Jatco

JATCO Ltd Environmental & Social Report 2017

Looking toward a bright future for man and society, achieved through the development and production of transmissions.

Connecting the engine to the wheel and delivering power smoothly to the road.
The transmission is the “hidden star player” that matches driving conditions with the optimal gear ratio, playing a major role in the car’s driving and environmental performance.
At JATCO, we strive to develop and produce transmissions that are smoother and more environmentally friendly.
Through this, we support not only the global automotive industry, but also drivers in their everyday lives.

Jatco *The mission is passion.*

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Editorial Policy

This is our Environmental and Social Report, which is intended for all of our stakeholders, including customers, employees, business partners, and our local communities. Through this report, we hope to foster a better understanding of JATCO’s ongoing initiatives towards environmental and social improvements, and the contributions we have made so far. We also hope that your opinions and feedback will provide an opportunity for us to identify new challenges which we can address in our future initiatives. We look forward to receiving your comments and feedback.
<Website> http://www.jatco.co.jp/ENGLISH

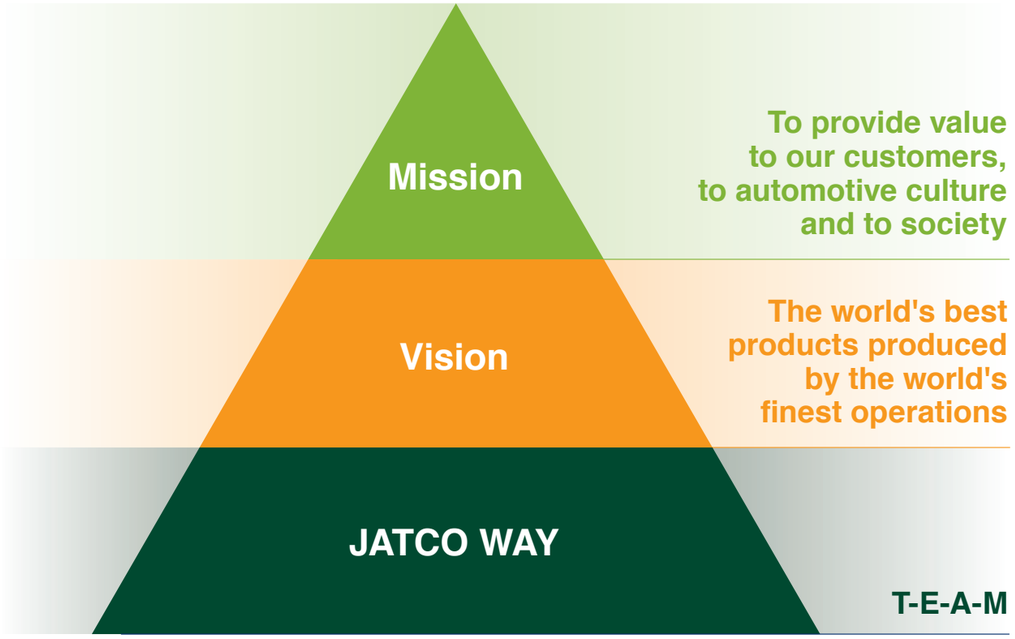
Message from the CEO

JATCO supports the sustainable development of society through monozukuri activities that contribute to the environment and society.
We aim to be the No. 1 manufacturer of automatic transmissions in the world, and to continue being a corporation that is well loved by the community.

JATCO Ltd
President and CEO
Teruaki Nakatsuka

As a manufacturer specializing in automatic transmissions for automobiles, JATCO has provided the world with numerous innovative products throughout the history of the company. Of these, JATCO has a top share of the global market in the area of continuously variable transmissions (CVT), and offers a full lineup of products that cover a wide range of automobiles from mini vehicles to large passenger vehicles. Automatic transmissions, and particularly CVTs, are certain to play an increasingly important role for bringing about the realization of clean and fuel-efficient cars. The key to solving social problems lies in the technological prowess of monozukuri companies. To date, JATCO has commercialized the world's pioneering technology for reducing CO_2 emissions. In order to further reduce the burden on the environment, we are moving forward on the development of the next transmission system. We must also continue to develop technologies that can provide support for Increasingly diverse electrification technologies for automobiles, such as hybrid vehicles, electric vehicles, and fuel cell vehicles. It is our duty to provide innovative products that are characteristic of JATCO, through refining our technological capabilities and anticipating the needs of our customers. In order to continue achieving further growth in the expanding automotive market going forward, JATCO has established the goal of becoming the "No. 1 automatic transmission manufacturer in the world." However, this goal is not merely a quantitative indicator. Rather, we aim to be a No. 1 company with substance—where all employees work energetically, and which is recognized by everyone in the world as a company where people wish to work. In addition to our development and production bases in Japan, we have also expanded our business overseas, with development facilities in Korea, United States, France, Russia, and Spain, as well as production bases in Mexico, China, and Thailand. There are differences in history, culture, and ways of thinking among different countries and regions, and the ideal image that is expected of a citizen also differs accordingly. Nevertheless, JATCO aims to continue being a company that is well loved by the residents of the local community, and which people feel positive about. Corporations shoulder the immense social responsibility of providing employment, while environmental conservation activities such as green procurement as well as energy and resource conservation are also of great importance. Companies must additionally never neglect to show consideration for local residents, such as by ensuring safety and caring for the environment in the areas around a production plant. JATCO also aims to continue contributing to society in line with the needs of the country and region, through activities such as cleanup activities, tree planting, and support for nurturing children. At the same time, we will continue to further enhance the company's support systems for employees' activities. A large number of outstanding personnel are employed at JATCO. When each individual employee acts with the desire to fulfill a useful role in the world, JATCO will present an image of a "good corporate citizen." Our goal is for each employee to demonstrate their leadership ability, take the perspective of the customer, and prevail on the global stage through technological prowess. We will continue to be a company where such human resources work dynamically as a united team. This in turn will contribute to "providing value to our customers, to automotive culture, and to society," which is JATCO's mission, and represents JATCO's ideal image as a manufacturer that aims to develop and mature to become a "good corporate citizen."

Corporate Philosophy



*T-E-A-M: Acronym of the four passages that every JATCO employee should bear in mind

In order to clearly set forth our ideal corporate image, JATCO has established a mission, vision, and the JATCO WAY (principles of action) as the company's philosophy.

As a manufacturer specializing in automatic transmissions for automobiles, JATCO aims to continue providing products of value not only to customers, but also toward the development of a sustainable automotive culture and society. We seek to further enhance our monozukuri technology and develop cutting-edge products in order to meet the expectations of customers and society. Each individual employee is working hard to promote the business with a strong awareness of this goal.

Social Responsibility

The goal for all of our activities is to "achieve a society where automobiles coexist in harmony with the environment"

JATCO complies with laws and human rights, and always acts fairly. In addition, we aim to take a proactive stance toward fulfilling our social responsibility by providing value to society through our business and products. Taking "good corporate citizen" as our mantra, we promote social contribution activities centered on the three areas of environment, education, and welfare toward being a JATCO that is well loved by the community. We are also engaged in voluntary efforts aimed at resolving social issues.

Part 1

Environmental Activities

In order to achieve our corporate philosophy of “providing value to our customers, to automotive culture, and to society,” JATCO places importance on fusing the latest technology with the “kindness” of each individual employee as demonstrated through their consideration and care toward nature and the Earth.
JATCO will continue to put effort into realizing a “society where automobiles and the environment coexist in harmony,” through the development, production, and sale of transmissions.

JATCO Ltd
COO
Seiji Honda 本田 聖二

Providing products with outstanding environmental performance, and reducing the burden imposed on the environment by our production and distribution processes, are the two aspects of environmental contribution that JATCO is striving to advance.

Global automobile production and ownership are expanding mainly in emerging economies, and automobiles featuring automatic transmissions are becoming the mainstream of this trend. Although there are still regions where automobiles with manual transmissions occupy a large market share, the demand for automatic vehicles is expected to grow more and more going forward. On the other hand, the rise in CO_2 emission volumes in tandem with the popularization of cars has given rise to concerns for the adverse impact on the Earth's environment, and we face increasingly diverse challenges to develop new forms of environmentally-friendly technologies, such as hybrid vehicles, plug-ins, electric vehicles, and fuel cell vehicles. JATCO, which plays a role in the automotive industry, is no exception. One of the answers that we have developed in response to these needs is the CVT. By developing products such as the Jatco CVT7 and Jatco CVT8, expanding transmission gear ratio, making the transmissions more compact and lightweight, and reducing friction, we have succeeded in improving fuel performance and driving performance.
In Europe, pairing CVTs with diesel engines that have excellent fuel performance is also an option. The shift toward vehicle electrification is also supported by transmissions for hybrid vehicles that make use of our unique 1-motor, 2-clutch system. While refining the basic function of transmissions, which is to transmit torque (power) efficiently from the engine to the tires, we have continued to innovate our technologies from the perspective of “total energy management” aimed at harnessing energy from the entire vehicle without incurring any waste, such as through energy regeneration. In this way, we are achieving an even higher dimension of balance between driving performance and fuel performance. In addition to providing environmentally-friendly transmissions, it is also very important at the same time to establish production and distribution processes that impose a low burden on the environment. JATCO pursues the adoption of energy-saving facilities, development of efficient engineering methods, and streamlining of production processes, and our production processes are constantly evolving. This approach remains unchanged even at our overseas production bases, including JATCO Mexico, S.A. de C.V., JATCO (Guangzhou) Automatic Transmission Ltd. in China, and JATCO (Thailand) Co., Ltd. We aim to provide high-quality products in a timely manner while taking into consideration the characteristics of the country or region, such as peripheral infrastructure and energy matters, and to carry out production globally at locations that are close to our customers. Reducing the environmental burden that arises in the transportation process is also an important issue for JATCO, and we are actively taking measures to promote the modal shift toward transporting cargo by rail or ferry, and to improve loading efficiency by consolidating cargo. In order to reduce the burden on the Earth's environment across the whole of JATCO's global supply chain, we also share our environmental philosophy with our business partners, and actively engage in initiatives that go beyond the boundaries of a corporation. We constantly remind our employees to engage in their work from an environmental perspective. Going forward, JATCO will continue to keep this “environmental perspective” in view, nurture human resources who are able to create new technologies, and fulfill our responsibilities as a corporation. By sharing this approach not only among JATCO's employees but also with the affiliated companies, we are confident that we will be able to move closer toward the realization of a “society where automobiles and the environment coexist in harmony.”

Environmental Policy

We aim to bring about the realization of a “society where automobiles and the environment coexist in harmony” through environmentally-friendly products and facilities

Realization of a society where automobiles and the environment coexist in harmony

Technology: Development of transmissions with high energy-transmission efficiency
Preventing pollution: Taking preventive measures for environmental problems, and complying with laws
Effective use of resources: Minimizing the use of resources and energy
Continuous improvement: Improving the effectiveness of our environmental management system

Jatco 2016

JATCO’s achieve ments in FY2016

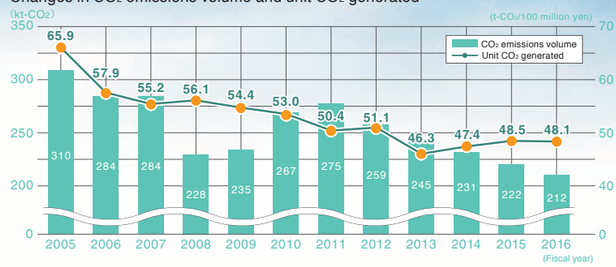
Reduction in the volume of the three major hazardous air pollutants generated
100% reduction maintained
(Compared to FY2000)

Volume of CO_2 emissions generated through our business activities in Japan
31.45% reduction (Compared to FY2005)
212,372t-CO_2

The volume of CO_2 emissions generated through JATCO’s business activities in Japan in FY2016 was 212,372t-CO_2. Unit CO_2 generated* was about 48t-CO_2/100 million yen. This was a 31.45% improvement from the baseline figure from FY2005. Our final target for FY2020 is to achieve unit CO_2 generated of 46.2t-CO_2/100 million yen.

*Unit CO_2 generated: Refers to CO_2 emissions volume per unit sales (100 million yen)

Changes in CO_2 emissions volume and unit CO_2 generated



27% reduction Total volume of waste generated
(Compared to FY2006)

Recycling rate Achieved 100%

99% reduction VOC* emissions volume
(Compared to FY2000)

*VOC is the abbreviation for “Volatile Organic Compounds,” and is the general term for volatile organic compounds that enter the gaseous state in the atmosphere.

JATCO’s technologies play a role in reducing the burden that automobiles impose on the environment.

Today, the pressing need for environmental conservation is being debated on a global scale. In order to reduce the environmental burden generated through the social activities of human communities, various initiatives are being promoted and implemented across the world. One of these is the improvement of the environmental performance of automobiles, which is a familiar part of our everyday lives. In particular, there are high expectations toward the evolution of transmissions, which are strongly linked to improvements in driving and fuel performance, and with a particular focus on continuously variable transmissions (CVTs). JATCO, as the world’s leading company for CVTs, and the only manufacturer that offers a full lineup of CVTs that cover a wide range of automobiles from mini vehicles to large passenger vehicles, contributes to reducing the environmental burden imposed by automobiles on a global scale, by supplying products with superior environmental performance to automotive manufacturers around the world.

We also care for the environment in our global business activities.

