



MUSASHI Sustainability Report 2020



Top Message

President & CEO

Hiroshi Otsuka

Be an “Essential Company” for Society Always Supporting with our Technology

Change in Our Business Environment

I would initially like to express my deepest condolences to those of you who have lost family members and dear friends because of the COVID-19 pandemic. I would also like to express my sincere appreciation to the medical staff who are working so hard to avoid the spread of this disease, and to all of the essential workers who have kept our life infrastructure maintained and running.

During the COVID-19 pandemic, we have been directing our efforts towards prioritizing the safety of our stakeholders, including customers, suppliers, employees and their families. Under the direction of our Risk Management Officer, we have implemented a global management system to monitor the status of our group companies at home and abroad, whilst supplying ongoing technical and material support. By avoiding the spread of COVID-19 through the company-wide promotion of remote work and production support from remote locations using MR (mixed reality), we have success-

fully maintained business continuity. Looking back at our history of over 80 years, we have confronted many major changes in the business environment. We have always taken such challenges as opportunities to transform and grow our business. Our first business domain was aircraft parts. And then we could move to the sewing machine market by applying the knowledge of manufacturing aircraft parts we gained when the aircraft parts market shrank. And when we saw the sewing machine market became saturated, we leveraged the technology to shift to motorcycle and automobile parts business. Such a series of challenges we experienced has become a part of Musashi's DNA. We are now taking the current situation of COVID-19 as an opportunity as well and advancing approaches that would bring us to the next stage and future growth.

Our Contribution to Society as a Technology Company

It is widely accepted that the automobile industry is facing a

“once in a hundred-year” shock. Against this background we have been implementing numerous initiatives with an increased sense of urgency; these initiatives include the development of new products suited to the acceleration of global development and electrification era. This transformation will be a significant contributor to achieving a carbon neutral future and offers many opportunities for our company. The reduction gears and differential assemblies used in electric vehicles require a higher level of performance compared to conventional internal combustion engines in terms of rigidity, compactness and quietness. Our product development capabilities, coupled with our “Monozukuri” manufacturing methods and integrated production system from forging to assembly, give us a unique ability to meet these exacting requirements. By providing our customers with products that add safety and value, we help to contribute to a reduction in CO₂ emissions and to a sustainable society.

In order for us to be a driving force where new technology changes the world innovatively, we are focusing on creating new business opportunities. In 2019 we established Musashi AI Ltd. jointly with our business partner in Israel (SixAI Ltd.). By combining SixAI's technology with Musashi's “Monozukuri” manufacturing knowledge, we are going to realize “Human jobs for human” which means people work on more creative jobs. Our first target is to automate both repetitive and high intensity works including visual product checking and logistic activities both inside and outside the factory with new technology we are developing now. We are also aiming to expand this technology to different areas including agriculture and general distribution activities.

New Electricity Storage Devices for Sustainable Society

In order to support a carbon neutral future, there is a rapidly increasing demand for electrical storage devices. The use of electricity storage devices is expected to diversify due to various factors such as future technological innovation and strengthening environmental and safety regulations. In April 2020, Musashi made JM Energy Ltd. a subsidiary company (renamed Musashi Energy Solutions Ltd. in November 2020) to develop, manufacture and sell lithium-iron capacitors (LICs) along with related electrical storage devices. LICs have the advantages of rapid charging and discharging, low risk of ignition, and long life without excessive deterioration. It is expected to be used in applica-

tions such as charging and discharging in renewable energy systems, charging and discharging assist in fuel cell systems using hydrogen, and safe backup power supplies for 5G base stations. We will further accelerate the development of our energy solutions business to realize a sustainable society.

We Condition New Business on “Technology for the World”

Our company aims to achieve further business growth and resolve social issues by creating new businesses that are not bound by existing businesses. In 2017, we held an in-house business creation program called “Musashi Innovator's Gate 2017” and created 2 teams of in-house startups that solve social issues. We also opened “MUSASHI Innovation Lab CLUE” in front of Toyohashi Station in December 2018 to offer opportunities to people who are serious about innovating. CLUE offers incubation opportunities for new business innovators in the East Mikawa region. The only condition we set to launch new business is it should be a sustainable business model that contributes to the well-being of society. The Company Agritrio Co., Ltd. Was founded in 2017 as part of our new business creation program. The system matches individuals who want to work freely with farmers who are struggling with manpower shortages. By applying our production standardization technology and manualizing technology, farmers can share their know-how with those who have no experience in agriculture, we are developing a matching service “Know - How” that enables short working hours, and an agriculture-related service “Know - Care” that connects welfare service



MUSASHI Innovation Lab CLUE
Creating Innovations from the East Mikawa Region

* Longest fault around 1,000km crossing middle of the Japanese islands (from East Japan to Kyushu)

offices with farmers who can accept disabled workers. We have started franchising nationwide, and through our business activities, we aim to solve problems such as the shortage of farmers and an increase in abandoned farmland due to the aging of society.

The East Mikawa region in Aichi Prefecture, where our head office is located, is one of Japan's leading agricultural areas blessed with rich nature. This area is a rare place where the Median Tectonic Line is exposed, and the ground surface stores a lot of iron and rare minerals allowing many different plants to thrive in the region, including mulberry, chrysanthemum, gotu kola, mugwort and horsetail. They are known to contain very high levels of functional ingredients (phytochemical) that are useful for people's health. This is the result of many years of research by Ms. Atsuko Morita,



Agritrio Supports Solving Farmers' Issues

from Toyohashi City, Aichi Prefecture, who is a leading expert in plant therapy in Japan. Ms. Morita has established the company Waphyto Inc. to exploit these health benefits and Musashi is proud to be an investor in this company. Waphyto currently produces skin and hair care products, and in the future, we plan to expand this brand into the fields of supplements and nursing care and develop it into a new brand that represents Higashi Mikawa to contribute to people's health.

In October 2020, we established a bio-lab (designated "M Lab") in Musashi head plant. The laboratory will provide a research and development facility to further investigate the health benefits of the local plants as well as the necessary extraction techniques. With local production in mind, we hope to develop this business into a "Life is 100 years." business.

Improving Governance Through Diversification

In establishing governance in our company, where overseas sales account for a large portion of net sales, we are implementing initiatives to enhance the soundness, transparency, and diversity of the Board of Directors. Through increasing the number of outside directors, foreign directors, and female directors, we are inviting people who actively provide opinions from a wide range of perspectives. We keep all management information open to outside directors, and sometimes receive harsh criticism, but this has



Waphyto Offers Inner and Outer Care Products Based on Plant Biotechnology



helped us a lot. Especially in times of rapid social change like this, not only is it necessary to become familiar with the latest social trends in a wider range of fields, but it is also necessary to have a director who has a completely different perspective from other executives who have long spent time in the manufacturing industry, such as management experience at IT companies and overseas global companies. In the event of a major social change, such as the spread of the COVID-19 infection, we will recognize that management is the one who can make bold decisions. We will look ahead to the future from a medium- to long-term perspective and respond to the change with a strong will.

Digital Transformation Requires Self - Starters

While taking on challenges that anticipate the changes of the times, there is something that Our Group has maintained as a cornerstone. It is the Musashi Philosophy formed by the trinity of "Spirit of Foundation", "Corporate Mission" and "Guidance for Conduct".

Especially, the "Spirit of Foundation," "Shitsujitsu-Goken, Shisei-Ikkan (Simple and Sturdy, Consistent Sincerity)" that embodies the will of the founder is the unchanged starting point for Our Group.

As the final year of the Musashi Global Vision for 2020 "Be Unique!!", we are currently working on a new long-term vision for the 100 - year anniversary of our founding in 2038.

In the wake of COVID-19 disaster, we realized once again that "the whole company must exist to support the world."

That is why we target business that is "good for the world." Under the theme of "enrich the world" and "making people happier," a project team consisting mainly of members in their 20s and 30s is thinking about our new long-term vision. I have entrusted these young people with this mission as I believe

that each new era should always be defined by the upcoming generation. I want them to draw a future image of Musashi based on their own spontaneous ideas.

This year, all social events within the company were cancelled due to COVID - 19 infection and our employees came up with the idea of "Connect with Musashi SNS Live Event" and many videos created by them were distributed live online. The new communication by the younger generation gave us a good feeling, and the voluntary efforts of our employees became an irreplaceable asset. I really feel that a company with many employees who can think independently is strong.

In this world where information is abundant, it is important to go and collect necessary information by yourself. We believe that it is difficult to survive in the age of digital transformation if we are not autonomous.

Remote work, which has started with full - scale implementation due to the COVID-19 disaster, also requires engagement and autonomy. If you don't think about what you have to do and keep waiting, in 10 years, AI and robots will take your job away. It is important for teams to set their own goals, demonstrate their abilities, and trust each other, rather than being obliged to monitor and report.

From now on, we will develop human resources who can tackle daily work while being conscious of what kind of work output they will produce.

Being an "Essential Company" Needed by the World

The COVID-19 disaster has made me realize that there are many essential workers in the world, including medical professionals. I strongly felt that people cannot live alone, and that everyone lives supported by someone else.

In order to be needed by society as well, we have delved into the SDGs 17 goals United Nations Summit adopted in 2015 and identified our company's top management priorities (materiality).

As a top priority, we aim to create a next-generation sustainable social system centered on technology. To achieve this, we will work to strengthen the foundation for economic growth, build a sustainable energy system, realize diverse work style, and improve the quality of employment. We believe that the raison d'etre of our company is to continuously contribute to the development of the global society through our business activities, and we aim to be a company whose existence is needed by society, in other words, an "essential company".

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- Period Covered
This report mainly covers the activities in FY2019.
- Organization
Information in this report refers to all consolidated organizations. Report on activities in Japan refers preliminarily to Musashi Seimitsu Industry Co., Ltd.

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 - System to Ensure the Efficiency of Business Execution
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- Referred Guidelines
IIRC: International Integrated Reporting Framework
GRI: GRI Standards
ISO: ISO26000 :2010 Guidelines on Social Responsibilities
Ministry of Environment, Government of Japan: Guidelines on Environmental Report

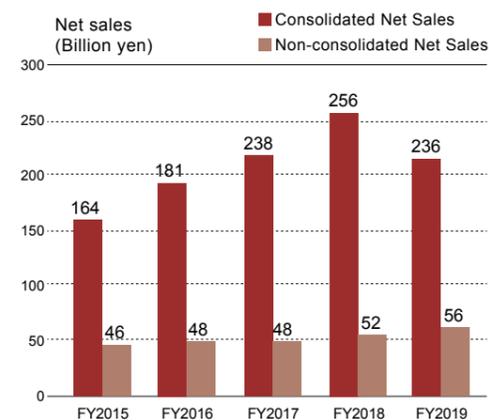
Company Profile

Company Name	Musashi Seimitsu Industry Co.,Ltd.
Head Office	39-5, Daizen, Ueta-Cho, Toyohashi, Aichi
Founded	April 1938
Incorporated	January 22, 1944
Capital	5,394 million yen (As of August 2020)
Employees	Group:16,113 (As of March 2020)
	Japan:1,356 (As of March 2020)

FY2019 Financial Result

(Million yen)		
Consolidated/Non-consolidated	Consolidated	Non-consolidated
Net sales	236,355	56,052
Ordinary income	7,113	8,833
Net income	△6,902	△9,232

Sales trend



Japan Network



Our Business

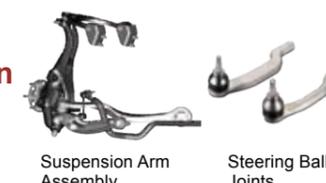
Power Train

For various needs in the era of EV



Linkage & Suspension

Seek for more compact, lighter and higher performance



Motorcycle

World No.1 share transmission (according to our research)



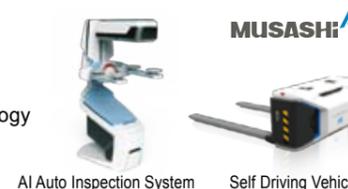
Machinery & Tools

For every need in manufacturing on the floor



AI

Auto solution with leading AI technology



Energy Solutions

Provide sustainable energy solutions



*Musashi Energy Solutions Co., Ltd. renamed from JM Energy Co., Ltd. on November 1, 2020

Musashi Philosophy

“Musashi Philosophy consists of 3 key elements: “Spirit of Foundation”, “Corporate Mission” and “Guidance for Conduct.”

