to consolidated financial statements.

Consolidated Statement of Changes in Equity

Fiscal year ended 31st December, 2018

	Millions of yen								
	Equity attributable to owners of the parent								
	Subscribed capital	Capital surplus	Hybrid capital	Treasury shares	Retained earnings	Other components of equity (Note 21)	Subtotal	Non-controlling interests	Total equity
As of 1st January, 2017	¥ 51,115	¥ —	¥ 49,505	¥ (23,769)	¥ 34,863	¥(11,266)	¥ 100,449	¥ 2,033	¥ 102,482
Profit	—	—	—	—	15,263	—	15,263	412	15,676
Other comprehensive income	—	—	—	—	—	1,302	1,302	(4)	1,298
Total comprehensive income	—	—	—	—	15,263	1,302	16,566	408	16,974
Payments to owner of hybrid capital (Note 21)	—	—	—	—	(1,069)	—	(1,069)	—	(1,069)
Acquisition of treasury shares (Note 21)	—	—	—	(5,251)	—	—	(5,251)	—	(5,251)
Cancellation of treasury shares (Note 21)	—	(12,847)	—	12,847	—	—	—	—	—
Disposition of treasury shares (Note 21)	—	(6,442)	—	6,446	—	—	3	—	3
Cash dividends (Note 22)	—	—	—	—	(3,405)	—	(3,405)	(57)	(3,462)
Transfer from retained earnings to capital surplus	—	19,290	—	—	(19,290)	—	—	—	—
Share-based payments (Note 23)	—	—	—	—	—	328	328	—	328
Changes due to business combinations	—	—	—	—	(5)	—	(5)	18	13
	—	—	—	—	—	—	—	—	—
Transfer from other components of equity to retained earnings	—	—	—	—	(129)	129	—	—	—
Total transactions with owners of the parent	—	0	—	14,042	(23,899)	458	(9,398)	(39)	(9,437)
Acquisition of non-controlling interests	—	(0)	—	—	—	—	(0)	(0)	(0)
Changes in ownership interests in subsidiaries and others	—	(0)	—	—	—	—	(0)	(0)	(0)
As of 31st December, 2017	¥ 51,115	¥ —	¥ 49,505	¥ (9,726)	¥ 26,227	¥ (9,504)	¥ 107,617	¥ 2,402	¥ 110,019
As of 1st January, 2018	**¥ 51,115**	**¥ —**	**¥ 49,505**	**¥ (9,726)**	**¥ 26,227**	**¥(9,504)**	**¥107,617**	**¥ 2,402**	**¥110,019**
Impact of changes in accounting policies (Note 2)	—	—	—	—	(208)	—	(208)	—	(208)
As of 1st January, 2018 (revised)	**51,115**	**—**	**49,505**	**(9,726)**	**26,018**	**(9,504)**	**107,408**	**2,402**	**109,811**
Net income	**—**	**—**	**—**	**—**	**18,517**	**—**	**18,517**	**857**	**19,374**
Other comprehensive income	**—**	**—**	**—**	**—**	**—**	**(8,612)**	**(8,612)**	**(11)**	**(8,624)**
Total comprehensive income	**—**	**—**	**—**	**—**	**18,517**	**(8,612)**	**9,904**	**845**	**10,750**
Payment to the owner of hybrid capital (Note 21)	**—**	**—**	**—**	**—**	**(1,072)**	**—**	**(1,072)**	**—**	**(1,072)**
Acquisition of treasury shares (Note 21)	**—**	**—**	**—**	**(0)**	**—**	**—**	**(0)**	**—**	**(0)**
Cancellation of treasury shares	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Disposition of treasury shares (Note 21)	**—**	**(254)**	**—**	**1,156**	**—**	**(100)**	**801**	**—**	**801**
Cash dividends (Note 22)	**—**	**—**	**—**	**—**	**(6,050)**	**—**	**(6,050)**	**(159)**	**(6,210)**
Transfer from retained earnings to capital surplus	**—**	**340**	**—**	**—**	**(340)**	**—**	**—**	**—**	**—**
Share-based payments (Note 23)	**—**	**4**	**—**	**—**	**—**	**209**	**213**	**—**	**213**
Changes due to business combinations	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Increase in consolidated subsidiaries	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**250**	**250**
Transfer from other components of equity to retained earnings	**—**	**—**	**—**	**—**	**426**	**(426)**	**—**	**—**	**—**
Total transactions with owners of the parent	**—**	**90**	**—**	**1,155**	**(7,037)**	**(318)**	**(6,109)**	**90**	**(6,018)**
Acquisition of non-controlling interests	**—**	**(90)**	**—**	**—**	**—**	**—**	**(90)**	**(285)**	**(375)**
Total changes in ownership interests in subsidiaries and others	**—**	**(90)**	**—**	**—**	**—**	**—**	**(90)**	**(285)**	**(375)**
As of 31st December, 2018	**¥ 51,115**	**¥ —**	**¥ 49,505**	**¥ (8,571)**	**¥ 37,498**	**¥(18,435)**	**¥111,113**	**¥ 3,053**	**¥114,166**

See accompanying notes to consolidated financial statements.

	Thousands of U.S. dollars (Note 2)								
	Equity attributable to owners of the parent								
	Subscribed capital	Capital surplus	Hybrid capital	Treasury shares	Retained earnings	Other components of equity	Subtotal	Non-controlling interests	Total equity
As of 1st January, 2018	**$460,412**	**$ –**	**$445,910**	**$ (87,605)**	**$236,236**	**$ (85,606)**	**$969,347**	**$ 21,635**	**$990,983**
Impact of changes in accounting policies (Note 2)	–	–	–	–	(1,873)	–	(1,873)	–	(1,873)
As of 1st January, 2018 (revised)	460,412	–	445,910	(87,605)	234,354	(85,606)	967,456	21,635	989,110
Profit	–	–	–	–	166,789	–	166,789	7,719	174,509
Other comprehensive income	–	–	–	–	–	(77,571)	(77,571)	(99)	(77,679)
Total comprehensive income	–	–	–	–	166,789	(77,571)	89,209	7,611	96,829
Payment to the owner of hybrid capital (Note 21)	–	–	–	–	(9,655)	–	(9,655)	–	(9,655)
Acquisition of treasury shares (Note 21)	–	–	–	(0)	–	–	(0)	–	(0)
Cancellation of treasury shares	–	–	–	–	–	–	–	–	–
Disposition of treasury shares (Note 21)	–	(2,287)	–	10,412	–	(900)	7,214	–	7,214
Cash dividends (Note 22)	–	–	–	–	(54,494)	–	(54,494)	(1,432)	(55,935)
Transfer from retained earnings to capital surplus	–	3,062	–	–	(3,062)	–	–	–	–
Share (based payments (Note 23)	–	36	–	–	–	1,882	1,918	–	1,918
Changes due to business combinations	–	–	–	–	–	–	–	–	–
Increase in consolidated subsidiaries	–	–	–	–	–	–	–	2,251	2,251
Transfer from other components of equity to retained earnings	–	–	–	–	3,837	(3,837)	–	–	–
Total transactions with owners of the parent	–	810	–	10,403	(63,384)	(2,864)	(55,026)	810	(54,206)
Acquisition of non(controlling interests	–	(810)	–	–	–	–	(810)	(2,567)	(3,377)
Total changes in ownership interests in subsidiaries and others	–	(810)	–	–	–	–	(810)	(2,567)	(3,377)
As of 31st December, 2018	**$460,412**	**$ –**	**$445,910**	**$ (77,202)**	**$337,758**	**$(166,051)**	**$1,000,837**	**$ 27,499**	**$1,028,337**

See accompanying notes to consolidated financial statements.

Consolidated Statement of Cash Flows

Fiscal year ended 31st December, 2018

	Millions of yen		Thousands of U.S. dollars (Note 2)
	Fiscal year ended 31st December, 2018 (1st January, 2018 through 31st December, 2018)	Fiscal year ended 31st December, 2017 (1st January, 2017 through 31st December, 2017)	**Fiscal year ended 31st December, 2018 (1st January, 2018 through 31st December, 2018)**
Cash flows from operating activities:			
Profit before income taxes	**¥ 31,275**	¥ 24,803	**$ 281,705**
Depreciation and amortization	**18,499**	18,344	**166,627**
Loss on sales or disposal of property, plant and equipment	**492**	470	**4,431**
Financial income and costs	**5,154**	4,649	**46,424**
Share of profits of associates and joint ventures accounted for using equity method	**(167)**	(62)	**(1,504)**
Other non-cash transactions	**(3,751)**	(5,502)	**(33,786)**
Changes in asset and liability items:			
Inventories	**(12,958)**	5,324	**(116,717)**
Trade and other receivables	**(11,782)**	(6,601)	**(106,125)**
Trade and other payables	**10,517**	(9,872)	**94,730**
Advanced received (Note 2)	**—**	15,298	**—**
Contract liabilities (Note 2)	**18,828**	—	**169,591**
Provisions	**5,873**	247	**52,900**
Other (Note 2)	**(770)**	(1,315)	**(6,935)**
Subtotal	**61,207**	45,783	**551,315**
Interest received	**342**	393	**3,080**
Dividends received	**119**	254	**1,071**
Interest paid	**(5,002)**	(5,305)	**(45,054)**
Income tax paid	**(7,269)**	(9,703)	**(65,474)**
Net cash flows from operating activities	**49,398**	31,423	**444,946**
Cash flows from investment activities:			
Purchases of property, plant and equipment	**(13,732)**	(5,895)	**(123,689)**
Proceeds from sales of property, plant and equipment	**1,521**	1,882	**13,700**
Purchases of intangible assets	**(5,545)**	(3,488)	**(49,945)**
Acquisition of subsidiaries, net of cash acquired	**(199)**	(649)	**(1,792)**
Acquisition of associated companies, net of cash acquired	**(1,103)**	—	**(9,935)**
Purchases of financial instruments	**(64)**	(1,616)	**(576)**
Proceeds from sales of financial instruments	**50**	8,001	**450**
Other	**53**	378	**477**
Net cash flows from investing activities	**(19,020)**	(1,387)	**(171,320)**
Cash flows from financing activities:			
Net increase in short-term borrowings	**12,240**	17	**110,250**
Proceeds from long-term borrowings	**4,885**	65,372	**44,001**
Payments for long-term borrowings	**(75,404)**	(87,489)	**(679,192)**
Payments for bond redemption	**—**	(20,000)	**—**
Dividends paid	**(6,044)**	(3,403)	**(54,440)**
Dividends paid to non-controlling interests	**(159)**	(57)	**(1,432)**
Proceeds from non-controlling interests	**250**	—	**2,251**
Acquisition of non-controlling interests	**(392)**	(0)	**(3,530)**
Acquisition of treasury shares	**(0)**	(5,251)	**(0)**
Payments for obligations for non-controlling interests	**(1)**	(11)	**(9)**
Payments to owners of hybrid capital (Note 21)	**(1,072)**	(1,069)	**(9,655)**
Proceeds from issue of debt instruments (Note 16)	**—**	14,838	**—**
Others	**265**	(670)	**2,386**
Net cash flows from financing activities	**(65,433)**	(37,726)	**(589,380)**
Effect of exchange rate changes on cash and cash equivalents	**(2,550)**	4,913	**(22,968)**
Decrease in cash and cash equivalents	**(37,605)**	(2,777)	**(338,722)**
Cash and cash equivalents at the beginning of the period	**64,973**	67,750	**585,236**
Cash and cash equivalents at the end of period (Note 7)	**¥ 27,368**	¥ 64,973	**$ 246,514**

See accompanying notes to consolidated financial statements.

Notes to Consolidated Financial Statements

1. Reporting Entity

DMG MORI Co., Ltd. (the "Company") is a company established under Corporation Law of Japan. The Company domiciles in Japan and its registered office is located in 106 Kitakoriyama-cho, Yamato-Koriyama City, Nara.

The consolidated financial statements of the Company as of and for the fiscal year ended 31st December, 2018 (the fiscal year 2018) comprise the Company, its subsidiaries and associates, and equity interests in related companies (collectively, the "Group"). The Group engages in businesses related to manufacturing and sales of machine tools (machining centers, turning centers, turn-mill complete machining centers and universal milling machines for five-axis machining), software (user interface, technology cycles and embedded software) and measuring devices, and provides total solutions utilizing the machine tools, software and measuring devices with service support, applications and engineering.

2. Basis of Preparation

(1) Accounting standards adopted

The consolidated financial statements of the Group have been prepared in accordance with International Financial Reporting Standards ("IFRS"), pursuant to the provisions set forth in Article 93 of the Ordinance on Terminology, Forms, and Preparation Methods of Consolidated Financial Statements (Ordinance of the Ministry of Finance No. 28 of 1976), as the Group meets the requirements for a "Specified Company applying Designated IFRS" prescribed in Article 1-2 of said ordinance.

(2) Basis of measurement

As stated below in Note 3," Significant Accounting Policies," the consolidated financial statements have been prepared on a historical cost basis, with the main exception of financial instruments, which are measured at fair value.

(3) Functional and presentation currency

The consolidated financial statements are presented in Japanese yen, which is the Company's functional currency. All financial information presented in Japanese yen has been rounded down to the nearest million, unless otherwise stated.

The translation of Japanese yen amounts to U.S. dollar amounts is included solely for the convenience of readers outside Japan, using the prevailing exchange rate of ¥111.02 to U.S. $1.00 at 31st December, 2018. This translation should not be construed as a representation that the Japanese yen amounts have been, could have been or could in the future be, converted into U.S. dollars at the above or any other rate.

(4) Approval of consolidated financial statements

The consolidated financial statements of the Group were approved at the Board of Directors' meeting of the Company held on 22nd March, 2019.

(5) Changes in presentation

"Increase in advances received" and "Increase in contract liabilities", which were included in "Other" in consolidated statement of cash flows from operating activities, were presented separately from the fiscal year 2018 due to the increase in financial importance. In order to reflect the changes, consolidated statements of the fiscal year 2017 were reclassified.

As a result, ¥13,982 million ($125,941 thousand),

which was included in "Other" in consolidated Cash Flow statement of the fiscal year 2017, was reclassified ¥15,298 million ($137,794 thousand) of "Increase (decrease) in advances received" and -¥1,315 million (-$11,844 thousand) of "Other".

(6) Changes in accounting policies

Effective 1st January, 2018 the Group adopted the following new and revised standards.

IFRS		Description of new accounting standards and amendments
IFRS 9	Financial Instruments	Amendments to classification, measurement and recognition of financial instruments and hedge accounting
IFRS 15	Revenue from Contracts with Customers	Comprehensive framework for revenue recognition

Overview of these standards and its impact to the consolidated financial statements is as follows:

1 IFRS 9 "Financial Instruments"
Effective 1st January, 2018, the Group has implemented IFRS 9 "Financial Instruments." The new standard replaces IAS 39 "Financial Instruments: Recognition and Measurement." The standard deals with the classification, recognition and measurement (including impairment) of financial instruments and also introduces a new hedge accounting model.

There is no material impact on the Group's performance or financial position from the application of this standard.

(i) Classification and measurement of financial instruments
Items such as equity securities and debt securities which were previously classified as available-for-sale under IAS 39, are classified as financial assets at fair value through other comprehensive income (FVTOCI financial assets). Debt financial instruments are classified as financial instruments measured at amortized cost.

Changes in the fair value of equity instruments designated as financial assets at fair value through other comprehensive income are recognized in other comprehensive income, and the cumulative amount of other comprehensive income is transferred to retained earnings when the instruments are derecognized.

(ii) Impairment of financial assets
On 1st January, 2018, the Group changed the methodology of assessing impairment of its financial assets from the incurred loss model under IAS 39 to the expected credit loss model under IFRS 9. In accordance with the transition method of IFRS 9, the Group has not restated prior periods, but it has reassessed the loss allowances under the new approach as of 1st January, 2018.

(iii) Hedge accounting
As the Group may continue to apply the hedge accounting requirements of IAS 39 instead of those in IFRS 9 at the initial application of IFRS 9, the Group has chosen to continue to apply the hedge accounting requirements of IAS 39.

(iv) Transition approach
At the initial application of IFRS 9, the Group has adopted the transition method of recognizing the cumulative effect amount as an adjustment in retained earnings at the application. As a result, ¥43 million ($387 thousand) of retained earnings as of 1st January, 2018 was decreased.

2 IFRS 15 "Revenue from Contracts with Customers"
Effective 1st January, 2018, the Group has implemented IFRS 15 "Revenue from contracts with customers." The new standard replaces IAS 18 "Revenue" and IAS 11 "Construction Contracts." IFRS 15 establishes a comprehensive framework for determining whether, how much and when revenue is recognized, and also contains new requirements related to presentation. The core principle in that framework is that

revenue should be recognized dependent on the transfer of promised goods or services to the customers for an amount that reflects the consideration which should be received in exchange for those goods or services.

The objective of the standard is to provide following five-step approach to revenue recognition:

Step 1: Identify the contract(s) with a customer
Step 2: Identify the performance obligations in the contract
Step 3: Determine the transaction price
Step 4: Allocate the transaction price to the performance obligations in the contract
Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation

(i) Impact of the application to the Group

The Group engages in businesses related to manufacturing and sales of machine tools and provide services and solutions for the machine tools and related business areas. For the sales of machine tools, the Group recognizes revenue at a point in time when control over the products passed to the customers which is defined in the sales contracts. For the providing of services and solutions, the Group recognizes revenue when the Group satisfies performance obligations required by the contracts with the customers.

With adopting IFRS 15, ¥1,293 million($11,646 thousand) of sales revenue, ¥451 million ($4,062 thousand) of operating results and profit before income taxes were decreased in this fiscal year, respectively. Please note that “Advances received” in the consolidated statement of financial position in the previous year is presented as “Contract liabilities.” A part of provisions and other current liabilities are also presented “Contract liabilities”.

(ii) Transition approach

At the initial application of IFRS 9, the Group has adopted the transition method of recognizing the cumulative effect amount as an adjustment in retained earnings at the application. As a result, ¥164 million ($1,477 thousand) of retained earnings as of 1st January, 2018 was decreased.

3. Significant Accounting Policies

The significant accounting policies of the Group are applied continuously to all the years indicated in the consolidated financial statements, unless otherwise stated.

(1) Basis of consolidation

All financial statements included in the consolidated financial statements are prepared as of 31st December, 2018, in accordance with the unified accounting policies and, when necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with those of the Group.

(2) Business combinations

Business combinations are accounted for using the acquisition method. The consideration transferred for the acquisition of a business is the aggregate of the acquisition date fair value of the assets transferred, the equity interests issued by the Group and the liabilities incurred, including the fair value of any assets or liabilities resulting from a contingent consideration arrangement.

Identifiable assets acquired and liabilities and contingent liabilities assumed resulting from a business combination are, in principle, measured at fair value at the acquisition date.

In a business combination achieved in stages, any previously held equity investment before obtaining control is remeasured at its acquisition-date fair value and any resulting gain or loss is recognized in profit or loss.

For each business combination, the Group chooses the method of measurement of non-controlling interests, which can be measured using one of two bases, either at fair value at the acquisition date or at the non-controlling interest's proportionate share of the acquiree's net identifiable assets. Acquisition-related costs are expensed as incurred.

Any excess of the consideration transferred over the fair value of the identifiable assets acquired and liabilities assumed is recognized as goodwill in the consolidated statement of financial position.

Goodwill is allocated to a cash generating unit ("CGU") or group of CGUs that are expected to benefit from synergies of the combination. If this is less than the fair value of the net assets of the subsidiary acquired, the difference is recognized directly in profit or loss. Goodwill is not amortized in accordance with IFRS 3 "Business Combinations" and IAS 36 "Impairment of Assets."

Equity in a subsidiary not attributable, directly or indirectly, to a parent is recognized as non-controlling interest. Total comprehensive income is attributed to the owners of the parent and to the non-controlling interest even if this results in the non-controlling interest having a deficit balance.

Changes in the Group's ownership interest in a subsidiary that do not result in a loss of control is accounted for as an equity transaction. If the Group, however, loses control of a subsidiary, any resulting effects are recognized as gain or loss in profit or loss attributable to the Group.

(3) Investments in subsidiaries

A subsidiary is an entity controlled by the Group.

Specifically, the Group controls an investee if and only if the Group has all of the following:

(a) Power over the investee,
(b) Exposure, or rights, to variable returns from its involvement with the investee and
(c) The ability to use its power over the investee to affect the amount of the investor's returns

Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control of the subsidiary.

All intercompany transactions, balances, and any unrealized gains and losses arising from intercompany transactions, are eliminated in the preparation of the consolidated financial statements.

(4) Investments in associates

An associate is an entity over which the Group has significant influence but does not have control to govern the entity's financial and operating policies. The Group's investments in its associates are accounted for using the equity method. Under the equity method, the investment in an associate is initially recognized at acquisition cost. The carrying amount of the investment is adjusted to recognize changes in the Group's net share of net assets of the associate since the acquisition date.

Goodwill relating to the associate is included in the carrying amount of the investment (less any accumulated impairment loss).

The consolidated statement of profit or loss reflects the results of operations of its associates through the Group's investments. Any changes in other comprehensive income of those associates since the acquisition date are presented as part of the Group's other comprehensive income.

When there has been a change recognized directly in retained earnings of the associate, the Group recognizes its share of any changes in its retained earnings.

The carrying amount of the investment is adjusted to recognize any change in the Group's share of net assets of the associate since the acquisition date. When the Group's share of losses in an associate equals or exceeds its interest in the associate, the Group does not recognize further losses, unless it has incurred obligations or made payments on behalf of the associate.

At each reporting date, the Group determines whether there is objective evidence that an investment in an associate is impaired. If there is such evidence, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate and its carrying amount, and then recognizes the loss as "Other operating costs" in the consolidated statement of profit or loss. Unrealized gains and losses resulting from transactions between the Group and associates are eliminated to the extent of the Group's interest in the associate.

(5) Joint control

A joint arrangement is a contractual arrangement where two or more parties have joint control. The Group determines the type of joint agreement in which it is involved. The classification of a joint arrangement as joint operation where the Group has rights to the assets and obligations for the liabilities of the arrangement, or a joint venture where the Group has rights to the net assets of the arrangement, depends upon the rights and obligations of the parties to the arrangement.

For a joint operation, the Group recognizes its assets, including its share of any assets held jointly, liabilities, including its share of any liabilities incurred jointly, revenue from the sale of its share of the output arising from the joint operation, share of the revenue from the sale of the output by the joint operation; and expenses, including its share of any expenses incurred jointly. The Group's interest in a joint venture is accounted for using the equity method.

(6) Cash and cash equivalents

Cash and cash equivalents consist of cash on hand, demand deposits, and readily-marketable short-term investments with maturities of three months or less from the date of acquisition, which are subject to an insignificant risk of changes in value.

(7) Inventories

Inventories are measured at the lower of cost and net realizable value. The cost of inventories includes purchase costs, costs of conversion, storage costs and all other costs incurred in bringing the inventories to their present location and condition.