JATCO is expanding its production facilities globally in order to ensure a stable supply of products to automotive manufacturers around the world. To minimize the burden imposed on the environment by our production facilities, we apply the same environmental protection measures for our production facilities in Japan to all our branches around the world, and we are taking a proactive stance in trying out unique ideas at each facility. Furthermore, the ISO14001 environmental management standard has been acquired by JATCO Mexico, JATCO (Guangzhou) Automatic Transmission Ltd., and JATCO (Thailand) Co., Ltd. Going forward, with the aim of producing transmissions with outstanding environmental performance while caring for the environment during the production process itself, we will continue to undertake production across our global bases that minimizes the impact on the environment.

What JATCO can do for the future of the environment and automobiles

When customers choose a car, “environment” and “fuel performance” are becoming increasingly important factors in their decision-making processes. In order to create an ideal automobile that strikes a balance between driving and environmental performance, JATCO continues to tackle the challenges of transmission development. Our technologies and experience, built up through our long history as a transmission manufacturer that has always been committed to conducting research on environmental and fuel performance, provide that value through products such as the latest Jatco CVT7, Jatco CVT7 W/R, Jatco CVT8, and Jatco CVT8 HYBRID. Going forward, we will continue to develop innovative technologies for electric vehicles (EVs) and fuel cell vehicles (FCVs), and contribute to the future of the automotive society. Even in the future, we will never lose steam in tackling our monozukuri challenges, in order to bring about the realization of a “society where automobiles and the environment coexist in harmony.”

Material Balance

Obtaining data about emissions volume generated as a result of business activities

Various waste substances are generated through JATCO's business activities.
At JATCO, we are putting effort into the appropriate use of resources and reducing emissions volume, with the aim of developing a recycling society.

INPUT

Water resources

- Industrial water **2,027km³**
- Clean water **398km³**
- Ground water **924km³**

Energy

- Electricity **754,984MWh**
- Natural gas **13,120km³**
- Kerosene **11,336kL**
- Other **555kL**
  - LPG **2,999t/year**
  - etc.

Raw materials

- Aluminum material **92kt**
- Steel material / Steel plates **241kt**

Jatco

Offices (P.22) → Research and development (P.16) → Procurement (P.31) → Materials → Machining → Sub-assembly → Main assembly → Final test

Production plant (Production process) (P.20)

OUTPUT

- CO_2 **454,588t-CO_2**
- Emissions gases (production process) **1,442,262kNm³**
- Discharged water **2,581km³**
- Direct landfill waste **896t**

Transportation Trucks / Ships / Airplanes / Railway (P.23)

Delivery destination
Automotive manufacturers' assembly plants around the world

Customers

*The numbers shown are extracted from global data for FY2016

Improvement Efforts

Continuous efforts to reduce environmental burden, based on the PDCA cycle (Plan-Do-Check-Act cycle)

JATCO sets forth initiatives every year aimed at reducing environmental burden. We have established these as our environmental targets, and aim to achieve these targets. Based on the results of the initiatives undertaken every year, we establish our targets for the following fiscal year and after, thereby improving continuously on our environmental performance.

Targets and results for FY2016

Environmental objectives	Items	Target	FY2016 results	Assess-ment	FY2017 target
Continuous improvement of the environmental management system	Implementation of regular reviews	・Auditee of regular inspections Continuous registration ・Implementation of internal environmental audit: 1 time ・Environmental Committee: 2 times ・Management review: 1 time	・Auditee of regular inspections Continuous registration ・Implementation of internal environmental audit: 1 time ・Environmental Committee: 2 times ・Management review: 1 time	○	・Auditee of regular inspections Continuous registration ・Implementation of internal environmental audit: 1 time ・Environmental Committee: 2 times ・Management review: 1 time
	Training internal environmental auditors	・Number of required personnel	・4 people / Course completed	○	・Number of required personnel
Complying with laws / Taking preventive measures for environmental issues	"Zero" findings pointed out by administrative and government agencies	・Number of findings: 0 cases	・Number of findings: 0 cases	○	・Number of findings: 0 cases
	Maintenance and management of significant environmental aspects	・Number of regular reviews: 100%	・Number of regular reviews: 100%	○	・Number of regular reviews: 100%
	Implementation of education related to environmental laws	・Number of complaints: 0	・Number of complaints: 0	○	・Number of complaints: 0
	Preventing environmental accidents	・Number of B rank accidents: 0 ・Number of C rank accidents: Less than 10	・Number of B rank accidents: 0 ・Number of C rank accidents: 3	○	・Number of B rank accidents: 0 ・Number of C rank accidents: Less than 10
Effective use of resources	Promotion of energy conservation ・Amount of energy per unit sales (CO_2 conversion)	・48.05t-CO_2/100 million yen	・48.06t-CO_2/100 million yen	×	・0.0594t-CO_2/unit *Changed to total energy used per units produced from FY2017.
	Promoting reduction of the volume of waste ・Reduction in the total volume of waste generated	・Compared to FY2014 2.0% reduction	・Compared to FY2014 3.4% reduction	○	・Compared to FY2014 2.0% reduction
	・Recycling rate	・Maintained 100%	・Maintained 100%	○	・Maintained 100%
Technological development aimed at reducing environmental burden	Environmentally-friendly design [Contribution to environmental conservation and improvement in automobile fuel performance]	・Achievement rate for individual (product) issues: 100%	・Achievement rate for individual (product) issues: 100%	○	・Achievement rate for individual (product) issues: 100%
	Management and reduction of environmentally hazardous substances in products	・Maintenance of product compliance with environmental laws and regulations: 100%	・Maintenance of product compliance with environmental laws and regulations: 100%	○	・Maintenance of product compliance with environmental laws and regulations: 100%
Coexisting in harmony with the local community, society, and nature	Disclosure of information to external parties	・Publication of Environmental and Social Report	・Publication of Environmental and Social Report October 2016	○	・Publication of Environmental and Social Report
	Communication with local communities	・Annual participation in regional community contribution activities Planning and participation at production plants	・Annual participation in regional community contribution activities Planning and participation at production plants	○	・Annual participation in regional community contribution activities Planning and participation at production plants

Assessment / Achieved: ○ Not achieved : ×

MATERIAL BALANCE

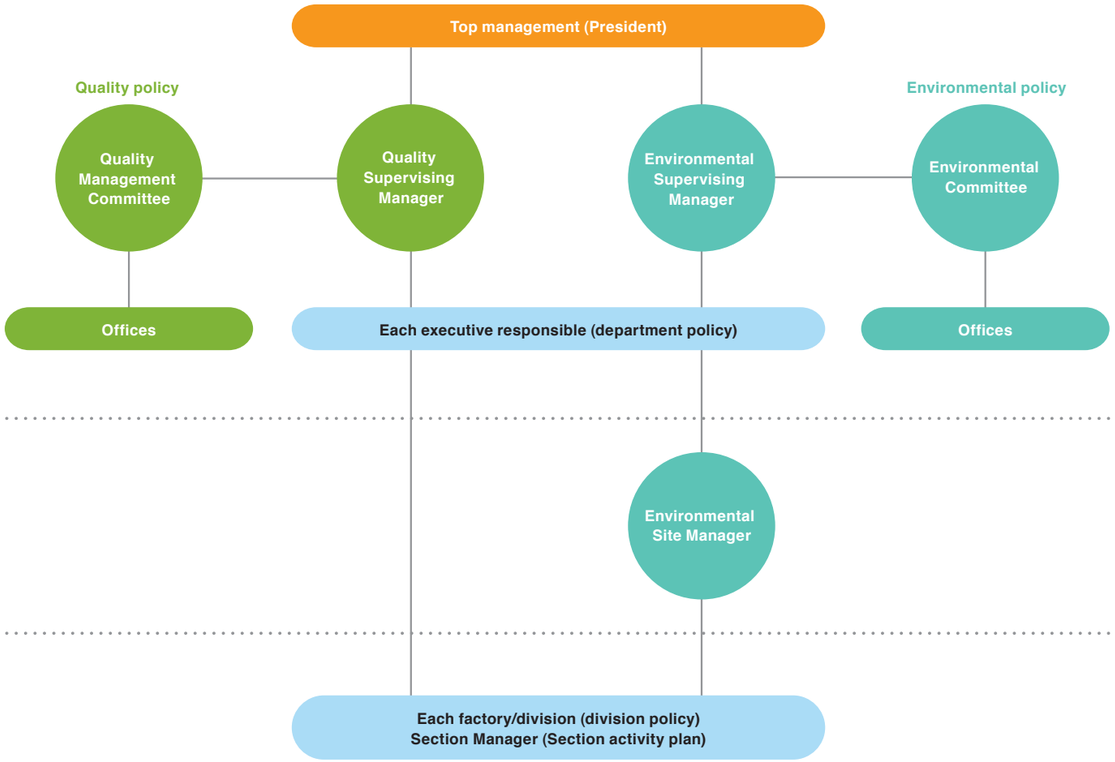
IMPROVEMENT EFFORTS

Environmental Management System

Promotion system for environmental management

JATCO has acquired the ISO14001 accreditation for its headquarters as well as its production facilities in Japan. As part of our system to promote the environmental management system (EMS), we have appointed one environmental supervising manager and 13 environmental site managers. Under the responsibility and authority of the environmental supervising manager, they promote EMS at each production facility and division. Furthermore, in 2011, we integrated our management systems for quality and environment. With regard to EMS promotion for the whole of JATCO, a comprehensive deliberation and assessment is carried out by the company-wide environmental committee, which comprises the environmental supervising manager and environmental site managers, and a follow-up system is put in place. By applying the company-wide EMS to all divisions and production facilities, we are able to align our efforts as a company, and strongly promote environmental management. This is a major characteristic of JATCO's EMS. JATCO Engineering Ltd has acquired the ISO14001 accreditation on its own. At overseas facilities, JATCO Mexico, S.A. de C.V. and JATCO (Guangzhou) Automatic Transmission Ltd. acquired the ISO14001 accreditation in 2011 and 2013 respectively. JATCO (Thailand) Co., Ltd. acquired ISO14001 accreditation in FY2015. We are now working to ensure compliance with ISO14001:2015, the updated version of the standard.

■ JATCO's quality and environmental management

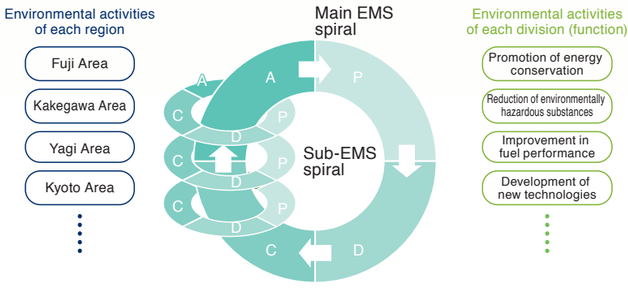


Promotion system for environmental activities

Promotion of activities that meet the needs of the local community by Environmental Committees of each region

JATCO has established Environmental Committees in each region, and the Committees carry out environmental activities that meet the needs of the local community. By mutually interlinking and operating two types of PDCA cycles—the PDCA cycle for the whole of JATCO (main EMS spiral), and the PDCA cycles for the regions and divisions (sub EMS spiral)—we strive to unite the direction of all the initiatives that are implemented. The aim is to create and provide environmental value to our stakeholders through continuous improvements, in order to improve the effectiveness of activities.

■ Conceptual diagram of JATCO's environmental activities



Creation and provision of environmental value, and realization of a sustainable society

Stakeholders: Customers, employees, business partners, local communities, etc.

Considering a medium- to long-term strategy with environmental planning subcommittee

At JATCO, as an organization that considers medium- to long-term strategy for its environmental plan, an environmental planning subcommittee was formed in 2008. In contrast to the EMS promotion system that carries out environmental management by sector, the committee was formed to examine and promote medium- to long-term strategies related to the environment that JATCO should undergo, in response to social conditions and high-level planning. While examining JATCO from an overall observatory position, the committee undergoes management and planning across the company. They are also implementing this strategy while coordinating the environmental activity planning and management of foreign bases. Within the subcommittee, it is further broken up into eight working groups that deal with product development, production, and delivery amongst other business activities, creating environmental management that utilizes function as its "axis." Within this, the environmental planning subcommittee takes the three areas of "stopping global warming," "preserving the environment," and "effective utilization of resources" as some of the most important environmental themes to JATCO, and is strengthening their work in these areas.

*1 For details related to corporate responsibility, see page 6
*2 For details related to quality policy, see page 32
*3 For details related to environmental policy, see page 10

■ Medium- to long-term environmental strategy
Conceptual diagram of review/promotion

Cross-functional activities

Medium- to long-term environmental strategy

Product Efforts: Development

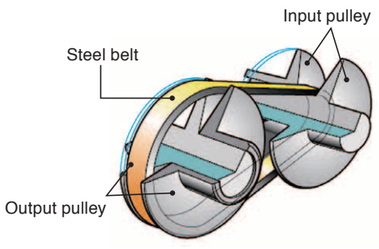
Developing CVTs with excellent environmental performance as a brand with the top market share

In order to limit the impact that CO_2 emissions have on the Earth's environment, the improvement of fuel performance for automobiles has become a top priority issue in recent years. JATCO turned its focus to CVTs with a high level of environmental performance from an early stage, and in 1997, it became the first company in the world to launch a 2-liter class metal belt-type CVT on the global market. On top of that, through repeated improvements, we have successfully created a full lineup of CVTs that cover a wide range of automobiles from mini vehicles to large passenger vehicles. We developed the Jatco CVT7 with an auxiliary transmission in 2009, and the Jatco CVT8 in 2012, as part of our efforts to update the lineup of our original models. We have further improved fuel consumption. In FY2016, JATCO produced about 4.64 million CVT units, and by the end of March 2017 the total number of JATCO CVT units produced globally had reached 35 million. As the brand with the top CVT market share in the world, JATCO contributes to reducing the burden imposed by automobiles on the environment.