Guidance for Conduct

一、お得意本位で
二、誠実を尽くし
三、工事をこらして
四、努力をおしまず
五、みなで力を合せて
六、権利義務を忘れず

1. Customer first
2. Integrity
3. Resourcefulness
4. Persistence
5. Cooperation for the common goal
6. Remember our rights and responsibilities

Spirit of Foundation

至誠一貫 質実剛健

Shitsujitsu-Goken
(Simple and Sturdy)
Shisei-Ikkan
(Consistent Sincerity)

Corporate Mission

わたしたちは
独創的なものづくりを探究し
世界のの人に信頼される
魅力的な商品の提供を通して
地球社会の発展に貢献します

We will continue to explore and develop our original Monozukuri and thereby contribute to the global society by providing trusted and attractive products.

Musashi Global Vision 2020



Musashi Group’s Approach to Sustainability

Musashi Group resolved the “Basic Policy of Musashi Group for realization of sustainable global society” in the Board of Directors.

While the economic and social impact of corporations is increasing, providing society with values continuously and discharging corporate responsibilities for realization of sustainable society are the key issues for the mid/long term growth of Musashi group.

Musashi Group will promote activities for realization of sustainable society as a company trusted by people in the world and as a company contributing to the sustainable development of global society.

“Basic Policy of Musashi Group for realization of sustainable global society”

“We will continue to explore and develop our original Monozukuri and there by contribute to the global society by providing trusted and attractive products.”

This corporate mission is expressing basic attitude of Musashi Group for realization of sustainable global society. Based on this corporate mission, we will contribute to sustainable development of the global society through our overall business activities from these two aspects below.

Creating Shared Value

We will continue developing “our original Monozukuri ”and providing “attractive products” which can contribute to sustainable “global society” development.

Social Responsibility as a Global Company

To be a company which is “trusted” by people around the world, we will positively contribute to develop better society.



Creating Shared Value - Contribution to the social development through business activities -

Musashi's strength originates in “Unique Monozukuri”: an integrated production system, precision forging technology and a global production/sales system. The core of Musashi business is to develop/provide “attractive products” for improvement of the mobility comfort and safety, and for a lower environment load through “Unique Monozukuri”.

Creating and providing beneficial “values” for society through our business is the realization of “Power to Value.” And that is essential for Musashi to contribute to the sustainable development of global society and to be needed by society.

Social responsibility as a global company - CSR promotion -

As the base of business practices, striving for solving various problems such as climate change in global society and communities is one of the important corporate responsibilities.

To discharge our responsibilities, we adopt the ISO26000 as the guidance to see the current condition of sustainability activities and to sort out issues. And we promote activities for a better society with our employees, customers, suppliers and local communities.



Special COVID-19 Musashi's Initiatives

Mouth Shields Made in Musashi Provided to Schools for Free

Utilizing the latest technology like 3D printers, we work improvement activities on floor. We started making and using mouth shields in house to avoid heat in summer and for better communication. As part of activities against COVID-19, we provided some local schools and volunteer groups with mouth shields made in Musashi.



Musashi Facilities Open for School Kids

In March 2020, temporary school closing was announced as a prevention measure of the COVID-19 infection. MUSASHI Innovation Lab CLUE conducted the "Child Kuru (Come) @CLUE" project to look after elementary school kids. The project attracted a lot of attention in media. Many messages of support were sent by visiting or by post.



Disinfect Gels Distributed in the Flooded Kyushu

In Kyushu, many people evacuated from the flood in July 2020. Kyushu Musashi Seimitsu, located in Kumamoto prefecture, gave disinfect gels to the local bodies of the affected areas to assure the health and safety of the employees and residents. Masks, gloves, and water were also provided.



New Work Style in the Era of Coexisting with COVID-19

We have adapted promptly to a change in environment due to the spread of COVID-19 by working from home with various communication tools. Travelling abroad is now restricted so operations are being streamlined by supporting online with the latest technology such as MR (mixed reality) with HoloLens.



Donations to Red Cross by 3 Chinese Affiliates

In February 2020, the infection of pneumonia caused by coronavirus started spreading in Wuhan, China. Musashi affiliates in China (MAP-CH, MAP-NT and MAP-TJ) donated 1.5 million CNY in total (around 23.6 million JPY) for local support.



Special New Business for Social Issue Solution



Waphyto



New Brand in East Mikawa!

In February 2020, Musashi invested in Waphyto, Inc. which offers inner and outer care products containing the functional ingredients of plants yielded in the East Mikawa region. As a company which head office is in East Mikawa, Musashi wants to contribute to solving local issues. Waphyto aims to establish an East Mikawa brand which supports local development and health through the global rollout of cosmetics which optimize the plant power.



What is Plant Biomedicine?

"Plant Biomedicine" advocated by Waphyto is a scientific combination of herbal medication: phytotherapy systematized in France and herborological knowledge formalized in Japan. Waphyto products feature five functional ingredients: mulberry, chrysanthemum, gotu kola, mugwort and horsetail, selected from organic plants yielded in the rich soil of Mikawa. Focusing on the basics of phytotherapy, a synergetic effect of drinking, applying and smelling, Waphyto delicately blends fragrance with the concept of Oriental medicine.



Starting New Service "Nou-Care"

"In addition to the "Nou-How" service connecting local people who want to work and farmers who need manpower, Agritrio started offering new service, "Nou-Care" which connects welfare and farmers. Under the service, welfare facilities and workers with disability register with farmers who can accept them. Since April, more than 120 cases have been matched (so far 8 facilities and 8 farmers). The collaboration of agriculture and welfare aims to make the disabled active in agriculture. Together with the development of agricultural management, confidence and motivation in life can be created so that people with disabilities participate in workforce. "Nou-Care" was born to solve the issue by connecting farmers who need manpower and those who are not satisfied with their job opportunity because of disability. Agritrio will keep creating motivation of work in agriculture and increase wage for better quality of life of people with disability.



Innovation of East Mikawa! MUSASHI Innovation Lab CLUE



In February 2020, the Final Demo Day of the new business creation project "East Mikawa Innovator's Gate 2019" was held in MUSASHI Innovation Lab CLUE. Targeting local contribution and creation, 7 teams (3 members per team) from Musashi, four CLUE partners, and Toyohashi University of Technology participated in the project. They spent 115 days for preparation and pitched* their business model in front of management to judge whether to carry out their business.



* Short presentation of business plans for gaining investment

icuco



"Recognized social issues: More women in labor force, fewer children, lack of child-care workers"



"Visualize" to eliminate concerns about child rearing and create the exciting family experience!

Value Creation Process

The business environment surrounding us is entering the “new normal” era resulted from coexisting with COVID-19. New values with innovation are demanded; for example, diverse work styles, activities pursuing carbon-free society, and the health and safety of each person. Our group aims to create innovations blended with ‘monozukuri’ techniques and leading technologies and to contribute to the development of sustainable global society.

Realization of Musashi 2020 Vision and Contribution to SDGs



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Resources Supporting Musashi Group

Business Activities Supporting Value Creation

FY2019 Results

Financial capital (Sound financial foundation)

Consolidated net assets: 82.5 billion yen
Equity ratio: 34.5%

Human capital (Global and diverse HR)

Consolidated No. of associates: 16,113
Associates working outside Japan: 86.6%
Non-Japanese top management: 36.0%

Intellectual capital (Technology)

Technology in a history of 80 years
(Registered or pending) patents:
127 (Japan), 195 (outside Japan) ▶ Page 38
R&D cost: 4.37 billion yen
Development in 3 bases (Japan, Canada, and China)
AI development in 3 bases (Japan, Canada, and Indonesia)

Manufacturing capital (Monozukuri foundation)

Production: 36 plants in 14 countries
Capital investment: 17.3 billion yen

Social and relation capital (Collaboration with external bodies)

Steel: 5 suppliers (Japan), 33 suppliers (outside Japan)
Business-academia: Comprehensive collaboration agreement with Toyohashi University of Technology



4 strengths of Musashi's monozukuri

Organizational Governance ▶ Page 35~

Social solution by open innovation

Industry 4.0

Existing technology × Digital technology



E-Mobility / MaaS

Existing technology × New business model



For Society

Exploitation of new technology and business field



Monozukuri Solution

Wider sales of existing products and technology



Financial capital (Better capital efficiency)

Consolidated sales: 236.3 billion yen
Consolidated operating profit: 7.2 billion yen

Financial capital (Return to stakeholders)

Annual dividend: 31.5 yen
Corporate tax: 377 million yen

Human capital

Skill exam: 36 members certified ▶ Page 24
Paid leave acquisition: 78% ▶ Page 25

Intellectual capital (Technology)

No. of patents: 20 (Japan), 18 (outside Japan) ▶ Page 38
Beta version of AI visual inspection in production ▶ Page 22
Verification of SDV ▶ Page 22
Support of launch with MR ▶ Page 9

Manufacturing capital (Supply to customers)

Motorcycle transmission share: 32% (according to our research)
PoC services for AI visual inspection
Neural Cube development ▶ Page 27
Machinery business: 36 items

Social and relation capital (Collaboration with external bodies)

Global contribution to local communities ▶ Page 33~
MUSASHI Innovation Lab partners: 8 corporations and 3 individuals
New business network with 11 companies (as of Sep 2020)
Investment and participation in management of Waphyto ▶ Page 10
Joint announcement with REE at 68th Frankfurt Motor Show ▶ Page 22



7 core subjects of ISO26000

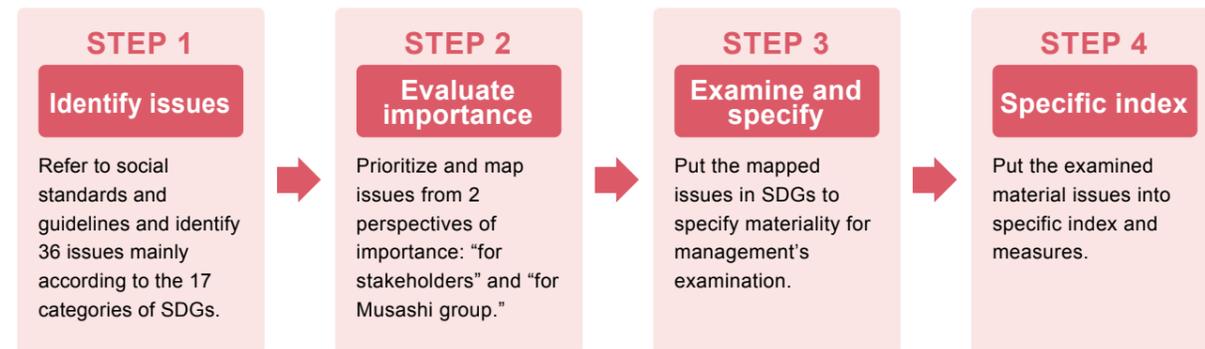
Musashi Philosophy

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Specification of Materiality

To “contribute to the global society” as specified in our corporate mission, we have analyzed what Musashi can do now and where to focus on to specify materiality in management. Based on social expectations and requirements, we put priority by considering business characteristics including value chains so that we can deepen the mutual understanding internally and with stakeholders and promote our activities of sustainability more efficiently.

Process of Identifying Materiality



Materiality Map

The 36 identified issues are mapped in terms of importance from 2 perspectives. As a result of studying business relations and the linkage with other themes, 3 directions are specified under one major theme.