Net realizable value is calculated as the estimated selling price for the inventories in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale.

Cost of inventories is mainly determined by the average cost method, except for the following inventories to which the identified cost method is applied.

The identified cost method is applied to inventories such as:
(a) Inventories that are not interchangeable and
(b) Goods or services produced for specific projects and segregated from other inventories

(8) Property, plant and equipment

Property, plant and equipment is measured using the cost model and is stated at acquisition cost less accumulated depreciation and accumulated impairment losses. Such cost includes any costs directly attributable to the purchase of the assets. Repair and maintenance costs are recognized in profit or loss as incurred.

Depreciation of property, plant and equipment begins when the asset is available for use, on a straight-line basis, over the following estimated useful lives:

Office and plant	: 3–50 years
Machinery	: 2–30 years
Tools, furniture and fixtures	: 2–23 years

(9) Goodwill and other intangible assets (other than leased assets)

Intangible assets are measured using the cost model and are stated at acquisition cost less accumulated amortization and accumulated impairment losses.

Goodwill arising on a business combination is recognized as "Goodwill" in the consolidated statement of financial position. Goodwill and intangible assets with indefinite useful lives are not amortized, but are tested for impairment annually and any respective impairment losses are recognized when necessary. Impairment losses relating to goodwill cannot be reversed in future periods.

Development costs on an individual project are recognized as an intangible asset, only if all of the following have been demonstrated:
(a) The technical feasibility of completing the intangible asset so that it will be available for use or sale;
(b) The Group's intention to complete and use or sell the intangible asset;
(c) The Group's ability to use or sell the intangible asset;
(d) How the intangible asset will generate probable future economic benefits;
(e) The availability of appropriate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
(f) The ability to measure reliably the expenditure related to the intangible asset during its development.

Capitalized development costs are amortized on a straight-line basis beginning when development is complete and the asset is available for use over the period of expected future benefit. Development costs which do not meet the above criteria are expensed as incurred.

Other intangible assets are amortized on a straight-line basis over the following estimated useful lives:

Intangible assets generated by development	: 2–10 years
Software and other intangible assets	: 1–5 years
Customer-related assets	: 15 years (approximately)
Technology-related assets	: 6 years (approximately)
Trademarks (with definite useful lives)	: 30 years

(10) Leases

Leases that transfer substantially all the risks and rewards incidental to ownership to the Group are classified as finance leases and other lease transactions are classified as operating leases.

Determining of whether an arrangement contains a lease is based on the substance of the

arrangement at the inception of the lease.

Operating lease payments are charged to profit or loss over the lease term after the recognition of the aggregate of any benefit of incentives given by a lessor as a reduction of lease payments on a straight-line basis.

Finance leases are capitalized at the commencement of the lease at the inception date fair value of the leased property or, if lower, at the present value of the minimum lease payments. Lease obligations are recognized as current or non-current liabilities in the consolidated statement of financial position.

Lease payments are apportioned between the finance charge and the reduction of the outstanding liability and the finance charge is allocated to each period during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

A leased asset is depreciated over its useful life. However, if there is no reasonable certainty that the Group will obtain ownership by the end of the lease term, the asset is depreciated over the shorter of the estimated useful life of the asset and the lease term.

(11) Impairment of non-financial assets

The Group assesses, at each reporting date, whether there is any indication that intangible assets with indefinite useful lives and that have not yet been brought into use and all property, plant and equipment, excluding goodwill, may be impaired. If any indication exists, the Group estimates the asset's recoverable amount. When the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and the asset is written down to its recoverable amount. A CGU is the smallest group of assets which generates cash inflows from continuing use that are largely independent of those from other assets or groups of assets.

Goodwill and intangible assets with indefinite useful lives and that have not yet been brought into use are not amortized but tested for impairment annually, mainly at the end of fiscal year, regardless of whether an indication of impairment exists and when circumstances indicate that the carrying amount may be impaired. When the recoverable amount of a CGU is less than its carrying amount, an impairment loss is recognized.

The recoverable amount of CGU is the higher of the value in use and the fair value less costs of disposal. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

The estimated present value based on future cash flows incorporates assumptions about future sales price, sales volume and costs.

For assets, excluding goodwill, an assessment is made at each reporting date to determine whether there is an indication that previously recognized impairment losses may no longer exist or may have decreased. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount (net of depreciation) that would have been determined had no impairment loss been recognized for the asset in prior years.

(12) Income taxes

Income taxes consist of current and deferred taxes. Current and deferred taxes are recognized in profit or loss, except for those arising from business combinations and recognized directly in other comprehensive income or equity.
Deferred tax is provided using the asset and liability method on temporary differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes, including carry forwards of unused tax losses and tax credits granted at the reporting date.

Deferred tax assets are recognized for all

deductible temporary differences, the carry forwards of unused tax losses and any unused tax credits to the extent that it is probable that taxable profit will be available against which the deductible temporary difference can be utilized. Deferred tax liabilities are recognized for all taxable temporary differences in principle.

Deferred tax assets and liabilities are recognized for all taxable temporary differences, except:

(a) Future taxable temporary differences arising from initial recognition of goodwill.
(b) Future taxable or deductible differences relating to initial recognition of an asset or liability in a transaction other than a business combination that affects neither accounting profit nor taxable profit or loss.
(c) Future taxable temporary differences associated with investments in subsidiaries when the timing of the reversal of the temporary differences can be controlled and it is probable that such differences will not reverse in the foreseeable future.
(d) Future deductible temporary differences associated with investments in subsidiaries when it is probable that such differences will not reverse in the foreseeable future.

Deferred tax assets and liabilities are offset if a legally enforceable right exists to set off current tax assets against current tax liabilities and the deferred taxes relate to income taxes levied by the same taxation authority on the same taxable entity.

(13) Financial instruments

1. Financial assets

(i) Initial recognition and measurement

Trade and other receivables are initially recognized on the date when they are incurred, and other financial assets at the transaction date when the Group becomes a party to the contract for the financial assets. At the initial recognition, financial assets are measured at fair value plus transaction costs, except for those measured at fair value through profit or loss.

(ii) Classification and subsequent measurement

The financial assets are classified as financial assets measured at amortized cost, financial assets measured at fair value through other comprehensive income or financial assets measured at fair value through profit or loss at initial recognition.

(Financial assets measured at amortized cost)

A financial asset shall be measured at amortized cost if both of the following conditions are met:

- the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows and
- the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets measured at amortized cost are measured at amortized cost using the effective interest method subsequent to the initial recognition.

(Financial assets measured at fair value through other comprehensive income)

Equity instruments such as shares held mainly for the purpose of maintaining or strengthening business relationships with investees are designated at initial recognition as financial assets measured at fair value through other comprehensive income.

Any change in fair value of equity financial assets measured at fair value through other comprehensive income is recognized in other comprehensive income subsequent to the initial recognition. If such assets are derecognized or the fair value decreases significantly, accumulated other comprehensive income is directly transferred to retained earnings. Dividends from such financial assets are recognized in profit or loss.

Debt financial assets which meet both of the below requirements are classified into financial

assets measured at fair value through other comprehensive income.

- the financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets and
- the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

(Financial assets measured at fair value through profit or loss)
Financial assets other than above are classified as financial assets measured at fair value through profit or loss.
Changes in fair value of financial assets measured at fair value through profit or loss are recognized in profit or loss subsequent to the initial recognition.

(iii) Impairment of financial assets
For financial assets measured at amortized cost, allowance for doubtful receivables for expected credit losses is recognized.

The Group evaluates at the end of each reporting period whether there is a significant increase in credit risk of financial assets since initial recognition. When there is no significant increase in the credit risk since initial recognition, the amount equal to expected credit losses for 12 months are recognized as allowance for doubtful receivables. When there is a significant increase in credit risk since initial recognition, the amount equal to expected credit losses for the remaining life of the financial assets are recognized as allowance for doubtful receivables.

For trade and other receivables, allowance for doubtful receivables are always recognized at the amount equal to expected credit losses for the remaining life of the assets.

With regard to financial assets on which impairment losses were previously recognized, when the amount of impairment losses decreased due to any event that occurred after the initial recognition of the impairment losses, the previously recognized impairment losses are reversed and recognized in profit or loss.

(iv) Derecognition
A financial asset is derecognized when the contractual rights to the cash flows from the financial asset expire or when the contractual rights to receive the cash flows from the financial asset are assigned and substantially all the risks and rewards of ownership are transferred.

2. Financial liabilities
(i) Initial recognition and measurement
Financial liabilities are initially recognized at the transaction date when the Group becomes a party to the contract for the financial liabilities. All financial liabilities are measured at fair value at initial recognition, whereas financial liabilities measured at amortized cost are measured at the amount less directly attributable transaction costs.

(ii) Classification and subsequent measurement
Financial liabilities are classified into financial liabilities measured at fair value through profit or loss or financial liabilities measured at amortized cost at initial recognition.

Changes in fair value of financial liabilities measured at fair value through profit or loss are recognized in profit or loss subsequent to the initial recognition.

Financial liabilities measured at amortized cost are measured at amortized cost subsequent to the initial recognition, by using the effective interest method. Amortization by the effective interest method, as well as gains and losses associated with derecognition shall be recognized in profit or loss.

(iii) Derecognition
A financial liability is derecognized when it is extinguished, namely when the obligation specified in the contract is discharged, cancelled or expires.

(iv) Preferred shares

Preferred shares are classified as equity or financial liability based on the substance of the contractual arrangements, not on their legal forms. Preferred shares mandatorily redeemable on a specified date are classified as financial liabilities. Preferred shares classified as liability are measured at amortized cost in the consolidated statement of financial position and the dividends on these preferred shares are recognized as interest expense and presented as financial costs in the consolidated statement of income.

3. Offsetting financial instruments

Financial assets and liabilities are offset, with the net amount presented in the consolidated statements of financial position, only if the Group holds a legal right to offset the recognized amounts, and there is an intention to settle on a net basis or to realize the asset and settle the liability simultaneously.

4. Derivatives and hedge accounting

The Group uses derivatives such as forward foreign currency exchange contracts and interest rate swaps, as hedging instruments against foreign currency exchange risk and interest rate risk. These derivatives are classified as financial assets measured at fair value through profit or loss and financial liabilities measured at fair value through profit or loss. Derivatives that meet criteria for hedge accounting are designated as hedging instruments, and hedge accounting is applied to the derivatives. For the application of hedge accounting, the Group officially makes designation and prepares documentation at the inception of the hedge, regarding the hedging relationship as well as the risk management objectives and strategies. Such document contains hedging instruments, hedged items, the nature of the risks to be hedged and the method for evaluating the hedging effectiveness. The Group continually evaluates whether the hedging relationship is effective prospectively.

The Group applies cash flow hedges to interest rate-related derivative transactions that meet criteria for hedge accounting. Of changes in fair value associated with hedging instruments in cash flow hedges, the effective portion is recognized in other comprehensive income, and recognized as other components of equity until the hedged transaction is executed and recognized in profit or loss. The ineffective portion is recognized in profit or loss.

The amount associated with hedging instruments recognized in other components of equity is transferred to profit or loss, at the point in time when the hedged transactions exerts impact on profit or loss. If a hedged item results in the recognition of a non-financial asset or a non-financial liability, the associated amount recognized in other components of equity is accounted for as adjustment to the initial book value of the non-financial asset or the non-financial liability. When any forecast transaction is no longer expected to occur, hedge accounting is discontinued, and any related cumulative gain or loss that has been recognized as other components of equity is transferred to profit or loss. Even if hedge accounting was discontinued, the amount that had been recognized as other components of equity until hedge accounting was discontinued continues to be recognized in other components of equity until future cash flows occur when these future cash flows are expected to occur. The Group does not use fair value hedges or net investment hedges in foreign operations.

(14) Provisions

Provisions are recognized when the Group has a legal or constructive obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. The amount to be recognized as a provision is measured based on the best estimate of the expenditure required to settle the present obligation at the end of the reporting period. If

the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, when appropriate, the risks specific to the liability.

(15) Employee benefits

The Group recognizes the undiscounted amount of any short-term benefits attributable to services that have been rendered in the period as an expense. When a present legal or constructive obligation to make payments associated with bonus plans or accumulating paid absences exists, and a reliable estimate of the provision can be made, the amount to be paid in accordance with these benefits is accounted for as a liability. Projected benefit obligations are measured using the projected unit credit method. This actuarial method also determines the current service cost and any past service costs.

The projected unit credit method is used to make a reliable estimate of the ultimate cost to the entity for benefits that employees have earned in return for their services in current and prior periods. This requires the Group to make estimates (actuarial assumptions) about demographic variables and financial variables, such as future increases in salaries that will affect the cost of the benefit. The valuation is based on a report prepared by independent actuaries.

Net defined benefit liabilities are based on the present value of the defined benefit obligation less the fair value of plan assets at the reporting date.

The present value of a defined benefit obligation is based on the discounted future cash flows at a rate determined by reference to market yield on high-quality corporate bonds whose currency and term are consistent with the obligation.

Actuarial differences arising from changes in actuarial assumptions and experience adjustments are recognized immediately in other comprehensive income in the consolidated statement of comprehensive income.
Past service costs are recognized immediately in profit or loss.

The contribution payable for a defined contribution plan in exchange for employee service is recognized as an expense, unless another IFRS requires or permits its capitalization.

When there is a surplus in a defined benefit plan, the net defined benefit asset recognized is restricted to the lower of the surplus in the plan and the asset ceiling.

(16) Equity and equity instruments

1. Common stock
   Equity instruments issued by the Company are included in subscribed capital and capital surplus. Transaction costs related to the issuance of equity instruments are deducted from capital surplus.

2. Treasury shares
   When the Company repurchases its own ordinary shares, the amount of the consideration paid, including transaction costs, is deducted from equity. When the Company sells or reissues treasury shares, the consideration received is recognized directly in equity, and the gain or loss resulting from the transaction is included in capital surplus-treasury shares.

3. Perpetual subordinated loan and perpetual subordinated bonds
   Perpetual subordinated loan and perpetual subordinated bonds are classified as equity instruments as no specific date is determined for repayment of the principal and optional deferral of interest payments is possible. The proceeds from the perpetual subordinated loan and perpetual subordinated bonds, after deduction of issuance costs, are recorded as "Hybrid capital" in the consolidated statement of financial position.

(17) Share-based payment

1. Stock option

   The Group has stock option plans as incentive plans for directors, executive officers, and employees and accounted for as cash-settled share-based payment transactions. The fair value of stock options at the grant date is recognized as a personnel cost over the vesting period from the grant date as a corresponding increase in other components of equity. The fair value of the stock options is measured using the Black-Scholes model or other models, taking into account for the terms of the options granted. The Group regularly reviews the terms and revises estimates of the number of options that are expected to vest, as necessary.

2. Restricted share remuneration plan

   The Group has adopted restricted share remuneration plan as equity-settled share-based remuneration for directors.

   The consideration amount as provided service is measured at the fair value of the company shares as of the grant date, which recognized as expenses on a straight-line basis over certain period from the grant date and the same amount is recognized as an increase in equity.

3. Trust-type employee stock ownership incentive plan

   The Group has adopted "Trust-Type Employee Stock Ownership Incentive Plan" as an cash-settled incentive plan to increase the mid to long-term corporate value of the company to its employees.

   Under this plan, the Company shares owned by "DMG MORI Employee Shareholders Association Exclusive Trust" are treated as treasury shares.

   The consideration amount as provided service is measured at fair value of the liabilities incurred, which is recognized as expenses over the expiration of the trust period from the grant date and the same amount is recognized as an increase in liabilities. The liabilities is remeasured at fair value as of the end of the each quarter period until settlement, the changes measured at fair value is recognized as profit or loss.

(18) Revenue recognition

The Group recognizes revenues as adopting the following steps to contracts with customers.

STEP 1: Identify the contract(s) with a customer
STEP 2: Identify the performance obligations in the contract in the contract
STEP 3: Determine the transaction price
STEP 4: Allocate the transaction price to the performance obligations in the contracts
STEP 5: Recognize revenue when (or as) the entity satisfies a performance obligation

The Group engages in businesses related to manufacturing and sales of machine tools and provide services and solutions for the machine tools and related business areas. For the sales of machine tools, the Group recognizes revenue at a point in time when control over the products passed to the customers which is defined in the sales contracts. For the providing of services and solutions, the Group recognizes revenue when the Group satisfies performance obligations required by the contracts with the customers.

Revenue is measured at the amount of promised consideration in contracts with customers less discounts and rebates, and reduced by the amount of sales returns.

(19) Financial income

Interest income is recorded using the effective interest method.

Dividend income is recognized when the Group's right to receive payment is established.

(20) Government grants

Government grants are recognized at fair value where there is reasonable assurance that the grant will be received and all attached conditions

will be complied with.

When the grant relates to an expense item, it is recognized as income on a systematic basis over the periods in which the related costs, for which it is intended to compensate, are expensed.

When the grant relates to an asset, it is recognized as income in equal amounts over the expected useful life of the related asset and as deferred income for the remaining portion in the consolidated statement of financial position.

(21) Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets that necessarily take a substantial period of time to get ready for their intended use or sale are capitalized as part of the cost of the assets.

All other borrowing costs are expensed for the year when they occur.

(22) Foreign currency translation

Transactions in foreign currencies are initially recorded by Group entities at their respective functional currency spot rates at the date the transaction first qualifies for recognition. Assets and liabilities of foreign subsidiaries are translated into Japanese yen using the closing rate at the reporting date and income and expense items are translated using the average exchange rates for the period.

The exchange differences arising on translation of financial statements of foreign subsidiaries are recognized in other comprehensive income and the cumulative effect from the exchange differences is recognized in "Other components of equity" in the consolidated statement of financial position.

Monetary assets and liabilities denominated in foreign currencies are translated using the functional currency spot rates at the reporting date.

Non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was measured.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates at the dates of the initial transactions.

The gain or loss arising on settlements or translation is recognized in profit or loss.

Any goodwill and other intangible assets arising on the acquisition of a foreign operation and any fair value adjustments to the carrying amounts of assets and liabilities arising on the acquisition are treated as assets and liabilities of the foreign operation and translated at the spot rate of exchange at the reporting date.

(23) Significant accounting judgments, estimates and assumptions

The preparation of consolidated financial statements requires management of the Group to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses.

Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods. Estimates and assumptions are reviewed on an ongoing basis.

Changes in accounting estimates are accounted for prospectively; defined as recognizing the effect of the change in the accounting estimate in the current and future periods affected by the change.

In the process of applying the Group's accounting policies, management has made the following estimations and judgments, which have the most significant effect on the amounts recognized in the consolidated financial statements:

1. Fair value of acquired assets and assumed liabilities as a result of business combinations
   Assets acquired and liabilities assumed as a result of a business combination are initially measured at fair value at the date of acquisition. The key assumptions, including future cash flow and discount rates, serving as the basis for the valuation of fair value may change due to market changes or circumstances arising that are beyond the control of the Group and, accordingly, prospectively significant adjustments to the carrying amount of goodwill and other intangible assets and respective amortization expenses may occur.

2. Impairment of property, plant and equipment, goodwill and other intangible assets
   An impairment test is performed annually or at any time if indications of impairment exist.

   For the impairment testing of property, plant and equipment, goodwill and other intangible assets, the recoverable amount is defined as the higher of fair value less costs of disposal and value in use based on the identified cash generating units.

   The key assumptions, including the measurement of fair value less cost of disposal and the cash flow that the Group will derive from the use and disposal, in order to calculate the value in use of the cash generating unit and the respective discount rates may change due to market changes or circumstances arising that are beyond the control of the Group and, accordingly, prospectively significant adjustments to the impairment loss of property, plant and equipment, goodwill and other intangible assets may occur.

3. Recoverability of deferred tax assets
   Deferred tax assets are recognized for deductible temporary differences to the extent that it is probable that future taxable profits will be available against which they can be utilized. However, judgment of the recoverability is based on the premise of estimated taxable income estimated from business plans of the Group. The estimation of taxable income may change due to market changes or circumstances arising that are beyond the control of the Group and, accordingly, prospectively significant adjustments to the recognized amount of deferred tax assets may occur.

4. Measurement of provisions
   The amount to be recognized as a provision is measured based on the best estimate of the expenditure required to settle the present obligation at the end of the reporting period.

   The estimated outcome and financial effects are determined by the judgment of the management of the Group, supplemented by evidence provided by events occurring after the reporting period.

   The assumptions used for measuring a provision may change due to market changes or circumstances arising that are beyond the control of the Group and, accordingly, prospectively significant adjustments to the measurement of a provision may occur.

5. Financial liabilities arising from the Domination, Profit and Loss Transfer Agreement (hereinafter, the "DPLTA")
   The Group estimates the amount of its obligation for the share purchase option and the annual compensation amount at the end of the reporting period based on a re-purchase price per share, annual compensation amount per share and the number of outstanding shares. At the same time, the Group reasonably estimates the expected payment timing. Based on this information, the Group recognizes the present discounted value of financial liabilities arising from the DPLTA.

   The conditions for the Group's obligation and future economic conditions may change and, accordingly, prospectively significant adjustments to the measurement of the liability may occur.

4. New Accounting Standards Not Yet Adopted by the Group

The new accounting standards, amended standards and new interpretations that are issued or amended, but not yet adopted by the Group up to the date of approval of the consolidated financial statements are as follows:

	IFRS	Mandatory adoption (Effective)	To be adopted by the Group	Description of new accounting standards and amendments
IFRS16	Leases	1st January, 2019	Fiscal year	Amendments to recognition of assets and liabilities for lessees
IFRIC 23	Uncertainty over Income Tax Treatments	1st January, 2019	Fiscal year	Clarifying accounting treatment for uncertainty over income tax treatments.

IFRS 16 "Lease" will be adopted effective from the fiscal year beginning on or after 1st January, 2019. IFRS 16 will replace IAS 17 "Leases" and the related application guidance which currently applies.

IFRS 16 does not require that a lessee classifies its leases into finance lease or operating leases, and introduces a single lessee accounting model. A lessee recognizes, for all leases, a right-of-use asset representing its right use of the underlying leased asset and a lease liability representing its obligation to make lease payments. However, a lessee may elect not to apply the above requirement to short-term and low value lease. After the initial recognition of a right-of-use asset and a lease liability, an entity recognizes depreciation cost of the right-of-use asset and interest expense of the lease liability. In addition, in applying IFRS 16 the Group can select either method to apply retrospectively to all periods to be disclosed or method to recognize the amount of the cumulative effect due to the application of this standard on the date of application.

As the Group will implement a single lessee accounting model for operating leases, mainly the right of use assets, land, buildings, structure, machinery, vehicle will increase. Therefore, the rent fees recorded under IAS 17 will be recognized as depreciation and financial cost.

The Group plans not to apply IFRS 16 for short-term and low-value leases.
In addition, in applying IFRS 16, the Group plans to select the method to recognize the amount of the cumulative effect due to the application of this standard on the date of application.