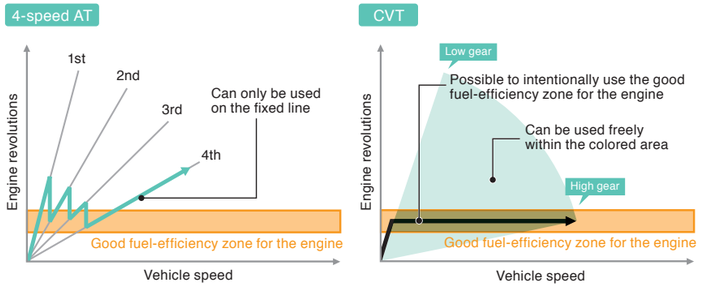
Characteristics of CVT

A CVT takes advantage of its ability to shift seamlessly to enable the selection of the optimal gear ratio for various situations. In this way, it always matches the gear ratio ideally with the driving conditions, making it possible to drive a vehicle in the most fuel-efficient way.

■ CVT mechanism



■ Comparison of the range of efficiency between 4AT and CVT



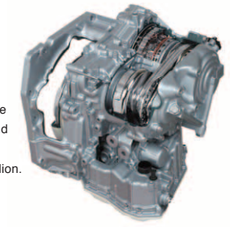
Technology that supports low fuel consumption and a comfortable driving experience

Automobiles with start-stop control reduce CO_2 emission by turning off the engine when the vehicle comes to a halt. In recent years, technology has enabled the engine to be turned off not only when the vehicle stops, but also when it decelerates, hence achieving even further improvements in fuel efficiency. JATCO has been an early adopter of this technology, providing customers with a comfortable driving experience while keeping fuel consumption at a low level. This is achieved by maintaining transmission oil pressure using an auxiliary pump to ensure a smooth restart, and engaging the clutch on inclined roads when starting the car to prevent the car from sliding backwards. Furthermore, as JATCO believes that striking a balance between low fuel consumption and excellent driving performance contributes to improving customer satisfaction, it is developing a new control system known as "Dynamic Step Shift Control" with Nissan Motor Co., Ltd. This new system not only improves the fuel performance of CVTs, but also allows the driver to operate the vehicle just like an MT or step AT, and it realizes a direct drive feeling and enhances the sense of acceleration.

Jatco CVT7

Jatco CVT7 – Realizing low fuel consumption through an innovative new mechanism

Using a concept that is completely different from conventional ideas, we have developed the Jatco CVT7, which has the widest range of possible transmission gear ratios for CVTs. Through this CVT, we aim to achieve dramatic improvements in environmental performance by expanding transmission gear ratio through the adoption of an innovative new auxiliary transmission system, thereby improving fuel efficiency through friction-reduction technology, and bringing about outstanding driving performance. The high levels of power performance and fuel efficiency provided by the Jatco CVT7 have made it a best-seller, and its demand is still growing. In August 2016, the cumulative production volume of Jatco CVT7 had reached 10 million.



Jatco CVT7 W/R

The new Jatco CVT7 W/R featuring the world's broadest gear ratio of 8.7

Based on the Jatco CVT7, the Jatco CVT7 W/R provides enhanced driving performance through the utilization of a variety of additional technologies. These include active slip control, which prevents excessive engine pick-up response when starting the engine, and D-Step control, which provides a sportier driving experience. In addition, the application of newly developed belts and enhanced pulleys has allowed us to increase the gear ratio up to 8.7, the world's broadest CVT gear ratio. The usage of an enhanced compact oil pump provides reduced friction, thereby also improving fuel efficiency.

Jatco CVT8

Improvement in fuel performance in Jatco CVT8 compared to previous models

More than 10%

Jatco CVT8 - Striking a balance between environmental performance and powerful drive

We have updated our previous CVT models and developed the Jatco CVT8 in order to support a wide range of engines in the volume zone from 2-liter to 3.5-liter class vehicles. This CVT retains the smooth driving performance offered by CVTs, while expanding the transmission gear ratio width from the previous 6.0 to 7.0*, thereby thoroughly improving efficiency across the detailed parts and reducing friction by about 40%. This has allowed us to achieve a balance between a dramatic improvement in environmental performance and powerful drive.

*2-liter to 2.5-liter class

Jatco CVT8 HYBRID

The "Jatco CVT8 HYBRID" meets the expanding range of needs relating to hybrid vehicles.

We used our original one-motor, two-clutch system to develop hybrid units specifically designed for use in FF and FR hybrid vehicles. The use of a system in which a clutch and motor take the place of a torque converter has made additional size and weight reductions possible, making the system easier to install in a wider range of vehicles, and enhancing inner city driving efficiency and quietness. Thanks to a range of technologies employed in the base unit, the outstanding Jatco CVT8, fuel efficiency and quietness at high speeds have also been further enhanced. Combining a CVT and motor makes it possible to provide direct feeling and a quick throttle response.

Toward further reduction of CO_2 emissions

Going forward, we will continue to actively develop transmission technology toward achieving further reduction of CO_2 emissions.

- Improving transmission efficiency, expanding range, and reducing weight of the CVT
- Increasing the number of steps, expanding range, and reducing weight of the step AT
- Providing support for growing vehicle electrification

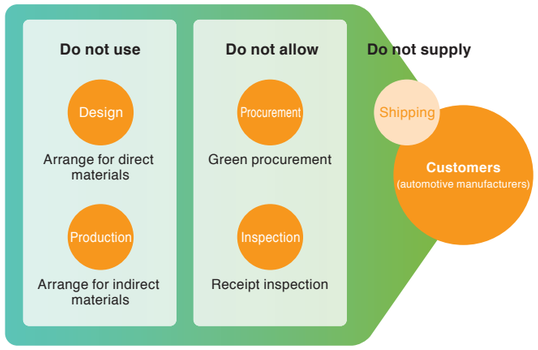
Product Efforts: Lower Environmental Impact

Thorough management and reduction of environmentally hazardous substances

Environmentally hazardous substances used in our products are controlled using JES M9001*1. Activities to reduce the use of JES M9001-controlled substances are considered to be the responsibility of each individual division. R&D and production divisions follow what is referred to as a “Do not use” policy, while purchasing and inspection divisions follow a “Do not allow” policy, and production and shipping divisions follow a “Do not supply” policy. “JES M9001” is based on GADSL*2 (a list of controlled chemical substances for the automotive industries of Japan, Europe, and North America) and Japan’s Chemical Substance Control Law (CSCL)*3, and additional control is offered for the use of chemical substances that are restricted under laws and regulations in countries in which JATCO engages in business and also those chemical substances that are restricted by regulations specified by individual JATCO customers. JATCO reviews JES M9001 at least once a year and more if necessary, and measures are put in place to manage and reduce the use and generation of environmentally hazardous substances in order to remain ahead of global environmental laws and regulations. As part of our efforts to comply with GHS*4, labels are used to ensure the safe handling of the substances, and SDS*5 are prepared to protect the environment and the health of our employees.

*1 Internal technical standard covering restrictions on the use of specified materials
*2 GADSL: “Global Automotive Declarable Substance List”
*3 Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
*4 GHS: “Globally Harmonized System of Classification and Labeling of Chemicals,” referring to a standard global system for the classification and labeling of chemicals.
*5 SDS: “Safety Data Sheets”
*6 IMDS: “International Material Data System”

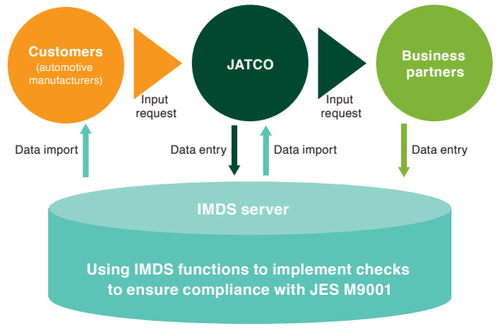
■ Key points in activities to reduce environmentally hazardous substances



Spreading management and reduction initiatives across the supply chain

It is also important to take thorough steps to spread the management and reduction of environmentally hazardous substances across the supply chain, including to business partners. Accordingly, JATCO distributes its “Green Procurement Guideline” covering the specific requirements for suppliers in order to raise awareness throughout the supply chain.

■ IMDS*1 framework



■ Status of efforts to reduce environmentally hazardous substances

Regulated chemical substances	Status
Lead	No longer in use (excluding exemptions)
Hexavalent chromium	No longer in use
Mercury	No longer in use
Cadmium	No longer in use
Asbestos	No longer in use
European REACH regulation*2 (substances requiring approval)	Currently reducing usage

*1 IMDS: “International Material Data System”
*2 “REACH” is an abbreviation of “Registration, Evaluation, Authorization and Restriction of Chemicals”, a European system for managing chemical substances.

Product Efforts: Resource Reuse

3R initiatives for products

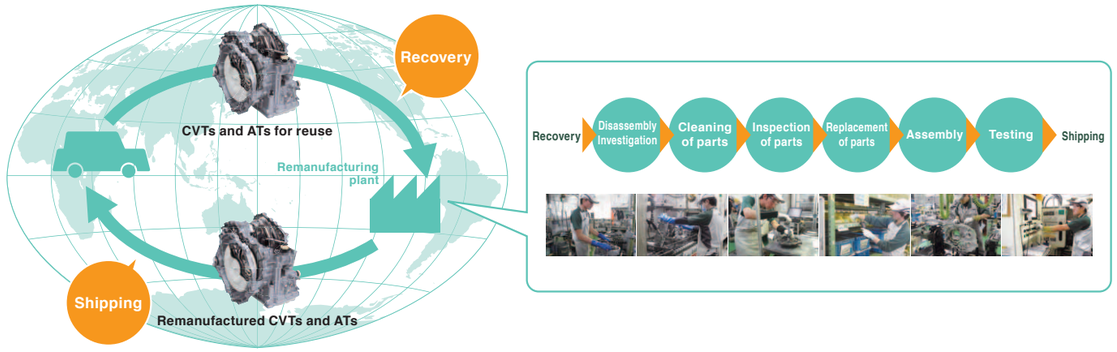
The term “3R” derives from the first letter of the three keywords for building a recycling society—Reduce, Reuse, and Recycle. JATCO’s 3R initiatives are shown in the following diagram.

■ 3R for products

Remanufacturing system

JATCO’s remanufacturing activities (remanufacturing business) involve recovering CVTs and ATs from the market, disassembling and repairing them, providing quality assurance, and supplying them back to the market. We have engaged in these activities since 1989. By recycling and utilizing the resources that are required in CVT and AT production, we contribute to the conservation of the Earth’s environment. In addition to establishing remanufacturing business bases in Japan and Mexico, we have also concluded a technological assistance contract with a local repairing company in China and commissioned the company to undertake repairs of products recovered from the market. Going forward, we will continue to put effort into improving the recycling rate of parts that are recovered, with the aim of protecting the environment.

■ Processes in the remanufacturing business



LOWER IMPACT

RESOURCE REUSE

Production Efforts

Generation of greenhouse gases in the production process by FY2050

50% reduction

JATCO is pursing the introduction of energy and resource-saving facilities, aimed at achieving a balance between improving efficiency and reducing environmental burden in the production process.

Promoting energy and resource conservation activities in pursuit of greater efficiency in the production process

JATCO carries out production in an integrated manner, from the purchase of raw materials, rough material process, machining process, and assembly process, to the completion of the unit. However, when planning for a new product or developing a new technology, we are mindful of the Earth's resources. In particular, with the aim of tackling priority issues such as reducing CO_2 emissions and managing hazardous substances through the active adoption of new technology, and recycling goods through the utilization of idle facilities, we are putting effort into developing innovative technologies to shorten work processes and develop highly-efficient processes with a low environmental burden, as well as adopting and making the shift toward energy and resource-saving facilities.

Innovating production and engineering processes, and strengthening the development of innovative technologies

In the development of next-generation technologies, JATCO has established the reduction of CO_2 emissions as one of our principle goals, and is putting in place initiatives toward the achievement of this goal. Our target is to reduce the emission of greenhouse gases by 50% by 2050, for both the production and development processes. One of these is the production and engineering process for the latest CVT. We have further reviewed the production and engineering processes used to date, and succeeded in reducing the production lead-time significantly. With regard to all other parts, the development and production divisions are working together to minimize the emission of CO_2.

Furthermore, we are also putting effort into balancing product performance and improving productivity by promoting "production design," which involves the production technology division in the design of the product from the development phase. We have additionally taken steps to purchase molten metal at the point of die-casting, abolished the shaving process for gear parts, developed the next-generation vacuum carburizing furnace, changed materials, and thin-walled die-cast to reduce the weight of the unit. We have taken up the challenge of achieving further technological breakthroughs.

Protecting the Earth's environment through cross-industry collaboration

JATCO is actively promoting collaboration with companies from different industries as part of a new initiative for protecting the Earth's environment. Since FY2005, we have worked jointly with Tokyo Electric Power Company to introduce NAS battery facilities. NAS charges in the nighttime when power consumption is low, and utilizes this electric power during the daytime when load is high. This helps to reduce excess operation of the power plant, and brings about efficient power consumption. We have also collaborated with Chubu Electric Power since FY2007 to monitor the combustion conditions in aluminum melting furnaces in real-time, and jointly introduced a system that constantly maintains the optimal conditions. We are working to spread these initiatives laterally across the company in order to achieve further reduction.