Material Issues

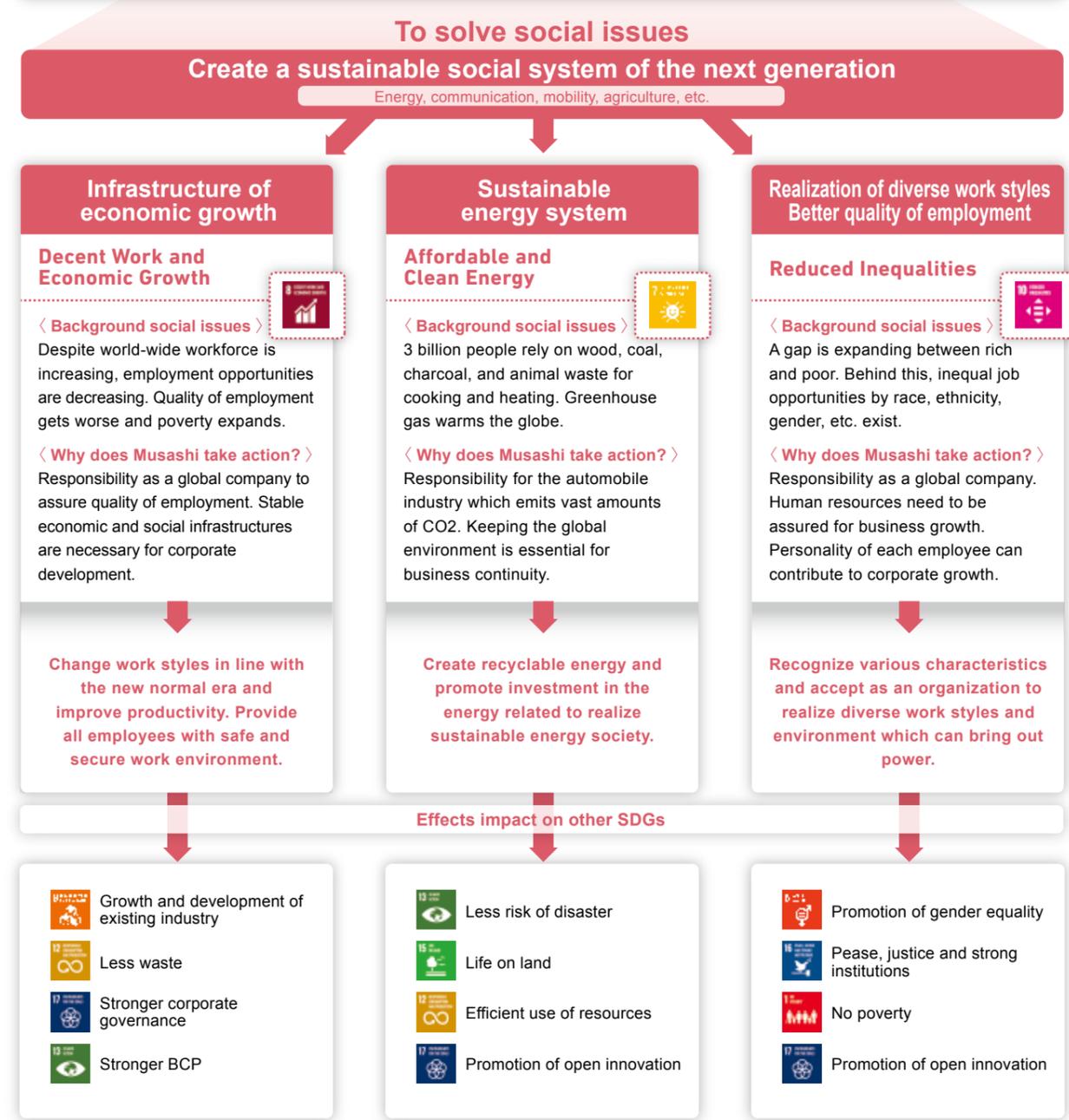
Top Priority Issue Industry, Innovation, and Infrastructure

Background social issues

In the whole world,
2.6 billion people are not supplied with stable electricity.
2.5 billion people are not in use of basic hygiene facilities.
800 million people are not in access to water.
= No infrastructure of industry and innovation

Why does Musashi take action?

Designing industrial infrastructures is essential as a precondition of a corporation which keeps developing and existing in local communities.



Environment

Musashi considers stakeholders request and expect the development and provision of products which contribute to the prevention of global warming and the reduction of environmental impact throughout the product life cycle. Each of the global affiliates is working on the reduction of environmental impact from both "product" and "production" perspectives.

» Environmental Issues Surrounding Musashi Group

In December 2015, the 21st Conference of the Parties (COP21) for the United Nations Framework Convention on Climate Change adopted the Paris Agreement, a new framework of greenhouse gas emissions after 2020.

The Paris Agreement is a legally binding international framework since the Kyoto Protocol adopted 18 years ago. The Agreement specifies "holding the increase in the global temperature to well below 2 degrees and to pursue efforts to limit the temperature increase to 1.5 degrees."

The Kyoto Protocol obligated only the developed countries to reduce green house gas emissions; however, the Paris Agreement concluded by all countries including developing countries should reduce green house gas emissions too. The Agreement recognised that global warming is now a world-common issue.

Under such circumstances, Musashi Group which develops its business globally recognizes that measures against global warming are one of the critical group-wide issues.

Not only saving energy and reducing environmental impact in production processes, but also our stakeholders including customers are requesting and expecting us to develop and supply products which contribute to reduce energy consumption and environmental impact while these are in use.

To respond to their requests and expectations and to be a "company trusted by people around the world," our global production sites are working on the reduction of environmental impact including energy and resource saving from "product" and "production" perspectives.

Basic Principle

Musashi recognizes that environmental preservation is one of the most important problems as a member of society. We preserve the global environment and enhance mankind's prosperity through its corporate activities for the society and the environment. We set the following guidelines toward achieving the goal to maintain the spirit of innovation.

Basic Policy

We will continue to explore and develop our original Monozukuri and thereby contribute to the global society by providing trusted and attractive products.

To realize this corporate mission, we globally establish environmental management system based on the guidelines stated below.

- Not only complying with law regulations, Musashi establishes the necessary self-imposed environmental targets for meeting social and stake holders requirements. Musashi promotes environmental preservation activities, including reduction of Green House Gas, Waste water, Air pollutant, Noise, Odor, Vibration, Waste, Hazardous materials, Soil contamination.
- Musashi reduces environmental load as much as possible in all business area of the organization. Musashi shall continuously endeavour to maintain and improve our environmental management system to improve our environmental performance.
- Musashi ensures the effective use of energy and other resources and pursues the appropriate management of chemical substances and reduction of waste, in every lifecycle stage of our products and all aspects of business activities.
- To protect and preserve our global environment, Musashi implement environmental conservation actions and endeavour that all individual working in or for our organization keep awareness of environmental protection.

We establish objectives, targets and action plans to achieve these policies. And, we review and revise them for every fiscal year according to the law regulation, environmental aspects of our business and opinion and requirement of stakeholders.

Also, we ensure that all individuals working in or for our organization are fully aware of these environmental policies by posting and disclosing these policies. We make these policies available to all stakeholders.

April 1, 2018

Global Environmental Management Promotion System

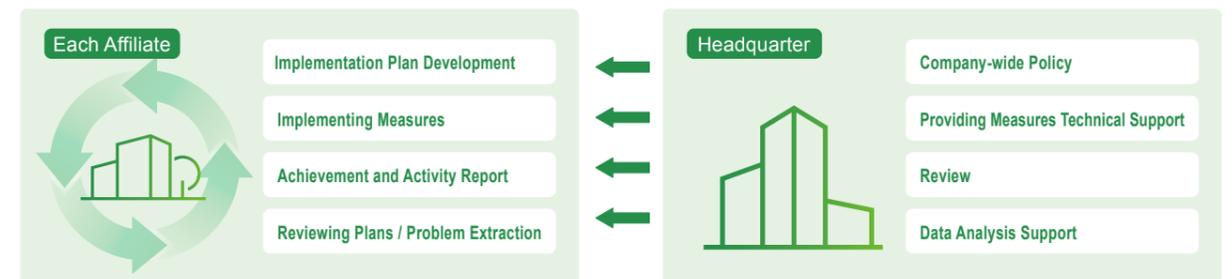
Musashi Group is advancing environmental management under the ISO14001 standard. Based on the standard, we have conducted activities, the quantitative grasp of the environmental data, and information sharing regarding technologies and measures for environmental impact reduction.

Various environmental data in each region is shared between the affiliates and headquarters each month and its achievement and activities are reviewed at the "Global Top Meeting*" represented by all management.

Collection of actual cases of environmental improvement reported from each region has been published on the company intranet. We also share advance improvement activities in each region at the Global QC Circle Convention. These measures and activities for reducing environmental impact are planned and promoted continuously across the Group.

* A meeting attended by management of all global sites to share group policies, identify issues for realizing management plans, and discuss actions to be taken.

Global Environment Management Promotion System



Environmental Management in Japan

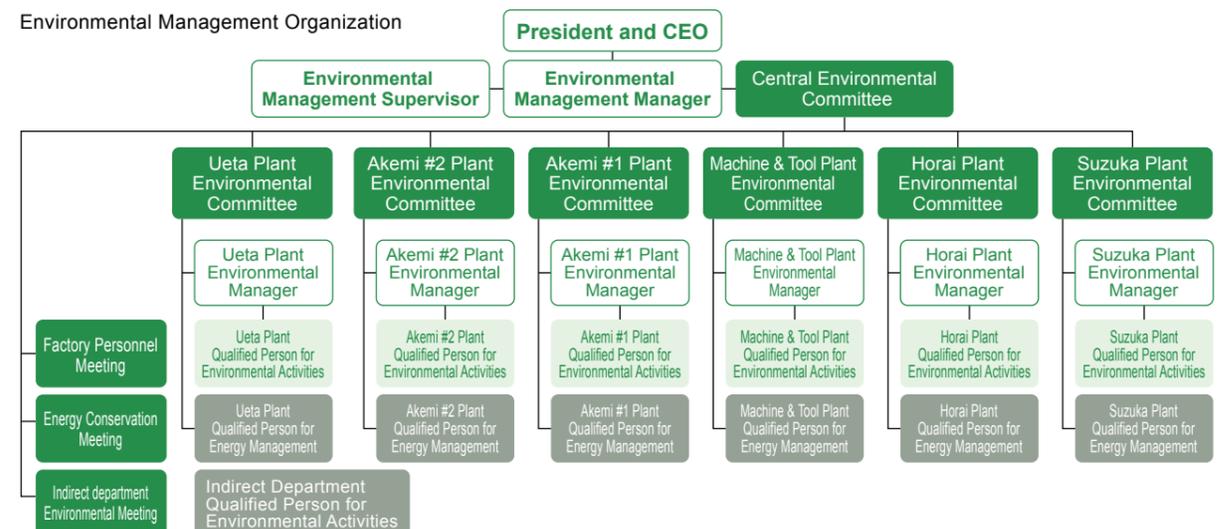
Current Status of Environmental Issues and Future Responsibilities in Japan

In Japan, "climate change and energy issues" stay as a key environmental matter and various initiatives have been taken. With the expansion of our business on a global scale, the efficiency is much required in the domestic business. From environmental perspectives, cutting-edge activities of the reduction of environmental energy conservation, saving resources and pollution prevention are expected to be taken as well as developing these in the world. Remaining as a frontrunner of environmental activities for all production sites, we will step up Musashi's global activities for all production sites, we will step up Musashi's global environmental activities.

Environmental Management Organization

To establish a company-wide environmental management, Musashi has formed the Central Environment Committee to orchestrate a company-wide response to the environmental issues. Also, to improve environmental management, an audit has been conducted twice by an external certification body and by an internal audit team since the acquisition of ISO 14001 certification in August 1998. In FY2019, a renewal audit was taken in July, and the first periodic external audit was taken in February 2020. None of the items were identified as non-conformity and the certification was maintained.

Environmental Management Organization



Environmental Laws/Regulations and Risk Management

To ensure the compliance of environmental laws and regulations, we conduct a periodic check of the measurement of regulatory values, the notification to government, and the status of equipment.

For any equipment which may impact significantly on environment, possible accidents are anticipated. We are prepared for emergency by defining procedures and contact routes and by conducting/reviewing periodic training programs and drills. Our business partners also participate in such drills.