With adopting IFRIC 23, no significant impact to the consolidated financial statement expected.

5. Significant Change in Scope of Consolidation

There was no significant change in scope of consolidation during the fiscal years 2018 and 2017.

6. Segment Information

(1) Outline of reportable segments

The reportable segments of the Group are based on its business areas for which discrete financial information is available, and they are regularly reviewed by the Board of Directors and corporate officers for the purpose of making decisions about resource allocation and performance assessment. The classification of the reportable segments is based on the products and services and the associated internal reporting and management methods.

As a result, the business activities of the Group are categorized into "Machine Tools" and "Industrial Services," as its two reportable segments.

The "Machine Tools" segment generates its revenue through the production and sales of machine tools. The "Industrial Services" segment generates its revenue through providing services and solutions related to machine tools.

(2) Calculation methods of sales revenues, income or loss, assets and other items by each reportable segment

The amount of segment income is based on operating income and share of profits of at equity-accounted investments. Sales revenues between the segments are based on market prices.

(3) Segment sales revenue and income

The segment sales revenues, income or loss and other items by each reportable segment for the fiscal years 2018 and 2017 are summarized as follows:

	Millions of yen					
	2018					
	Reporting segments			Adjustments		Consolidated
	Machine Tools	Industrial Services	Total	Corporate Services	Elimination	
Sales revenues:						
External customers	¥ 373,348	¥ 127,875	¥ 501,223	¥ 24	¥ —	¥ 501,248
Other segments	194,835	17,969	212,804	1,918	(214,722)	—
Total	568,183	145,844	714,027	1,943	(214,722)	501,248
Segment income (Note 1)	40,163	12,938	53,101	(16,444)	(228)	36,429
Financial income	—	—	—	—	—	470
Financial costs	—	—	—	—	—	(5,624)
Profit before income taxes	—	—	—	—	—	31,275
Segment assets (Note 2)	724,941	503,325	1,228,267	399,242	(1,099,086)	528,423
Other items						
Depreciation and amortization	8,832	5,759	14,591	3,907	—	18,499
Investments in associates and joint ventures	427	2,903	3,331	—	—	3,331
Capital expenditure	12,104	2,209	14,314	5,227	(262)	19,278

	Thousands of U.S. dollars					
	2018					
	Reportable segments			Adjustments		Consolidated
	Machine Tools	Industrial Services	Total	Corporate Services	Elimination	
Sales revenues:						
External customers	**$ 3,362,889**	**$ 1,151,819**	**$ 4,514,709**	**$ 216**	**$ —**	**$ 4,514,934**
Other segments	**1,754,954**	**161,853**	**1,916,807**	**17,276**	**(1,934,083)**	**—**
Total	**5,117,843**	**1,313,673**	**6,431,516**	**17,501**	**(1,934,083)**	**4,514,934**
Segment income (Note 1)	**361,763**	**116,537**	**478,301**	**(148,117)**	**(2,053)**	**328,130**
Financial income	**—**	**—**	**—**	**—**	**—**	**4,233**
Financial costs	**—**	**—**	**—**	**—**	**—**	**(50,657)**
Profit before income taxes	**—**	**—**	**—**	**—**	**—**	**281,705**
Segment assets (Note 2)	**6,529,823**	**4,533,642**	**11,063,475**	**3,596,126**	**(9,899,891)**	**4,759,709**
Other items						
Depreciation and amortization	**79,553**	**51,873**	**131,426**	**35,191**	**—**	**166,627**
Investments in associates and joint ventures	**3,846**	**26,148**	**30,003**	**—**	**—**	**30,003**
Capital expenditure	**109,025**	**19,897**	**128,931**	**47,081**	**(2,359)**	**173,644**

(Note 1) "Adjustments to segment income" include trade elimination of inter-segment transactions and expenses related to corporate services.
(Note 2) "Adjustments to segment assets" mainly include corporate assets not attributable to any business segment and elimination of inter-segment receivables.

	Millions of yen					
	2017					
	Reportable segments			Adjustments		Consolidated
	Machine Tools	Industrial Services	Total	Corporate Services	Elimination	
Sales revenues						
Sales revenues with third parties	¥ 312,073	¥ 117,556	¥ 429,630	¥ 34	¥ —	¥ 429,664
Sales revenues with other segments	131,133	18,580	149,714	2,067	(151,782)	—
Total	443,207	136,136	579,344	2,101	(151,782)	429,664
Segment income (Note 1)	31,407	9,087	40,495	(9,511)	(1,529)	29,453
Financial income	—	—	—	—	—	647
Financial costs	—	—	—	—	—	(5,297)
Profit before income taxes	—	—	—	—	—	24,803
Segment assets (Note 2)	687,366	502,990	1,190,356	431,189	(1,054,134)	567,411
Other items						
Depreciation and amortization	9,364	5,289	14,653	3,690	—	18,344
Investments in associates and joint ventures	413	1,815	2,229	—	—	2,229
Capital expenditure	4,116	1,569	5,686	3,916	(218)	9,384

(Note 1) "Adjustments to segment income" include trade elimination of inter-segment transactions and expenses related to corporate services.
(Note 2) "Adjustments to segment assets" includes corporate assets not attributable to each business segment and elimination of inter-segment receivables.

(4) Information on products and services

As the classification for the reportable segments is based on the type of products and services of the Group, there is no additional information to be disclosed.

(5) Information on geographical areas

Sales revenues from external customers and non-current assets by geographic areas are as follows:

Sales revenues from external customers

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Japan	**¥ 80,300**	¥ 65,756	**$ 723,293**
Germany	**112,868**	99,952	**1,016,645**
The Americas	**85,154**	78,524	**767,014**
Europe other than Germany	**158,821**	141,802	**1,430,562**
China and Asia	**64,103**	43,627	**577,400**
Total	**¥ 501,248**	¥ 429,664	**$ 4,514,934**

(Note) Sales revenues by geographical areas are categorized by countries or regions based on the geographical location of the respective sales entities.

Non-current assets

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Japan	**¥ 63,357**	¥ 60,028	**$ 570,680**
Germany	**92,269**	97,785	**831,102**
The Americas	**9,612**	10,334	**86,578**
Europe other than Germany	**105,431**	115,220	**949,657**
China and Asia	**9,300**	11,081	**83,768**
Eliminations	**(17,029)**	(17,803)	**(153,386)**
Total	**¥ 262,941**	¥ 276,646	**$ 2,368,411**

(Note) Non-current assets by geographical areas are classified by countries or regions based on the locations of the assets, and consist of property, plant and equipment, goodwill and other intangible assets.

(6) Information on major customers

Disclosure of major customers was omitted because the proportion of revenue from an individual customer did not exceed 10% of consolidated sales revenues for the fiscal years 2018 and 2017, respectively.

7. Cash and Cash Equivalents

The breakdown of cash and cash equivalents at 31st December, 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Cash on hand and at banks with maturities of three months or less	**¥ 27,368**	¥ 64,973	**$ 246,514**
Total	**¥ 27,368**	¥ 64,973	**$ 246,514**

(Note) The balance of cash and cash equivalents in the consolidated statement of financial position at 31st December, 2018 and 2017 agreed with the respective balances in the consolidated statement of cash flows.

8. Trade and Other Receivables

The breakdown of trade and other receivables at 31st December, 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Notes and trade receivables	**¥ 65,709**	¥ 59,343	**$ 591,866**
Other	**6,238**	3,525	**56,188**
Allowance for doubtful receivables	**(2,506)**	(2,127)	**(22,572)**
Total	**¥ 69,441**	¥ 60,741	**$ 625,481**

9. Inventories

The breakdown of inventories at 31st December, 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Raw materials and supplies	**¥ 59,235**	¥ 50,770	**$ 533,552**
Work in process	**31,294**	30,152	**281,877**
Merchandise and finished goods	**40,196**	42,059	**362,060**
Total	**¥ 130,726**	¥ 122,981	**$ 1,177,499**

(Note 1) "Costs of raw materials, consumables and goods for resale" in the consolidated statement of profit or loss includes the write-downs of inventories of ¥3,928 million ($35,381 thousand) and ¥3,215 million for the fiscal years 2018 and 2017, respectively.

(Note 2) Cost of inventories recognized in profit or loss for the fiscal years 2018 and 2017 amounted to ¥315,111 million ($2,838,326 thousand) and ¥268,125 million, respectively, including the above write-downs of inventories.

(Note 3) There is no significant reversal of impairment loss for the fiscal years 2018 and 2017.

10. Property, Plant and Equipment

(1) The movement in acquisition cost, accumulated depreciation and impairment losses and carrying amount for property, plant and equipment for the fiscal years ended 31st December, 2018 and 2017 is as follows:

Acquisition cost

	Millions of yen				
	2018				
	Land, buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress (Note 3)	Total
Beginning balance	**¥ 163,235**	**¥ 28,927**	**¥ 42,661**	**¥ 1,605**	**¥ 236,430**
Acquisitions	**3,729**	**1,068**	**3,213**	**5,996**	**14,009**
Acquisitions through business combinations	**—**	**—**	**—**	**—**	**—**
Disposals	**(2,072)**	**(2,958)**	**(1,488)**	**—**	**(6,518)**
Reclassification from construction in progress	**642**	**395**	**493**	**(1,497)**	**34**
Exchange differences on translation of foreign operations	**(5,858)**	**(1,548)**	**(2,284)**	**(322)**	**(10,014)**
Other	**—**	**1,001**	**—**	**—**	**1,001**
Ending balance	**¥ 159,678**	**¥ 26,886**	**¥ 42,595**	**¥ 5,782**	**¥ 234,942**

	Thousands of U.S. dollars				
	2018				
	Land, buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress (Note 3)	Total
Beginning balance	**$ 1,470,320**	**$ 260,556**	**$ 384,264**	**$ 14,456**	**$ 2,129,616**
Acquisitions	**33,588**	**9,619**	**28,940**	**54,008**	**126,184**
Acquisitions through business combinations	**—**	**—**	**—**	**—**	**—**
Disposals	**(18,663)**	**(26,643)**	**(13,403)**	**—**	**(58,710)**
Reclassification from construction in progress	**5,782**	**3,557**	**4,440**	**(13,484)**	**(306)**
Exchange differences on translation of foreign operations	**(52,765)**	**(13,943)**	**(20,572)**	**(2,900)**	**(90,199)**
Other	**—**	**9,016**	**—**	**—**	**9,016**
Ending balance	**$ 1,438,281**	**$ 242,172**	**$ 383,669**	**$ 52,080**	**$ 2,116,213**

Accumulated depreciation and impairment losses

	Millions of yen				
	2018				
	Land, buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress (Note 3)	Total
Beginning balance	**¥ (60,217)**	**¥ (14,019)**	**¥ (28,210)**	**¥ —**	**¥ (102,447)**
Depreciation (Note 1)	**(4,121)**	**(2,879)**	**(4,146)**	**—**	**(11,147)**
Impairment losses (Note 2)	**(590)**	**—**	**—**	**—**	**(590)**
Disposals	**661**	**2,148**	**1,308**	**—**	**4,118**
Exchange differences on translation of foreign operations	**1,500**	**729**	**1,568**	**—**	**3,798**
Other	**—**	**13**	**0**	**—**	**13**
Ending balance	**¥ (62,767)**	**¥ (14,007)**	**¥ (29,480)**	**¥ —**	**¥ (106,255)**

	Thousands of U.S. dollars				
	2018				
	Land, buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress (Note 3)	Total
Beginning balance	**$ (542,397)**	**$ (126,274)**	**$ (254,098)**	**$ —**	**$ (922,779)**
Depreciation (Note 1)	**(37,119)**	**(25,932)**	**(37,344)**	**—**	**(100,405)**
Impairment losses (Note 2)	**(5,314)**	**—**	**—**	**—**	**(5,314)**
Disposals	**5,953**	**19,347**	**11,781**	**—**	**37,092**
Exchange differences on translation of foreign operations	**13,511**	**6,566**	**14,123**	**—**	**34,210**
Other	**—**	**117**	**0**	**—**	**117**
Ending balance	**$ (565,366)**	**$ (126,166)**	**$ (265,537)**	**$ —**	**$ (957,079)**

Carrying amount

	Millions of yen				
	2018				
	Land, buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress (Note 3)	Total
Beginning balance	**¥ 103,018**	**¥ 14,908**	**¥ 14,450**	**¥ 1,605**	**¥ 133,983**
Ending balance	**96,910**	**12,878**	**13,114**	**5,782**	**128,686**

	Thousands of U.S. dollars				
	2018				
	Land, buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress (Note 3)	Total
Beginning balance	**$ 927,922**	**$ 134,282**	**$ 130,156**	**$ 14,456**	**$ 1,206,836**
Ending balance	**872,905**	**115,997**	**118,122**	**52,080**	**1,159,124**

(Note 1) Depreciation is included in "Depreciation and amortization" in the consolidated statement of profit or loss.
(Note 2) Impairment losses are included in "Other operating costs" in the consolidated statement of profit or loss.
(Note 3) Amounts for property, plant and equipment under construction are presented in "Construction in progress."

Acquisition cost

	Millions of yen				
	2017				
	Land, buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress (Note 3)	Total
Beginning balance	¥ 153,703	¥ 30,172	¥ 39,343	¥ 8,859	¥ 232,078
Acquisitions	1,802	935	2,153	1,163	6,054
Acquisitions through business combinations	—	15	9	—	24
Disposals	(4,439)	(3,778)	(1,272)	(310)	(9,800)
Reclassification from construction in progress	6,392	642	992	(8,163)	(136)
Exchange differences on translation of foreign operations	4,995	746	2,696	57	8,496
Other	780	194	(1,261)	—	(285)
Ending balance	¥ 163,235	¥ 28,927	¥ 42,661	¥ 1,605	¥ 236,430

Accumulated depreciation and impairment losses

	Millions of yen					
	2017					
	Land, buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress (Note 3)	Total	
Beginning balance	¥ (57,033)	¥ (13,632)	¥ (23,970)	¥ —	¥	(94,636)
Depreciation (Note 1)	(3,388)	(3,373)	(4,420)	—		(11,182)
Impairment losses (Note 2)	(950)	(570)	—	—		(1,520)
Disposals	3,487	3,414	1,027	—		7,930
Exchange differences on translation of foreign operations	(1,749)	(380)	(1,767)	—		(3,897)
Other	(583)	521	920	—		858
Ending balance	¥ (60,217)	¥ (14,019)	¥ (28,210)	¥ —	¥	(102,447)

Carrying amount

	Millions of yen					
	2017					
	Land, buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Construction in progress (Note 3)	Total	
Beginning balance	¥ 96,670	¥ 16,540	¥ 15,372	¥ 8,859	¥	137,441
Ending balance	103,018	14,908	14,450	1,605		133,983

(Note 1) Depreciation is included in "Depreciation and amortization" in the consolidated statement of profit or loss.
(Note 2) Impairment losses are included in "Other operating costs" in the consolidated statement of profit or loss.
(Note 3) Amounts for property, plant and equipment under construction are presented in "Construction in progress."

(2) Impairment losses

The carrying amount of certain assets, including buildings, were written down to their recoverable amount during the fiscal year 2018 as their profitability declined. As a result, ¥590 million ($5,314 thousand) of impairment loss was allocated to the Industrial Services segment.

The carrying amounts of buildings were written down to their recoverable amount during the fiscal year 2017 as their profitability declined. In addition, the carrying amounts of machinery were written down to their recoverable amount during the fiscal year 2017 as they were not expected to be used for business purposes. As a result, ¥1,520 million of impairment loss was allocated to the Industrial Services segment.

(3) Leased assets

The carrying amounts of the leased assets held under finance lease contracts included in property, plant and equipment are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Land, buildings and structures	**¥ 2,349**	¥ 2,642	**$ 21,158**
Machinery and vehicles	**207**	768	**1,864**
Tools, furniture and fixtures	**54**	138	**486**
Total	**¥ 2,610**	¥ 3,549	**$ 23,509**

(4) Collateral

Assets pledged as collateral and secured liabilities are as follows:

Assets pledged as collateral

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Land and buildings	**¥ —**	¥ 5,376	**$ —**
Total	**¥ —**	¥ 5,376	**$ —**

Secured liabilities

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Interest-bearing bonds and borrowings	**¥ —**	¥ 2,052	**$ —**
Total	**¥ —**	¥ 2,052	**$ —**

11. Goodwill and Other Intangible Assets

(1) The movement in acquisition cost and accumulated impairment losses for goodwill for the fiscal years 2018 and 2017 is as follows:

	Millions of yen		
	2018		
	Acquisition cost	Accumulated impairment losses	Carrying amount
Beginning balance	**¥ 73,347**	**¥ —**	**¥ 73,347**
Acquisitions	**—**	**—**	**—**
Acquisitions through business combinations	**43**	**—**	**43**
Disposals	**—**	**—**	**—**
Impairment losses	**—**	**(306)**	**(306)**
Exchange differences on translation of foreign operations	**(4,216)**	**(13)**	**(4,230)**
Ending balance	**¥ 69,174**	**¥ (320)**	**¥ 68,854**

	Thousands of U.S. dollars		
	2018		
	Acquisition cost	Accumulated impairment losses	Carrying amount
Beginning balance	**$ 660,664**	**$ —**	**$ 660,664**
Acquisitions	**—**	**—**	**—**
Acquisitions through business combinations	**387**	**—**	**387**
Disposals	**—**	**—**	**—**
Impairment losses	**—**	**(2,756)**	**(2,756)**
Exchange differences on translation of foreign operations	**(37,975)**	**(117)**	**(38,101)**
Ending balance	**$ 623,076**	**$ (2,882)**	**$ 620,194**

	Millions of yen		
	2017		
	Acquisition cost	Accumulated impairment losses	Carrying amount
Beginning balance	¥ 65,641	¥ —	¥ 65,641
Acquisitions	—	—	—
Acquisitions through business combinations	1,727	—	1,727
Disposals	—	—	—
Impairment losses	—	—	—
Exchange differences on translation of foreign operations	5,979	—	5,979
Ending balance	¥ 73,347	¥ —	¥ 73,347

(2) The movement in acquisition cost and accumulated amortization and impairment losses for other intangible assets for the fiscal years 2018 and 2017 as follows:

Acquisition cost

	Millions of yen						
	2018						
	Trademarks	Customer -related assets	Technology -related assets	Patents	Capitalized development costs	Others	Total
Beginning balance	**¥ 45,468**	**¥ 8,432**	**¥ 6,396**	**¥ 1,669**	**¥ 8,953**	**¥ 33,659**	**¥ 104,581**
Acquisitions	**55**	**—**	**—**	**—**	**—**	**5,848**	**5,903**
Acquisitions through business combinations	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Additions due to internal development	**—**	**—**	**—**	**—**	**1,030**	**—**	**1,030**
Disposals	**—**	**—**	**—**	**—**	**(18)**	**(134)**	**(153)**
Reclassification	**—**	**—**	**—**	**—**	**—**	**(34)**	**(34)**
Exchange differences on translation of foreign operations	**(2,731)**	**(458)**	**(378)**	**—**	**(1,185)**	**(1,125)**	**(5,879)**
Other	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Ending balance	**¥ 42,792**	**¥ 7,974**	**¥ 6,018**	**¥ 1,669**	**¥ 8,779**	**¥ 38,212**	**¥ 105,448**

	Thousands of U.S. dollars						
	2018						
	Trademarks	Customer -related assets	Technology -related assets	Patents	Capitalized development costs	Others	Total
Beginning balance	**$ 409,547**	**$ 75,950**	**$ 57,611**	**$ 15,033**	**$ 80,643**	**$ 303,179**	**$ 942,001**
Acquisitions	**495**	**—**	**—**	**—**	**—**	**52,675**	**53,170**
Acquisitions through business combinations	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Additions due to internal development	**—**	**—**	**—**	**—**	**9,277**	**—**	**9,277**
Disposals	**—**	**—**	**—**	**—**	**(162)**	**(1,206)**	**(1,378)**
Reclassification	**—**	**—**	**—**	**—**	**—**	**(306)**	**(306)**
Exchange differences on translation of foreign operations	**(24,599)**	**(4,125)**	**(3,404)**	**—**	**(10,673)**	**(10,133)**	**(52,954)**
Other	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Ending balance	**$ 385,444**	**$ 71,824**	**$ 54,206**	**$ 15,033**	**$ 79,075**	**$ 344,190**	**$ 949,810**

Accumulated amortization and impairment losses

	Millions of yen						
	2018						
	Trademarks	Customer -related assets	Technology -related assets	Patents	Capitalized development costs	Others	Total
Beginning balance	**¥ (1,166)**	**¥ (2,648)**	**¥ (3,059)**	**¥ (1,611)**	**¥ (3,747)**	**¥ (23,031)**	**¥ (35,265)**
Amortization	**(345)**	**(544)**	**(1,074)**	**(29)**	**(1,724)**	**(3,632)**	**(7,351)**
Impairment losses	**—**	**—**	**—**	**—**	**—**	**(109)**	**(109)**
Reversal of impairment losses	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Disposals	**—**	**—**	**—**	**—**	**18**	**98**	**117**
Reclassification	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Exchange differences on translation of foreign operations	**67**	**153**	**209**	**—**	**1,154**	**975**	**2,560**
Other	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Ending balance	**¥ (1,444)**	**¥ (3,040)**	**¥ (3,925)**	**¥ (1,640)**	**¥ (4,298)**	**¥ (25,699)**	**¥ (40,048)**

	Thousands of U.S. dollars						
	2018						
	Trademarks	Customer -related assets	Technology -related assets	Patents	Capitalized development costs	Others	Total
Beginning balance	**$ (10,502)**	**$ (23,851)**	**$ (27,553)**	**$ (14,510)**	**$ (33,750)**	**$(207,449)**	**$(317,645)**
Amortization	**(3,107)**	**(4,900)**	**(9,673)**	**(261)**	**(15,528)**	**(32,714)**	**(66,213)**
Impairment losses	**—**	**—**	**—**	**—**	**—**	**(981)**	**(981)**
Reversal of impairment losses	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Disposals	**—**	**—**	**—**	**—**	**162**	**882**	**1,053**
Reclassification	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Exchange differences on translation of foreign operations	**603**	**1,378**	**1,882**	**—**	**10,394**	**8,782**	**23,058**
Other	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Ending balance	**$ (13,006)**	**$ (27,382)**	**$ (35,353)**	**$ (14,772)**	**$ (38,713)**	**$(231,480)**	**$(360,727)**

Carrying amount

	Millions of yen						
	2018						
	Trademarks	Customer -related assets	Technology -related assets	Patents	Capitalized development costs	Others	Total
Beginning balance	**¥ 44,302**	**¥ 5,784**	**¥ 3,337**	**¥ 58**	**¥ 5,205**	**¥ 10,627**	**¥ 69,315**
Ending balance	**41,347**	**4,934**	**2,093**	**29**	**4,481**	**12,512**	**65,399**

	Thousands of U.S. dollars						
	2018						
	Trademarks	Customer -related assets	Technology -related assets	Patents	Capitalized development costs	Others	Total
Beginning balance	**$ 399,045**	**$ 52,098**	**$ 30,057**	**$ 522**	**$ 46,883**	**$ 95,721**	**$ 624,346**
Ending balance	**372,428**	**44,442**	**18,852**	**261**	**40,362**	**112,700**	**589,074**

Other intangible assets in the above table with finite useful lives are amortized over their useful economic lives.