*NAS battery: An accumulator that uses liquid sodium, liquid sulfur, and special ceramics

NAS battery facility

Heat monitoring system

Launch of the expert diagnostic team for energy conservation

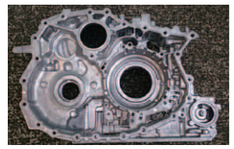
JATCO Plant Tec Ltd and JATCO have jointly established an expert facility diagnostic team for energy conservation (J-ESCO* Team), and the team is now actively engaged in activities. To ensure the effective use of energy at our overseas branches by conducting diagnostics on energy-saving equipment, the team started its activities at JATCO (Guangzhou) Automatic Transmission Ltd. in FY2013, and conducted diagnostics at JATCO Mexico, S.A. de C.V. in FY2014. In December 2015, the team was authorized to act as an energy-saving diagnostic team for Nissan Group, and the team's name was changed to "NESCO-JTC" *2. The team will be sharing information globally and will be further accelerating its energy-saving activities.

*J-ESCO: Abbreviation of JATCO Energy Service Company
*2 NESCO-JTC: Abbreviation of Nissan Energy Saving Collaboration-JATCO

Reduction in volume of CO_2 emissions for FY2016

Adoption of compact and lightweight casing parts — Approx. 68 t-CO_2

Thin casing parts are used in Jatco CVT8. In the development of this model, "production design" was strongly promoted in the development and production technology divisions from the development phase. By adopting the optimal shape and reducing the thickness of some sections (which determines the limitations of production), we have succeeded in reducing weight by 10% compared to previous CVTs in the same class.



Transmission case with reduced wall thickness

Reducing environmental burden through direct carving of the mold — Approx. 58 t-CO_2

Due to the complicated shapes of the molds used in the die-casting and forging processes at JATCO, production had previously been carried out using electro-discharge machining. Today, however, we are moving toward direct carving with direct machining at the machining center. By improving the machining program and cutting conditions, we have also significantly reduced machining time and the volume of industrial waste generated.

Die-cast mold, produced through a direct carving process

Adoption of production design into the machining and heat treatment lines — Approx. 3,200 t-CO_2

For Jatco CVT7, "production design" was promoted by involving the production technology division in the product design process from the development phase. By reducing the number of processing locations as much as possible on the pulley machining line, we have significantly reduced the number of production machines and cycle time. By incorporating the requisite specifications in the heat treatment line, we have also significantly reduced cycle time on this line. These measures have dramatically increased current production efficiency.

Machining line

	Line for previous units	Line for new units	
Number of equipment	No. of units 49 × 3.5 Modules	**No. of units 27 × 3.5 Modules**	▲43%
Annual CO_2 emissions	2,919t/year	**1,740t/year**	▲40%

Heat treatment line

	Line for previous units	Line for new units	
Cycle time	100%	**66.6%**	▲33%
Annual CO_2 emissions	6,244t/year	**4,164t/year**	▲33%

Converting from hydraulic press fitting to servo (electric) press fitting — Approx. 46 t-CO_2

In conventional hydraulic press fitting, which is a part of the assembly process, a large amount of power is consumed as the pump in the hydraulic generator is constantly running. In addition, much noise and heat is generated. Hence, JATCO is moving toward converting to the use of electric press fitting using a servo. As the servo does not require the pump to be in constant operation as in a hydraulic press fitting, it successfully minimizes the amount of power consumed, as well as the noise and heat generated.

Use of regenerative energy and energy-saving equipment, and visualization of the amount of power consumed — Approx. 45 t-CO_2

Through the use of regenerative energy from the motor and the adoption of energy-saving equipment such as LED lighting, we have succeeded in minimizing the amount of power consumed. We are also promoting activities to reduce power consumption by visualizing power consumption for the main and sub-lines respectively, and by enhancing awareness of energy conservation.

Enhancing lighting facilities at each production plant (Reduction in power consumption: 145MWh) — Approx. 54 t-CO_2

Reducing CO_2 emissions by enhancing our lighting equipment is also one of the main items in our energy conservation initiatives, and is proceeding according to plan. As the rate of energy consumption by lighting equipment in production plants is by no means low, we have focused on improving ceiling lights for each production plant. To ensure the brightness of the working environment, we have put in place measures such as making the conversion to energy-saving equipment, dimming the illumination, and turning off the lights appropriately.

Use of residual heat in the forging process — Approx. 100 t-CO_2

At JATCO, we had previously adopted a process that cools the parts once after hot forging, heats the parts once again, and carries out heat treatment for rough materials. Currently, we are promoting the transition to a heat treatment format (auto-thermal annealing) that uses residual heat after hot forging. This has allowed us to integrate the heat treatment processes that had been carried out on separate lines into one line, thereby omitting the need for logistics between the lines.

Previous line

Receipt of steel material → Cutting → Press → Heat treatment → Shot → Lubrication treatment → Cold press → Inspection of exterior → Palletizing → Next process

New line — Line integration

Receipt of steel material → Cutting → Press → Heat treatment → Shot → Lubrication treatment → Cold press → Inspection of exterior → Palletizing → Next process

Office Efforts

Promotion at offices

As part of our energy conservation initiatives at offices in Japan, we promote Cool Biz from June to September by encouraging employees to wear light clothing and raising the temperature settings of air-conditioning equipment at offices, and Warm Biz from December to March by encouraging employees to put on warm clothing when they feel cold and reducing the temperature settings of heating equipment. Through the visualization of power consumption, it is now possible for all employees to easily verify the amount of power consumed at the respective regions. This in turn contributes to voluntary efforts by each individual employee to engage in energy conservation initiatives.

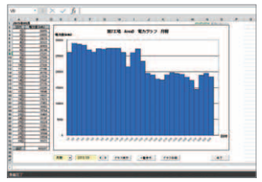
COOLBIZ

WARMBIZ

Educating employees through the use of environmental contents

With the aim of raising environmental awareness among employees, we have set up a dedicated environment webpage on our portal site for employees. In addition to encouraging employees to participate in environmental events within and outside the company, we also post contents to help employees learn about environmental issues in a light-hearted manner, such as JATCO's unique eco certification and eco-drive certification. There is also a section on the power consumption visualization section, which sheds light on the situation of actual power consumption, and a section on power cost reduction, which provides information about energy conservation.

eco certification


The power consumption visualization section

Reduction in volume of CO_2 emissions for FY2016

Promotion of energy conservation activities based on ideas from the employees

9,888 t-CO_2

JATCO has established targets for reducing CO_2 emissions at each place of business, and environmental officers as well as many employees brainstorm and come up with and implement ideas for energy conservation. For ideas that have been implemented and which have proven to be particularly effective, we take the initiative to share the ideas and improve motivation, through means such as introducing them on the internal environment website.

Adoption of solar power systems, and roof greening initiatives

Approx. 5 t-CO_2

JATCO has installed a solar power system (10kW), on the rooftop of the head office. The power generated through this is used as electricity to drive the air-conditioning equipment. We have also carried out roof greening initiatives by harnessing the drop in the building's temperature brought about by plants, which contributes to a reduction in the amount of power consumed by air-conditioning facilities during summer.


Solar power systems


Roof greening initiatives

Logistics Efforts

Volume of CO_2 emissions generated through transportation in FY2016

13 % reduction
(Comparison with FY2010)

Promotion of a modal shift

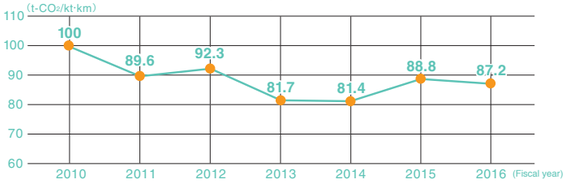
JATCO utilizes green logistics with the aim of reducing CO_2 emissions, and since 2012, we have achieved an average reduction of 1.4%. In order to reduce the volume of CO_2 emissions arising through the product transportation process, we have been promoting a modal shift in logistics since 1994 while working on gaining the understanding of customers in Japan. Specifically, we have switched from using trucks to using ferries for transporting products to customers in Kyushu, thereby reducing CO_2 emissions by 75%. On top of that, for the transportation of procured parts to Shizuoka, where JATCO's production facility is located, we have also switched from truck to rail for transportation from Hiroshima (approximately 780 km away) starting from FY2005, and from Okayama (approximately 680 km away) starting from the beginning of FY2006. As a result, the shipping load amounting to seven 10t trucks per day is now transported in 16 containers, contributing to reduction in CO_2 emissions of 83.3% per year. We will continue to pursue this modal shift and work to improve load efficiency to reduce the number of trucks and other vehicles used for shipping.

*Unit CO_2 emissions generated: CO_2 emissions (t-CO_2) ÷ Transportation load (kt/km)


Maritime transportation by ferry (Photo source: MOL Ferry Co., Ltd.)


Land transportation by railway

■ Changes in unit CO_2 emissions generated (Index)



Improvements in transportation and packaging materials

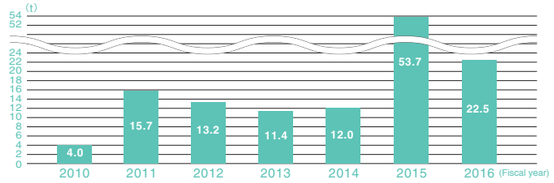
As part of our measures to improve the loading ratio, which contributes to a reduction in the number of trucks used, JATCO is taking steps to improve the packing of purchased parts for delivery. Plastic cushioning material that is used as plastic containers and for protecting products in their transportation and storage, but which have become unusable as a result of deterioration or product changes, had previously been disposed of as industrial waste. However, after 2004, JATCO has begun reusing this material on other products. We have also received cooperation from companies engaged in the production of plastic to further reduce the volume of waste generated, such as by recycling plastics as raw materials.

■ Improving packaging of parts purchased


In the example, we have eliminated wasted space and improved transportation efficiency for goods. In addition, we have also improved safety in the handling of the goods.

At the same time, we are also promoting clean activities for containers.

■ Changes in the reuse and recycling of plastic containers



OFFICE EFFORTS

LOGISTICS EFFORTS

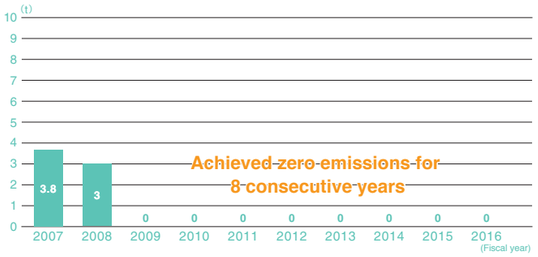
Waste Reduction & Substance Management

Activities to reduce the volume of waste generated

Volume of direct landfill waste
Implementation of zero-emission activities
Achieved zero emissions

At JATCO, we have incorporated the goal of achieving zero emissions of waste into the management of activities to promote the reduction of waste, in our environmental management system (ISO14001). We are promoting initiatives toward the achievement of this goal. As a result of the initiatives, we have reduced the volume of direct landfill waste to “zero” at our places of business in Japan. Overseas, we are also putting effort into reducing the volume of direct landfill waste.

■ Changes in the volume of direct landfill waste (Japan)



Recycling rate
Recycling waste through thorough efforts to separate garbage
Achieved 100%

As part of our zero-emission initiatives, JATCO has abolished disposal of waste through incineration and landfill, and is promoting thermal recycling (conversion to fuel) and material recycling (reuse and recycling). We are also putting efforts into separating garbage in order to enable the effective utilization of waste as resources. Through these initiatives, we have succeeded in achieving a 100% recycling rate at our places of business in Japan.

Total volume of waste generated in FY2016
Initiatives to reduce waste through company-wide participation
31% reduction (Compared to FY2005)

JATCO puts effort into reducing the volume of waste by considering “Can it be reduced? Can it be reused? Can it be used for other purposes?” To make it easier to recycle items that we have no choice but to discard, we establish separation standards and dispose of garbage in line with these standards. At each place of business, we have established targets of reducing the total volume of waste, registered ideas for initiatives implemented at each workplace, and shared information on reducing waste to raise the level of motivation.

Management of chemical substances

VOC emissions for FY2016
Management of volatile organic compounds
Approx. 99% reduction (Compared to FY2000)

We have implemented measures against volatile organic compounds (VOC) to achieve the target of reducing total VOC emissions by 30% (compared to FY2000) by FY2010, based on the action plan formulated by the Japan Auto Parts Industries Association (JAPIA). As a result of these measures, we succeeded in reducing VOC emissions by 98% by FY2006, 99% in FY2010, and 99% again in FY2016.

Measures against soil and groundwater pollution

As part of our measures against soil and groundwater pollution, we have completely abolished the use of organic chlorine-based solvents, and are currently monitoring past usage records of organic chlorine-based solvents and impact on the environment.

Emissions of the three major hazardous air pollutants for FY2016
Reduction in the three major hazardous air pollutants
100% Maintaining reduction levels (Compared to FY2000)

With regard to the emissions volume of the three major hazardous air pollutants*1, we achieved 100% reduction in FY2006, and have successfully maintained this even in FY2016.

Management of PRTR*2 substances

The volume of PRTR chemical substances handled by JATCO, calculated for the volume discharged and transported by domestic production facilities, is shown in the following table.