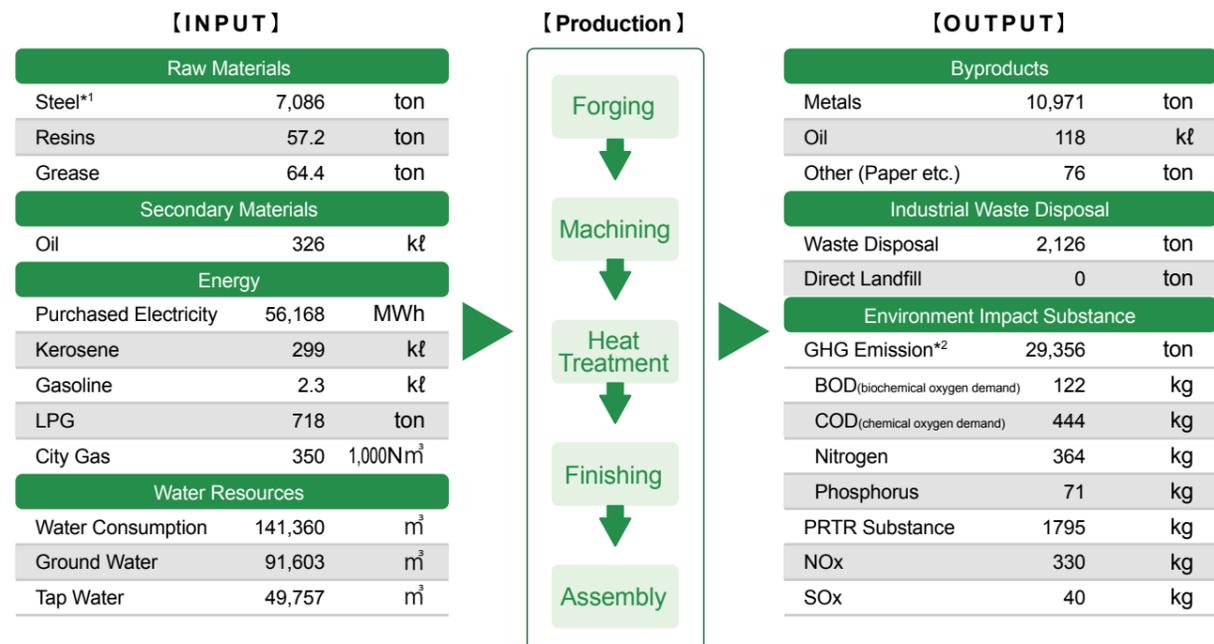
Material Flow

To see the overall environmental impact, we ascertain the balance (material flow) of annual raw materials, energy, and waste. The data is used to set target for reduction of CO₂ and waste.

Environmental Accounting

Environmental accounting calculates investment and cost of environmental conservation. "Investment" is the investment for tangible fixed assets in FY2019, "Expense" is the expense for environmental measures in FY2019.

FY2019 Resource Input and Output



*1 Excluding supplier processed parts.
 *2 The subjects of CO₂ emissions have been those under the Energy Saving Act. Accordingly, the actual emission factor in the "CO₂ Emission Factors of Each Electricity Utility" published by the Ministry of the Environment of Japan in November 2018 was used.
 Period: April 1, 2019 to March 31, 2020

FY2019 Environmental Accounting

Cost Classification	Main Initiatives	Investment	Expenses
Cost within Business Area		8.3	159
Break down	(1)-1 Pollution prevention	1.1	22.5
	(1)-2 Global environmental preservation	3.8	23.1
	(1)-3 Circulation of resources	3.5	113
Upstream/Downstream Cost	Investment in product recycling	0	0
Management Activity Cost	ISO regular inspection, environmental education, environmental labor cost etc.	1.7	38.6
R&D Cost	R&D of products for energy saving (compact, lightweight)	39.5	82.1
Social Activity Cost	Community clean-up activities Musashi woodland projec	0	9.3
Environmental Damage Cost		0	0
Other		0	0
Total		49.5	288.6

FY2019 Environmental Goals and Achievements

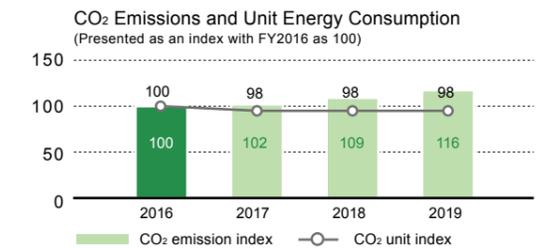
In 2019, we set targets for each of the following categories and worked on environmental improvement.

Category	Environmental Activity	Control Item	FY2019			FY2020 Target
			Target	Result	Achievement	
Global Warming Measures, Energy Saving	Green-House Gas Reduction	CO ₂ Emissions per Unit (CO ₂ ton/million yen)	3% Reduction (baseline:2016)	1.6% Reduction	×	4% Reduction (baseline:2016)
	Reduction of Transportation-Related CO ₂ Emissions	CO ₂ per Unit (CO ₂ ton/million yen)	3% Reduction (baseline:2016)	6.8% Reduction	◎	4% Reduction (baseline:2016)
Resource Saving	Water Consumption Reduction	Water Consumption (m ³)	3% Reduction (baseline:2016)	22.2% Increase	×	4% Reduction (baseline:2016)
	Industrial Waste Reduction	Waste Volume per Unit (ton/million yen)	3% Reduction (baseline:2016)	22.1% Increase	×	4% Reduction (baseline:2016)
	Promotion of Waste Recycling	Direct Landfill (%)	Maintain 0% Landfill	0%	○	Maintain 0% Landfill
Less Environmental Impact	Reduction of Chemical Substances	PRTR* -Listed Substances(ton)	85% Reduction (baseline:2000)	96% Reduction	◎	85% Reduction (baseline:2000)

(Target achieved) ◎:105% or higher, ○:95% to 105%, △:80% to 95%, ×:80% or lower
 *APRTR (Pollutant Release and Transfer Register) is a national or regional database of information on the environmental release and off-site transfer of potentially hazardous chemical substances from industrial and other facilities.

Reduction of GHG Emissions

Although FY2019 CO₂ emissions per unit was decreased by 1.6% compared to FY2016, the target was not achieved due to energy loss in new model launch. We will improve processes and production efficiency more and take countermeasures against energy loss for better energy efficiency.



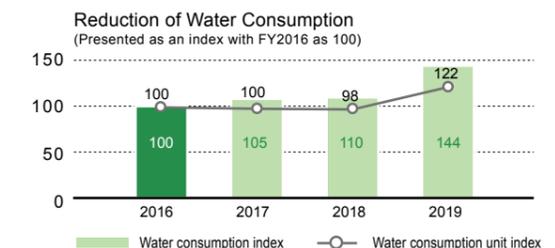
Reduction of Industrial Waste

The industrial waste per unit in FY2019 was increased by 22.1% from FY2016. The target of 3% reduction from FY2016 was not achieved due to the operation of the new plant. But we maintain 0% of external direct landfill. We will control waste generated from each process and reduce the volume of industrial waste with water-based cutting fluid and internal sludge treatment.



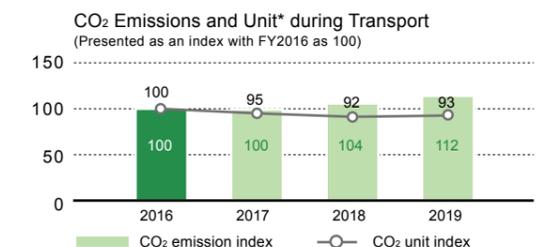
Reduction of Water Consumption

FY2019 water consumption was increased by 22.2% from the FY2016 baseline due to the operation of the new plant. We will keep reducing water consumption by implementing water saving activities; by replacing old pipes for leakage prevention; and by monitoring waste and loss.



Highly-efficient Transportation

To reduce CO₂ emissions during shipping, Production Management Division is focusing on the highly-efficient transportation by working closely with customers and transport companies. In FY2019, we continuously worked on the improvement of loading efficiency for shipping and the expansion of "pick-up transportation" applied to reduce CO₂ in the entire supplier chain logistics. This helped to reduce CO₂ emissions generated from transportation by 6.8% compared to the base year of FY2016.



* CO₂ Unit : CO₂ Emissions (t-CO₂) / Sales (Million yen)

Initiatives in Electrification

Contribution to the Sustainable Development of Mobility and Global Society

Risk of climate change has been significant year by year. In mobility, stronger environmental regulations and initiatives in electrification are imposed for the prevention of global warming. Each country has set its own regulations on CO₂ emission and fuel economy which are expected to be stricter. Designing and developing parts for electric vehicles and electric driven units, Musashi will improve fuel economy and safety functions. Also, from the perspective of production and supply, Musashi will support the widespread of electric vehicles to contribute to the sustainable development of the global society.

Response to Change in Automobile Mechanism (Electrification)

Like electrification, while changing the automobile mechanism rapidly, we take such environmental change as a chance. In addition to differential assembly and planetary assembly, we have built a production system of major power transmission units from the output of an electric unit motor to right before the tire.

Development of Unique Electric Units Essential for Electric Vehicles

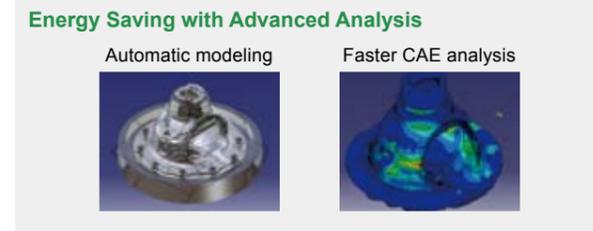
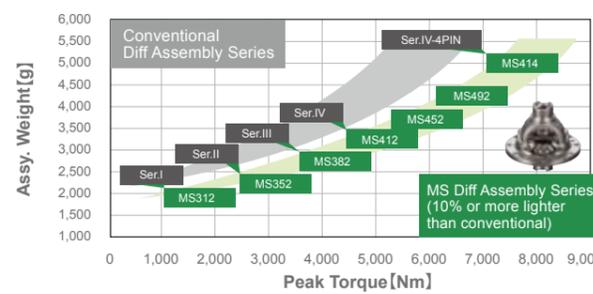
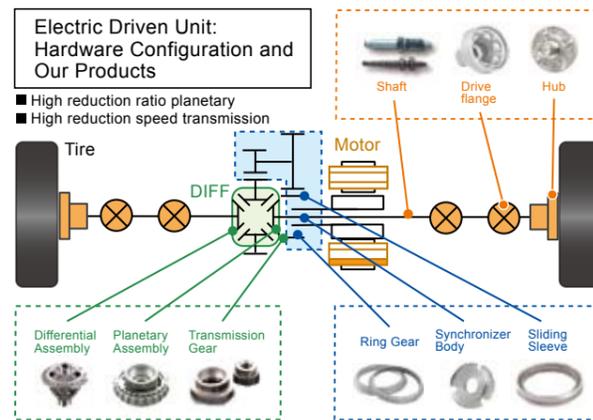
We are promoting the development of unique electric units essential for electric vehicles and motorcycles. We are developing electric units as well as element technologies necessary for the units in parallel to achieve lightweight, compact and low-noise products. Simulations with the latest CAE (computer-aided engineering) optimize specs and accelerate development. Also, a stronger R&D environment has been designed. Equipment for testing units and assembly products have been introduced to offer and develop products by unit and to assure functions.

We will keep contributing to the advancement of mobility; commoditize customer needs by paying attention to changes in what customers want; and design a system which forms technologies, products and services to fit with the times.

Product Development Contributing to Less Environment Load in Mobility

The lightweight diff assembly (MS Diff) with self-developed bevel gears have achieved 10% or lighter than the conventional. The MS Diff Series reduce vehicle weight and improve fuel economy in every torque bands from compact to large vehicles. Currently, we are promoting new technology development to improve the competitiveness. To ensure a competitive edge of our compact and lightweight differential gears, we are optimizing specifications with the technology of welding, compact-structure, and materials.

Also, we are working on the fastest means of CAE analysis for better efficiency to speed up development. This can reduce the development time as well as energy and resource consumption required for prototype and verification significantly. Seizing changes in the function required for electrification, we will keep working on lightweight products to contribute to the reduction of environment load.

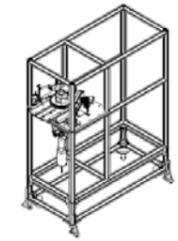


Initiatives in Environment through Operations

Installation of Environment-Friendly Equipment

AI

While fabricating AI equipment meeting customer needs, we offer specifications which avoid using pneumatic devices as much as possible by considering environment load.



Manufacture Engineering

To reduce environment load, we visualized the amount of air leak from equipment, power consumption, and CO₂ emission. We will install more measuring devices to encourage the associates to understand.



Production Engineering

In the phase of selecting new equipment in production, we use an environment chart with energy-saving and high-efficiency approach. Also, we provide periodic seminars on environment impacting in production internally to improve the mind-set of the associates.



The CFCs control law requires not to use dryers encapsulated with refrigerant gas (R-22) containing elements that destroy ozone. We replaced such dryers with R-410A for less environment load. We will keep complying with regulations by sharing information with the governance team.



Reduction of Processes and Waste

Forging Engineering

We are working for better forging technology by reducing forging and complex machining processes, and by eliminating workload. We take a challenge of reducing processes for better productivity and less environment load.

Key for improvement in forging

- Process design with accumulated forging technology
- Verification of forming with simulation
- Challenge for high-efficient forging

Quality Assurance

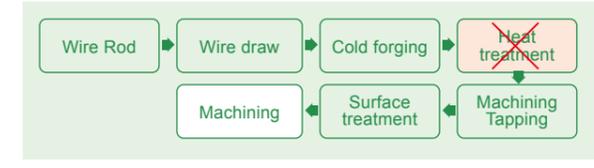
We are controlling the usage of toxin for material or forging testing more strictly for minimum usage and waste.