Amortization of intangible assets is included in "Depreciation and amortization" in the consolidated statement of profit or loss. Impairment losses are included in "Other operating costs" in the consolidated statement of profit or loss.

The amount of intangible assets in the above table with indefinite useful lives was ¥32,940 million ($296,703 thousand) at 31st December, 2018. Intangible assets with indefinite useful lives were mainly trademarks, which were recognized as a result of the integration between DMG MORI AG and the Company during the fiscal period 2015. Trademarks are classified as intangible assets with indefinite useful lives since there is no foreseeable limit to the period over which the asset is expected to generate net cash flows for the Group to the extent that their respective operations continue.

Internally generated intangible assets (after deducting accumulated amortization and impairment losses) at 31st December, 2018 were ¥4,481 million ($40,362 thousand) and included in capitalized development costs in the above table.

Acquisition cost

	Millions of yen						
	2017						
	Trademarks	Customer -related assets	Technology -related assets	Patents	Capitalized development costs	Others	Total
Beginning balance	¥ 41,356	¥ 7,658	¥ 5,813	¥ 1,669	¥ 6,003	¥ 29,402	¥ 91,904
Acquisitions	—	—	—	—	—	2,695	2,695
Acquisitions through business combinations	—	—	—	—	—	1	1
Additions due to internal development	—	—	—	—	1,529	—	1,529
Disposals	—	—	—	—	—	(88)	(88)
Reclassification	—	154	—	—	107	(125)	136
Exchange differences on translation of foreign operations	4,112	620	583	—	1,313	1,805	8,433
Other	—	—	—	—	—	(32)	(32)
Ending balance	¥ 45,468	¥ 8,432	¥ 6,396	¥ 1,669	¥ 8,953	¥ 33,659	¥ 104,581

Accumulated amortization and impairment losses

	Millions of yen						
	2017						
	Trademarks	Customer -related assets	Technology -related assets	Patents	Capitalized development costs	Others	Total
Beginning balance	¥ (761)	¥ (1,918)	¥ (1,769)	¥ (1,581)	¥ (1,537)	¥ (17,989)	¥ (25,557)
Amortization	(336)	(530)	(1,043)	(29)	(1,533)	(3,687)	(7,161)
Impairment losses	—	—	—	—	—	(190)	(190)
Reversal of impairment losses	—	—	—	—	—	—	—
Disposals	—	—	—	—	—	80	80
Reclassification	—	(16)	—	—	—	16	—
Exchange differences on translation of foreign operations	(68)	(182)	(246)	—	(676)	(1,294)	(2,468)
Other	—	—	—	—	—	32	32
Ending balance	¥ (1,166)	¥ (2,648)	¥ (3,059)	¥ (1,611)	¥ (3,747)	¥ (23,031)	¥ (35,265)

Carrying amount

	Millions of yen						
	2017						
	Trademarks	Customer -related assets	Technology -related assets	Patents	Capitalized development costs	Others	Total
Beginning balance	¥ 40,595	¥ 5,740	¥ 4,044	¥ 88	¥ 4,465	¥ 11,413	¥ 66,346
Ending balance	44,302	5,784	3,337	58	5,205	10,627	69,315

Other intangible assets in the above table with finite useful lives are amortized over their useful economic lives.
Amortization of intangible assets is included in "Depreciation and amortization" in the consolidated statement of profit or loss.
Impairment losses are included in "Other operating costs" in the consolidated statement of profit or loss.
The amount of intangible assets in the above table with indefinite useful lives was ¥35,009 million at 31st December, 2017. Intangible assets with indefinite useful lives were mainly trademarks, which were recognized as a result of the integration between DMG MORI AG and the Company during the fiscal period 2015. Trademarks are classified as intangible assets with indefinite useful lives since there is no foreseeable limit to the period over which the asset is expected to generate net cash flows for the Group to the extent that their respective operations continue.
Internally generated intangible assets (after deducting accumulated amortization and impairment losses) at 31st December, 2017 were ¥5,205 million and included in capitalized development costs in the above table.

(3) Impairment losses

The carrying amount of goodwill was written down to their recoverable amount during the fiscal year 2018 since the Group judged that certain foreign subsidiaries could not meet their target profit as originally expected. Additionally, the carrying amount of a part of software was written down to their recoverable amount as they were not expected to be used for business purpose. Impairment loss of ¥109 million ($981 thousand) and ¥306 million ($2,756 thousand) were allocated to Machine Tools segment and the Industrial Services segment, respectively.

The carrying amount of a part of software was written down to their recoverable amount during the fiscal year 2017 as they were not expected to be used for business purposes. Impairment loss in the amount of ¥190 million was allocated to the Machine Tools segment.

(4) Significant goodwill and other intangible assets

Significant goodwill and other intangible assets in the consolidated statement of financial position were recognized as a result of the integration with DMG MORI AG and the Company during the fiscal period 2015 as follows:

	Millions of yen			Thousands of U.S. dollars
	2018	2017	Remaining amortization period	**2018**
	Carrying amount	Carrying amount		Carrying amount
Goodwill	**¥ 66,053**	¥ 70,203	—	**$ 594,964**
Other intangible assets:				
Trademarks	**41,319**	44,254	27 years or non-amortizable	**372,176**
Customer-related assets	**4,238**	4,913	approximately 12 years	**38,173**
Technology-related assets	**2,093**	3,337	approximately 3 years	**18,852**

(5) Impairment test of goodwill and other intangible assets

Carrying amounts of goodwill and other intangible assets with indefinite useful lives allocated to each CGU (or group of CGUs) are as follows:

		Millions of yen		Thousands of U.S. dollars
	CGU	**2018**	2017	**2018**
Goodwill	Machine Tools	**¥ 29,315**	¥ 31,157	**$ 264,051**
	Industrial Services	**39,539**	42,190	**356,143**
	Total	**¥ 68,854**	¥ 73,347	**$ 620,194**
Other intangible assets with indefinite useful lives	Machine Tools	**¥ 14,843**	¥ 15,775	**$ 133,696**
	Industrial Services	**18,096**	19,233	**162,997**
	Total	**¥ 32,940**	¥ 35,009	**$ 296,703**

The recoverable amount of goodwill and other intangible assets (allocated to each CGU) with indefinite useful lives related to DMG MORI AG is measured at value in use. The key assumptions used for the calculation are as follows:

Estimation of future cash flow: The Group estimates future cash flow based on a five-year business plan. The expected growth rate of future cash flow beyond the period of the business plan is estimated as 2.2%.

Discount rate: The Group used a discount rate of 9.5% and 9.7% at 31st December, 2018 and 2017 considering the corresponding WACC in similar business industries.

The recoverable amounts of goodwill and other intangible assets (allocated to each CGU) with indefinite useful lives related to DMG MORI AG exceeded the corresponding carrying amounts by ¥16,792 million ($151,252 thousand) and ¥18,594 million in the Machine Tools segment and ¥56,942 million ($512,898 thousand) and ¥27,245 million in the Industrial Services segment at 31st December, 2018 and 2017, respectively. Future business plans or the discount rate used for the calculation of the value in use may change, and, as a result, the recognition of impairment may be required in some cases.

The value in use for the other goodwill currently exceeds the carrying amounts and the Group believes any reasonably possible change in the key assumptions on which the recoverable amount is based would not cause the aggregate carrying amount to exceed the aggregate recoverable amount of the CGU.

12. Other Financial Assets

The breakdown of other financial assets at 31st December, 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Financial assets measured at amortized cost:			
Other financial assets including loans	**¥ 9,007**	¥ 10,474	**$ 81,129**
Financial assets measured at fair value through other comprehensive income			
Other financial assets[Equities]	**6,088**	—	**54,836**
Financial assets measured at fair value through profit or loss:			
Derivative assets	**250**	—	**2,251**
Financial assets measured at fair value			
Derivative assets	**—**	95	**—**
Available-for-sale financial assets	**—**	7,079	**—**
Total	**¥ 15,345**	¥ 17,649	**$ 138,218**
Current assets	**¥ 6,836**	¥ 8,652	**$ 61,574**
Non-current assets	**8,509**	8,996	**76,643**
Total	**¥ 15,345**	¥ 17,649	**$ 138,218**

13. Investments in Associates and Joint Ventures

The carrying amount of the Group's investments in associates at 31st December, 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Carrying amount of investments in associates (at the reporting date)	**¥ 3,331**	¥ 2,229	**$ 30,003**

Income and other comprehensive income attributable to the Group are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Profit attributable to the Group	**¥ 167**	¥ 62	**$ 1,504**
Other comprehensive income (loss) attributable to the Group	**(21)**	18	**(189)**
Total	**¥ 146**	¥ 80	**$ 1,315**

14. Trade and Other Payables

The breakdown of trade and other payables at 31st December, 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Trade payables	**¥ 38,264**	¥ 32,913	**$ 344,658**
Other payables	**10,881**	8,536	**98,009**
Others	**7,688**	6,267	**69,248**
Total	**¥ 56,833**	¥ 47,717	**$ 511,916**

15. Interest-bearing Bonds and Borrowings

The breakdown of interest-bearing bonds and borrowings at 31st December, 2018 and 2017 is as follows:

	Millions of yen				Thousands of U.S. dollars
	2018	2017	Average interest rate (%) (Note 1)	Maturity (Note 1)	**2018**
Financial liabilities measured at amortized cost:					
Short-term borrowings	**¥ 17,838**	¥ 5,590	0.15~1.59	—	**$ 160,673**
Long term borrowings due within one year	**16,887**	17,063	0.21~2.80	—	**152,107**
Long term borrowings (excluding those due within one year)	**52,334**	126,788	0.19~2.80	2020-2025	**471,392**
Interest-bearing bonds due within one year	**20,000**	—	0.12	—	**180,147**
Interest-bearing bonds (excluding those due within one year)	**9,954**	29,918	0.21	2021	**89,659**
Total	**¥ 117,015**	¥ 179,359			**$ 1,053,999**
Current liabilities	**54,725**	22,653			**$ 492,929**
Non-current liabilities	**62,289**	156,706			**561,061**
Total	**¥ 117,015**	¥ 179,359			**$ 1,053,999**

(Note 1) Average interest rate and maturity are based on the respective information at the end of the fiscal year 2018.

16. Other Financial Liabilities

The breakdown of other financial liabilities at 31st December, 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Financial liabilities measured at amortized cost:			
Payment obligation for external shareholders (Note 1)	**¥ 94,680**	¥ 101,691	**$ 852,819**
Preferred shares (Note 2)	**14,833**	14,838	**133,606**
Finance lease obligations	**3,546**	4,580	**31,940**
Others	**1,023**	1,185	**9,214**
Financial liabilities at fair value through profit or loss:			
Derivative liabilities	**1,057**	2,469	**9,520**
Total	**¥ 115,140**	¥ 124,765	**$ 1,037,110**
Current liabilities	**¥ 95,982**	¥ 3,857	**$ 864,546**
Non-current liabilities	**19,158**	120,907	**172,563**
Total	**¥ 115,140**	¥ 124,765	**$ 1,037,110**

(Note 1) The payment obligation for external shareholders arose from the DPLTA. For details, please refer to Note 34 "Domination and Profit and Loss Transfer Agreement."

(Note 2) One subsidiary of the Group issued preferred shares in the fiscal year 2017. The preferred shares cannot be converted to corporate bonds and instead, the subsidiary shall redeem the shares after a period of five years from the issuance date. Considering the contractual conditions, the subsidiary classifies these shares as financial liabilities instead of equity. The shares are cumulative preferred shares and the annual dividend rate is based on the Japanese-yen TIBOR (6 months). The subsidiary shall be liable for any unpaid dividends with the amount carried forward to the next fiscal year in the event that the subsidiary does not fully pay the dividend based on the annual rate.

The net present value of finance lease obligations at 31st December, 2018 and 2017 is as follows:

	Millions of yen				Thousands of U.S. dollars
	2018	2017	Average interest rate (%) (Note 1)	Maturity (Note 2)	2018
Minimum lease payments	**¥ 4,399**	¥ 5,767	—	—	**$ 39,623**
Less: Future financing costs	**(853)**	(1,186)	—	—	**(7,683)**
Net present value of minimum lease payments	**3,546**	¥ 4,580	—	—	**31,940**
Current finance lease obligations (Not later than one year)	**932**	¥ 724	3.74	—	**8,394**
Non-current finance lease obligations (Later than one year)	**2,613**	3,856	6.11	2020-2029	**23,536**
Total	**¥ 3,546**	¥ 4,580			**$ 31,940**

(Note 1) Average interest rate is based on the weighted-average rate that applied to interest rates and balances at the end of fiscal year 2018.
(Note 2) Average interest rate and maturity are based on the respective information at the end of fiscal year 2018.

17. Operating Leases

Lease payments under operating lease contracts recognized as an expense are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Minimum lease payments	**¥ 5,311**	¥ 4,831	**$ 47,838**
Total	**¥ 5,311**	¥ 4,831	**$ 47,838**

Minimum lease payments are included in "Other operating costs" in the consolidated statement of profit or loss.

Future minimum lease payments under non-cancelable operating lease contracts are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Not later than one year	**¥ 4,783**	¥ 3,981	**$ 43,082**
Later than one year and not later than five years	**9,923**	9,668	**89,380**
Later than five years	**2,608**	1,606	**23,491**
Total	**¥ 17,315**	¥ 15,256	**$ 155,962**

Operating lease payments represent rental fees payable by the Group for certain rental buildings. Some lease contracts include renewal options. However, there are no significant restrictions on variable lease fees, purchase options, sublease agreements, escalation clauses and significant limits under any lease contracts.

18. Retirement Benefits

The Company and its consolidated subsidiaries have established funded and unfunded defined benefit pension plans and defined contribution pension plans. In addition to the above, certain domestic consolidated subsidiaries participate in a small- and medium-sized enterprise mutual aid plan.

(1) Defined benefit plans

1. Defined contribution plans adopted in Japan as post-employment benefit
   The Company and its domestic consolidated subsidiaries have established defined contribution pension plans. Although certain domestic subsidiaries had established defined benefit pension plans, the change of post-employment benefits from defined benefit plans to defined contribution plans has been completed.
2. Defined benefit plans of overseas subsidiaries as post-employment benefits
   Overseas consolidated subsidiaries, mainly in Germany and Switzerland, have primarily established defined benefit plans for post-employment benefits. The contributions to these plans are determined based on the employee's length of service, salary level and other factors depending on general laws, economic conditions and taxation regulations of the respective countries. These plans expose

the Group to the risks arising from fluctuations in interest rates, market and foreign exchanges rates, as well as actuarial differences due to changes in estimations, such as average life expectancy.

Assets and liabilities of defined benefit plans recognized in the consolidated statement of financial position at 31st December, 2018 and 2017 are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Present value of defined benefit obligations	**¥ 8,834**	¥ 10,116	**$ 79,571**
Fair value of plan assets	**(3,675)**	(3,862)	**(33,102)**
Funded status	**5,159**	6,254	**46,469**
Effect of asset ceiling	**—**	—	**—**
Net defined benefit liabilities	**¥ 5,159**	6,254	**46,469**
Amounts in consolidated statement of financial position:			
Employee defined benefit assets	**—**	—	**—**
Net employee defined benefit liabilities	**¥ 5,159**	¥ 6,254	**$ 46,469**

Costs of defined benefit plans recognized in the consolidated statements of profit or loss for the fiscal 2018 and 2017 are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Current service cost	**¥ 206**	¥ 195	**$ 1,855**
Past service cost	**71**	39	**639**
Subtotal of operating costs	**278**	234	**2,504**
Net interest cost	**66**	70	**594**
Subtotal of financial costs	**66**	70	**594**
Other	**—**	—	**—**
Total	**¥ 344**	¥ 304	**$ 3,098**

The movement in the present value of defined benefit obligations for the fiscal 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Beginning balance	**¥ 10,116**	¥ 10,645	**$ 91,118**
Pension cost charged to profit or loss:			
Current service cost	**206**	195	**1,855**
Past service cost	**71**	39	**639**
Interest cost	**101**	106	**909**
Subtotal	**379**	340	**3,413**
Remeasurement (gains) losses in other comprehensive income:			
Actuarial gains and losses arising from changes in demographic assumptions	**60**	—	**540**
Actuarial gains and losses arising from changes in financial assumptions	**(368)**	29	**(3,314)**
Actuarial gains and losses arising from experience adjustments	**(147)**	218	**(1,324)**
Subtotal	**(455)**	248	**(4,098)**
Other:			
Benefits paid	**(701)**	(793)	**(6,314)**
Contributions to the plan by participants	**78**	82	**702**
Decrease through business disposals	**—**	(114)	**—**
Exchange differences on translation of foreign operations	**(581)**	(292)	**(5,233)**
Subtotal	**(1,205)**	(1,117)	**(10,853)**
Ending balance	**¥ 8,834**	¥ 10,116	**$ 79,571**

The movement in the fair value in the plan assets for the fiscal years ended 31st December, 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Beginning balance	**¥ 3,862**	¥ 4,444	**$ 34,786**
Amount recognized in profit or loss:			
Interest income	**35**	36	**315**
Subtotal	**35**	36	**315**
Amount recognized in other comprehensive income:			
Remeasurements of fair value of plan assets			
Return on plan assets	**156**	47	**1,405**
Subtotal	**156**	47	**1,405**
Other:			
Contributions to the plan by the employer	**461**	478	**4,152**
Benefits paid	**(691)**	(773)	**(6,224)**
Contributions to the plan by participants	**19**	17	**171**
Exchange differences on translation of foreign operations	**(167)**	(389)	**(1,504)**
Subtotal	**(378)**	(666)	**(3,404)**
Ending balance	**¥ 3,675**	¥ 3,862	**$ 33,102**

(Note) The Group expects to contribute ¥414 million ($3,729 thousand) to its defined benefit pension plans for the fiscal year 2019.

Significant actuarial assumptions used for the calculation of the present value of defined benefit obligations are as follows:

	2018	2017
Discount rates (%)	**0.78～2.50**	0.59～3.01
Rate of increase in benefits paid (%)	**0.00～2.00**	0.00～2.00

(Note) The weighted average duration of the defined benefit obligation as of 31st December, 2018 and 2017 were 13.0 years and 13.5 years, respectively.

The sensitivity analysis does not consider correlations between assumptions, assuming that all other assumptions are held constant. In practice, changes in some of the assumptions may occur in a correlated manner. When calculating the sensitivity of the defined benefit obligations, the same method has been applied as when calculating the defined benefit obligations in the consolidated statement of financial position.

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Discount rate:			
0.25% increase	**¥ (268)**	¥ (234)	**$ (2,413)**
0.25% decrease	**283**	317	**2,549**
Changes in rate of increase in benefits paid:			
0.25% increase	**190**	213	**1,711**
0.25% decrease	**(186)**	(205)	**(1,675)**

The breakdown of the fair value of plan assets at 31st December, 2018 and 2017 is as follows:

	Millions of yen		
	2018		
	Quoted prices in active market	Quoted prices in active market unavailable	Total
Cash and cash equivalents	**¥ —**	**¥ —**	**¥ —**
Equities	**—**	**—**	**—**
Bonds	**—**	**—**	**—**
Real estate	**—**	**—**	**—**
Insurance	**—**	**2,070**	**2,070**
Other	**—**	**1,604**	**1,604**
Total	**¥ —**	**¥ 3,675**	**¥ 3,675**

	Thousands of U.S. dollars		
	2018		
	Quoted prices in active market	Quoted prices in active market unavailable	Total
Cash and cash equivalents	**$ —**	**$ —**	**$ —**
Equities	**—**	**—**	**—**
Bonds	**—**	**—**	**—**
Real estate	**—**	**—**	**—**
Insurance	**—**	**18,645**	**18,645**
Other	**—**	**14,447**	**14,447**
Total	**$ —**	**$ 33,102**	**$ 33,102**

	Millions of yen		
	2017		
	Quoted prices in active market	Quoted prices in active market unavailable	Total
Cash and cash equivalents	¥ —	¥ —	¥ —
Equities	—	—	—
Bonds	—	—	—
Real estate	—	—	—
Insurance	—	2,209	2,209
Other	—	1,652	1,652
Total	¥ —	¥ 3,862	¥ 3,862

The investment strategy of the global pension assets in the Group is based on the goal of assuring pension payments over the long term. In Germany, plan assets mainly comprise insurance contracts and are held by a legally separate and independent entity whose sole purpose is to hedge and finance employee benefit liabilities. In Switzerland, external plan assets are invested in a traditional pension fund. Plan assets in Switzerland are subject to customary minimum funding requirements.