■ Volume of PRTR substances handled and discharged (FY2016)

Classification	Chemical substance	Volume handled	Volume discharged			Volume transported Waste
			Air	Water	Soil	
Specific Class I Designated Chemical Substances	Dioxin (mg-TEQ/Nm³)	—	23.3	0	0	0.019
	Benzene	1,120	1.4	0	0	0
Class I Designated Chemical Substances	Ethylbenzene	3,602	11	0	0	0
	Xylene	134,454	38.8	0	0	0
	1, 2, 4-Trimethylbenzene	139,743	0.3	0	0	0
	1, 3, 5-Trimethylbenzene	2,334	9.6	0	0	0
	N-hexane	2,114	5.8	0	0	0
	Toluene	50,633	33.5	0	0	0

Unit: kg (mg-TEQ/Nm³ for dioxins)

*1 Three major hazardous air pollutants: Dichloromethane, trichloroethylene, tetrachloroethylene
*2 PRTR: Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

Responding to Water Risk

Initiatives for the effective utilization of waste water purification and water resources

JATCO’s production plants comply with standards for discharged water established by the national and municipal governments, and have also drawn up even more stringent internal standards for purification. By combining facilities for activated carbon adsorption, ultrafiltration, high-speed aggregation precipitation, contact oxidation, sand filtration, and pressure flotation, we are continuing to maintain a high level of quality in our purification activities. Furthermore, in line with the Nissan Green Program 2016 launched by Nissan Motor Co., Ltd., JATCO commenced activities in FY2014 to reduce water consumption as a countermeasure against water depletion on a global scale.

In FY2016, we succeeded in reducing water consumption by 7.3% compared to FY2014.


Water treatment facilities

Reusing discharged water through the adoption of cold water circulation equipment

JATCO promotes the reuse of discharged water, and has adopted cold water circulation equipment to purify the water that is used for cooling and cleaning production equipment, as well as for thinning cutting oil. Water purification equipment was introduced for all 48 units in FY2015, resulting in a 70,000t reduction in water consumption in FY2016.


Cold water circulation equipment for forging facilities

Implementation of rainwater measures

Rainwater that falls on the premises of the production plants is discharged through drainage outlets directly into rivers. Employees monitor the situation at the drainage outlets to prevent rainwater that has been polluted by oil and grease from roads and buildings in the premises from flowing into the rivers. To enable prompt identification of the drainage outlets, employees have manually color-coded the outlets. This not only prevents polluted water from accidentally flowing through, but also raises awareness among all employees that the drainage outlets lead to rivers. In case of incidents where oil leakage from employees’ cars and vehicles transporting parts and products within the premises flow to the drainage outlets, gates have been installed at the connecting points with rivers, in order to prevent the pollutants from flowing into them.


Color-coding of drainage gutters by employees

Consideration for safety in the transportation of polluted water

JATCO not only takes steps to reduce the incidences of water pollution, but also gives consideration for safety when transporting polluted water to treatment facilities. Measures are put in place at facilities where parts are cleaned to enable the repeated reuse of water after pollutants have been removed from it. After reusing the water for several months, it is then transported to the treatment facility by truck. In view of the fact that the method of transporting polluted water to treatment facilities through pipes and gutters buried under the ground is easily impacted by changes over time, and gives rise to credibility issues, we are also putting in place improvements by transporting this water to treatment facilities using pipes installed above ground, which are visible to employees.

REDUCTION & MANAGEMENT

WATER RISK

Environmental Communication

Proactive stance toward information disclosure

JATCO takes a proactive stance toward disclosing information about its environmental initiatives. In order to gain widespread understanding of our environmental conservation initiatives, we have published the Environmental Report since 2005. From 2009 onwards, we have expanded the focus to include societal topics, and changed the title to the “Environmental and Social Report.” The 2015 report, which marked the milestone of 10 years since the first publication, underwent a complete design revision to make the report easier to read and understand. The various initiatives included in the Environmental and Social Report are also published on JATCO’s company website. Additionally, we are putting further effort into circulating the information more widely to society by actively registering information on browsing and search websites for CSR report and environmental reports on the Internet.

Environmental and Social Report: http://www.jatco.co.jp/ENGLISH/society/reports.html
JATCO's environmental initiatives: http://www.jatco.co.jp/ENGLISH/society/environmental/

Thinking about and nurturing the environment together with the local community

Hosting of factory tours (Shizuoka Prefecture)

We host factory tours for numerous organizations, including children’s groups, as part of our open factory initiative. We also implement a 3R policy (reduce, reuse, recycle) in the manufacturing workplace in order to make effective use of renewable resources, including detailed separation of waste produced during manufacturing and the reuse of recyclable materials in new products. Accordingly, our factory tours include an introduction of these environmental initiatives in addition to the tours of manufacturing processes. We also run a program that lets visitors experience the process of converting waste water to clean water using an experimental device as part of the introduction to the system used by our water processing facility.

Cleaning of Koike River (Shizuoka Prefecture)

JATCO proactively engages in social contribution and environmental protection activities at each of its locations. For example, our factory in the Kambara district has engaged in cleaning and grass cutting for twelve consecutive years since 2005 to maintain the banks of the Koike River which flows near the factory. The entire staff of the Kambara Factory, which is located in a residential area, takes the time to follow the local cleaning schedule to work with the community. The factory also distributes decorative plants purchased with the proceeds from aluminum cans collected by staff as a sign of gratitude for the local community, and to help local children develop a deeper interest in the importance of greenery.

Protecting Mount Fuji, a World Heritage site

The JATCO headquarters are located in Fuji City at the foot of Mt. Fuji, and the company carries out numerous environmental activities to protect this registered World Heritage.

For example, the company works with the staff of the Fuji City Hall to plan and implement the cleaning of climbing route 3776 on Mt. Fuji leading from sea level to the top of the mountain. Another activity to nurture the mountain is the planting of beech trees near its base in collaboration with other local companies.

We also support the Waterside Expedition to teach the importance of protecting Mt. Fuji’s abundant water resources through such activities as releasing fish fry into rivers and observing living creatures and the mechanisms of springs, while also cooperating with universities, the prefecture, and the city to work on environmental education initiatives.

We also work with local NPOs and companies to plan and implement grass cutting at river banks and the planting of flowers to keep the local river in a pristine state that will be loved by local residents.

Our employees volunteer their time proactively to participate in all of these activities, which provides them with a great opportunity to think about the environment.

Releasing of sweetfish fry into the Tajuku River

Planting red tiger lillies at Takikawa

Mt. Fuji Clean Route 3776

Cleaning at Miho no Matsubara

Waterside Explorers at Ukishimagahara Natural Park

Planting beech trees at the foot of Mt. Fuji

Reducing Environmental Impact

JATCO Mexico's environmental management system

Since its establishment in April 2003, JATCO Mexico, S.A. de C.V. has promoted various environmental initiatives, including formulating an environmental policy, energy conservation activities from the power supply side, and the promotion of garbage separation to improve the recycling rate. In particular, since 2009, it has established an environmental management system, and acquired the ISO14001 accreditation in May 2011. Three committees have been established to oversee the environmental management system—the Environmental Committee, and under that, the Environmental Legal Requirements Sub-Committee, as well as the Energy Conservation Sub-Committee. The Environmental Committee is led by the President and Vice-President of the company, and comprises representatives from the respective divisions. It engages in comprehensive deliberations, assessments, and follow-up on activities related to the environment. The Environmental Legal Requirements Sub-Committee deliberates on and promotes efficient operation for each group that uses electricity, water, gas, or other power sources. Annual environmental targets are also established with the aim of reducing environmental burden. Furthermore, by reflecting on the previous year and setting targets for the next fiscal year, continuous efforts are also made to improve on the environmental management system.

■ JATCO Mexico's energy consumption

	FY2015*	FY2016*
Electricity	206,514,034kWh	219,253,959kWh
Natural gas	3,179,071m³	3,534,742m³
Propane gas	162.65t	322.26t
Water consumption	462,929m³	371,224m³

*Increase in energy consumption as a result of plant expansion on the second site

Environmental management system of JATCO (Guangzhou) Automatic Transmission Ltd.

JATCO (Guangzhou) Automatic Transmission Ltd. began establishing its environmental management system from 2013, and acquired the ISO14001 accreditation in March 2014. With the aim of realizing a "society where automobiles and the environment coexist in harmony," it also established an Environmental Committee and ISO Office to manage the environmental management system. The Environmental Committee comprises the General Manager, respective Assistant General Managers, and representatives from each division, and conducts comprehensive management, assessments, and follow-up on environmental activities. The ISO Office is established under the engineering division, and carries out assessments on compliance with environmental legal requirements as well as the implementation of other everyday items.

■ Energy consumption of JATCO (Guangzhou) Automatic Transmission Ltd.

	FY2015	FY2016
Electricity	81,057,025kWh	89,625,288kWh
Natural gas	–	–
Propane gas	–	–
Water consumption	149,621m³	160,121m³

Environmental management system of JATCO (Thailand) Co., Ltd.

JATCO (Thailand) Co., Ltd., which started production in September 2013, has been working on creating an environmental management system since its establishment and in February 2016 acquired ISO14001 accreditation. JATCO (Thailand) Co., Ltd. has also formulated a plan called "JATCO Thailand Green Action" with the aim of further reducing the burden imposed on the environment. In line with this, it plans measures such as the following to reduce environmental load in collaboration with local companies.

1. Purchasing molten metal in place of using aluminum ingots
2. Introduction of vacuum carburizing heat treatment facility
3. Purification of water discharged from the production plant
4. Reuse of resource materials through separation and recovery
5. Maximizing the proportion of green spaces on the plant premises

■ JATCO Thailand's energy consumption

	FY2015	FY2016
Electricity	24,982,400kWh	25,264,400kWh
Natural gas	–	–
Propane gas	31.43t	30.02t
Water consumption	60,422m³	58,052m³

Part 2

Social Activities

JATCO strives to be a company that is widely accepted by society,
and to that end, engages in various activities.
In order to build relationships of trust with all stakeholders and resolve
the various issues confronting our society,
we aim to be a corporation that is well loved and trusted by the people,
and which contributes to the development of a sustainable society.

Our Stakeholders

JATCO's stakeholders

JATCO's business activities are founded upon the trust between the company and its various stakeholders. We engage in business activities while giving consideration to the opinions of all our stakeholders and the needs of society, and we consider it important to build relationships of trust. JATCO responds to changes in the needs of customers, and provides products of value while positioning safety and peace of mind as the top priority. We also pursue true customer satisfaction by engaging in the highest standards of monozukuri in the world. Through fair trading with our business partners based on mutual trust, we are taking steps toward achieving mutual growth and the realization of a "society where automobiles and the environment coexist in harmony." We also aim to develop human resources to match the needs of the times, respect diversity, and create a motivated workplace that each individual employee can experience growth in. We will continue to contribute to the local community and engage in communication activities that are deeply rooted in the community, in order to be a good corporate citizen in all the regions in which JATCO conducts business.

With Our Business Partners

Building partnerships of mutual growth

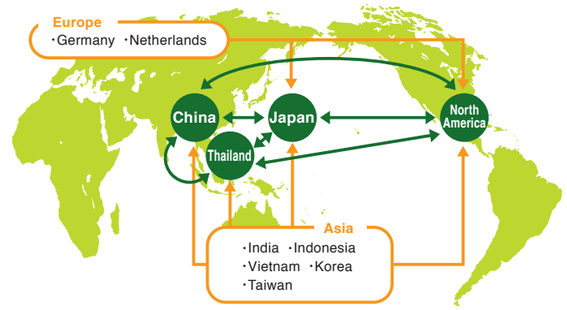
Contributing to the maintenance and strengthening of cooperative relationships, and the development of society

JATCO strives to bring about mutual growth and the realization of a "society where automobiles and the environment coexist in harmony," based on the relationships of trust that we share with our business partners. To that end, it is important to work together in accordance with standards that are fair, just, and transparent. We follow clearly established rules, as represented by green procurement, in selecting our business partners, and present awards to outstanding corporations.

Procurement in the global market

In light of the expansion of production in Mexico, China, and Thailand, we are promoting local production and the procurement of materials from highly competitive overseas sources in order to increase competitiveness while ensuring fairness in the global market and improving efficiency in the shipping of parts.

■ JATCO's global procurement



Environmental initiatives

Promoting the management of environmentally hazardous substances

In light of the expansion of the global market, JATCO promotes the management of environmentally hazardous substances in cooperation with our business partners with a focus on the following four items.

1. **Global implementation of the JATCO Green Procurement Guidelines**
Beginning with the head office in Japan, we manage environmentally hazardous substances on a global scale, including our overseas affiliates.

2. **Standardized application of requirements to new business partners**
We promote the management of environmentally hazardous substances among new business partners by clearly indicating the requirement of submitting green procurement documents.

3. **Compliance with REACH* regulations**
Without limiting the scope of items targeted for management to data on chemical substances contained in our products, we extend the scope to data on chemical substances in packaging materials and shipping parts during transportation, and in recent years to supplies used in the production process (for example, stationery items such as marker pens). Going forward, we will continue to put effort into minimizing the use of environmentally hazardous substances.
*"REACH" is an abbreviation of "Registration, Evaluation, Authorization and Restriction of Chemicals", a European system for managing chemical substances.