Production/Manufacturing Engineering

- Cycle time was reduced by switching manual to auto press. Auto press was changed to full stroke for better productivity and less environment load.
- More machining specs were applied to complete processes in house to reduce CO₂ generated in transportation.
- Centrifugal degreasing units were installed to reduce grease in wash fluid. This improved wash life. Fluid is now treated 3 times a year only (2 times a week before).
- Gear chamfering was changed from electrolysis to cutting to avoid generating chrome which causes soil pollution. Also, waste fluid was abolished.

Purchasing

We have adopted procuring materials which can reduce surface treatment. This process reduction enhanced the competitiveness and reduced environment load. We will find and adopt new materials more.



Water Quality Control and Reduction of Water Consumption

Tools & Machinery, No.4 Manufacturing Division (Horai Plant)

Tools & Machinery Division is located in the industrial estate by the Mikawa bay. Wastewater from Horai plant flows into the river and to the bay in the end. For this reason, we are working proactively on the prevention of ocean pollution. We are taking preventive activities against the flow out of the slight amount of oil: by cleaning gutters around the plant, by cleaning and checking oil separators periodically, and by installing oil plotters. Such activities encourage the associates to improve their environment mind-set.



Social Issue Solution by Open Innovation

Now, in the phase of transition so-called Industry 4.0, is a perfect timing for us to take a new challenge for the future. Utilizing the infrastructure internally and collaborating externally, we are engaged in creating innovations which contribute to social issue solution.



Major Initiatives

Musashi Energy Solutions Co., Ltd.

Musashi Energy Solutions Co., Ltd., which renamed from JM Energy Co., Ltd. on November 1st, 2020, is committed in developing, manufacturing, and selling lithium-ion capacitors with one of the few mass production infrastructures in the world. A lithium-ion capacitor is an electric storage device which maintains the advantage of rapid charging and discharging with the energy density much higher than conventional, based on the technological combination of an electrical double layer capacitor*1 and a lithium-ion battery*2. Other characteristics include long-life, maintenance-free, and highly-safe. Currently lithium-ion capacitors are used inside and outside Japan as compensators in case of momentary voltage drop or short power failure, transit energy recovery systems, and equalization of solar and wind power generation. For automotives,

a combination of fuel cells and lithium-ion capacitors can build an ideal power system which realizes clean, highly-efficient, good-responding, and robust driving performance. A lithium-ion capacitor is expected to be one of the key devices in the electrification society by developing the technology for larger volume and by creating new markets. As a Musashi group company, Musashi Energy Solutions practices Musashi Philosophy, builds a strong corporate

structure, and accelerates the rollout of energy solution business which realizes sustainable society.

*1 Electrical double layer capacitor: A capacitor which improves the electricity storage volume with the physical phenomenon of electric double layer
 *2 Lithium-ion battery: A secondary battery which charges and discharges with lithium ions moving between positive and negative



Musashi Energy Solutions, Head Office



Various LIC modules

MUSASHI AI

— HUMAN JOBS FOR HUMAN —

To accelerate AI technology development, implementation at manufacturing sites, and global expansion, Musashi established Musashi AI Ltd. in July 2019 with SixAI Ltd. which is represented by its founder, Mr. Ran Poliakine. In the manufacturing industry products are delivered to customers through the process of transfer, machining and inspection. The manual process of transfer and visual check, on the other hand, is repetitive

routine work requiring high load. Under the slogan "Human jobs for human," Musashi AI implements AI to release

people from highly-loaded repetitive work in production and works on the realization of manufacturing innovation.



AI Automatic Inspection System



SDV (Self-Driving Vehicle)

Investment



Energy solution business developing small engines for the generation of electricity



Agreement with Nokia for electricity supply in South East Asia



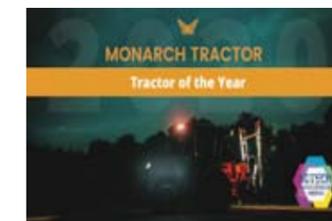
Development of drive modules of the flatbed platform for EV



A winner of the Bloomberg NEF Pioneer Award



Development of smart tractors for compact electric and auto driving in agriculture



A winner of the 2020 AgTech Breakthrough Award of Tractor of the Year

Human Resources, Labor Practices, and Human Rights

Considering the “development of creative human resources” as the foundation of realizing “Be Unique!!” and creating values continuously, Musashi works on the development of human resources. Based on the concept “valuing human resources is a corporate basis,” we works on the improvement of worksite environment, the health management of our employees, and the prevention of discrimination and harassment.

Basic Concept of Human Resource Development

Based on the concept of “developing independent individuals as well as standing on the foundation of fairness and trust to bring out the total power,” our human resource development allows each of our employees to grow with “free ideas,” “initiatively action,” and “responsibility for outcome.”

Our employees are provided with various training opportunities according to their position and role in order to deepen their understanding of “Musashi Philosophy” and to bring it to action.

Basic Concept of Human Resource Development

Develop independent individuals as well as stand on the foundation of fairness and trust to bring out the total power

Boost-up to Strengthen Expertise and Boss-Subordinate Communication

Target Setting and Measurement of Competence

To bring out the employees’ competence in their expertise and to boost up their growth, the Company has a clear definition of the required competence of each area. The employees set their target based on the definition and improve their competence in their work and learning. The annual measurement of their competence can show their current competence level to allow them to set a new target for continuous development.



Coaching training for stronger 1 on 1 communication

1 on 1

We hold a “1 on 1” meeting every half year to strengthen the reliability between superiors and subordinates, to promote the growth of subordinates, and to understand personnel assessment in a more satisfied and transparent way. Through a 1 on 1 meeting, a boss conveys his/her expectations and advise for growth, a subordinate conveys his/her carrier plan and request so that both parties can set the work/competence target to achieve an interactive communication.

Dialogue with Labor Representatives

The Company considers it essential to listen to its employees and exchange opinions for the sustainable development, thus dialogue with the labor union as labor representatives is a key. To accept employee needs and develop a better labor environment, the Company discusses honest opinions in monthly labor and management meetings and periodic committees to improve/apply labor conditions and various welfare systems. Employee survey is taken periodically to reflect its results in business plans of each division.



Labor and management meeting

Training System (Overview)

Category	By Position/Responsibility	Special Knowledge/Skill	Global Communication	Language	Other
General Manager	Training on management strategies			Expatriate with responsibility	
Section Manager	Management training	[Applied] Quality Safety/Environment	Compliance Education	Expatriate training	English learning support program
Supervisor	Training for management candidates				
General	Autonomous e-learning training	[Basic] Quality Safety/Environment	National trade certificate training	OJT (by area/section)	Mental health
	Training for new associates				
					Life plan

Training by Position

To improve knowledge and capability required by position or title, training programs including orientation, e-learning for autonomy, and management are provided.



Philosophy education

Global / Language Training

English learning programs are provided necessary for global work. We focus on the development of global human resources by providing online TOEIC exams and learning support.



Online English training – internal briefing

Engineering / Skill Training

Focusing on engineering and skill training essential for a manufacturing company, we are training our employees to get certified. 101 exam takers, 36 certified in 2019



Skill exam certification ceremony

Support for Diverse Work Style

Promotion of Paid Holiday Acquisition

Labor and management are working together to ensure a high level of take-up of paid holiday entitlement. A special system of "paid holiday for caring" has been set up. In the system, unused paid holidays can be carried over every year and be used either for sickness benefit, or for caring of family members.

Support Both Work and Family

A "shorter working hour program for childcare," which can be used for any period under certain conditions, is provided for the employees raising school kids. Also, a "nursing leave program" has been set up separately from annual paid holiday acquisition to allow the employees to acquire a holiday for nursing pre-school kids. Like childcare, "shorter working hours," "caring leave," and "temporary retirement for caring" programs are provided for caring their family members. Additionally, in 2017, "work-from-home" and "reemployment system" for the employees in caring were introduced to manage both work and family support.

Re-employment after Retirement

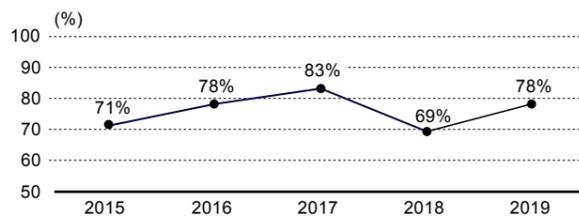
The company sets the retirement age as 60; however, a "re-employment after retirement" system is in place to allow the employees with good health and mentality to work continuously. More and more employees are hired again. Employees can work until the age of 65 in full-time base or some days a week. Their skills built in a long time can be utilized after their retirement.

Provision of a Prayer Room

Communication and mutual understanding of members working together is essential for diverse cultural and religious values. A prayer room is now available in the head office for the employees who need religious care. We will keep building the environment accepting the diversity.



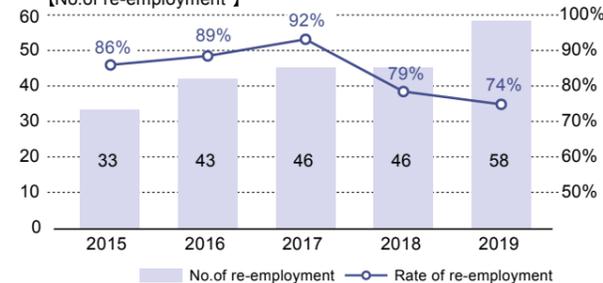
Paid Holiday Acquisition Rate



Child-care Leave

	2015	2016	2017	2018	2019
Female employee child-care leave (%)	100	100	100	100	100
Return to work after child-care leave (%)	100	100	100	100	100

Re-employment after Retirement
[No. of re-employment]



Respect for Human Rights and Harassment Prevention

Concept and training against discrimination and harassment

The "Musashi Compliance Guidelines," common code of conduct that the employees are kept informed, clearly indicate the basic concept of respect for human rights and harassment prevention. Using the "Musashi Compliance Guidelines" as main training materials, basic training programs on human rights and harassment prevention are provided for new members at their entry. Training programs at promotion are also provided according to the position or rank of the employees to deepen their understanding.

Basic Concept of Respect for Human Rights and Harassment Prevention— from "Musashi Compliance Guidelines"

IV We will respect human rights and embrace diversity and differences of each individual. We will not tolerate any discrimination or harassment.

【Basic Concept】

As a responsible company which conducts business activities around the world, the Musashi Group will respect the human rights of every individual and will not accept forced labor, child labor or any form of discrimination. Additionally, the Musashi Group will strive to avoid complicity in human rights violations. To create the work environment where each associate is able to work with integrity and maximize their worth and ability, the Musashi Group will respect and embrace the diversity and differences of each individual and will not accept any form of harassment.

【Action Guide】

- We will not discriminate against those working for Musashi or its suppliers for any reason including family background, nationality, race, ethnicity, belief, religion, gender, sexual orientation, age, intellectual or physical disability, disease, academic background or social status.
- We will not use words or expressions which are, or could be deemed as discriminatory or could violate human dignity.
- We will not tolerate any kind of harassment (including bullying, sexual harassment, power harassment etc.) in our workplace which could violate human dignity of others, put others at unfair disadvantage, make others feel threatened or uncomfortable.

Industrial Health/Safety Management

Basic Concept of Industrial Health/Safety

Based on "No safety, no production," the basic philosophy of industrial health and safety, we consider that corporate continuation starts from creating a safe and healthy workplace. To eliminate industrial accidents, we are promoting various safety training programs to reduce serious industrial disasters or accidents not only by sharing preventive action, but also by training internal prediction trainers to improve their awareness.

Prevention of Industrial Accidents and Safety/Health Activities

To prevent industrial accidents and to improve work environment, the Central Safety/Health Committee, consisting Production Officer as its Chair, is promoting company-wide safety and health activities for "safe work environment." In addition to the Safety/Health and Accident Prevention Committees set in each plant, the head office has sub-committees in manufacturing, engineering and administration areas to develop activities according to each level and area, to take countermeasures, and to share information. Also, Union members attend all committees so that employees' opinions can be reflected more.

Occurrence of Industrial Accidents

Based on the basic philosophy of "No safety, no production," we make sure that preventive action is applied and taken against similar serious accidents of pinching or trapping in past. Also, safety/health risk assessment is conducted from multiple perspectives of production and safety/health when new equipment is installed to make sure no serious risk of safety which cannot be identified in the phase of process design to create a safe production environment.