(2) Defined contribution plans

The expenses related to the defined contribution plans charged to profit or loss for the fiscal years 2018 and 2017 are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Expenses for defined contribution plans	**¥ 2,920**	¥ 2,807	**$ 26,301**

19. Provisions

The movement in provisions for the fiscal years ended 31st December, 2018 and 2017 is as follows:

	Millions of yen				
	2018				
	Provision for product warranties	Provision for sales commissions	Provision for personnel costs	Other provisions	Total
Beginning balance	**¥ 5,899**	**¥ 4,840**	**¥ 15,392**	**¥ 7,727**	**¥ 33,859**
Adjustment amount for adopting IFRS 15	**(6)**	**(292)**	**—**	**(305)**	**(605)**
Beginning balance after adjusting	**5,892**	**4,548**	**15,392**	**7,421**	**33,254**
Increase	**7,354**	**3,237**	**12,627**	**4,439**	**27,657**
Decrease due to intended use	**(5,550)**	**(1,756)**	**(9,951)**	**(1,194)**	**(18,452)**
Reversal	**(187)**	**(502)**	**(795)**	**(518)**	**(2,003)**
Increase due to passage of time	**0**	**—**	**(4)**	**1**	**(2)**
Increase due to business combinations	**—**	**—**	**—**	**—**	**—**
Exchange differences on translation of foreign operations	**(358)**	**(340)**	**(965)**	**(900)**	**(2,564)**
Ending balance	**¥ 7,151**	**¥ 5,185**	**¥ 16,303**	**¥ 9,249**	**¥ 37,889**

	Thousands of U.S. dollars				
	2018				
	Provision for product warranties	Provision for sales commissions	Provision for personnel costs	Other provisions	Total
Beginning balance	**$ 53,134**	**$ 43,595**	**$ 138,641**	**$ 69,600**	**$ 304,981**
Adjustment amount for adopting IFRS 15	**(54)**	**(2,630)**	**—**	**(2,747)**	**(5,449)**
Beginning balance after adjusting	**53,071**	**40,965**	**138,641**	**66,843**	**299,531**
Increase	**66,240**	**29,156**	**113,736**	**39,983**	**249,117**
Decrease due to intended use	**(49,990)**	**(15,816)**	**(89,632)**	**(10,754)**	**(166,204)**
Reversal	**(1,684)**	**(4,521)**	**(7,160)**	**(4,665)**	**(18,041)**
Increase due to passage of time	**0**	**—**	**(36)**	**9**	**(18)**
Increase due to business combinations	**—**	**—**	**—**	**-**	**-**
Exchange differences on translation of foreign operations	**(3,224)**	**(3,062)**	**(8,692)**	**(8,106)**	**(23,094)**
Ending balance	**$ 64,411**	**$ 46,703**	**$ 146,847**	**$ 83,309**	**$ 341,280**

	Millions of yen				
	2017				
	Provision for product warranties	Provision for sales commissions	Provision for personnel costs	Other provisions	Total
Beginning balance	¥ 4,820	¥ 4,149	¥ 13,345	¥ 7,818	¥ 30,133
Increase	5,478	2,377	10,343	1,815	20,014
Decrease due to intended use	(4,753)	(1,621)	(8,690)	(2,313)	(17,378)
Reversal	(65)	(395)	(620)	(578)	(1,658)
Increase due to passage of time	0	—	1	0	2
Increase due to business combinations	30	—	4	21	56
Exchange differences on translation of foreign operations	388	330	1,008	961	2,689
Ending balance	¥ 5,899	¥ 4,840	¥ 15,392	¥ 7,727	¥ 33,859

The breakdown of provisions at 31st December, 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Current liabilities:			
Provision for product warranties	**¥ 7,151**	¥ 5,899	**$ 64,411**
Provision for sales commissions	**5,032**	4,567	**45,325**
Provision for personnel costs	**12,951**	12,325	**116,654**
Other provisions	**7,121**	7,094	**64,141**
Subtotal	**32,256**	29,886	**290,542**
Non-current liabilities:			
Provision for sales commissions	**152**	273	**1,369**
Provision for personnel costs	**3,352**	3,067	**30,192**
Other provisions	**2,128**	632	**19,167**
Subtotal	**5,633**	3,973	**50,738**
Total	**¥ 37,889**	¥ 33,859	**$ 341,280**

Provision for product warranties
Provision for product warranties is calculated based on the actual historical ratio of repair costs as a portion of the corresponding product sales revenues to provide for future repairs during free-of-charge product warranty periods.

Provision for sales commissions
Provision for sales commissions is calculated based on the estimated commissions to be paid to sales dealers.

Provision for personnel costs
Provision for personnel costs mainly consists of a provision for annual paid leaves and bonuses.

The outflows of economic benefits related to provisions included in current liabilities and non-current liabilities are expected within one year from the end of the reporting period and after one year from the end of the reporting period, respectively.

20. Income Taxes

(1) Deferred tax assets and liabilities

The breakdown and movement of deferred tax assets and liabilities by major causes of their occurrence for the fiscal years 2018 and 2017 are as follows:

	Millions of yen			
	2018			
	Beginning balance	Increase due to business combinations	Recognized in profit or loss (Note 1)	Recognized in other comprehensive income	Ending balance
Deferred tax assets:					
Intangible assets	¥ 2,722	¥ —	¥ (368)	¥ —	¥ 2,354
Property, plant and equipment	988	—	244	—	1,232
Inventories	3,937	—	1	—	3,938
Trade and other receivables	1,329	—	66	—	1,395
Unused tax losses (Note 2)	2,813	—	(897)	—	1,915
Other	6,336	—	(669)	—	5,667
Total	18,128	—	(1,623)	—	16,504
Deferred tax liabilities:					
Intangible assets	(12,668)	—	721	—	(11,947)
Property, plant and equipment	(2,478)	—	699	—	(1,778)
Available-for-sale financial assets	(858)	—	19	154	(685)
Inventories	(293)	—	35	—	(257)
Other	(3,590)	—	217	(278)	(3,651)
Total	(19,890)	—	1,694	(124)	(18,320)
Net amount	¥ (1,762)	¥ —	¥ 70	¥ (124)	¥ (1,816)

	Thousands of U.S. dollars			
	2018			
	Beginning balance	Increase due to business combinations	Recognized in profit or loss (Note 1)	Recognized in other comprehensive income	Ending balance
Deferred tax assets:					
Intangible assets	$ 24,518	$ —	$ (3,314)	$ —	$ 21,203
Property, plant and equipment	8,899	—	2,197	—	11,097
Inventories	35,462	—	9	—	35,471
Trade and other receivables	11,970	—	594	—	12,565
Unused tax losses (Note 2)	25,337	—	(8,079)	—	17,249
Other	57,070	—	(6,025)	—	51,044
Total	163,285	—	(14,618)	—	148,657
Deferred tax liabilities:					
Intangible assets	(114,105)	—	6,494	—	(107,611)
Property, plant and equipment	(22,320)	—	6,296	—	(16,015)
Available-for-sale financial assets	(7,728)	—	171	1,387	(6,170)
Inventories	(2,639)	—	315	—	(2,314)
Other	(32,336)	—	1,954	(2,504)	(32,885)
Total	(179,156)	—	15,258	(1,116)	(165,015)
Net amount	$ (15,871)	$ —	$ 630	$ (1,116)	$ (16,357)

	Millions of yen									
	2017									
	Beginning balance		Increase due to business combinations		Recognized in profit or loss (Note 1)		Recognized in other comprehensive income		Ending balance	
Deferred tax assets:										
Intangible assets	¥	2,503	¥	—	¥	218	¥	—	¥	2,722
Property, plant and equipment		1,051		—		(63)		—		988
Inventories		4,371		—		(433)		—		3,937
Trade and other receivables		1,415		—		(85)		—		1,329
Unused tax losses (Note 2)		4,803		—		(1,989)		—		2,813
Other		4,760		—		1,576		—		6,336
Total		18,905		—		(777)		—		18,128
Deferred tax liabilities:										
Intangible assets		(12,182)		(68)		(417)		—		(12,668)
Property, plant and equipment		(2,493)		—		15		—		(2,478)
Available-for-sale financial assets		(1,623)		—		(1)		766		(858)
Inventories		(180)		—		(113)		—		(293)
Other		(3,925)		—		248		85		(3,590)
Total		(20,405)		(68)		(268)		852		(19,890)
Net amount	¥	(1,500)	¥	(68)	¥	(1,045)	¥	852	¥	(1,762)

(Note 1) Exchange differences arising on translation of foreign operations are included.

(Note 2) The cause of deferred tax assets associated with unused tax losses at 31st December, 2018 and 2017 is non-recurring in nature, and it is probable that the tax benefit will be realizable based on the forecast of future taxable income in the business plan approved by the Board of Directors of the Company.

(2) Unrecognized deferred tax assets

Deductible temporary differences, unused tax losses, and unused tax credits for which no deferred tax asset is recognized are as follows:

	Millions of yen				Thousands of U.S. dollars
	2018		2017		**2018**
Deductible temporary differences	**¥**	**19,493**	¥	13,221	**$ 175,580**
Unused tax losses		**9,964**		11,795	**89,749**
Unused tax credits		**46**		297	**414**
Total	**¥**	**29,504**	¥	25,313	**$ 265,753**

Unused tax losses and unused tax credits for which no deferred tax asset is recognized will expire as follows:

	Millions of yen				Thousands of U.S. dollars
	2018		2017		**2018**
Unused tax losses					
Year 1	**¥**	**81**	¥	401	**$ 729**
Year 2		**184**		101	**1,657**
Year 3		**579**		1,428	**5,215**
Year 4		**1,694**		1,010	**15,258**
Year 5 or later		**7,424**		8,854	**66,870**
Total	**¥**	**9,964**	¥	11,795	**$ 89,749**
Unused tax credits					
Year 1	**¥**	**32**	¥	264	**$ 288**
Year 2		**—**		32	**—**
Year 3		**14**		—	**126**
Year 4		**—**		—	**—**
Year 5 or later		**—**		—	**—**
Total	**¥**	**46**	¥	297	**$ 414**

(3) Income tax expense

The breakdown of income tax expense recognized in profit or loss is as follows:

	Millions of yen				Thousands of U.S. dollars
	2018		2017		**2018**
Current income tax expense	**¥**	**10,289**	¥	8,716	**$ 92,676**
Deferred income tax expense:					
Temporary differences originated and reversed		**1,933**		(1,271)	**17,411**
Changes in tax rate or imposition of new taxation		**8**		1,892	**72**
Change in unused tax losses or temporary differences not recognized in prior years		**(330)**		(209)	**(2,972)**
Total		**1,610**		411	**14,501**
Total income taxes	**¥**	**11,900**	¥	9,127	**$ 107,187**

(4) Reconciliation of effective tax rate

The Company is mainly subject to corporate tax, inhabitant tax and enterprise tax. The effective statutory tax rates calculated based on these taxes was 30.69% for the fiscal years 2018 and 2017. Foreign subsidiaries are subject to income taxes in their respective jurisdictions.

The reconciliation of the effective statutory tax rates and the average actual tax rates for the fiscal years 2018 and 2017 is as follows:

	2018	2017
Effective statutory tax rates	**30.69%**	30.69%
Non-deductible expenses, such as entertainment expenses	**3.99**	3.49
Tax credits	**(0.49)**	(0.83)
Non-taxable income, such as dividend income	**(0.15)**	(0.10)
Temporary differences arising from investments in associates	**0.34**	0.08
Changes in unrecognized deferred tax assets	**5.20**	(3.44)
Effect of change in applicable tax rates	**0.03**	7.63
Effective tax rate difference in overseas consolidated subsidiaries	**(1.38)**	(1.30)
Other	**(0.18)**	0.58
Average actual tax rates	**38.05%**	36.80%

(5) Revision of amounts of deferred tax assets and deferred tax liabilities due to changes in tax rate, such as corporate tax

Based on the enactment of the new US tax legislation on 22nd December 2017, which includes a reduction of the federal corporate tax rate from 35% to 21% effective from the fiscal year 2018. The Group has evaluated the deferred tax balances in the US and recognized a one-time tax expenses of ¥1,890 million for the fiscal year 2017, arising from reversal of the deferred tax assets on the loss carryforward of the past years and devaluation.

21. Equity and Other Components of Equity

(1) Number of authorized shares and issued shares

The number of authorized shares and issued shares is as follows:

	Shares	
	2018	2017
Number of authorized shares	**300,000,000**	300,000,000
Number of issued shares:		
At the beginning of the porting period	**125,953,683**	132,943,683
Increase/(decrease)	**—**	(6,990,000)
At the end of reporting period	**125,953,683**	125,953,683

(Note 1) The shares issued by the Company are ordinary shares with no par value. Issued shares are fully paid-in.

(Note 2) The number of issued shares decreased by 6,990,000 during the fiscal year 2017 was due to cancellation of treasury shares.

(2) Treasury shares

The movement in treasury shares is as follows:

	Shares	
	2018	2017
At the beginning of the reporting period	**5,054,853**	12,924,920
Increase (Notes 1 and 2)	**362**	2,619,933
Decrease (Notes 1 and 2)	**598,616**	10,490,000
At the end of reporting period	**4,456,599**	5,054,853

(Note 1) The increase of the number of treasury shares by 362 shares is due to purchases of treasury shares less than one unit during the fiscal year 2018. The decrease of the number of treasury shares by 598,616 shares during the fiscal year 2018 is due to the following reasons; stock option exercise of 363,700 shares, sales to employee shareholders association of 226,300 shares and grant of restricted stocks of 8,616 shares.

(Note 2) The number of treasury shares at 31st December 2018 includes 2,273,700 shares which is hold by The Nomura Trust and Banking Co., Ltd (DMG MORI Employee Shareholders Association Exclusive Trust) for Trust-Type Employee Stock Ownership Incentive Plan.

(Note 3) The increase of number of treasury shares by 2,619,933 shares during the fiscal year 2017 was due to the following reasons; purchases of 2,619,100 shares based on the resolution of the Board of Directors on 13th January, 2017 and purchases of 833 shares less than one unit during the fiscal year 2017. The decrease of the number of treasury shares by 10,490,000 shares during the fiscal year 2017 was due to the following.
Reasons; disposal of 3,500,000 shares amounted to ¥6,446 million to Mori Manufacturing Research and Technology Foundation on purpose of supporting the entity's activity of social contribution based on the resolution of shareholders' meeting and the Board of Directors on 22nd March, 2017 cancellation of 3,500,000 treasury shares amounted to ¥6,446 million on 31st March, 2017 based on the resolution in the Board of Directors on 13th January, 2017 and cancellation of 3,490,000 shares amounted to ¥6,401 million on 30th June, 2017 based on the resolution of the Board of Directors on 10th May, 2017.

(3) Capital surplus and retained earnings

The Corporation Law of Japan (the "Law") provides that an amount equal to 10% of the amount to be disbursed as distributions of capital surplus and retained earnings be transferred to the capital reserve and the legal reserve, respectively, until the sum of the capital reserve and the legal reserve equals to 25% of the capital stock account.

(4) Hybrid capital

The Company raised funds in the amounts of ¥40 billion through a perpetual subordinated loan (the "subordinated loan") and ¥10 billion through perpetual subordinated bonds (the "subordinated bonds") in September, 2016.

The subordinated loan and the subordinated bonds are classified as equity instruments since no date for repayment of the principal is specified and optional deferral of interest payments is possible. The proceeds from the subordinated loan and the subordinated bonds after deducting issue costs are recorded as "Hybrid capital" under "Equity" in the consolidated statement of financial position.

1. Overview of Subordinated Loan

(1) Amount	¥40 billion
(2) Lender	Mizuho Bank, Ltd., and Sumitomo Mitsui Banking Corporation
(3) Execution date	20th September, 2016
(4) Repayment date	No repayment date is specified. Provided, however, that on each interest payment date from 20th September, 2021 onward, optional repayment of all or part of the principal is possible.
(5) Interest rate	From 20th September, 2016 to 20th September, 2026: Variable interest based on 6-month Japanese yen TIBOR From 21st September, 2026 onward: Variable interest stepped up by 1.00%
(6) Clauses relating to payment of interest	Deferral of interest payment is optional.
(7) Subordinated loan clause	The subordinated creditors have right to claim for repayment only after the all claims by senior creditors are satisfied in case an event defined in the loan contract such as liquidation occurs.

2. Overview of Subordinated Bonds

(1) Amount	¥10 billion
(2) Execution date	2nd September, 2016
(3) Repayment date	No repayment date is specified. Provided, however, that on each interest payment date from 2nd September, 2021 onward, optional repayment of all principal is possible.
(4) Interest rate	From 2nd September, 2016 to 2nd September, 2021: Fixed interest From 3rd September, 2021 onward: Variable interest based on 6-month Japanese yen LIBOR
(5) Clauses relating to payment of interest	Deferral of interest payment is optional.
(6) Subordinated loan clause	The subordinated creditors have right to claim for repayment only after the all claims by senior creditors are satisfied in case an event defined in the loan contract such as liquidation occurs.
(7) Replacement restrictions	When making optional redemption or repurchase of the subordinated bonds, it is assumed that the subordinated bonds are being replaced with equivalent bonds or loans certified by a credit rating agency, that satisfy necessary conditions to be classified as equity instruments. Provided, however, that if, after five years elapse, both of the following items are satisfied, it is possible not to refinance with equivalent financial instruments. (a) Consolidated shareholders' equity after the adjustment is more than ¥151.2 billion. (b) The consolidated equity ratio after the adjustment is more than 26.8%. The values stated above shall be calculated according to the following method. (a) Consolidated shareholders' equity after the adjustment is equal to total equity attributable to owners of parent less other components of equity and hybrid capital. (b) The consolidated equity ratio after the adjustment is equal to consolidated shareholders' equity after the adjustment as calculated above divided by total assets.

3. Paid amount for hybrid capital

The following payments on the hybrid capital were made for the fiscal years 2018 and 2017:

		Payment amount	
		2018	
Category	Payment date	Millions of yen	Thousands of U.S. dollars
Subordinated loan	20th March, 2018	**¥ 437**	**$ 3,936**
	20th September, 2018	**448**	**4,035**
Subordinated bonds	1st March, 2018	**93**	**837**
	30th August, 2018	**93**	**837**

		Payment amount
		2017
Category	Payment date	Millions of yen
Subordinated loan	21st March, 2017	¥ 440
	20th September, 2017	442
Subordinated bonds	2nd March, 2017	93
	1st September, 2017	93

4. Fixed future payment on hybrid capital

Subsequent to 31st December, 2018 and 2017, the following payments were determined before the approval date of the consolidated financial statements:

		Payment amount	
		2018	
Category	Payment date	Millions of yen	Thousands of U.S. dollars
Subordinated loan	20th March, 2019	**¥ 441**	**$ 3,972**
Subordinated bonds	28th February 2019	**93**	**837**

		Payment amount
		2017
Category	Payment date	Millions of yen
Subordinated loan	20th March, 2018	¥ 437
Subordinated bonds	1st March, 2018	93

(5) Other components of equity

The movement in other components of equity is as follows:

	Millions of yen					
	2018					
	Remeasure-ments of defined benefit plans	Exchange differences on translation of foreign operations	Effective portion of changes in fair value of cash flow hedges	Changes in fair value measurements of financial assets measured at fair value through other comprehensive income	Stock options	Total
Beginning balance	**¥ —**	**¥ (11,564)**	**¥ (198)**	**¥ 1,845**	**¥ 412**	**¥ (9,504)**
Other comprehensive income (loss)	**426**	**(8,392)**	**157**	**(804)**	**—**	**(8,612)**
Treasury shares disposition	**—**	**—**	**—**	**—**	**(100)**	**(100)**
Share-based payments	**—**	**—**	**—**	**—**	**209**	**209**
Transfer from other components of equity to retained earnings	**(426)**	**—**	**—**	**—**	**—**	**(426)**
Ending balance	**¥ —**	**¥ (19,957)**	**¥ (40)**	**¥ 1,040**	**¥ 521**	**¥ (18,435)**

	Thousands of U.S dollars					
	2018					
	Remeasure-ments of defined benefit plans	Exchange differences on translation of foreign operations	Effective portion of changes in fair value of cash flow hedges	Changes in fair value measurements of financial assets measured at fair value through other comprehensive income	Stock options	Total
Beginning balance	**$ —**	**$ (104,161)**	**$ (1,783)**	**$ 16,618**	**$ 3,711**	**$ (85,606)**
Other comprehensive income (loss)	**3,837**	**(75,589)**	**1,414**	**(7,241)**	**—**	**(77,571)**
Treasury shares disposition	**—**	**—**	**—**	**—**	**(900)**	**(900)**
Share-based payments	**—**	**—**	**—**	**—**	**1,882**	**1,882**
Transfer from other components of equity to retained earnings	**(3,837)**	**—**	**—**	**—**	**—**	**(3,837)**
Ending balance	**$ —**	**$ (179,760)**	**$ (360)**	**$ 9,367**	**$ 4,692**	**$ (166,051)**

	Millions of yen					
	2017					
	Remeasure-ments of defined benefit plans	Exchange differences on translation of foreign operations	Effective portion of changes in fair value of cash flow hedges	Changes in fair value measurements of available-for-sale financial assets	Stock options	Total
Beginning balance	¥ —	¥ (15,613)	¥ (167)	¥ 4,429	¥ 83	¥ (11,266)
Other comprehensive income (loss)	(129)	4,048	(31)	(2,584)	—	1,302
Share-based payments	—	—	—	—	328	328
Transfer from other components of equity to retained earnings	129	—	—	—	—	129
Ending balance	¥ —	¥ (11,564)	¥ (198)	¥ 1,845	¥ 412	¥ (9,504)

Descriptions and purposes of other components of equity are explained as follows:

Remeasurements of defined benefit plans

Remeasurements of defined benefit plans comprise actuarial gains and losses, the return on plan assets, excluding amounts included in interest income, and any changes in the effect of the asset ceiling, excluding amounts included in interest income.

Exchange differences on translation of foreign operations

Exchange differences on translation of foreign operations arising from the translation of the foreign currency financial statements of foreign subsidiaries.

Effective portion of changes in fair value of cash flow hedges

This is the effective portion of changes in the fair value of derivative transactions designated as cash flow hedges.

Changes in fair value movements of financial assets measured at fair value through other comprehensive income

This is a valuation difference on financial assets measured at fair value through other comprehensive income. This is included in "Changes in fair value measurements of available-for-sale financial assets" for the fiscal year 2017.

Stock options

The Company has stock option plans and issues stock options under the Law. For details on the conditions and amounts, please refer to Note 23 "Share-based Payment."

22. Dividends

(1) Dividends paid

Dividend paid for the fiscal years 2018 and 2017 are as follows:

		2018			
Resolution	Class of shares	Total dividends (Millions of yen) (Thousands of U.S. dollars)	Dividends per share (Yen) (U.S. dollars)	Record date	Effective date
Annual general meeting of shareholders held on 22nd March, 2018	Ordinary shares	¥ 3,022 $ 27,220	¥ 25 $ 0.22	31st December, 2017	23rd March, 2018
Board of Directors meeting held on 8th August, 2018	Ordinary shares	¥ 3,089 $ 27,823	¥ 25 $ 0.22	30th June, 2018	14th September, 2018

		2017			
Resolution	Class of shares	Total dividends (Millions of yen)	Dividends per share (Yen)	Record date	Effective date
Annual general meeting of shareholders held on 22nd March, 2017	Ordinary shares	¥ 1,560	¥ 13	31st December, 2016	23rd March, 2017
Board of Directors meeting held on 8th August, 2017	Ordinary shares	¥ 1,844	¥ 15	30th June, 2017	15th September, 2017

(Note) The amount of dividends based on Board of Directors meeting held on 8th August, 2018 includes ¥61 millions ($ 549 thousand) of dividends paid for exclusive trust account of "DMG MORI Co., Ltd. Employee Shareholders Association Exclusive Trust."

(2) Dividends whose record date is in the fiscal year 2018 but whose effective date is in the following fiscal year are as follows:

		2018			
Resolution	Class of shares	Total dividends (Millions of yen) (Thousands of U.S. dollars)	Dividends per share (Yen) (U.S. dollars)	Record date	Effective date
Annual general meeting of shareholders held on 22nd March, 2019	Ordinary shares	¥ 3,098 $ 27,904	¥ 25 $ 0.22	31st December, 2018	25th March, 2019

		2017			
Resolution	Class of shares	Total dividends (Millions of yen) (Thousands of U.S. dollars)	Dividends per share (Yen) (U.S. dollars)	Record date	Effective date
Annual general meeting of shareholders held on 22nd March, 2018	Ordinary shares	¥ 3,022	¥ 25	31st December, 2017	23rd March, 2018

(Note) The amount of dividends based on Annual general meeting of shareholders held on 22nd March, 2019 includes ¥56 millions ($ 504 thousand) of dividends for exclusive trust account of "DMG MORI Co., Ltd. Employee Shareholders Association Exclusive Trust."