4. **Promoting the management of environmentally hazardous substances through the utilization of IMDS***
Corresponding with an era of "No Data, No Market" (no sales without data), we are cooperating with business partners to promote the management of highly precise data using IMDS (International Material Data System), jointly with the development division.
*IMDS: "International Material Data System"

Promoting green procurement activities

JATCO's green procurement activities tackle environmental conservation across all the products that are supplied by our business partners. The following are the three key points.

1. **Verifying the intention to promote green procurement**
2. **Establishing an environmental management system**
3. **Reporting on the use of environmentally hazardous substances**

JATCO prioritizes the purchase of products from companies that take a proactive stance toward green procurement activities. We also request that our business partners prioritize companies that promote green procurement activities when deciding on a company to purchase products from. In addition, JATCO awards business partners that have put particular effort into achieving JATCO's vision of realizing a "society where automobiles and the environment coexist in harmony."

Business partners award

For Our Customers

JATCO's quality policy

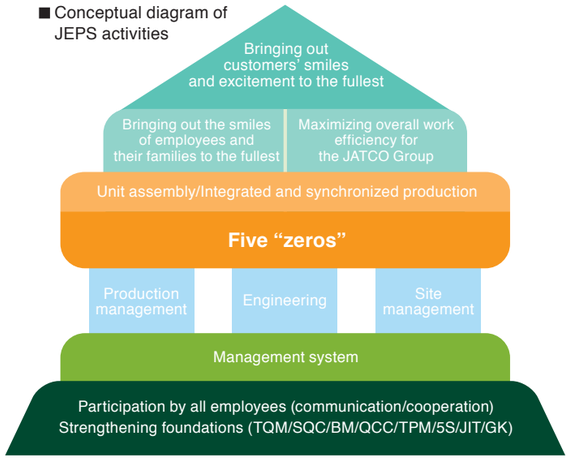
Customers are the ones who ultimately assess the quality of JATCO's products. Responding sincerely to assessments from our customers serves as our starting point for meeting the expectations of customers. In order to achieve the high quality that our customers can continue to trust in, it is necessary for JATCO to provide products and services that exceed their expectations, based on our world-class monozukuri capability. Amidst the global expansion of our business, it is vital for us to ensure that we offer quality that JATCO can take pride in regardless of the region or country that we are in. JATCO complies with global law, and also constantly strives to improve itself and to take up the challenge of being innovative. We believe that this approach can contribute to the creation of a comfortable and safe automotive society.

Realizing the high quality that customers can continue to trust

Aiming to be the world's No. 1 in monozukuri, from the customers' perspective

JATCO aims to respond swiftly to changes in customers, and to be the world's no. 1 in monozukuri in the aspects of quality, cost, and delivery. To that end, we have established, and are operating, a unique production system known as the JATCO Excellent Production System (JEPS). JEPS eliminates all waste by operating the entire series of processes, from assembly to shipping, at the same speed and sequence as if they were on a single line, and carries out production and transportation in a timely manner. Through JEPS, we are bringing about the realization of two "unlimited" features across the whole supply chain—"unlimited synchronization with our customers," and "visualization of unlimited challenges and innovation."

■ Conceptual diagram of JEPS activities

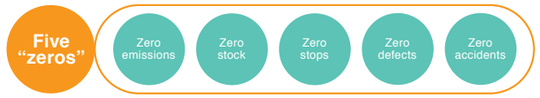


JEPS activities

Promoting JEPS innovation

The basic stance of JEPS can be summed up into the following two points: unlimited synchronization with our customers, and visualization of unlimited challenge and innovation. To pursue these two "unlimited goals," JATCO has established clear indicators in the form of the five "zeros." Toward the achievement of these goals, JATCO continuously improves JEPS and promotes energy and resource conservation.

■ The five "zeros"



Two "unlimiteds"

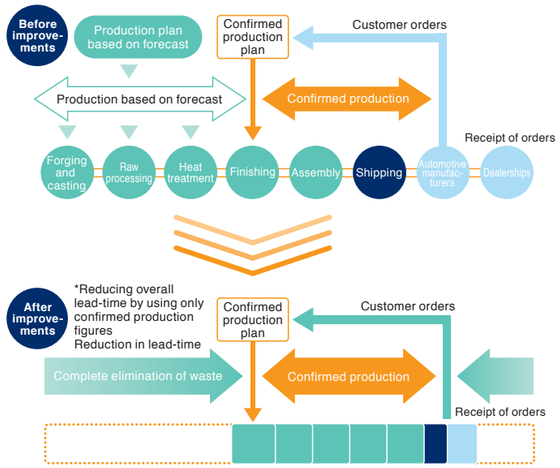
1. Unlimited synchronization with our customers

Q: To synchronize quality by producing the quality demanded by our customers
C: To synchronize costs by offering reasonably priced products
D: To synchronize delivery time by reducing production lead-time, JATCO aims to pursue these three "synchronizations" and move infinitely closer to our customers.

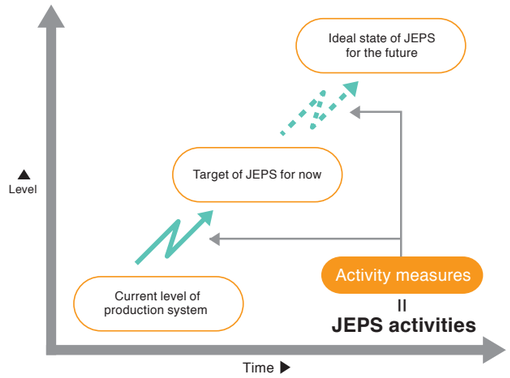
2. Visualization of unlimited challenge and innovation

While recognizing the gap between the current situation and the "ideal state" that JATCO should aim achieve as the world's no. 1 in monozukuri, we are striving to visualize difficult issues. We are continuously trying to improve the monozukuri system through repeated improvements and innovation.

■ JATCO's monozukuri



■ Visualization of unlimited challenge and innovation



With the Community

Transforming social contribution activities into a corporate culture

The JATCO Group has established the corporate philosophy of “providing value to our customers, to automotive culture and to society.” We have also set forth the goal of becoming a “good corporate citizen” in our mid-term management plan. Corporate activities are conducted through our involvement with the local community. JATCO considers it our important responsibility to be actively involved with society as a member of the community, and to contribute to the local community in various ways. We promote social contribution activities with this approach in mind.

Three priority areas of activities

Based on our desire to be a presence that the local community is glad to have, the JATCO Group has identified the three priority areas of “environment,” “education,” and “welfare.” We are implementing social contribution activities around the world in these three areas, and undertake activities that meet the needs of the respective local communities.

Contribution activities in the area of environment

Hana-saku * JATCO-MAE Station Project (Shizuoka Prefecture)

JATCO-MAE is a station on the Gakunan Line in Fuji City. It is one of the very few stations in Japan that are named after a company. This project began when a JATCO staff member proposed the idea of turning the local station named after JATCO into a popular flower-viewing spot. During FY2016, the second year of the project, flower beds were planted over 1/3 of the site’s area, into which 850 pots of moss phlox were planted. Meanwhile, the area planted in FY2015 was renewed by planting white moss phlox in the shape of Mt. Fuji, which symbolizes Fuji City. The work to carefully cultivate the flower beds continues on a daily basis in collaboration with the members of the Fuji City “Koko Kara” Youth Consultation Office.

Planting moss phlox flowers around JATCO-Mae Station on the Gakunan Line

Planting mangroves (Thailand)

JATCO (Thailand) Co., Ltd. has continued to implement a reforestation event named “9,999 trees for ecology… we care.” This event involves planting mangroves in the mud at the wetlands of Chonburi Province, which is located about 20km from the production plant. In addition to JATCO employees, many of their family members also participate in the event where they have a good time working together.

Mangrove reforestation activity carried out in Thailand

Contribution activities in the area of education

Kids Engineer (Kanagawa Prefecture)

The “Kids Engineer” event was organized by the Society of Automotive Engineers of Japan, Inc. JATCO agrees with the spirit of this event, which is targeted at elementary school students and seeks to communicate the joy of manufacturing, and has continued to participate in it since the inaugural event in 2008. The event was held in Yokohama, Kanagawa Prefecture in FY2016.

“Kids Engineer” organized by the Society of Automotive Engineers of Japan

Experiential learning for middle and high school students (Shizuoka Prefecture)

We host experiential learning courses for middle and high school students in Fuji City. We provide participants with experience in a wide range of workplaces from development to production to help provide an opportunity for the children to consider what type of work they want to do in the future, and which path to take. The activities include CAD software operation, tours of testing facilities, experiencing next generation technologies at the Future Technology Center, factory tours, and factory work experience.

Experiential learning for middle and high school students

Contribution activities in the area of welfare

Soccer match for intellectually disabled soccer players (Shizuoka Prefecture)

Intellectually disabled soccer players have only limited opportunities to demonstrate the results of their training. Accordingly, JATCO organizes the “JATCO×Yokohama F. Marinos Futuro Cup” together with the Yokohama F. Marinos soccer club. In 2016, the event’s second year, a total of six teams and approximately 120 athletes participated. The event was managed by ten university student volunteers from the Shinkanto Riko-kei League, which is supported by JATCO and the Yokohama F. Marinos.

JATCO×Yokohama F. Marinos Futuro Cup

Creation of hats for children in Africa (Korea)

The JATCO Korea Engineering Corp. carries out social contribution activities proposed by employees. One of these activities was the creation of hats for children in Africa. In some parts of Africa, children run the risk of losing their vision due to the strong sunlight and sandstorms. Accordingly, the use of these hats, which include a wind blocking mesh, can serve to protect the eyes and prevent the loss of vision. The hats made by the employees were delivered to the children via a non-government organization.

The creation of hats for children in Africa

With Our Employees: The Work Environment

Ensuring work safety

JATCO aims to move from “zero accidents” to “zero danger,” and promotes the development of a workplace where all employees can work safely and comfortably through measures such as actively conducting risk assessments at the workplace and promoting health management for employees. We recognize the task of ensuring safety as a priority in all our work, and have established “Absolute Safety” as our motto. In line with this, we engage in safety activities with a focus on on-site inspection, such as risk assessment activities, SESI*1, 5S patrols*2, plant (division) safety patrols, public work inspections, and safety commitment inspections. Particular emphasis is placed on eradicating abnormal processes with a high risk of causing work accidents, and which also cause potential loss in production activities. The risks that are detected in each activity are summarized in a list. We determine the degree of priority and the appropriate countermeasures based on the size of the risk, and speedily implement “hard” countermeasures such as improving facilities, as well as “soft” countermeasures such as training and guidance.

*1 SESI: “Safety Evaluation System I.” This system conducts quantitative assessments of safety levels at the workplace (JATCO Safety Evaluation Standards)
*2 5S Patrols: Patrolling the sites on a regular basis to ensure compliance with 5S (Seiri, Seiton, Seiso, Seiketsu, Shukanzuke)

Implementing SES through our global members

Promoting occupational health

At JATCO, the following initiatives are implemented as part of our efforts to help employees stay physically and mentally healthy.

Initiatives for mental health

In cooperation with the specialized EAP* organization, we conduct stress check-ups once a year. The results are fed back to each individual employee, so as to enable them to check on their own stress levels. The families of employees may also make use of consultation and treatment, as well as counseling services, at EAP. To ensure early detection and prevention for those who are suspected of suffering from mental health issues, the mental health seminars that had previously been conducted for managers and supervisors have also been extended to general employees.

*EAP: “Employee Assistance Program”

Scene at a mental health seminar

Initiatives to improve lifestyle habits

As part of our countermeasures against lifestyle-related diseases and metabolic syndromes, we extract a list of targeted employees based on the health examination results, and provide health guidance to these employees. Support is provided even after the interview, and various forms of guidance are provided to help employees improve steadily and achieve their goals.

Guidance for the prevention of lifestyle-related diseases

Activities to prevent passive smoking and reduce smoking rates

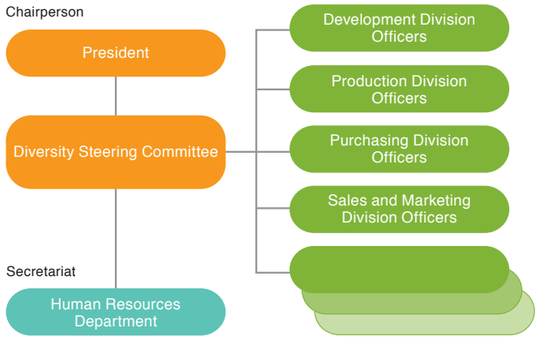
Since 2003, JATCO has promoted measures to prevent passive smoking and reduce the smoking rate. As a result of initiatives such as (1) Segregating office break rooms from the smoking areas, (2) Activities to raise awareness on non-smoking, and (3) Suspending the sale of cigarettes in the company, the smoking rate has decreased significantly among employees, thereby also dramatically reducing the risks of passive smoking. Furthermore, an initiative to completely eliminate smoking on the entire grounds of all locations was begun on April 1, 2017. Smoking is known to cause cancer and has a major effect on brain and heart diseases. JATCO will continue to work to increase the number of employees who quit smoking in order to protect the health of those employees, JATCO’s most important asset, through edification activities that include continued promotion of non-smoking among visitors, a consultation desk to support quitting smoking at the health support office, and seminars on quitting smoking.

With Our Employees: Diversity

Tackling diversity as a management issue

In order to continuously provide our customers with good value as we expand our business globally to respond to the changes of the times, it is necessary for us to incorporate diverse perspectives and create new value. From this perspective, JATCO positions diversity as a management issue, and has put in place various initiatives to that end. In FY2008, we established the Diversity Steering Committee, headed by the President and staffed by management personnel, to actively promote employment and human resource deployment without discrimination based on gender, nationality, or other forms of bias.