Keeping the Employees Healthy

The Company provides its employees with continuous health support through the following:

Full medical check-up

- Additional X-ray on stomach and check of bowel cancer
- Additional blood test at age of 30
- Vaccination against flu in the Company

Support for individual health improvement

- Lecture on health

Support for employee's mental health

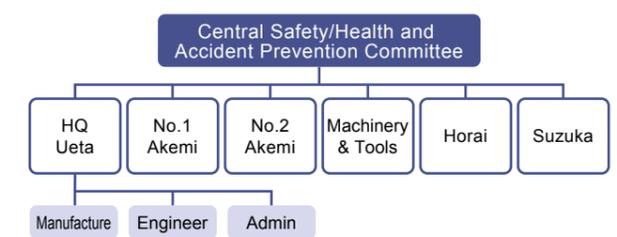
- Regular diagnosis of mental stress
- Work environment improvement initiatives based on stress diagnosis results
- Counseling by an industrial counselor

Prevention of passive smoking

Promotion of Infection Prevention from COVID-19

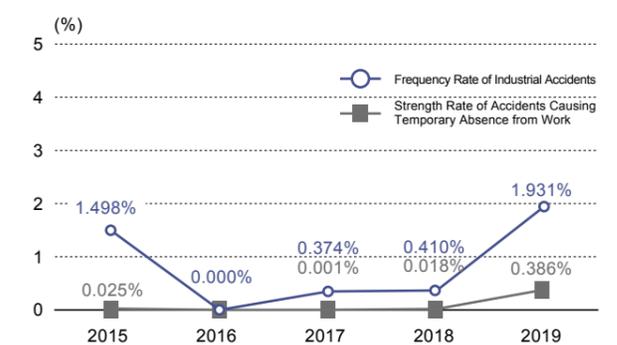
The Company prevents the infection of COVID-19 by requesting the employees wearing a mask and by providing more alcohol sterilizers and a non-contact thermometer on each floor.

Organization Chart for Safety/Health



Safety/Health Walk-through

Frequency Rate of Industrial Accidents



Non-contact Thermometers and Alcohol Sterilizer

Initiatives in Society through Business Activities

Promoting Work from Home (HR Division and IT Solution Division)

To promote work styles in the new normal of coexisting with COVID-19, we are re-building and operating the HR system. Allowing more associates work from home or flexible hours aims to prevent the infection of COVID-19 as well as to ensure time for caring their children or other family members and to reduce working hours. Also, for the improvement of environment for work from home based on the system change, we are affording more users connecting to SSL-VPN and introducing IT tools to improve work accessibility and productivity. We are also offering managers programs on asynchronous communication and logical writing with IT tools to utilize work from home throughout the company.



Approach to Smart Factory (AI Project, Manufacturing Division, and Manufacturing Engineering)

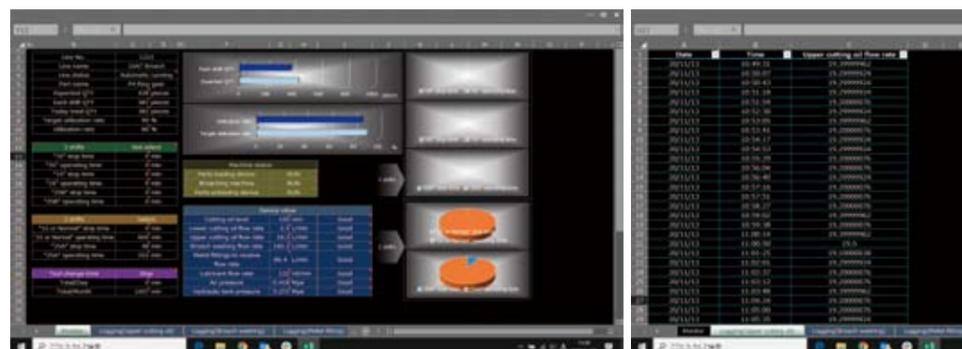
Automated Spatter Inspection - No More Visual Inspection with AI

We are working on the automation of visual inspection by deep learning. In 2019 we developed an auto inspection system to identify spatters generated on weld gears in addition to dents (scratches) on bevel gears. The system was verified and introduced in actual production. Visual inspection which is a long-hour routine process requiring high load can be reduced by around 60%. This allows us to build satisfying environment that associates can focus on machining which is the core of manufacturing and on processes additional values can be created through human technique and judgment.



Implementation of RPA in Manufacturing Lines - Visualization of Machine Operation

The status of machine operation in the plant used to be analyzed based on daily reports filled by members manually. Now we have a Robotic Process Automation (RPA) system to allow us to monitor the real-time operation status. The system checks change points in manufacturing lines by product and backs up quality correctly. Also, workload of supervisors and members as well as unconformity between them can be reduced. The operation status can be checked from a remote location so the system can contribute to the promotion of work from home and fewer working hours.



Traffic Safety, Disaster Prevention/Mitigation, and BCP (HR, Manufacturing, Tools & Machinery, and Purchasing)

For Traffic Safety

A lecture on traffic safety is provided for the associates before the long holiday. Kyushu Musashi Seimitsu organizes a traffic safety workshop for parents and children to achieve zero traffic accidents in the entire community.



Traffic Safety Workshop for Parents and Children

For Disaster Prevention/Mitigation

We conduct a disaster prevention drill every September assuming what to do first in case of an earthquake from the Nankai Trough. The drill this year was smaller with more evacuation spots to keep distance by avoiding COVID-19 infection. Also, Manufacturing Division and Tools & Machinery conducted a fire extinguishing drill on a regular basis. We also participate a drill against liquefaction and safety confirmation organized by the Akemi Industrial Park to build a relationship of mutual support in times of emergency.

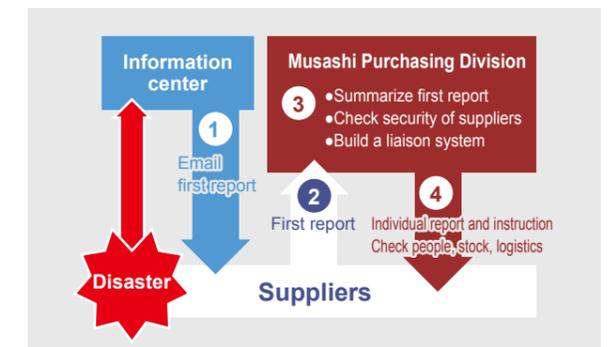


Disaster Prevention Drill

Fire Extinguishing Drill

For BCP (Business Continuity Plan)

We have a BCP Committee for an immediate recovery from difficulties of business continuity in various fields. Sub-committees for the operation of crisis response to headquarters, supply continuity, and production recovery are set and various training programs are provided to minimize the damage of business activities and the impact on local communities. Also, a training program against cyberterrorism has been added to take full security measures. Purchasing Division has introduced a system checking the real-time damage of suppliers in times of a disaster. We are strengthening the cooperation with them for appropriate decisions through immediate information sharing.



Information Control and Cooperation with Suppliers in Case of Disaster

Diverse Human Resources and Mutual Understanding (HR, Finance and Other Divisions)

To achieve the sustainable growth of a true global company, we accept diverse human resources regardless of their nationality, gender or religion. Emphasizing the understanding of various cultures and religions, we have a pray room and halal menus. In Finance which CFO is non-Japanese and other divisions where non-Japanese members are working, English is used as a common language for meetings and documents. Respecting different ways of thinking and culture, we are creating environment which diverse values can be brought proactively.



Rate of non-Japanese employees among total employment (including new graduates and mid career)



Product Responsibility and Quality Assurance

As described in our motto, "Generate trust and prosperity through quality" and "Provide products pleased by our customers," we work on quality assurance to provide our customers with better products by setting "control/criteria not to occur defects" and "control/criteria not to flow out defects."

Basic Policy for Quality Assurance Activity

Based on the Quality Policy as shown below, we defined our action policy as "Challenge to the 'Number 1' ~aiming to be a truly global company~". Based on the action policy, we promote the improvement in our duties and quality to keep our customers satisfied. In FY 2019, we rolled out stronger preventive measures and promoted standardization to improve or maintain the group-wide quality index and production index. We will keep improving the group-wide quality management system to provide our stakeholders including customers with products which can be used with peace of mind.

Quality Policy

Meet customer needs accurately, respond to a change flexibly and speedily, and provide top level products in the world to gain customers' trust from Quality, Cost and Delivery perspectives.

Quality Management System, Preventive Action, and Constitution Improvement

Quality Management System

Establishing quality management based on the IATF16949 requirements, we have a system to provide products which satisfy customer quality requirements. Our production sites in the world are also promoting the establishment of a quality management system to meet the IATF16949 standards to build an integrated quality management system in the group.

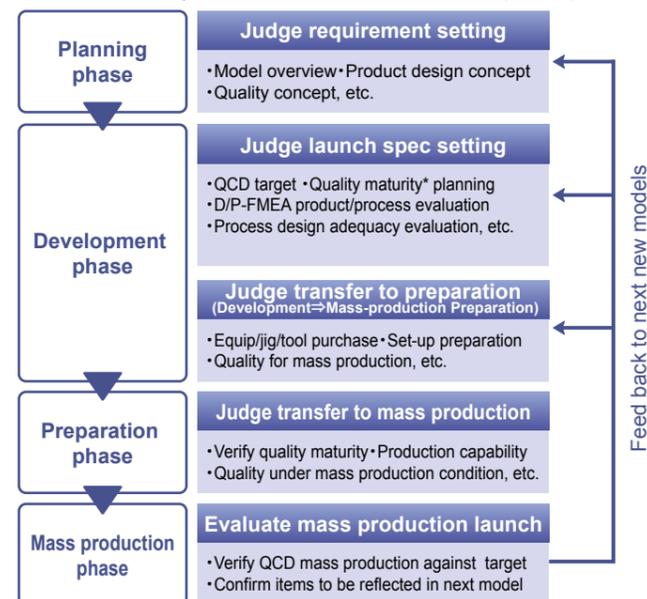
Quality Assurance for New Model Launch (M-FLO)

We adopt M-FLO, a management flow for new model development/ launch in all production sites. In accordance with the M-FLO, we carry out council for evaluation/judgment on quality, production capability, and cost in each phase from planning to mass production. Particularly, quality is evaluated and judged in each phase to make sure preventive action against quality defects is studied fully for preventing the recurrence of defects.

QCD Constitution Improvement Activity (M-QCD)

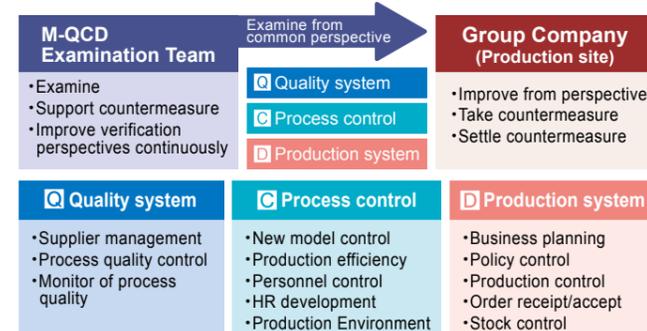
For a stronger "Monozukuri" or manufacturing, we are working on improving the corporate constitution for the higher levelling of our strengths by examining a quality/production system and process control from a common and objective perspective and by strengthening potential weaknesses.

Overview of Quality Assurance for New Model Launch (M-FLO)



*Assure quality level required in the phase after mass production phase by prototype/test.

Overview of QCD Constitution Improvement Activity (M-QCD)



Quality Training

The Company provides the employees with quality training programs according to their internal qualification and duties. Since 2019 TQM training has been provided for all administrators and supervisors to strengthen human development and circle activities. The associates not only of Quality but also of other sections throughout the Company are supported for the Quality Control (QC) exam. The number of the qualified has been increasing every year. We will establish our original quality examination system and promote the development of quality human resources at a global level.

Annual training plans

- **IATF Training**
Understanding of standards, internal auditor training, core tools
- **Quality control training**
 - TQM training
 - Junior Course
 - Foreman Course
- **QC Circle activity training**
for promoters and leaders
- **Quality training for new members**
basics of quality, practice of measurement instruments



Training on quality management

Global MM Circle (QC Circle) Activities

The Group has 409 circles (3,306 members) working on the improvement for the purpose of creating, expanding, and succeeding small-group activities as well as making a more lively and stronger workplace and corporate constitution. Outcomes of their activities are highly acclaimed in conventions held by our customers in the various countries. The "MM Circle World Convention" is organized every year to invite representative circle members from all over the world to Japan. Not only sharing kaizen know-how between attendees, but also exchanging with global associates makes the Group more cohesive and contributes to improve the competing power.