23. Share-based Payment

The Group introduces stock options, restricted stock compensation plan, and trust-type employees stock ownership incentive plan as share-based payment.

The share-based payment is implemented as an incentive plan to gain the medium- to long-term corporate value of the Group as well as to promote operation towards increase in business performance by raising awareness to the business performance and share price of the Group.

(1) Description of stock options

1. Outline of stock options

The Company grants stock options as equity-settled share-based payments to its corporate officers and certain of its and its subsidiaries' employees, in order to raise their motivation for enhancing the corporate value of the Company and secure talented personnel.

The outline of stock option plan is as follows:

Issuer	The Company (DMG MORI CO., LTD.)	
Date of resolution at the Board of Directors Meeting	13th September, 2016	
Grantees	Corporate officers of the Company	20
	Employees of the Company	75
	Executive officers of the Company's subsidiaries	15
	Employees of the Company's subsidiaries	49
Class and number of granted shares	Common stock, 2,410,000 shares	
Grant date	30th September, 2016	
Vesting Conditions	Continuous service with the Company or its subsidiaries in the state of being employed or entrusted from the grant date (30th September, 2016) to the vesting date (13th September, 2018)	
Service period	From 30th September, 2016 to 13th September, 2018	
Exercisable period	From 14th September, 2018 to 13th September, 2021	

2. Changes in the number of shares for outstanding stock options (100 shares per 1 option)

	2018	2017
Beginning balance	**2,305,000**	2,410,000
Granted	**—**	—
Expired	**(60,000)**	(105,000)
Exercised	**(363,700)**	—
Ending balance	**1,881,300**	2,305,000
Exercisable outstanding balance at the reporting date	**1,881,300**	—

(Note) The weighted-average share prices of stock options at the time of exercise were ¥1,526 ($13) for the fiscal year 2018.

3. Measurement approach for fair value of stock options

The fair value of stock options has been estimated using the Black-Scholes model. The fair value and assumptions used in the calculation are as follows:

	Granted on 30th September, 2016 (Decided on 13th September, 2016)
Issue price per options (Yen)	27,700
Share price at the grant date (Yen)	1,042
Exercise price of the option (Yen)	1,090
Expected volatility of the share price (%)	47.724
Expected remaining life of the option (years)	3.46
Expected dividend yield (%)	2.495
Risk-free interest rate for the remaining life of the option (%)	(0.267)

The exercise price shall be the amount that is equal to the average of the daily closing prices (excluding days on which no transactions are established) of common stock of the Company in regular transactions at the Tokyo Securities Exchange during the calendar month immediately prior to the month in which the grant date of the stock acquisition rights belongs, multiplied by 1.05, and any fraction less than one yen resulting therefrom shall be rounded down; provided, however, that in the event that this amount is less than the closing price of common stock of the Company in regular transactions at the Tokyo Securities Exchange as of the grant date (the closing price on the day immediately preceding the grant date if no transactions are established on the grant date), the relevant closing price shall be the exercise price.

The expected volatility of the share price is calculated based on past weekly share prices corresponding to the remaining life of the option.

The Company has adjusted the exercise price of the options granted on 30th September, 2016 from ¥1,121 to ¥1,090 due to disposal of common shares at a price below the market price, for which the payment due date was 31st March, 2017.

(2) Description of restricted stock compensation plan

1. Restricted stock compensation plan issued by the Company
   The Company has introduced a restricted stock compensation plan ("the Plan") as equity-settled share-based payment since the fiscal year 2018 for the Company's executive directors excluding outside directors ("the Eligible Directors"), for the purpose of further promoting shared value with shareholders and providing an incentive to sustainably increase the Company's corporate value.
   For introducing the plan, the Company and each Eligible Directors have made an arrangement on allotment of restricted stocks, which includes (1) prohibiting the shares from being transferred or pledged to a third party or otherwise disposed of in any manner during a certain specified period and (2) allowing the Company to reclaim the shares at no cost under certain specified circumstances. Transfer restriction period is 30 years and the transfer restriction is lifted for all shares held by Eligible Directors when the transfer restriction period expires, on the condition that the Eligible Directors continued to hold a position of directors, executive officers not concurrently serving as directors, audit & supervisory board members, employees and fellows, or any other equivalent position of the Company during the transfer restriction period. The fair value of the restricted stock is measured based on the observable market price.

	2018
The grant date	**6th April, 2018**
Number of stocks granted (shares)	**Common stock 153,400**
Fair value of grant date (Yen) (U.S. dollars)	**¥1,954 ($17.6)**

2. Restricted stock compensation plan issued by Taiyo Koki Co., Ltd.
   Taiyo Koki Co., Ltd ("the company"), one of The Company's consolidated subsidiaries, has introduced a restricted stock compensation plan ("the plan") as equity-settled share-based payment since the fiscal year 2018 for the company's executive directors excluding outside directors ("the eligible directors"), for the purpose of raising their motivation and providing an incentive to sustainably enhance the corporate value.

   For introducing the plan, the company and each eligible directors have made an arrangement on allotment of restricted stocks, which includes (1) prohibiting the shares from being transferred or pledged to a third party or otherwise disposed of in any manner during a certain specified period and (2) allowing the company to reclaim the shares at no cost under certain specified circumstances. Transfer restriction period is 40 years and the transfer restriction is lifted for all shares held by eligible directors when the transfer restriction period expires, on the condition that the eligible directors continued to hold any position of the company during the transfer restriction period. The fair value of the restricted stock is measured based on the observable market price.

	2018
The grant date	**27th March, 2018**
Number of stocks granted (shares)	**Common stock 25,900 of Taiyo Koki Co, Ltd.**
Fair value of grant date (Yen) (U.S. dollars)	**¥2,565 ($23)**

(3) Description of trust-type employee stock ownership incentive plan

The Company has implemented a trust-type employee stock ownership incentive plan ("the Incentive Plan") as cash-settled share-based payment since the fiscal year 2018 as incentives for its employees to gain the medium- to long-term corporate value of the Company.

The Incentive Plan is available to all employees who belong to the DMG MORI Employee Shareholders Association ("the Association").

Under the Incentive Plan, the Company sets up a trust – DMG MORI Employee Shareholders Association Exclusive Trust ("the Exclusive Trust") – through a trust bank. The Exclusive Trust estimates the number of shares that the Association is likely to acquire in the future and purchases this amount during the acquisition period set in advance. Then the Exclusive Trust will sell the Company's shares to the Association on the same date every month. The Exclusive Trust will continuously sell the Company's shares to the Association, and if an amount equivalent to net gains on the Company's shares has accumulated in the Exclusive Trust when the trust period comes to an end, such money will be distributed as residual assets to members of the Association who meet beneficiary eligibility criteria. This distribution is cash-settled transaction and the fair value of the liability is measured on every reporting date at discounted present value of estimated cash flows as of the end of the trust period in accordance with the provisions in the trust contract.

The fair value of the Incentive Plan has been estimated using the Monte-Carlo method. The fair value and assumptions used in the calculation are as follows:

	2018
Share price (Yen) (U.S. dollars)	¥1,241($11)
Acquired shares (Shares)	2,500,000
Remaining shares (Shares)	2,273,700
Expected volatility of the share price * (%)	42.764
Expected remaining life of the option (years)	6.5
Risk-free interest rate for the remaining life of the option (%)	(0.128)

*The expected volatility of the share price is calculated based on past daily share prices corresponding to the expected remaining period of the option.

The liabilities arising from share-based payment regarding the Incentive Plan are as follows:

	Millions of yen	Thousands of U.S. dollars
	2018	
Book value arising from the cash-settled share-based payments	¥ 16	$ 144

(4) Share-based payment expenses

Share-based payment expenses on the consolidated statement of profit or loss are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Expenses arising from the stock options	¥ 213	¥ 328	$ 1,919
Expenses arising from the restricted stock compensation plan	33	—	297
Expenses arising from the trust-type employee stock ownership incentive plan	16	—	144
Total	¥ 262	¥ 328	$ 2,360

24. Financial Instruments

(1) Capital management

The Group's capital management policy is to maintain an optimal capital structure in order to achieve sustained improvement in the enterprise value for further growth in global machine tool markets. The Group monitors financial indicators, such as ROE (return on equity), EPS (earnings per share) and the equity ratio, in order to maintain an optimal capital structure. The Group is not subject to any material capital regulation.

The Group raises necessary capital partly by issuing new shares and bonds, borrowings from banks and liquidation of receivables for mainly operations related to the manufacturing and sales of machine tools based on the demand for funds from its operating activities.

(2) Risk management policy

The Group is exposed to financial risk, credit risk, liquidity risk, foreign exchange risk, interest rate risk and market volatility risk in operating its business and manages these risks based on its policy to mitigate them.

The Group manages surplus funds by investing only in short-term deposits and others and does not enter into speculative transactions. The purpose of derivative transactions is, in principle, to hedge the risks as described herein, and transactions are not carried out for speculative purposes.

(3) Credit risk

1. Credit risk management
   Credit risk is the risk that a counterparty will not meet its obligations under a financial

instruments or customer contract, leading to a financial loss.

Cash and cash equivalents are held only with banks and financial institutions with high credit ratings, therefore, the corresponding credit risk is very limited.

Trade and other receivables are exposed credit risk of customers. The Group regularly monitors the credit information related to customer operating claims and manages collection dates and outstanding balances in accordance with its credit control policy. The Group's receivables don't have significant concentration of credit risk on specific counterparties or counterparty groups.

Other account receivables are also exposed credit risk, however they are settled in short-term period.

Derivative transactions included in other financial assets and liabilities are exposed to credit risks associated with the banks and financial institutions with which the Group has a business relationship. To minimize the counterparty risk when entering into derivative transactions, counterparties are limited to financial institutions with high credit ratings.

2. Maximum exposure of credit risk
The Maximum exposure of credit risk at the end of the fiscal year 2018 is carrying amount after impairment of financial assets, however, there is no significant bad debt loss in prior years.

The Group has granted certain financial guarantees and these are exposed to the credit risk of those entities for which the guarantees were granted. Other than guarantee obligations, the Group's maximum exposures to credit risk, without taking into account any collateral held or other credit enhancements, is the carrying amount of the financial instruments less impairment losses in the consolidated statement of financial position and the amount of guarantee obligations as disclosed in Note 37, "Contingent Liabilities."

3. Credit risk management practices
Credit risk exposure of the Group regarding trade and other receivables and other financial instruments is as follows:
Credit risk exposure of trade receivables is measured at same amount as expected credit losses for all terms. In addition, considering with increase of significant credit risk, such as debtor's financial condition at the end of the fiscal year and past bad debt loss and overdue payment, the financial instruments are classified as for "the debtors who aren't facing a serious problem in business condition" and "the debtors who are facing serious problems in repaying their debt", allowance for doubtful is recognized by measuring expected credit losses for each category. "The debtor who aren't facing a serious problem in business condition" refer to those that have no indication of problems in repaying their debts and no problems in ability to repay their debts. Allowance for doubtful receivables on receivables from the debtors in this category is recognized collectively using a provision ratio based on a historical loan loss ratio and future estimates. "The debtors who are facing serious problems in repaying their debts" refer to those that are facing or will likely face, serious problems in repaying their debts. Allowance for doubtful receivables on receivables from the debtors in this category is recorded based on the estimated collectable amount of the respective assets on an individual basis.

The Group evaluates at the end of each reporting period whether there is a significant increase in credit risk of "other receivables and other financial assets" since initial recognition. When there is no significant increase in credit risk since initial recognition, the amount equal to expected credit losses for 12 months is recognized as allowance for doubtful receivables. When there is a significant increase in credit risk since initial recognition, the amount equal to expected credit losses for the remaining period of the financial assets is recognized as allowance for doubtful receivables.

"A significant increase in credit risk" refers to a situation in which there are serious problems in collectability of receivables at the end of the reporting period compared to that at the initial recognition. When evaluating whether or not there is a significant increase in credit risk, the Group takes into consideration reasonably available and supportable information, such as a debtor's operating results for past periods and management improvement plan, as well as past due information.

Allowance for doubtful receivables on "trade and other receivables and other financial assets" is recognized using a method to estimate credit losses collectively or individually according to the extent of the debtor's credit risk. However, when the debtors are in serious financial difficulty or legally or substantially bankrupt, allowance for doubtful receivables is recognized using a method to estimate credit losses individually by considering the receivables as credit-impaired financial assets.

Information on trade receivables

Carrying amounts of trade receivables and allowance for doubtful receivables are as follows:

Trade receivables at 31st December, 2018

	Millions of yen		
	2018		
	Debtors who aren't facing a serious problem in business condition	Debtors who are facing serious problems in repaying their debt	Total
Beginning balance	¥ 59,201	¥ 141	¥ 59,343
Ending balance	¥ 65,604	¥ 104	¥ 65,709

	Thousands of U.S. dollars		
	2018		
	Debtors who aren't facing a serious problem in business condition	Debtors who are facing serious problems in repaying their debt	Total
Beginning balance	$ 533,246	$ 1,270	$ 534,525
Ending balance	$ 590,920	$ 936	$ 591,866

Allowance for doubtful receivables for the fiscal year 2018

	Millions of yen		
	2018		
	Debtors who aren't facing a serious problem in business condition	Debtors who are facing serious problems in repaying their debt	Total
Beginning balance based on IAS 39	¥ 1,986	¥ 141	¥ 2,127
Adjustment for adapting IFRS 9	43	—	43
Beginning balance based on IFRS 9	2,029	141	2,170
Increase during the year	1,478	4	1,482
Decrease during the year	(853)	(40)	(894)
Other(Exchange difference on translation of foreign operations)	(299)	(0)	(299)
Ending balance	¥ 2,354	¥ 104	¥ 2,459

	Thousands of U.S. dollars		
	2018		
	Debtors who aren't facing a serious problem in business condition	Debtors who are facing serious problems in repaying their debt	Total
Beginning balance based on IAS 39	$ 17,888	$ 1,270	$ 19,158
Adjustment for adapting IFRS 9	387	—	387
Beginning balance based on IFRS 9	18,275	1,270	19,546
Increase during the year	13,312	36	13,348
Decrease during the year	(7,683)	(360)	(8,052)
Other(Exchange difference on translation of foreign operations)	(2,693)	(0)	(2,693)
Ending balance	$ 21,203	$ 936	$ 22,149

Information on other receivables

The carrying amounts of other receivables and allowance for doubtful receivables are as follows:

Other receivables at 31st December, 2018

	Millions of yen			
	2018			
	Financial assets measured at same amount as expected credit losses for 12 months	Financial instruments measured at same amount as expected credit losses for all terms		Total
		Credit risk of financial instruments was significantly increased since initial recognition	Credit-impaired financial instruments	
Beginning balance	¥ 3,525	¥ —	¥ —	¥ 3,525
Ending balance	¥ 6,238	¥ —	¥ —	¥ 6,238

	Thousands of U.S. dollars			
	2018			
	Financial assets measured at same amount as expected credit losses for 12 months	Financial instruments measured at same amount as expected credit losses for all terms		Total
		Credit risk of financial instruments was significantly increased since initial recognition	Credit-impaired financial instruments	
Beginning balance	$ 31,751	$ —	$ —	$ 31,751
Ending balance	$ 56,188	$ —	$ —	$ 56,188

Allowance for doubtful receivables for the fiscal year 2018

	Millions of yen			
	2018			
	Financial instruments measured at same amount as expected credit losses for 12 months	Financial instruments measured at same amount as expected credit losses for all terms		Total
		Credit risk of financial instruments was significantly increased since initial recognition	Credit-impaired financial instruments	
Beginning balance based on IAS 39	¥ —	¥ —	¥ —	¥ —
Adjustment for adapting IFRS 9	—	—	—	—
Beginning balance based on IFRS 9	—	—	—	—
Increase during the year	48	—	—	48
Decrease during the year	—	—	—	—
Other(Exchange difference on translation of foreign operations)	(1)	—	—	(1)
Ending balance	¥ 47	¥ —	¥ —	¥ 47

	Thousands of U.S. dollars			
	2018			
	Financial instruments measured at same amount as expected credit losses for 12 months	Financial instruments measured at same amount as expected credit losses for all terms		Total
		Credit risk of financial instruments was significantly increased since initial recognition	Credit-impaired financial instruments	
Beginning balance based on IAS 39	$ —	$ —	$ —	$ —
Adjustment for adapting IFRS 9	—	—	—	—
Beginning balance based on IFRS 9	—	—	—	—
Increase during the year	432	—	—	432
Decrease during the year	—	—	—	—
Other(Exchange difference on translation of foreign operations)	(9)	—	—	(9)
Ending balance	$ 423	$ —	$ —	$ 423

Information on other financial assets

The carrying amounts of allowance for doubtful receivables of other financial assets and certain receivables are as follows:

Other financial instruments at 31st December, 2018

	Millions of yen			
	2018			
	Financial instruments measured at same amount as expected credit losses for 12 months	Financial instruments measured at same amount as expected credit losses for all terms		Total
		Credit risk of financial instruments was significantly increased since initial recognition	Credit-impaired financial instruments	
Beginning balance	¥ 10,307	¥ 278	¥ —	¥ 10,585
Ending balance	¥ 8,846	¥ 170	¥ —	¥ 9,016

	Thousands of U.S. dollars			
	2018			
	Financial instruments measured at same amount as expected credit losses for 12 months	Financial instruments measured at same amount as expected credit losses for all terms		Total
		Credit risk of financial instruments was significantly increased since initial recognition	Credit-impaired financial instruments	
Beginning balance	$ 92,839	$ 2,504	$ —	$ 95,343
Ending balance	$ 79,679	$ 1,531	$ —	$ 81,210

Allowance for doubtful receivables for the fiscal year 2018

	Millions of yen			
	2018			
	Financial instruments measured at same amount as expected credit losses for 12 months	Financial instruments measured at same amount as expected credit losses for all terms		Total
		Credit risk of financial instruments was significantly increased since initial recognition	Credit-impaired financial instruments	
Beginning balance based on IAS 39	¥ —	¥ 111	¥ —	¥ 111
Adjustment for adapting IFRS 9	—	—	—	-
Beginning balance based on IFRS 9	—	111	—	111
Increase during the year	—	—	—	—
Decrease during the year	—	(97)	—	(97)
Other(Exchange difference on translation of foreign operations)	—	(4)	—	(4)
Ending balance	¥ —	¥ 9	¥ —	¥ 9

	Thousands of U.S. dollars			
	2018			
	Financial instruments measured at same amount as expected credit losses for 12 months	Financial instruments measured at same amount as expected credit losses for all terms		Total
		Credit risk of financial instruments was significantly increased since initial recognition	Credit-impaired financial instruments	
Beginning balance based on IAS 39	$ —	$ 999	$ —	$ 999
Adjustment for adapting IFRS 9	—	—	—	—
Beginning balance based on IFRS 9	—	999	—	999
Increase during the year	—	—	—	—
Decrease during the year	—	(873)	—	(873)
Other(Exchange difference on translation of foreign operations)	—	(36)	—	(36)
Ending balance	$ —	$ 81	$ —	$ 81

(4) Liquidity risk

The Group is exposed to liquidity risk that it might have difficulty settling its financial obligations.

Trade and other payables, bonds and borrowings and other financial liabilities are exposed to liquidity risk. However, the Group manages liquidity risk by maintaining liquidity on hand and credit lines from financial institutions that enable the Group to meet its obligations based on funding plans that are updated in a timely manner.

Financial liabilities by maturity date are as follows: The contractual cash flows in the table are based on the undiscounted cash flows, reflecting interest payments.

	Millions of yen				
	2018				
	Carrying amount	Contractual cash flows	Within one year	Over one year within five years	Over five years
Non-derivative financial liabilities:					
Trade and other payables	**¥ 56,833**	**¥ 56,833**	**¥ 56,833**	**¥ —**	**¥ —**
Bonds and borrowings	**117,015**	**118,333**	**56,142**	**61,158**	**1,031**
Other financial liabilities (Payment obligation for external shareholders)	**94,680**	**96,731**	**96,731**	**—**	**—**
Other financial liabilities (Preferred shares)	**14,833**	**16,029**	**257**	**15,772**	**—**
Other financial liabilities	**4,569**	**5,400**	**1,145**	**2,475**	**1,779**
Derivative financial liabilities:					
Other financial liabilities	**1,057**	**1,057**	**369**	**688**	**—**
Total	**¥ 288,989**	**¥ 294,386**	**¥ 211,480**	**¥ 80,094**	**¥ 2,810**

	Thousands of U.S. dollars				
	2018				
	Carrying amounts	Contractual cash flows	Within one year	Over one year within five years	Over five years
Non-derivative financial liabilities:					
Trade and other payables	**$ 511,916**	**$ 511,916**	**$ 511,916**	**$ —**	**$ —**
Bonds and borrowings	**1,053,999**	**1,065,871**	**505,692**	**550,873**	**9,286**
Other financial liabilities (Payment obligation for external shareholders)	**852,819**	**871,293**	**871,293**	**—**	**—**
Other financial liabilities (Preferred shares)	**133,606**	**144,379**	**2,314**	**142,064**	**—**
Other financial liabilities	**41,154**	**48,639**	**10,313**	**22,293**	**16,024**
Derivative financial liabilities:					
Other financial liabilities	**9,520**	**9,520**	**3,323**	**6,197**	**—**
Total	**$ 2,603,035**	**$ 2,651,648**	**$ 1,904,882**	**$ 721,437**	**$ 25,310**

	Millions of yen				
	2017				
	Carrying amounts	Contractual cash flows	Within one year	Over one year within five years	Over five years
Non-derivative financial liabilities:					
Trade and other payables	¥ 47,717	¥ 47,717	¥ 47,717	¥ —	¥ —
Bonds and borrowings	179,359	181,952	33,604	148,348	—
Other financial liabilities (Payment obligation for external shareholders)	101,691	105,510	2,973	102,536	—
Other financial liabilities (Preferred shares)	14,838	15,000	—	15,000	—
Other financial liabilities	5,766	6,953	953	3,881	2,117
Derivative financial liabilities:					
Other financial liabilities	2,469	2,469	186	2,283	—
Total	¥ 351,842	¥ 359,602	¥ 85,435	¥ 272,049	¥ 2,117

Borrowing commitments and other credit lines

For effective financing purposes, the Group concluded line-of-credit agreements with several banks and financial institutions. The status of such agreements is summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Credit line	**¥ 290,810**	¥ 282,132	**$ 2,619,437**
Borrowings	**14,839**	12,494	**133,660**
Unused balance	**¥ 275,971**	¥ 269,637	**$ 2,485,777**

(5) Foreign exchange risk

The Group operates globally and its business transactions denominated in foreign currencies other than the functional currencies of each group entity are exposed to foreign exchange risks. The underlying currencies of these transactions are mainly the Japanese yen, the U.S. dollar and the Euro.