■ Organizational structure of the Diversity Steering Committee



Promoting work-life balance

With the aim of building a workplace environment in which everyone can work confidently and enthusiastically, JATCO places great importance on the concept of “work-life balance” that seeks to enrich both work life and personal life. At the same time, we are working to expand our systems to enable employees to work despite the demands of their personal lives. We have also positioned work-life balance as one of the measures that provide support for the promotion of diversity, and are enhancing various systems in order to provide support to employees for striking a balance between work and childcare/eldercare.

Encouraging multinational human resources to play an active role

One of JATCO’s diversity initiatives involves promoting employment without discrimination based on nationality. Already, employees of various nationalities including China, Korea, and Mexico play an active role in the company, particularly at our overseas bases. We also promote human resource and technological exchanges with our respective overseas bases. When conducting a review for a new project, relevant members from the overseas members come together as global JATCO, and work united across the barriers of their affiliations and regions to tackle and solve problems.

Exchanges with members of overseas bases

External evaluation

JATCO has introduced various systems as part of our efforts to develop an environment where employees can find a balance between childcare and work. These include maternity leave, childcare leave, telecommuting, and flex-time systems that allow employees to adopt diverse working styles. These activities have been highly rated, and in August 2015 we became the first company headquartered in Shizuoka Prefecture to be specifically certified under the Act on Advancement of Measures to Support Raising Next-Generation Children (typically known as “Platinum Kurumin Certification), established by the Ministry of Health, Labor and Welfare.
In March 2016, JATCO was listed in “New Diversity Management Selection 100” by the Ministry of Economy, Trade and Industry. We were the first company headquartered in Shizuoka Prefecture to be selected for this list as well. Enterprises selected for the list are fully involved in such a way “as to create innovation and generate value with diverse human resources while providing them with the opportunity to realize their maximum potential.” JATCO was also recognized for its wide range of programs that allow employees to engage in work in diverse ways and reduce the number of hours of overtime hours. The company was additionally recognized for its creation of production plant workplaces that are comfortable for women, leading to production lines that are comfortable places to work not only for women but everyone, and leading to enhanced quality and efficiency at the same time.

Mark of special certification based on the Act on Advancement of Measures to Support Raising Next-Generation Children, commonly known in Japan as the “Platinum Kurumin”

WORK ENVIRONMENT

DIVERSITY

With Our Employees: Training Global Talent

Human resource development that encourages independent growth

JATCO practices human resource development that corresponds with the changing times, as well as respect for diversity, and aims to establish motivated workplaces where each individual employee can experience growth. In order to provide support for employees with the desire to earn, we offer programs that employees can take through their own volition. A wide range of courses is available, from topics that are directly related to work, to self-development programs. To ensure that employees can continue to grow dynamically, even after they join the company and are assigned to a division, we have introduced a Freshman Leader System. Under this system, the senior employees that new employees report directly to at their designated divisions provide guidance and advice to the new employees, and provide support to help them adapt smoothly to their work and corporate life.

Promoting the development of a culture of acknowledgement and praise

JATCO promotes the development of a culture of praise, and has introduced a Thanks Card System that encourages employees to express feelings of gratitude by writing on cards. This system contributes to improving the motivation of employees. In addition, the Global JATCO CEO Award and Employee Award are also presented to employees who have achieved results or taken positive action to enhance the results and reputation of the company. By positively evaluating and commending such achievements and positive action, we are developing an environment where employees can carry out their work in a motivated manner.

Global JATCO CEO Award Celemony

Responding to globalization

Promoting the human resource exchange program and global education program

JATCO has put in place initiatives for the development of global human resources who can respond to the expansion of the overseas market in the future. The human resource exchange program, undertaken in cooperation with overseas bases for the purpose of encouraging the early growth of employees as global human resources, is one such program. Young employees strive to acquire a global outlook through various experiences that encompass not only their work, but also everyday life. We furthermore offer overseas training programs, conduct various communication seminars (on assertiveness, debating, etc.) for employees in their second year in the company, based on the skills that are necessary in the globalizing world, and conduct intercultural seminars (Mexico, China, Thailand), as part of our efforts to improve employees global skills and mindsets.

Human resource development that supports overseas production sites

As part of JATCO's efforts to transplant the specialized skills and know-how on site management that we have built up over many years at our production sites in Japan to our overseas bases, we are working on nurturing local employees with the aim of putting in place management and practices based on the same approach and methods that are used in Japan. To ensure that the supervisors at each of our overseas facilities are able to properly conduct the necessary training courses as employee trainers, we dispatched instructors from Japan to develop the skills of each trainer. Together with these trainers, who receive training in their respective countries, we are aiming to provide training to JATCO employees around the world and work on further enhancing their skills.

Providing guidance to members at overseas bases

GLOBAL TALENT

Part 3

Corporate Governance

In order for JATCO to further enhance our value as a company
that can continue to win the trust of diverse stakeholders,
it is vital to enhance our corporate governance system.
In addition to building a management structure
that combines a strong sense of ethics with transparency,
all employees strive to raise their own awareness and compliance with laws.

CORPORATE GOVERNANCE

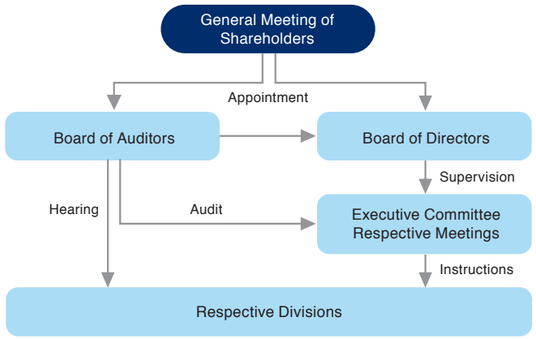
Governance Efforts

Commitment to corporate governance

Corporate governance system

JATCO is a company with a Board of Corporate Auditors, in line with the Companies Act, and is established as a legal organization with a General Meeting of Shareholders, Board of Directors, and Board of Auditors. In principle, the Board of Directors convenes once a month to decide on important management matters as well as to preside over the contents of the execution of operations. The Board of Directors is composed of Directors who undertake the execution of operations, as well as several external Directors in order to create a system that enables an objective check on the situation of the execution of operations. A Corporate Officer system has also been introduced to facilitate efficient and flexible management, and authority is delegated to Corporate Officers in clearly defined ways in the management of the business.

■ JATCO's corporate governance system



Strengthening the internal control system

JATCO maintains and strengthens its internal control system based on the Basic Policy on Internal Control System passed by the Board of Directors. The Basic Policy on Internal Control System lays out the basic policy on matters such as compliance with laws, information management, risk management, proper and efficient execution of work by the Directors, management of Group companies, and ensuring an effective audit system among the Auditors. Regular checks are conducted to verify that the internal control system is functioning effectively, and the results are reported to the Board of Directors.

System for ensuring proper management of Group companies

In order to put into practice the proper and efficient management of the JATCO Group, JATCO's domestic and overseas Group companies are working together with the respective divisions in charge at JATCO to carry out management work. To ensure that Group companies are able to undertake decision-making that is consistent with the Group policy, information exchange is carried out through the Group's Management Committee. Furthermore, in order to check if proper management is carried out in the Group companies, Auditors and Internal Auditors are regularly dispatched to conduct audits. Regular checks are conducted to verify that the internal control system in each company is functioning effectively, and the results are reported to the Board of Directors.

Strengthening compliance

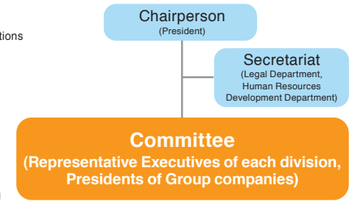
Basic stance on compliance

The JATCO Group considers compliance with the laws of each country and region a minimum requirement for winning the trust of society. In addition to compliance with laws, we also consider it important for all employees of the Group to act fairly and honestly with a strong sense of ethics. JATCO has enacted a Global Code of Conduct, and puts effort into ensuring thorough compliance by providing action guidelines that all employees should abide by.

Items set forth in the Global Code of Conduct

1. Compliance with laws and regulations
2. Prohibition of acts of conflict of interest
3. Protection of company assets
4. Fair and just relations
5. Ensuring transparency and accountability
6. Respecting diversity and equal opportunities, etc.
7. Environmental conservation
8. Duties of practice and reporting

■ Global Compliance Committee (GCC)



Promotion system for compliance

In order to promote compliance across the whole of the JATCO Group, JATCO has organized a Global Compliance Committee (GCC) comprising representative Executives from each division and the Presidents of Group companies in Japan and overseas, and holds regular meetings of this Committee. The GCC puts effort into ensuring the proper implementation of the PDCA cycle, such as by sharing common global matters related to compliance, sharing specific cases of incidents that have actually occurred, and checking the contents the compliance activities of each company. Compliance committees are also established in the respective Group companies, and these committees work together with the GCC Secretariat while engaging in their own compliance activities.

Compliance education and activities to raise awareness

Code of Conduct training is provided once a year for all employees in the Group, through the use of the e-learning system. With regard to important legal fields that are related to the execution of work by employees, such as prohibition of monopolization, prohibition of corruption, product safety, intellectual property, and export control, the GCC Secretariat draws up and implements programs to educate employees.

Promoting the internal reporting system

The JATCO Group has established the Easy Voice System, which is an internal reporting system that allows employees to report directly to the company on matters such as acts of violation. In addition, we have also established the Speak Up System that allows employees to report via phone or the website to a third-party organization, as part of our efforts to develop an environment where employees can take a proactive stance toward reporting on violations.

Risk Management: Systems & Infosec

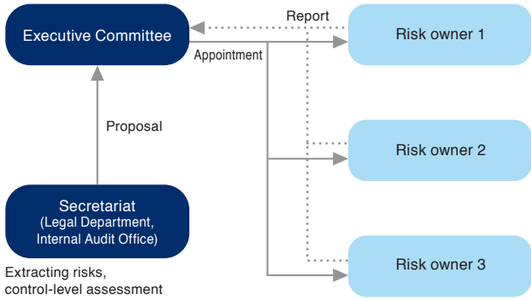
Risk management initiatives

Promoting risk management

In order to respond to the diversifying risks accompanying the global expansion of our business, JATCO carries out a risk management audit as part of the internal control system. Specifically, we identify risks each year, determine the items that should be tackled in the Executive Committee, appoint personnel to take charge of each item, and formulate and implement measures to mitigate the risks. The progress of initiatives for each item are reported at the Executive Committee, and a control-level assessment for each item is conducted at the end of the fiscal year.

■ Risk management promotion system

Deciding on items, checking on progress



Extracting risks, control-level assessment

Initiatives through the BCM* Committee

There are scenarios that endanger business continuity, such as earthquakes, typhoons, or other natural disasters. JATCO draws up hypotheses on the various risks that may arise, and has established a BCM Committee to implement measures for preventing risks before they happen and to mitigate risks when incidents do occur. In the event that a situation that has continuous impact on production arises, the relevant parties are notified immediately, and the BCM Committee takes a central role in resolving the issue with the cooperation of the respective divisions across the company. BCM training is carried out every year to help employees familiarize themselves with initial responses to take in the event of a large-scale earthquake, and the appropriate responses to take in order to achieve early recovery.

*BCM: Abbreviation of "Business Continuity Management." In preparation for events where the company becomes unable to continue with its business, such as large-scale disasters, epidemics of diseases, etc., countermeasures are formulated and training is carried out to ensure that the plan can be executed when necessary.

Risk management system in Group companies

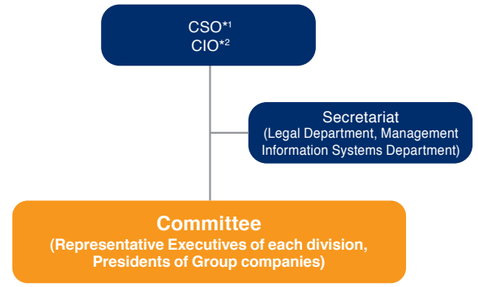
With regard to Group companies, including our overseas production facilities, risk management is carried out through the implementation of measures to counter hypothetical risks for each company. The experience and know-how that JATCO has built up through its BCM activities are disseminated to the Group companies, and for risks that are common to all bases across the world, risk management is carried out in cooperation with other Group companies.

Strengthening information security

Information security promotion system

JATCO has enacted an Information Security Policy, and conducts proper operations in relation to information security.
The Information Security Committee, which operates in a Group-wide fashion, shares issues and measures that are common across the Group, and checks on the implementation status in each division and Group company. Personnel in charge are assigned for each division and Group company, and these personnel supervise the everyday management of information security matters.

■ Information Security Committee



*1 Chief Security Officer
*2 Chief Information Officer

Commitment to information management, and promotion of training activities and activities to raise awareness

There is a need for more robust information security in order for us to maintain growth. JATCO is putting effort into further strengthening our information infrastructure. To prepare for cyber attacks, we implement various technical measures to prevent external attacks, and at the same time undertake thorough information management to prevent information from leaking out in the event of a security breach. Information security rests on the awareness of proper management among employees who handle information. Hence, we have continued to carry out information security education for all employees in the Group once a year, and strive to raise awareness about information security management.