FY2019 Excellent Circle "Reduction of Stud Machining Cost" (MAP-CA, Canada)

Supply Chain

Musashi business cannot be run without the cooperation of its business partners in the world. Based on the mutual benefit concept, we are building a reliable relationship with our business partners to promote sustainability activities in the entire supply chain.

Basic Concept of Purchasing

We develop our global purchasing activities in the world. Based on compliance and equal and fair business with our business partners in the various countries and regions who provide "products with good quality at appropriate prices", we are aiming for mutual benefit. Specifically, we are developing the QCD structure and activities in ways that provide a safe and healthy working environment, and also minimize our impact on the global environment. We will contribute to finding ways to develop our local and global society in a sustainable way.

For Equal and Fair Business

We provide our business partners with an equal and fair opportunity regardless of their nationality, corporate size or business history, and establish a sound partnership with them. We are developing a strong and thorough governance and compliance system, and set up an "Open Door" system to allow all stakeholders, including the employees of our business partners, to make a suggestion to us.

Full Anti-Bribery

We never pursue profits from bribery or other improper methods. The "Musashi Compliance Guidelines" clearly indicate the basic concept of fair business to keep the employees informed. Also, all of the business partners involved in our business are kept informed periodically not to make profits for Musashi with improper ways.

Corporate Ethics Window

Also, from the employees in our business partners, "The Musashi corporate ethics window" receives consultation and suggestion on (possibility of) actions violating laws or corporate ethics in the business with us. By internal regulation, the privacy of the person/ company who made the proposal is preserved and business partners are protected so as not to suffer disadvantage by proposing. And anonymous proposal can be accepted. Our business partners are informed on the "Open Door" contact through a periodic meeting.

Basic Policy for Purchasing

- 1 Stronger governance and compliance
- 2 Stronger structure of Quality, Cost and Delivery
- 3 Compliance with the Green Purchasing Guidelines

Basic Concept of Fair Business from "Musashi Compliance Guidelines"

IX To establish sound relationship with our customers* and suppliers, we will provide honest and precise information and conduct fair and sound transactions.

[Basic Concept]

The Musashi Group will provide honest and precise data to our customers and conduct faithful promotion activities based on facts and data. The Musashi Group will conduct fair and sound business transactions complying with all applicable legislation for fair-trade including anti-monopoly, anti-corruption and anti-bribery in each country and region of operation and our internal policies regarding them.

[Action Guide]

- To avoid misunderstandings and misleading our customers, we will ensure that we fully understand our product related information by using precise information and product data, and use this as a basis for conducting fair and honest promotional activities.
- We will preserve product related information and data in accordance with internal policies, we will strive to provide information and data which our customers require.
- We will comply with all fair trading and anti-monopoly legislation applicable in the country or region of operation and our internal policies. We will not seek to create private monopolies, use improper trading restraints or any other unfair methods of business, such as improper agreements, cartels or bid-rigging, nor will we seek to abuse any dominant bargaining positions which may arise.
- We will comply with all anti-corruption and anti-bribery legislation applicable in the country or region of operation and our internal policies. We will not receive or offer improper or excessive facilities including money, gifts, services or entertainments from or to interested parties such as suppliers.
- When sourcing products or services, we will compare the terms and conditions from at least two suppliers in order to fairly determine which one to use.

* Our customers* indicate not only the customers of the products we sell directly but also the final consumers of finished goods which use our products.

Training session on "Subcontractors Act"

To ensure thorough compliance in transactions with subcontractors, a periodic training session on the Subcontractors Act (Subcontractors Delayed Payment Prohibition Act) is co-organized by our Purchasing Section and Legal Section every year. In the 2019 session, 110 associates in charge of ordering operation participated.



Session on Subcontractors Act Co-organized by Purchasing and Legal Section

Stronger Cooperation with Our Business Partners

We hold a periodic meeting with our business partners to share the latest information on the business environment and to take action for the changing environment. In the meeting we present the annual policies for "Purchasing", "Quality" and "Environment" and so on, to keep our business partners understood on our various global activities. Additionally, we hold internal exhibitions and seminars organized by our business partners to develop the new Musashi brand together with business partners.

Dialogue with Our Business Partners (Meetings/Panels)

In the annual meeting with our business partners, we provide information on the business environment surrounding us and our basic policy. In addition to our overall policy, we inform our business partners on sustainability, purchasing, quality, and environmental policies for their understanding and cooperation.



Business partners gathering

Initiatives for New Business Values

We hold internal exhibitions and seminars organized by our business partners. In the exhibitions, our business partners can propose their new technologies, materials etc. New business values are developed together with our business partners through these activities.

Quality Management Initiatives

In order to provide products that customers can use with reliance, we are working on quality control and improvement activities throughout the supply chain, aiming at "0" quality defects, in collaboration with suppliers. Based on our own quality assessment method, we constantly confirm the quality status of each business partner, plan improvement program collaborating with our business partners, and promote quality improvement activities.

Environmental Initiatives

We are working to reduce the environmental impact throughout the supply chain in cooperation with suppliers. In order to manage chemical substances contained in products together with suppliers, we issue Green Purchasing Guidelines. Additionally, to reduce CO₂ emissions, we are working to conduct periodic surveys of CO₂ emissions at business partners and sharing examples of CO₂ reduction measures.



Internal exhibitions and seminars organized by business partners

Living with Local Communities

As a global company to be trusted by its local communities, based on the concept of mutual development in society, we will continue efforts towards social contribution activities tailored to the needs of communities in each region.

Serving Meals Due to Food Shortage by Lockdown (MAP-ID: India)

MAP-ID offered meals for local people who were struggling to get food due to lockdown against the spread of COVID-19. 14,000 people, including medical staff, were served in total in 2 months. A letter of appreciation was sent by the government of Haryana.



Working Together for Medical Inhalers (MDA: Brazil)

Cooperating with its local technology company and medical institute, MDA made 200 medical inhalers used for caring COVID-19 patients. The tool engineer team worked together with the local company to make parts which contributed to the strained medical team.



Cooperation for School Renovation (MAP-IN: Indonesia)

MAP-IN took part in the school renovation program to provide children of the next generation with a better education opportunity. Classrooms, Common facilities, and restrooms were refurbished. MAP-IN also donated stationery to students.



Offering Cups and Sanitizers to School (MAP-VN: Vietnam)

MAP-VN offered cups for drinking and sanitizers for hand washing to its local school to prevent the infection of COVID-19. MAP-VN also gave stationery to children in need before entering elementary or junior-high schools.



Planting Rare Trees in the Rain Forest (MDA: Brazil)

As part of SDGs 15 "Life on Land", MDA in Amazonia located in the world biggest rain forest, planted 350 trees (including rare trees) in the industrial estate with its local environment body. This also helps MDA associates to improve their environment mind-set.



Donation to Local Schools (MAP-TH: Thailand)

MAP-TH donated stationery and snacks to 3 local schools. MAP-TH will continue support activities like this so that children can come to school with smile.



Set-up of Musashi Eco Home (MAP-CH: China)

For local environment conservation and sustainable development, Musashi Eco Home, financially supported by the industrial estate and union, was set up in September 2019. Home provides families with hand-made eco craft, nature and recreation programs 3 times a month.



Donating Uniforms to School (MAP-ID: India)

MAP-ID donated winter uniforms and shoes to its local elementary school to support children for the next generation, with cooperation of an educational institution. Stationery was also donated. MAP-ID received a letter of appreciation from the school.



Supporting National Eagle Scout (MNA: USA)

MNA supported the commemoration ceremony hosted by the National Eagle Scout Association. Eagle Scout looks for companies accepting mentorship every year. MNA accepted 2 members interested in the sales and marketing area this year.



Visiting in Mid-Autumn Festival (MAP-CH: China)

During the traditional mid-autumn festival, MAP-CH members visited 54 households in total, including families in need and elderly people living alone, to enjoy making moon cakes. The visiting bonds the company and residents to improve mutual aid.



SNS "Connect with Musashi" (MSJ: Japan)

Despite of the restriction of gathering due to COVID-19, an SNS streaming event was organized to share the same time with the associates, their families and local communities. Many of them joined the programs such as PR movie contest, charity run, and lottery.



Collaboration with Local College (MEU: Germany)

A system of collaborating with local college is being designed for the associates to improve the technological ability beyond their daily operations. An easy access to experts and support of qualification encourages the growth of each associate.



Corporate Governance

Musashi Group is working on full corporate governance to respond to social expectations and responsibilities towards us.

Concept and System of Corporate Governance

Musashi Corporate Governance

The Group considers full corporate governance as one of the critical elements for management. In October 2015, to clarify the policy for our activities and to improve our corporate value, the "Basic Policy for Musashi Corporate Governance" was defined according to each principle specified in the "Corporate Governance Code" issued by the Tokyo Stock Exchange. To respond to our stakeholders both inside and outside, we will strive to fulfil corporate governance more for the sustainable growth of the company and for the improvement of the mid/long term corporate value.

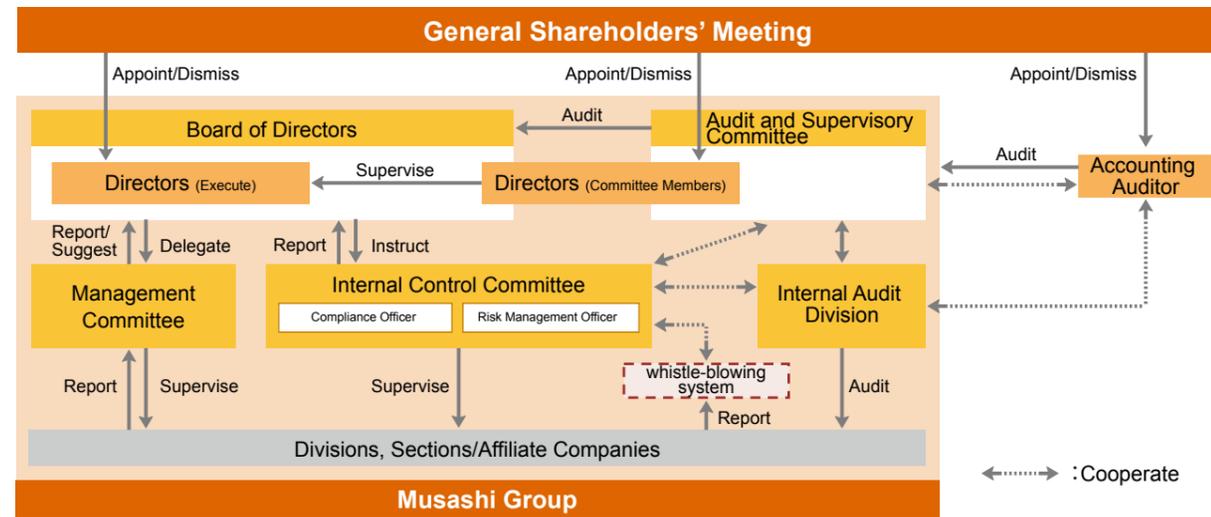
Corporate Governance System

The Company adopts an Audit and Supervisory Committee system. This enhances the auditing and supervising function of Directors to the business executions. Additionally, by involving outside Directors, including the members of the Audit and Supervisory Committee, in decision making, the transparency and soundness of management is improved. Decisions can be made and implemented promptly by delegating authority of some items resolved by the Board of Directors to the Management Committee, etc. to improve the flexibility in management judgment.

Basic Concept of Corporate Governance

Based on "Musashi Philosophy" consisting of "Spirit of Foundation," "Corporate Mission" and "Guidance for Conduct," governance which is considered as one of the critical elements for management.

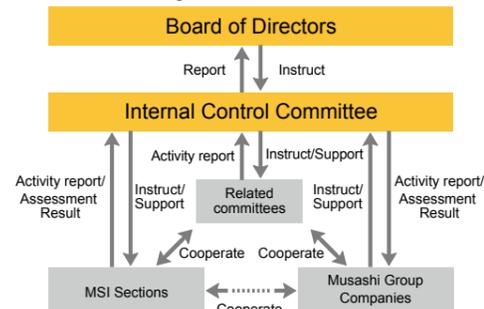
Scheme of Corporate Governance



Basic System of Internal Control

The Company has the Internal Control Committee consisting of Directors and Executive Officers which deliberates internal control matters including corporate ethics and compliance. The Internal Control Committee receives reports from related sections, committees and subsidiaries on the status of design/ operation of systems and policies in terms of compliance, information control, risk management, efficiency of business execution, and group governance. The Committee deliberates global internal control matters. Each section and subsidiary conducts self-assessment on internal control every year to clarify issues for the continuous improvement in internal control.