Trade receivables denominated in foreign currencies are exposed to foreign exchange risk, which is, in principle, hedged using foreign exchange forward contracts, limited to the necessary amounts, in order to mitigate the risk of fluctuations of foreign currencies identified by each currency. Trade payables denominated in foreign currencies, mainly related to the import of raw materials, are also exposed to foreign exchange risk.

The analysis of exposures to foreign exchange risk of the Group is as follows:

	Millions of yen		
	2018		
	Japanese yen	U.S. dollars	Euro
Net exposures	**¥ (1,905)**	**¥ 11,844**	**¥ 4,915**
Per each local currency	**—**	**$ 106,683 thousand**	**€ 38,698 thousand**

	Thousands of U.S. dollars		
	2018		
	Japanese yen	U.S. dollars	Euro
Net exposures	**$ (17,159)**	**$ 106,683**	**$ 44,271**

	Millions of yen		
	2017		
	Japanese yen	U.S. dollars	Euro
Net exposures	¥ (1,303)	¥ 24,357	¥ (8,439)
Per each local currency	—	$ 215,556 thousand	€ 62,515 thousand

Foreign currency sensitivity analysis

The financial impact on profit before income taxes for the years ended 31st December, 2018 and 2017 in the case of a 1% increase in the Japanese yen, which is the Company's functional currency, against the U.S. dollar and Euro is as follows:

It is based on the assumption that all parameters other than the currencies used for the calculation do not fluctuate. In addition, these amounts are based on the effect of translation. The effects of forecasted sales revenues and purchases are not taken into account.

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Japanese yen	**¥ 19**	¥ 13	**$ 171**
U.S. dollar	**(118)**	(243)	**(1,062)**
Euro	**(49)**	84	**(441)**

(Note) The impact on profit or loss due to the fluctuation of the Japanese yen in the above table is related to financial assets or financial liabilities denominated in Japanese yen of foreign subsidiaries.

(6) Interest rate risk

Non-current floating rate borrowings in the Group are exposed to interest rate risk. In order to manage the exposure and hedge interest rate risk, the Group enters into interest rate swaps in which the Group agrees to exchange interest payments at specified intervals.

Interest rate sensitivity analysis

The financial impact on profit before income taxes for the fiscal the years 2018 and 2017 in the case of a 1% increase in interest rates is as follows:
It is based on the assumption that all parameters other than the interest rates used for the calculation do not fluctuate. In addition, the table below represents the sensitivity analyses to the balance of floating rate borrowings, excluding the portion of borrowings whose interest payments are substantially fixed through a corresponding interest rate swap.

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Profit before income taxes	¥ (628)	¥ (703)	$ (5,656)

(7) Equity instruments measured at fair value through other comprehensive income

The Group holds listed shares and others of companies with business relationship, these equity instruments measure at fair value through other comprehensive income because the purpose holding these equity instruments is maintaining and strengthening of relationship.

These investments are classified as available-for-sale financial assets during the fiscal year 2017.

1. Main issuer and fair value

Main issuers and fair value as of 31st December, 2018 are as follows:

Issuer	Millions of yen	Thousands of U.S. dollars
	2018	
YAMAZEN CORPORATION	¥ 1,210	$ 10,898
DAIKIN INDUSTRIES,LTD.	1,075	9,682
The Nanto Bank,Ltd.	1,021	9,196
nLIGHT, INC	988	8,899
Shimadzu Corporation	719	6,476
ADAMOS GmbH	254	2,287
THK CO., LTD.	226	2,035
FURUSATO INDUSTRIES,LTD.	161	1,450
CKD Corporation	147	1,324
Other	281	2,531
Total	¥ 6,088	$ 54,836

2. Equity instruments measured at fair value through derecognized other comprehensive income

Fair value and cumulative profit and loss of equity instruments (before tax) measured at fair value through derecognized other comprehensive income during the year are as follows at the date of derecognized.

	2018	
	Millions of yen	Thousands of U.S. dollars
Fair value at the date of derecognized	¥ 50	$ 450
Cumulative profit and loss for disposal	—	—

(Note 1) The Group derecognized some of equity instruments measured at fair value through other comprehensive income by selling for mainly reviewing business relationship during the year.

(Note 2) In case that equity instruments measured at fair value through other comprehensive income are derecognized, cumulative profit and loss of other comprehensive income (after tax) are reclassified into retained earnings.

3. Dividend income

The breakdown of dividend income recognized from equity instruments measured at fair value through other comprehensive income is as follows:

	2018	
	Millions of yen	Thousands of U.S. dollars
Equity instruments derecognized during the year	¥ 0	$ 8
Equity instruments held at the end of year	117	1,053
Total	¥ 118	$ 1,062

4. Equity instruments sensitive analysis

The Group holds listed shares with business relationship which are exposed market volatility risk of equity instruments. The Group continually assesses the market situation by periodically reviewing share prices and the financial position of the issuers.

The financial impact on other comprehensive income (net of tax) for the year ended 31st December, 2018 and 2017 in the case of a 10% decrease in listed share prices is as follow. It is based on the assumption that all parameters other than the share prices used for the calculation do not fluctuate.

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Other comprehensive income	¥ (427)	¥ (470)	$ (3,846)

(8) Fair value of financial instruments

Carrying amounts and fair value of financial instruments are as follows:

	Millions of yen				Thousands of U.S. dollars	
	2018		2017		2018	
	Carrying amounts	Fair value	Carrying amounts	Fair value	Carrying amounts	Fair value
Financial assets measured at amortized cost:						
Cash and cash equivalents	**¥ 27,368**	**¥ 27,368**	¥ 64,973	¥ 64,973	**$ 246,514**	**$ 246,514**
Trade and other receivables	**69,441**	**69,441**	60,741	60,741	**625,481**	**625,481**
Other financial assets including loans	**9,007**	**9,007**	10,474	10,474	**81,129**	**81,129**
Financial assets measured at fair value through other comprehensive income included in other financial assets:						
Other financial assets (Equities)	**6,088**	**6,088**	—	—	**54,836**	**54,836**
Financial assets measured at fair value through profit or loss included in other financial assets:						
Derivative assets	**250**	**250**	95	95	**2,251**	**2,251**
Available-for-sale financial assets	**–**	**–**	7,079	7,079	**—**	**—**
Total	**¥ 112,155**	**¥ 112,155**	¥ 143,364	¥ 143,364	**$ 1,010,223**	**$ 1,010,223**
Financial liabilities measured at amortized cost:						
Trade and other payables	**¥ 56,833**	**¥ 56,833**	¥ 47,717	¥ 47,717	**$ 511,916**	**$ 511,916**
Interest-bearing bonds and borrowings	**117,015**	**117,037**	179,359	179,456	**1,053,999**	**1,054,197**
Other financial liabilities (Payment obligation for external shareholders)	**94,680**	**94,530**	101,691	101,186	**852,819**	**851,468**
Other financial liabilities (Preferred shares)	**14,833**	**14,875**	14,838	14,838	**133,606**	**133,984**
Other financial liabilities	**4,569**	**4,569**	5,766	5,766	**41,154**	**41,154**
Financial liabilities measured at fair value through profit or loss included in other financial liabilities:						
Derivative liabilities	**1,057**	**1,057**	2,469	2,469	**9,520**	**9,520**
Total	**¥ 288,989**	**¥ 288,904**	¥ 351,842	¥ 351,434	**$ 2,603,035**	**$ 2,602,269**

Methods to determine the fair value of financial assets and liabilities measured at amortized cost are summarized as follows:

Cash and cash equivalents

The carrying amount approximates the fair value due to the short maturities of the instruments.

Trade and other receivables

The carrying amount approximates the fair value due to the short maturities of the instruments.

Other financial assets including loans

The fair value of the non-current loans and other financial assets including loans is calculated based on the present value of total amount of principal and interest discounted by the expected interest rate based on the maturity term and credit risk considering years to maturity. On the other hand, the carrying amount of the current portion approximates the fair value due to the short maturities of the instruments.

Trade and other payables

The carrying amount approximates the fair value due to the short maturities of the instruments.

Interest-bearing bonds and borrowings

The fair value of interest-bearing bonds is determined based on the market price at the end

of the reporting period.

The fair value of non-current borrowings with fixed interest rates is calculated based on the present value of total amount of principal and interest discounted by the expected interest rate based on the maturity term and credit risks considering years to maturity. On the other hand, the carrying amount of the current portion approximates the fair value due to the short maturities of the instruments.

Other financial liabilities
The fair value of the payment obligations for external shareholders (the liabilities arising from the entry into force of the DPLTA) is calculated based on the present value of total amount of estimated future payments to the external shareholders discounted by the expected interest rate based on the payment period and credit risk considering years to payments.

The Group classifies its preferred shares outstanding as financial liabilities in accordance with IFRS since the shares are to be redeemed at a certain point of time in the future.

The fair value of the preferred shares is calculated based on the present value of future cash flows discounted by the expected interest rate including the credit risk premium considering years to maturity period and credit risk.

The fair value of other financial liabilities is calculated based on the present value of total amount of principal and interest discounted by the expected interest rate based on the maturity term and credit risks considering years to maturity.

Methods to determine the fair value of financial assets measured at fair value through other comprehensive income are summarized as follows:

Other financial assets (Equities)
The fair value of listed securities is based on the market price, and when no market price exists for non-listed securities, a rationally calculated amount principally measured based on net assets value is used.

The fair value of the debt securities is measured based on prices provided by counterparty financial institutions.

Methods to determine the fair value of financial assets and liabilities measured at fair value through profit or loss are summarized as follows:

Derivative assets and liabilities
The fair value of foreign exchange forward contracts included in derivative assets and liabilities is determined based on respective market price at the end of the reporting period. The fair value of interest rate swaps is calculated based on the present value of estimated future cash flows discounted by the expected interest rate based on the maturity term and applicable swap rates at the end of the reporting period.

The levels of the fair value hierarchy are as follows:

Fair value of financial instruments is categorized within the fair value hierarchy described as follows from Level 1 to Level 3. Any significant transfers of the financial instruments between levels are recognized at the date of events that causes the transfers or changes on the status.

- Level 1 – Fair value measured using quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2 – Fair value measured using inputs other than quoted prices included within Level 1 that are observable for the asset or liability either directly or indirectly
- Level 3 – Fair value measured using unobservable inputs for the asset or liability

Financial instruments measured at amortized cost

The carrying amount and the respective level in the fair value hierarchy of financial instruments measured at amortized cost at the end of the reporting period are as follows:

	Millions of yen				
	2018				
	Carrying amounts	Fair value			
		Level 1	Level 2	Level 3	Total
Interest-bearing long-term borrowings	**¥ 69,222**	**¥ —**	**¥ —**	**¥ 69,222**	**¥ 69,222**
Interest-bearing bonds	**29,954**	**—**	**29,977**	**—**	**29,977**
Other financial liabilities (Payment obligation for external shareholders)	**94,680**	**—**	**—**	**94,530**	**94,530**
Other financial liabilities (Preferred shares)	**14,833**	**—**	**—**	**14,875**	**14,875**

(Note) The balance of interest-bearing non-current borrowings and interest-bearing bonds includes those due within one year.

	Thousands of U.S. dollars				
	2018				
	Carrying amounts	Fair value			
		Level 1	Level 2	Level 3	Total
Interest-bearing long-term borrowings	**$ 623,509**	**$ —**	**$ —**	**$ 623,509**	**$ 623,509**
Interest-bearing bonds	**269,807**	**—**	**270,014**	**—**	**270,014**
Other financial liabilities (Payment obligation for external shareholders)	**852,819**	**—**	**—**	**851,468**	**851,468**
Other financial liabilities (Preferred shares)	**133,606**	**—**	**—**	**133,984**	**133,984**

(Note) The balance of interest-bearing non-current borrowings and interest-bearing bonds includes those due within one year.

	Millions of yen				
	2017				
	Carrying amounts	Fair value			
		Level 1	Level 2	Level 3	Total
Interest-bearing long-term borrowings	**¥ 143,851**	¥ —	¥ —	¥ 143,935	¥ 143,935
Interest-bearing bonds	**29,918**	—	29,931	—	29,931
Other financial liabilities (Payment obligation for external shareholders)	**101,691**	—	—	101,186	101,186
Other financial liabilities (Preferred shares)	**14,838**	—	—	14,838	14,838

(Note) The balance of interest-bearing non-current borrowings and interest-bearing bonds includes those due within one year.

The carrying amounts of financial instruments measured at amortized cost, except for non-current borrowings and bonds and other financial liabilities (payment obligation for non-controlling interests and preferred shares), approximates the fair value.

Financial instruments measured at fair value

The carrying amount and the respective level in the fair value hierarchy of financial instruments measured at fair value at the end of reporting period are as follows:

	Millions of yen			
	2018			
	Level 1	Level 2	Level 3	Total
Other financial assets:				
Financial assets measured at fair value through other comprehensive income included in other financial assets:				
Other financial assets (Equities)	**¥ 5,556**	**¥ —**	**¥ 531**	**¥ 6,088**
Financial assets measured at fair value through profit or loss included in other financial assets:				
Derivative assets	**—**	**250**	**—**	**250**
Total	**¥ 5,556**	**¥ 250**	**¥ 531**	**¥ 6,338**
Other financial liabilities:				
Financial liabilities measured at fair value through profit or loss included in other financial liabilities:				
Derivative liabilities	**¥ —**	**¥ 1,057**	**¥ —**	**¥ 1,057**
Total	**¥ —**	**¥ 1,057**	**¥ —**	**¥ 1,057**

(Note) There have been no significant transfers between Levels 1, 2, and 3 of the fair value measurement hierarchy during the fiscal year 2018.

	Thousands of U.S. dollars			
	2018			
	Level 1	Level 2	Level 3	Total
Other financial assets:				
Financial assets measured at fair value through other comprehensive income included in other financial assets:				
Other financial assets (Equities)	**$ 50,045**	**$ —**	**$ 4,782**	**$ 54,836**
Financial assets measured at fair value through profit or loss included in other financial assets:				
Derivative assets	**—**	**2,251**	**—**	**2,251**
Total	**$ 50,045**	**$ 2,251**	**$ 4,782**	**$ 57,088**
Other financial liabilities:				
Financial liabilities measured at fair value through profit or loss included in other financial liabilities:				
Derivative liabilities	**$ —**	**$ 9,520**	**$ —**	**$ 9,520**
Total	**$ —**	**$ 9,520**	**$ —**	**$ 9,520**

(Note) There have been no significant transfers between Levels 1, 2, and 3 of the fair value measurement hierarchy during the fiscal year 2018.

	Millions of yen			
	2017			
	Level 1	Level 2	Level 3	Total
Other financial assets:				
Derivative assets	¥ —	¥ 95	¥ —	¥ 95
Available-for-sale financial assets	6,141	—	937	7,079
Total	¥ 6,141	¥ 95	¥ 937	¥ 7,174
Other financial liabilities:				
Derivative liabilities	¥ —	¥ 2,469	¥ —	¥ 2,469
Total	¥ —	¥ 2,469	¥ —	¥ 2,469

(Note) There have been no significant transfers between Levels 1, 2 and 3 of the fair value measurement hierarchy during the fiscal year 2017.

The fair value of non-listed shares categorized within Level 3 is measured using the respective net asset values, which is calculated by the adjusted net asset method.

The financial assets and financial liabilities categorized in Level 2 are mainly derivative transactions related to foreign exchange forward contracts and interest rate and currency swaps. The fair values of foreign exchange forward contracts and interest rate and currency swaps are measured based on observable market data, such as interest rates mainly provided by counterparty financial institutions.

The movement in fair value of financial instruments categorized within Level 3 of the fair value hierarchy is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Beginning balance	**¥ 937**	¥ 369	**$ 8,439**
Total gain and loss:			
Profit or loss (Note 1)	**—**	(58)	**—**
Other comprehensive income (loss) (Note 2)	**(16)**	14	**(144)**
Purchase	**25**	695	**225**
Sales	**(50)**	—	**(450)**
Transfer from level 3 (Note 3)	**(333)**	—	**(2,999)**
Other	**(29)**	(83)	**(261)**
Ending balance	**¥ 531**	¥ 937	**$ 4,782**
Changes of unrealized gain which is recognized as profit or loss on financial instruments held at the end of reporting period (Note 1)	**¥ —**	¥ (58)	**$ —**

(Note 1) Gain and loss included in profit or loss are included in other operating costs in the consolidated statement of profit or loss

(Note 2) Gain and loss included in other comprehensive income (loss) are included in changes in fair value measurements of financial assets measured at fair value through other comprehensive income in the consolidated statement of comprehensive income for the fiscal year 2018 and changes in fair value measurements of available-for-sale financial assets in the consolidated statement of comprehensive income for the fiscal year 2017.

(Note 3) Transfer from level 3 is due to listing of the issuer.

(9) Derivative and hedge accounting

(i) Overview of hedge

The Group uses foreign exchange forward contracts to hedge the risk of foreign currency transactions and applies hedge accounting by designating the contracts as cash flow hedges. The Group recognizes economic relationship between the hedging instrument and the hedged item as the condition for exchange forward and that for highly probable forecast transaction such as the notional amount and payment date are to be matched. The Group sets the hedge ratio to 1:1 as the hedging exchange risk and the hedged risk have similar quality. The Group evaluates the effectiveness of the hedge by comparing the change in the fair value of the hedging instrument with that of the hedged item. The factors for the ineffective portion of the hedge are as follows:

- Mismatches in timing between the cash flows of the hedging instrument and of the hedged item
- Counterparty's credit risk associated with the changes in fair value of the hedging instrument and of the hedged item
- Changes in estimated cash flows of the hedging instrument and of the hedged item

The average exchange rate in the exchange forward contracts is 130.32 JPY / EUR and 108.70 JPY / USD.

The Group also uses cross currency interest rate swaps to exchange USD and EUR or JPY and receive variable interest rates and pay fixed interest rates in order to hedge the risk of currency exchange and interest rate, and applies hedge accounting by designating the swaps as cash flow hedges. For cross currency interest rate swaps, the notional amount, term (maturity) and the interest index of the hedging instrument and the hedged item are set to be matched, in principle.

The receipt of variable interest rates is LIBOR + 0.20% (annual) for six months and the payment of the fixed interest rates is 0.40%.

(ii) Information on items designated as hedging instruments

The impact of the hedging instrument on the Group's consolidated statements of financial position is as follows:

	Millions of yen					
	2018					
			Carrying amounts of the hedging instruments (Fair value)		Changes in fair value of the hedging instruments used in calculation of recognition of the ineffective portion of the hedge	Disclosure item in the consolidated statement of financial position which includes the hedging instruments
	Contract amount	Over one year	Assets	Liabilities		
Cash flow hedge:						
Foreign exchange forward contracts (risk of foreign currency transaction)	**¥ 40,111**	**¥ —**	**¥ 250**	**¥ 369**	**—**	**Other financial assets (current) and Other financial liabilities (current)**
Cross currency interest rate swaps (risk of foreign currency transaction and interest rate)	**19,717**	**19,717**	**—**	**688**	**—**	**Other financial liabilities (non-current)**
Total	**¥ 59,828**	**¥ 19,717**	**¥ 250**	**¥ 1,057**	**—**	

	Thousands of U.S. dollars					
	2018					
			Carrying amounts of the hedging instruments (Fair value)		Changes in fair value of the hedging instruments used in calculation of recognition of the ineffective portion of the hedge	Disclosure item in the consolidated statement of financial position which includes the hedging instruments
	Contract amount	Over one year	Assets	Liabilities		
Cash flow hedge:						
Foreign exchange forward contracts (risk of foreign currency transaction)	**$ 361,295**	**$ —**	**$ 2,251**	**$ 3,323**	**—**	**Other financial assets (current) and Other financial liabilities (current)**
Cross currency interest rate swaps (risk of foreign currency transaction and interest rate)	**177,598**	**177,598**	**—**	**6,197**	**—**	**Other financial liabilities (non-current)**
Total	**$ 538,893**	**$ 177,598**	**$ 2,251**	**$ 9,520**	**—**	

Derivative transactions which do not qualify for hedge accounting

	Millions of yen			
	2017			
	Contract amount	Over one year	Fair value	
Foreign exchange forward contracts	¥ 23,318	¥ —	¥	(59)
Cross currency interest rate swaps	—	—		—
Total	¥ 23,318	¥ —	¥	(59)

Derivative transactions which qualify for hedge accounting

	Millions of yen			
	2017			
	Contract amount	Over one year	Fair value	
Foreign exchange forward contracts	¥ 3,465	¥ —	¥	(31)
Cross currency interest rate swaps	30,103	30,103		(2,283)
Total	¥ 33,569	¥ 30,103	¥	(2,314)

(iii) Information on items designated as hedged items

The impact of the hedged items on the Group's consolidated statement of financial position is as follows:

	Millions of yen					
	2018					
	Changes in fair value of the hedged items used in calculation of recognition of the ineffective portion of the hedge		Cash flow hedge reserve from continued hedge accounting		Cash flows hedge reserve from discontinued hedge accounting	
Cash flow hedge:						
Highly probable forecast transactions (risk of foreign currency transactions in trade receivables)	¥	—	¥	(43)	¥	—
Highly probable forecast transactions (risk of foreign currency transactions in trade payables)		—		(8)		—
Variable interest rates borrowings in foreign currency (risk of foreign currency transaction and interest rate)		—		10		—
Total	¥	—	¥	(41)	¥	—

	Thousands of U.S. dollars					
	2018					
	Changes in fair value of the hedged items used in calculation of recognition of the ineffective portion of the hedge		Cash flow hedge reserve from continued hedge accounting		Cash flows hedge reserve from discontinued hedge accounting	
Cash flow hedge:						
Highly probable forecast transactions (risk of foreign currency transactions in trade receivables)	$	—	$	(387)	$	—
Highly probable forecast transactions (risk of foreign currency transactions in trade payables)		—		(72)		—
Variable interest rates borrowings in foreign currency (risk of foreign currency transaction and interest rate)		—		90		—
Total	$	—	$	(369)	$	—

(iv) Impact on the consolidated statements of profit or loss and comprehensive income by applying hedge accounting

The impact of the hedging instruments on the Group's consolidated statements of profit or loss and comprehensive income is as follows:

	Millions of yen								
	2018								
	Cash flow hedges recognized in other comprehensive income during the reporting period (Note)		Ineffective portion of the hedge recognized in profit or loss		Disclosure item in the consolidated statements of income which includes the ineffective portion of the hedge recognized		Amount of reclassification adjustment from cash flow hedge reserve to profit or loss		Disclosure item in the consolidated statements of profit or loss which includes the reclassification adjustment
Cash flow hedge:									
Highly probable forecast transactions (risk of foreign currency transactions in trade receivables)	¥	(43)	¥	—	¥	—	¥	—	—
Highly probable forecast transactions (risk of foreign currency transactions in trade payables)		(8)		—		—		(62)	**Other operating costs**
Variable interest rates borrowings in foreign currency (risk of foreign currency transaction and interest rate)		10		—		—		(229)	**Other operating costs**
Total	¥	(41)	¥	—	¥	—	¥	(291)	

(Note) The above table disclose the amounts before tax effect.

	Thousands of U.S. dollars								
	2018								
	Cash flow hedges recognized in other comprehensive income during the reporting period (Note)		Ineffective portion of the hedge recognized in profit or loss		Disclosure item in the consolidated statements of income which includes the ineffective portion of the hedge recognized		Amount of reclassification adjustment from cash flow hedge reserve to profit or loss		Disclosure item in the consolidated statements of profit or loss which includes the reclassification adjustment
Cash flow hedge:									
Highly probable forecast transactions (risk of foreign currency transactions in trade receivables)	$	(387)	$	—	$	—	$	—	—
Highly probable forecast transactions (risk of foreign currency transactions in trade payables)		(72)		—		—		(558)	**Other operating costs**
Variable interest rates borrowings in foreign currency (risk of foreign currency transaction and interest rate)		90		—		—		(2,062)	**Other operating costs**
Total	$	(369)	$	—	$	—	$	(2,621)	

(Note) The above table disclose the amounts before tax effect

(v) Movement in other components of equity (changes in fair value of the hedged items)

	Millions of yen	Thousands of U.S. dollars
	2018	
Beginning balance	¥ (291)	$ (2,621)
Transaction during the reporting period		
Highly probable forecast transactions (risk of foreign currency transactions in trade receivables)	(43)	(387)
Highly probable forecast transactions (risk of foreign currency transactions in trade payables)	(8)	(72)
Variable interest rates borrowings in foreign currency (risk of foreign currency transaction and interest rate)	10	90
Reclassification adjustment to profit or loss (Note)	291	2,621
Tax effect	0	0
Ending balance	¥ (40)	$ (360)

(Note) The amount before tax effect of ¥291 million ($2,621 thousand) is included in "Other operating costs" in the consolidated statements of profit or loss.

(10) Reconciliation of liabilities arising from financing activities

Reconciliation of liabilities arising from financing activities is as follows:

	Millions of yen						
	2018						
				Non-cash changes			
	Beginning balance	Cash flows from financing activities	Cash flows from operating activities	Foreign exchange differences	Measuring at amortized cost	Appropriation of retained earnings	Ending balance
Short-term borrowings	¥ 5,590	¥ 12,240	¥ —	¥ 7	¥ —	¥ —	¥ 17,838
Long-term borrowings	143,851	(70,519)	—	(4,352)	242	—	69,222
Interest-bearing bonds	29,918	—	—	—	36	—	29,954
Dividends payable	27	(6,204)	—	—	—	6,210	33
Payment obligation for external shareholders	101,691	(1)	(2,513)	(7,041)	2,545	—	94,680
Preferred shares	14,838	—	—	—	(4)	—	14,833
Finance lease obligations	4,580	(463)	—	(571)	—	—	3,546
Total	¥ 300,496	¥ (64,948)	¥ (2,513)	¥ (11,957)	¥ 2,819	¥ 6,210	¥ 230,107

	Thousands of U.S dollars						
	2018						
				Non-cash changes			
	Beginning balance	Cash flows from financing activities	Cash flows from operating activities	Foreign exchange differences	Measuring at amortized cost	Appropriation of retained earnings	Ending balance
Short-term borrowings	$ 50,351	$ 110,250	$ —	$ 63	$ —	$ —	$ 160,673
Long-term borrowings	1,295,721	(635,191)	—	(39,200)	2,179	—	623,509
Interest-bearing bonds	269,482	—	—	—	324	—	269,807
Dividends payable	243	(55,881)	—	—	—	55,935	297
Payment obligation for external shareholders	915,970	(9)	(22,635)	(63,421)	22,923	—	852,819
Preferred shares	133,651	—	—	—	(36)	—	133,606
Finance lease obligations	41,253	(4,170)	—	(5,143)	—	—	31,940
Total	$2,706,683	$ (585,011)	$ (22,635)	$ (107,701)	$ 25,391	$ 55,935	$2,072,662

	Millions of yen						
	2017						
				Non-cash changes			
	Beginning balance	Cash flows from financing activities	Cash flows from operating activities	Foreign exchange differences	Measuring at amortized cost	Appropriation of retained earnings	Ending balance
Short-term borrowings	¥ 2,444	¥ 17	¥ —	¥ 3,128	¥ —	¥ —	¥ 5,590
Long-term borrowings	154,473	(22,117)	—	11,171	324	—	143,851
Interest-bearing bonds	49,863	(20,000)	—	—	54	—	29,918
Dividends payable	25	(3,461)	—	—	—	3,462	27
Payment obligation for external shareholders	92,802	(11)	(2,406)	9,235	2,071	—	101,691
Preferred shares	—	14,838	—	—	—	—	14,838
Finance lease obligations	5,569	(462)	—	(525)	—	—	4,580
Total	¥ 305,177	¥ (31,198)	¥ (2,406)	¥ 23,010	¥ 2,450	¥ 3,462	¥ 300,496

25. Sales Revenues

(1) Breakdown of sales revenues

The breakdown of sales revenues is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Sales of products	**¥ 373,348**	¥ 312,073	**$ 3,362,889**
Service revenue	**127,875**	117,556	**1,151,819**
Other	**24**	34	**216**
Total	**¥ 501,248**	¥ 429,664	**$ 4,514,934**

Machine tools segment revenue is recognized when the control of product transfers to customers based on the contract. Industrial service revenue is recognized when the obligation based on the contract is executed.

Revenue is measured at the amount of promised consideration in contracts with customers less discounts and rebates, and reduced by the amount of sales returns.

The relationship between regional sales revenues and segment sales revenues is as follows;

	Millions of yen					
	2018					
	Reportable segments			Adjustments		
	Machine Tools	Industrial Services	Total	Corporate Services	Elimination	Consolidated
Sales revenues						
Japan	**¥ 109,047**	**¥ 29,756**	**¥ 138,804**	**¥ —**	**¥ (58,503)**	**¥ 80,300**
Germany	**194,385**	**33,237**	**227,623**	**1,943**	**(116,697)**	**112,868**
The Americas	**70,433**	**16,531**	**86,965**	**—**	**(1,810)**	**85,154**
Europe other than Germany	**139,456**	**50,411**	**189,868**	**—**	**(31,047)**	**158,821**
China and Asia	**54,859**	**15,906**	**70,766**	**—**	**(6,662)**	**64,103**
Total	**¥ 568,183**	**¥ 145,844**	**¥ 714,027**	**¥ 1,943**	**¥ (214,722)**	**¥ 501,248**

	Thousands of U.S. dollars					
	2018					
	Reportable segments			Adjustments		
	Machine Tools	Industrial Services	Total	Corporate Services	Elimination	Consolidated
Sales revenues						
Japan	**$ 982,228**	**$ 268,023**	**$ 1,250,261**	**$ —**	**$ (526,959)**	**$ 723,293**
Germany	**1,750,900**	**299,378**	**2,050,288**	**17,501**	**(1,051,134)**	**1,016,645**
The Americas	**634,417**	**148,901**	**783,327**	**—**	**(16,303)**	**767,014**
Europe other than Germany	**1,256,134**	**454,071**	**1,710,214**	**—**	**(279,652)**	**1,430,562**
China and Asia	**494,136**	**143,271**	**637,416**	**—**	**(60,007)**	**577,400**
Total	**$ 5,117,843**	**$ 1,313,673**	**$ 6,431,516**	**$ 17,501**	**$(1,934,083)**	**$ 4,514,934**

(2) Balance of outstanding contracts

Balance of receivables from contract with customers and contract liabilities is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Receivables from contract with customers	**¥ 65,709**	¥ 59,343	**$ 591,866**
Contract liabilities	**61,695**	49,204	**555,710**

Receivables from contract with customers are included in trade and other receivables in consolidated statement of financial position.

Revenues recognized during the fiscal year 2018 which is included in contract liabilities at the beginning of the fiscal year is ¥49,204 million. ($443,199 thousand). The expected contract term of remaining implementation obligation is less than one year.

26. Other Operating Revenues

The breakdown of other operating revenues is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Gain on sales of property, plant and equipment	**¥ 311**	¥ 459	**$ 2,801**
Received commission	**411**	749	**3,702**
Gain on sales of financial instruments	**—**	5,536	**—**
Other	**3,750**	5,283	**33,777**
Total	**¥ 4,472**	¥ 12,028	**$ 40,281**

27. Other Operating Costs

The breakdown of other operating costs is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Commissions	**¥ 21,803**	¥ 18,575	**$ 196,388**
Sales promotion costs	**7,300**	7,756	**65,753**
Outward freight and packaging	**16,032**	14,465	**144,406**
Research and development costs (except for amortization of capitalized development costs)	**10,987**	9,151	**98,964**
Exchange losses	**20**	594	**180**
Other	**28,914**	28,107	**260,439**
Total	**¥ 85,059**	¥ 78,650	**$ 766,159**

28. Personnel Costs

The breakdown of personnel costs is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Remuneration and salaries	**¥ 88,584**	¥ 82,157	**$ 797,910**
Bonuses	**16,277**	14,300	**146,613**
Social security and welfare expenses	**18,687**	17,379	**168,321**
Retirement benefit expenses	**3,264**	3,111	**29,400**
Share-based compensation expenses	**262**	328	**2,359**
Other employee benefit expenses	**4,351**	3,450	**39,191**
Total	**¥ 131,426**	¥ 120,728	**$ 1,183,804**

29. Financial Income

The breakdown of financial income is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Financial income			
Interest income:			
Financial assets measured at amortized cost	**¥ 351**	¥ 393	**$ 3,161**
Dividend income:			
Available-for-sale financial assets	**—**	254	**—**
Financial assets measured at fair value through other comprehensive income	**118**	—	**1,062**
Total	**¥ 470**	¥ 647	**$ 4,233**

30. Financial Costs

The breakdown of financial income is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Financial costs			
Interest expenses on bonds and borrowings:			
Financial liabilities measured at amortized cost	**¥ 3,078**	¥ 3,014	**$ 27,724**
Financial costs arising from DPLEA:			
Financial liabilities measured at amortized cost	**2,545**	2,071	**22,923**
Others	**—**	211	**—**
Total	**¥ 5,624**	¥ 5,297	**$ 50,657**

31. Other Comprehensive Income

The breakdown of each component of other comprehensive income (loss) and the corresponding tax effects (including non-controlling interests) is as follows:

	Millions of yen						Thousands of U.S. dollars		
	2018			2017			**2018**		
	Before tax effect	Tax effect	After tax effect	Before tax effect	Tax effect	After tax effect	Before tax effect	Tax effect	After tax effect
Items that will not be reclassified subsequently to profit or loss:									
Remeasurements of defined benefit plans:									
Amount arising during the year	**¥ 612**	**¥ (185)**	**¥ 426**	¥ (201)	¥ 71	¥ (129)	**$ 5,512**	**$ (1,666)**	**$ 3,837**
Net changes during the year	**612**	**(185)**	**426**	(201)	71	(129)	**5,512**	**(1,666)**	**3,837**
Changes in fair value of financial assets measured at fair value through other comprehensive income:									
Amount arising during the year	**(936)**	**154**	**(782)**	—	—	—	**(8,430)**	**1,387**	**(7,043)**
Net changes during the year	**(936)**	**154**	**(782)**	—	—	—	**(8,430)**	**1,387**	**(7,043)**
Share of other comprehensive income of associates accounted for using equity method:									
Amount arising during the year	**(21)**	**—**	**(21)**	—	—	—	**(189)**	**—**	**(189)**
Net changes during the year	**(21)**	**—**	**(21)**	—	—	—	**(189)**	**—**	**(189)**
Subtotal	**(346)**	**(31)**	**(377)**	(201)	71	(129)	**(3,116)**	**(279)**	**(3,395)**
Items that may be reclassified subsequently to profit or loss:									
Exchange differences on translation of foreign operations:									
Amount arising during the year	**(8,405)**	**—**	**(8,405)**	4,044	—	4,044	**(75,707)**	**—**	**(75,707)**
Reclassification adjustments to profit or loss	**1**	**—**	**1**	—	—	—	**9**	**—**	**9**
Net change during the year	**(8,404)**	**—**	**(8,404)**	4,044	—	4,044	**(75,698)**	**—**	**(75,698)**
Effective portion of changes in fair value of cash flow hedges:									
Amount arising during the year	**(41)**	**0**	**(40)**	(291)	93	(198)	**(369)**	**0**	**(360)**
Reclassification adjustments to profit or loss	**291**	**(93)**	**198**	246	(78)	167	**2,621**	**(837)**	**1,783**
Net change during the year	**250**	**(92)**	**157**	(45)	14	(31)	**2,251**	**(828)**	**1,414**
Changes in fair value measurements of available-for-sale financial assets:									
Amount arising during the year	**—**	**—**	**—**	2,167	(776)	1,390	**—**	**—**	**—**
Reclassification adjustments to profit	**—**	**—**	**—**	(5,536)	1,543	(3,993)	**—**	**—**	**—**
Net change during the year	**—**	**—**	**—**	(3,369)	766	(2,602)	**—**	**—**	**—**
Share of other comprehensive income of associates and joint ventures accounted for using equity method:									
Amount arising during the year	**—**	**—**	**—**	18	—	18	**—**	**—**	**—**
Net change during the year	**—**	**—**	**—**	18	—	18	**—**	**—**	**—**
Subtotal	**(8,153)**	**(92)**	**(8,246)**	647	781	1,428	**(73,437)**	**(828)**	**(74,274)**
Total other comprehensive income	**¥ (8,499)**	**¥ (124)**	**¥ (8,624)**	¥ 446	¥ 852	¥ 1,298	**$ (76,553)**	**$ (1,116)**	**$ (77,679)**

32. Earnings Per Share

The basis of the calculation of basic earning per share and diluted earnings per share is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Profit attributable to owners of the parent	**¥ 18,517**	¥ 15,263	**$166,789**
Profit not attributable to owners of the parent	**1,078**	1,068	**9,709**
Profit used for basic earnings per share	**17,438**	14,195	**157,070**
Profit adjustment for diluted profit	**—**	—	**—**
Diluted earnings	**17,438**	14,195	**157,070**
Weighted-average number of shares (Thousands of shares)	**121,026**	121,909	
Increase in number of common stock shares for diluted earnings per share			
Increase due to exercising stock options (Thousands of shares)	**770**	892	
Weighted-average number of shares outstanding for diluted earnings per share (Thousands of shares)	**121,797**	122,801	
Basic earnings per share (Yen)	**¥ 144.09**	¥ 116.44	**$ 1.29**
Diluted earnings per share (Yen)	**143.18**	115.59	**1.28**

(Note) Basic earnings per share and diluted earnings per share are calculated dividing by the average number of shares after deducting the average number of treasury shares during the year from profit attributable to owners of the parent after deducting the amount attributable to owners of hybrid capital. The average number of treasury shares during the year are calculated after deducting the share of the Company held by The Nomura Trust and Banking Co., Ltd (DMG MORI Employee Shareholders Association Exclusive Trust) (Average number of shares during the year of 2,400,144 shares) due to the implementation of "Trust-Type Employee Stock Ownership Incentive Plan".

33. Business Combinations

There was no business combination during the fiscal year 2018 and 2017.

34. Domination and Profit and Loss Transfer Agreement

(1) Entry into force of Domination, Profit and Loss Transfer Agreement

On 24th August, 2016, the DPLTA between DMG MORI GmbH ("GmbH"), one of the Company's consolidated subsidiaries, and DMG MORI AKTIENGESELLSCHAFT ("AG") came into effect. AG is subject to the DPLTA based on German Company Law, which enables an entity to give direct instructions to a decision-making body, normally the board meeting, of another entity. In addition, under the agreement all profit or loss of AG is transferred to GmbH.

Shareholders of AG, except for GmbH (hereinafter the "external shareholders"), have two options; either to offer their shares to GmbH in exchange for a cash compensation amount, or to receive a recurring annual cash compensation from GmbH.

Therefore, GmbH undertakes upon demand of the external shareholders to purchase their shares in exchange for the amount of €37.35 per share, or to pay them the recurring annual cash compensation of €1.17 per share. The obligation of GmbH to purchase the shares was originally limited to two months after the effective date of the agreement. However, since some external shareholders initiated a judicial appraisal proceeding to achieve a higher recurring compensation or a higher exercise price of the share purchase option, as the result, the time limitation period has been extended to two months after the date on which the final ruling has been announced in the Federal Gazette based on the German law.

The amounts of the recurring cash compensation and the exercise price of the share purchase option have been audited and certified as fair by independent auditors appointed by a German court and therefore, the Group believes that those amounts are appropriate.

(2) Outline of accounting treatments and significant non-cash transactions

Due to the entry into force of the DPLTA, the Group recognized the net present value of the expected future payment obligations as other financial liabilities in the consolidated statement of financial position.

As a result of revaluation of the discounted present value of the future payment obligations to external shareholders at the end of fiscal year 2018, the

Group recognized ¥94,680 million ($852,819 thousand) of other financial liabilities (current) and at the consolidated statement of financial position, and ¥2,545 million ($22,923 thousand) of financial expenses in the consolidated statement of profit or loss for the fiscal year 2018.

35. Significant Subsidiaries

The Group does not recognize significant non-controlling interests in its subsidiaries.

36. Related Party Transactions

(1) Transactions with related parties

Transactions with related parties carried out during the reporting period are as follows:

Category	Name of related parties	Details of transactions	Millions of yen		Thousands of U.S. dollars
			Transaction amounts		Transaction amounts
			2018	2017	**2018**
Associates	DMG MORI Finance GmbH	Sales of products	**¥ 15,201**	¥ 12,948	**$ 136,921**

Receivables and payables due from and to major related parties are as follows:

Category	Name of related parties	Details of transactions	Millions of yen				Thousands of U.S. dollars	
			2018		2017		**2018**	
			Millions of yen	Millions of yen	Millions of yen	Millions of yen	Millions of yen	Millions of yen
Associates	DMG MORI Finance GmbH	Sales of products	**¥ 2,731**	**¥ 975**	¥ 1,485	¥ 801	**$ 24,599**	**$ 8,782**

(2) Key management compensation

The breakdown of key management compensation in the Group is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Compensation and bonuses	**¥ 2,189**	¥ 1,789	**$ 19,717**
Share-based payments	**16**	—	**144**
Total	**¥ 2,205**	¥ 1,789	**$ 19,861**

(Note 1) Key management compensation is paid to directors, including outside directors, of the Company, and important director executive officers of subsidiaries such as DMG MORI AG.
(Note 2) The compensation and bonuses paid to the directors of DMG MORI AG totaled ¥1,314 million ($11,835 thousand) and ¥1,096 million for the fiscal years 2018 and 2017, respectively.
(Note 3) Share-based payments are costs of restricted stock compensation for the directors, excluding outside directors of the Company.

37. Contingent Liabilities

The breakdown of guarantee obligations is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	**2018**
Guarantees for lease payments by customers	**¥ 2,527**	¥ 2,486	**$ 22,761**
Other guarantee obligations	**599**	535	**5,395**
Total	**¥ 3,127**	¥ 3,021	**$ 28,166**

(Note) Guarantee obligations are not recognized as a financial liability, as the probability of executing these guarantees is very low.

38. Events after Reporting Period

There is no applicable event.

Corporate Data

Basic information

as of December 31, 2018

Corporate Profile

Company Name	DMG MORI CO., LTD.
Capital	51,115 million yen
Established	October, 1948
Registered Head Office	Yamato-Koriyama City, Nara, Japan

National Head Office	2-35-16 Meieki, Nakamura-ku, Nagoya City, Aichi 450-0002, Japan
Tokyo Global Headquarters	2-3-23, Shiomi, Koto-ku, Tokyo 135-0052, Japan
Business Operations	Manufacture and Sale of Machine Tools (Machining Centers, CNC lathes and other products)
Number of employees	13,042 (consolidated)
Website	https://www.dmgmori.co.jp

Share

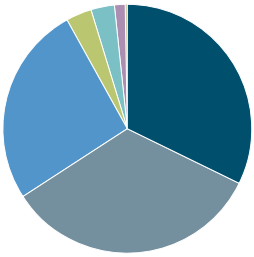
Total number of authorized shares	300,000,000
Number of shares outstanding	123,935,256 (excluding 2,018,427 treasury shares)
Number of shareholders	38,669

Top share holders

Name	Position (in thousand shares)	% of outstanding shares
The Master Trust Bank of Japan, Ltd. (trust account)	5,587	4.51
Masahiko Mori	3,591	2.90
Japan Trustee Services Bank, Ltd.(Mori Manufacturing Research and Technology Foundation account)	3,500	2.82
Japan Trustee Services Bank, Ltd. (trust account)	3,085	2.49
DMG MORI Employee Shareholders Association	2,899	2.34
Japan Trustee Services Bank, Ltd. (trust account 5)	2,450	1.98
The Nomura Trust and Banking Co., Ltd. (DMG Mori Co., Ltd. Employee Stock Ownership Plan)	2,273	1.83
CDSIL AS DEPOSITARY FOR OLD MUTUAL GLOBAL INVESTORS SERIES (standing proxy: Citibank, N.A.)	2,229	1.80
The Nomura Trust and Banking Co., Ltd. (investment trust account)	2,175	1.76
Japan Trustee Services Bank, Ltd. (trust account 9)	2,096	1.69

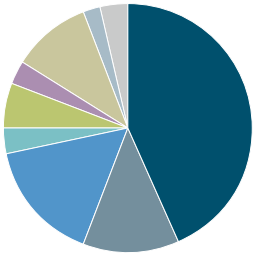
※Although DMG MORI holds treasury stocks (2,018,427 shares), the company is excluded from the major shareholders shown above.
※Shareholding ratio excludes treasury stock.

Shareholder composition



	Number of shares (1,000 shares)	Number of shareholders
Foreign corporate bodies (other than individuals)	40,588	321
Individuals/ Others	42,620	37,911
Financial institutions	32,712	72
Securities companies	4,399	60
Other corporate bodies (Japan)	3,583	268
Treasury shares	2,018	1
Foreign individual investors	29	36

Distribution by position



	Number of shares (1,000 shares)	Number of shareholders
1,000,000 shares or more	54,880	26
500,000 shares or more	15,577	23
100,000 shares or more	20,038	84
50,000 shares or more	4,083	58
10,000 shares or more	7,421	424
5,000 shares or more	3,962	643
1,000 shares or more	12,649	7,680
500 shares or more	3,053	5,130
Up to 500 shares	4,287	24,601

EMPLOYEES

SERVICE EXCELLENCE

SUSTAINABILITY

FIRST QUALITY

GLOBE - GLOBAL ONE BUSINESS EXCELLENCE

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