Schematic diagram of Internal Control



Compliance System

Basic Concept of the Compliance System

While the global business of the Group developing, to discharge corporate responsibilities including corporate ethics and compliance, each of us should be aware of society through our daily work and take initiatives.

To respect culture and customs of various countries and regions and develop global business more at the same time, "Musashi Compliance Guidelines" have been defined as shown below to specify our daily efforts. "Musashi Compliance Guidelines" written in Japanese and English as principle languages have been translated into the language of each region and country to share the understanding with all of the Officers and employees of each Group company through various education and training opportunities.

Musashi Compliance Guidelines

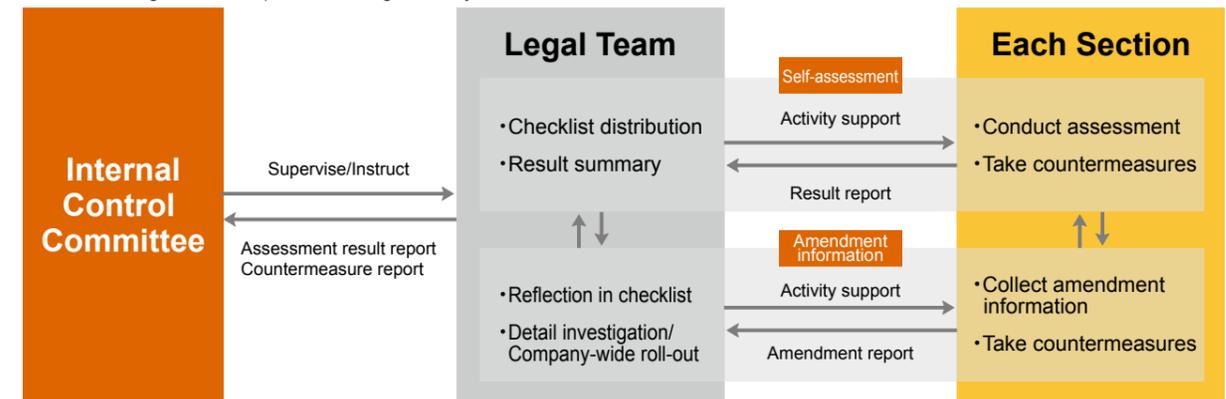
- I. We will actively participate in activities that contribute to the well-being of society.
- II. We will freely and willingly comply with all laws and regulations.
- III. We will seek ways to protect the environment.
- IV. We will strive to provide a safe and healthy working environment.
- V. We will abide by all traffic rules and regulations and drive safely.
- VI. We will respect and embrace the uniqueness and differences of each individual. We will respect human rights and will not tolerate forced or child labor, or any form of harassment.
- VII. We will do our utmost to respect and protect each individual's privacy.
- VIII. We will pay the utmost attention to the appropriate handling of confidential information including drawings, documents, information and data.
- IX. We will conduct fair and sound transactions. We will not enter into any improper trade agreements or cartels, or abuse any dominant bargaining positions.
- X. We will reject all contacts with organizations involved in violation of laws or accepted standards of responsible social behavior and safety.

Compliance System

The Company promotes a systematic approach: the appointment of a Compliance Officer who promotes compliance, and the deliberation of corporate ethics and compliance matters in the Internal Control Committee.

An annual self-assessment is conducted with a checklist to see the status of compliance. Measures are taken against high-risk items according to plans. The Company also sets a section in charge of grasping information on the amendment of laws related to our business, which informs the legal amendment company-wide immediately and reflects the self-assessment checklist.

Schematic diagram of Compliance Management system



Whistle Blowing System

The Company provides Musashi corporate ethics window, a whistle blowing window, (so called "Open Door") to receive suggestions on corporate ethics and compliance. This system is designed to preserve the privacy of the person who made the proposal and to protect him/her so as not to suffer disadvantage by proposing. And anonymous proposal can be accepted. To make it more effective, there are 3 windows; an internal window, Audit & Supervisory, and an external lawyer to provide a better environment for making suggestions.

Open Door

3 windows to receive compliance matters such as violation, misconduct and harassment

Open Door windows

- Musashi suggestion (internal)
- Musashi suggestion (Audit & Supervisory)
- External lawyer

Group Governance System

Application / Report on Business Executions

The Company has the "Regulation on Control of the Affiliate Companies" to ensure appropriate executions of its Group companies. Based on the Regulation, the Management Committee and the Board of Directors receive application/report on executions by degree of importance.

Self-Assessment

Each Group company conducts an annual self-assessment on internal control based on the checklist provided by MSI. Results and issues are shared by the MSI Internal Control Committee and section in charge of internal control to improve the entire group system continuously.

Audit Conducted by MSI Auditor

The "Internal Audit Office" independent from business executions conducts a periodic audit on the Group companies.



System to Ensure the Efficiency of Business Execution

For an immediate and optimal management judgment, officers' appointments are divided between business strategic functions and regional business operation functions. Regional operations are deployed to each region, and CEO, COO, CFO are appointed basically in each region to establish efficient operation system. Also, to improve the optimization and efficiency of the entire group, the GTM (Global Top Meeting) is held to share policies with the group companies, to identify issues for the realization of management plans, and to discuss how to respond to it.

Business Execution Functions		Regional Operation
Business Function		
Sales	Manufacturing Engineering	Europe
R&D	Quality Assurance	America
Forging Engineering	Purchasing	Japan
Production Management	PT Business	Asia
IT	L&S Business	China
Human Resource	Motorcycle Business	

*CEO, COO, CFO are appointed in each region.

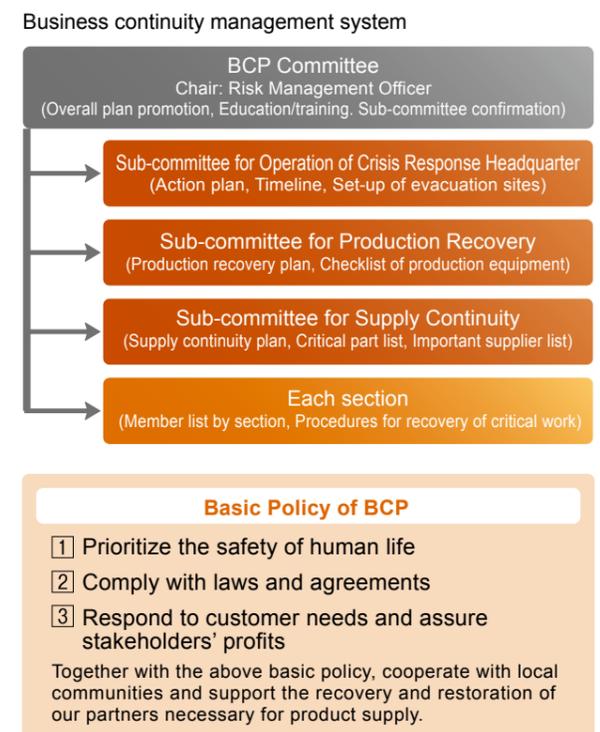
Risk Management and Business Continuity Management

Risk Management System

The Company has established a risk management system appointing one of the Officers as a Risk Management Officer who promotes systematic risk management activities. Risk management at ordinary times includes measures by each section for risk reduction/moderation and preparation of procedures in case of risk. Self-assessment is conducted on a regular basis to see the status of management for continuous improvement.

Crisis Response and Business Continuity Management

The Company has regulations which define what the organization and employees should do in case of crisis. Also, the regulations have been applied in the Group companies. In Japan, the Company has created a Business Continuity Plan (BCP) intended for a large-scale earthquake as one of the biggest risks in business continuity. Education and training based on BCP is provided on a regular basis. We reflect drill results and update/revise BCP periodically to improve the capability against risk in business continuity.



Information Management System and Security Control

The Company defines regulations on documentation control and storage period to control/store work related information. The system of security control is in place by defining a basic policy on handling. The regulation on security control clarifies "10 items to comply" including the "Need-to-Know principle" to specify rules of each item so that access, usage, copy, storage or taking out of confidential information can be limited and controlled. Training programs on security control are provided for all of the employees to ensure their understanding and a proper operation of rules/system. The Company also prepared the "Social Media Guidelines" summarizing what to be focused in official/private use of social media which has become common recently. The Group companies also apply the Guidelines to protect them and their employees from risk such as slander through social media, security violation, and lawsuit.

Basic Policy for Security Control

Information is our precious property.

Based on the "Musashi Philosophy," we protect confidentiality of the Musashi Group and customers.

- 1 Recognize that information in the Company is precious property and act accordingly.
- 2 Make full efforts to prevent risk of leak of internal / external information (including recruited).
- 3 Share the common recognition with all Musashi Group companies to work on security control.

10 items to comply

- 1 Need-to-Know principle
- 2 Confidentiality rank setting and control according to the rank
- 3 Prohibition of use of confidential information apart from work (including the retired)
- 4 Control of external use of confidential information
- 5 Copy/Distribution/Sending control of confidential documentation
- 6 Storage/Saving/Disposal control of confidential information
- 7 Control of outsourcing confidential information
- 8 Control of internal computers/networks
- 9 Control of PC/communication devises/media
- 10 Control of entry/exit

Measures for Information Security

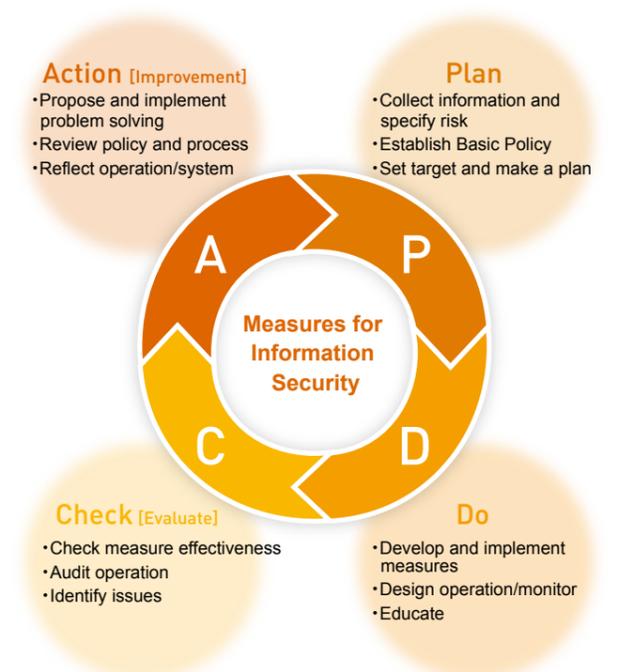
Based on the ISO27001 concept, we have issued our own security guidelines. We conduct PDCA to understand the current status and take measures through a periodic audit. We are improving our operation and action against threat at a global level.

[People]

The mind-set of each associate is important to protect information. Sharing the latest trend and examples on security, we are providing the associates with knowledge and initial action to be taken.

[Structure]

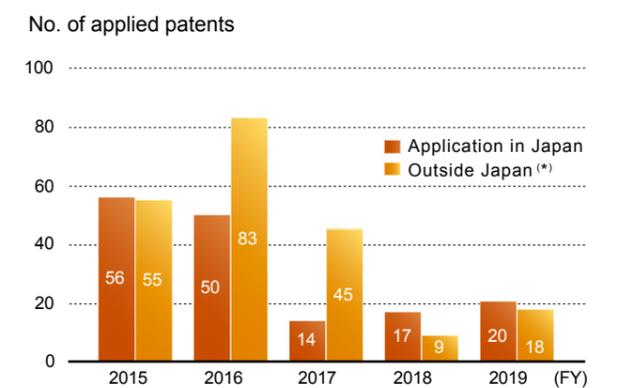
Establishing multi-layered preventive invasion systems, we protect information from the leak due to human errors and from cyberattacks.



Management of Intellectual Property

We are applying for patents domestically and internationally to utilize intellectual property effectively in global business. Also, we are working on the comprehensive protection and utilization of trademark registration and management of trade secrets.

* PCT international applications and EPC European applications are counted as applications made outside Japan as of application and counted as patents of each company after transition.





Sustainability Report 2020

Musashi Seimitsu Industry Co.,Ltd.

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