Information security activities in each division and Group company

In order to ensure the proper management and operation of information security, it is vital for each division and company of the group to have a proper grasp of the current situation and risks related to information security, formulate and implement countermeasures, and review the results, as part of the proper implementation of the PDCA cycle. Information on the contents of information security activities undertaken by each division and company is shared in the Information Security Committee. By encouraging the divisions and companies to incorporate mutual best practices, we are striving to further enhance information security across the Group.

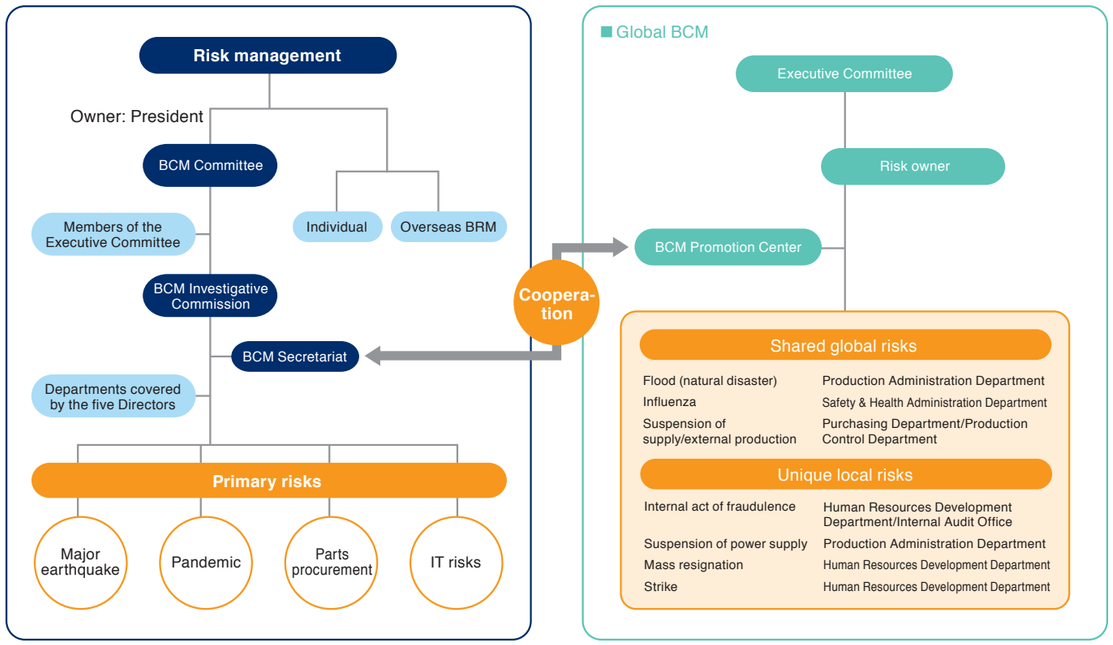
Risk Management : Emergency Response

Toward ensuring business continuity in the event of a large-scale earthquake

As part of JATCO's BCM initiatives, we organize disaster preparedness activities with a view to the possibility of a large-scale earthquake (seismic intensity higher than 6) that may occur in the near future. These activities are aimed at enabling the saving of lives as an initial response, preventing secondary disasters, and prompt and effective recovery to aid in the recovery of the business. With regard to initial response activities, we completed the establishment of a reception facility for emergency earthquake reports in March 2010, and commenced the operation of the facility. Furthermore, we have also launched the operation of safety verification systems in the respective places of business, and are striving to reduce the time taken to verify safety. We have incorporated self-defense and fire brigade activities into the drills that we conduct every year, and all employees participate in these drills. With regard to activities directed at business recovery, we have been conducting BCM simulation training since FY2008 for the relevant divisions. This training, based on hypothetical situations of damage, involves working together with the relevant divisions to solve issues related to business recovery. These issues include responding to automotive manufacturers and business partners, and responding to local communities and the media. Through the repeated implementation of such training, we aim to provide speedy response in the event of a disaster. Furthermore, in order to implement BCM more smoothly, we expanded the BCM Room in FY2011, thereby further enhancing our response capability in the event of an emergency, as well as our response to all risks related to business continuity. We also apply the experience that we have gained in developing BCM in Japan to our overseas bases, such as in Mexico, China, and Thailand. We are expanding BCM practices globally across the entire JATCO Group.

BCM training

■ BCM promotion organization



To ensure the safety of employees and the local community

Earthquake measures for buildings and facilities in Japan

In order to prevent damage to buildings and facilities, and harm to employees in the event of a large-scale earthquake, as well as to achieve early recovery of production plant functions, we have taken a wide range of earthquake countermeasures that include strengthening the quake-resistance of main production bases in Japan, stabilizing production facilities, and taking measures to prevent objects from falling from ceilings or cranes. As a member of a supply chain, we are constantly coming up with countermeasures to minimize the impact to the production activities of our customers.

Support legs newly added to facilities

Earthquake countermeasures at overseas bases

BCM activities that are similar to those at our domestic bases are also implemented at JATCO's overseas bases, which are expanding globally, in preparation for the event of a large-scale disaster such as an earthquake. At JATCO (Thailand) Co., Ltd., which commenced operations in July 2013, we have drawn lessons from the major floods that occurred in 2011, and raised the foundation filling of the building by 50 cm from the initial plans, in preparation for tsunami and floods.

Building site where the filling was carried out

Ensuring the safety of employees

In order to ensure the safety of employees in the event of a large-scale earthquake, JATCO has established detailed procedures with regard to evacuation shelters and actions. In order to ensure that employees have a good grasp of this information, regular training is conducted based on various hypothetical situations that may occur in the day or night. Taking into consideration the possibility of having employees at each base who are unable to return home during an emergency, we have prepared supplies such as water, food, helmets, and blankets.

Disaster preparedness supplies available at the Shin-Yokohama office

Securing safety and peace of mind for local residents

JATCO is a company that stands hand-in-hand with local residents. Hence, we cooperate actively with local residents to secure safety and peace of mind in everyday life in the region.

We are promoting the establishment of a system that provides company facilities as emergency shelters for local residents who have nowhere to escape to in the event of a large-scale disaster.

JATCO's History

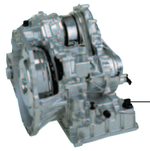
1943.8 Begins operation as Yoshiwara Plant of aircraft division of Nissan Motor Co., Ltd. (Current Fuji Area No. 1)

1970.1 Japan Automatic Transmission Co., Ltd. established through merger of Nissan Motor Co., Ltd., Mazda Motor Corporation (then: Toyo Kogyo Co., Ltd.), and Ford Motor Company

1989.4 **JR502E** — World's first 5-speed electric controls automatic transmission

1989.10 Japan Automatic Transmission Co., Ltd. changes name to JATCO Corporation

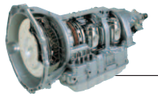
1997.8 **F06A** — World's first steel belt CVT for 2L class



1999.6 AT/CVT division of Nissan Motor Co., Ltd. splits off to become TransTechnology Ltd

1999.10 TransTechnology Ltd and JATCO Corporation merge to form JATCO TransTechnology Ltd

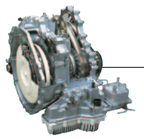
1999.10 **JR006E** — Mass Production of an ultimate "Toroidal CVT" for the first time in the world.



JATCO TransTechnology Ltd changes name to JATCO Ltd

2002.4 AT/CVT division of Mitsubishi Motors Corporation splits off to become Diamondmatic Co., Ltd.

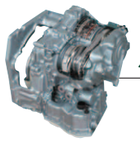
2002.11 **JF010E** — World's first steel belt CVT for 3.5L class



2003.4 JATCO Ltd merges with Diamondmatic Co., Ltd.

2005.11 Production commences in Mexico (Aguascalientes)

2009.9 **Jatco CVT7 (JF015E)** — World's first CVT with an auxiliary gearbox



2009.9 Production commences in China (Guangzhou)

2010.11 **JR712E** — World's first 1-motor, 2-clutch type transmission without a torque converter for hybrid vehicles

2013.7 Production commences in Thailand (Chonburi)

2014.9 Production commences at second plant in Mexico (Aguascalientes)

Our Business

Corporate Profile

Company Name	JATCO Ltd
Established	June 28, 1999
Head Office	700-1, Imaizumi, Fuji City, Shizuoka, Japan
Main Businesses	Development, manufacture and sale of transmissions and automobile components
Capital	¥29,935.3 million
Number of Employees (consolidated)	14,300 (as of March 31, 2017)
Shareholders	NISSAN MOTOR CO., LTD. 75% MITSUBISHI MOTORS CORPORATION 15% SUZUKI MOTOR CORPORATION 10%

Financial results (consolidated)

Unit: 100 million yen

	FY2014	FY2015	FY2016
Net Revenues	**7,401**	**7,521**	**7,220**
Operating income	**464**	**583**	**575**
Net income	**231**	**199**	**361**

(Reference)

Locations

- **Head Office and Fuji Area**
  Fuji City, Shizuoka
  PHONE +81-0545-51-0047 FAX +81-0545-51-5976
- **Shin-Yokohama Office**
  Yokohama City, Kanagawa
  PHONE +81-045-285-0200 FAX +81-045-473-8107
- **Kambara Area**
  Shizuoka City, Shizuoka
  PHONE +81-054-388-3486 FAX +81-054-388-2318
- **Fujinomiya Area**
  Fujinomiya City, Shizuoka
  PHONE +81-0544-58-6700 FAX +81-0544-58-5549
- **Kakegawa Area**
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- **Kyoto Area**
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- **Yagi Area**
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- **Okazaki R&D Center**
  Okazaki City, Aichi
  PHONE +81-0564-32-5255 FAX +81-0564-31-2104
- **Motegi Proving Ground**
  Haga-gun, Tochigi
  PHONE +81-0285-64-1335 FAX +81-0285-64-1340

Affiliated companies in Japan

- **JATCO Engineering Ltd**
  Fuji City, Shizuoka
  PHONE +81-0545-51-5777 FAX +81-0545-51-5494
- **JATCO Tool Ltd**
  Fuji City, Shizuoka
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- **JATCO Plant Tec Ltd**
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Affiliated companies overseas

- **JATCO USA, Inc.**
  38700 Country Club Drive, Farmington Hills,
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- **JATCO Korea Engineering Corp.**
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  PHONE +82-2-2082-7000 FAX +82-2-2082-7003
- **JATCO Korea Service Corp.**
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  Seoul 153-768, Korea
  PHONE +82-2-2082-7133 FAX +82-2-2082-7130
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  NO.8, Lihong 2 Road, Science City, Guangzhou
  Hi-Tech Industrial Development Zone, Guangzhou,
  Guangdong, 510530, China
  PHONE +86-20-8226-7338 FAX +86-20-8226-7002
- **JATCO France SAS**
  ZAC des Godets - Batiment C, 1-4 Impasse de
  la noisette, 91370 Verrières le Buisson, France
  PHONE +33-1-69-32-71-50 FAX +33-1-69-41-83-35
- **JATCO (Thailand) Co., Ltd.**
  700/999 Moo 3, Amata Nakorn Industrial Estate,
  Thumbon Nongkakha, Amphur Phanthong,
  Chonburi 20160, Thailand
  PHONE +66-38-930-000 FAX +66-38-930-051

Please refer to our website for information on our representative offices, etc.

as of September 29, 2017

Environmental data for each production base

Fuji Area

[Including the Head Office]
Site:580,440m²
Buildings (Total): 389,403m²

Atmosphere

NOx: Nitrogen oxide SOx: Sulfur oxide

Facility	Item	Unit	Regulation value (including agreed value)	Measured value	
				Maximum	Average
Compact boiler (24 units)	Soot and dust	g/Nm³	0.05	0.003	0.0003
	NOx	ppm	100	66	29
	SOx	Nm³/H	0.002	0	0
Metal-heating furnace (14 units)	Soot and dust	g/Nm³	0.05	0.042	0.010
	NOx	ppm	150	140	135
	SOx	Nm³/H	0.018	0	0
Steel-heating furnace (3 units)	Soot and dust	g/Nm³	0.05	0.003	0.001
	NOx	ppm	150	37	21
	SOx	Nm³/H	0.026	0	0
Aluminum-melting furnace (6 units)	Soot and dust	g/Nm³	0.05	0.042	0.010
	NOx	ppm	150	49	30
	SOx	Nm³/H	0.019	0.017	0.002125
	Dioxin	mg-TEQ/Nm³	5	0.37	0.079
Drying kiln (1 unit)	Soot and dust	g/Nm³	0.05	0.048	0.048
	NOx	ppm	56	20	14.5
	SOx	Nm³/H	0.0048	0	0
	Dioxin	mg-TEQ/Nm³	5	0.0014	0.0014
Drying combustion furnace (1 unit)	Dioxin	mg-TEQ/Nm³	5	0.025	0.025

Water quality

Figures shown in the brackets ( ) for the regulation value are daily averages

Item	Unit	Regulation value (including agreed value)	Measured value	
			Maximum	Average
Hydrogen ion concentration (pH)	—	5.8～8.6	7.6	7.5
Biochemical oxygen demand (BOD)	mg/L	20（15）	7.6	4.1
Chemical oxygen demand (COD)	mg/L	20（15）	9.3	6.7
Suspended solids (SS)	mg/L	20（10）	4	2.7
n-hexane extracts (mineral oils)	mg/L	4	0	0
Copper	mg/L	0.1	0	0
Zinc	mg/L	0.1	0.09	0.06
Coliform count	Unit/cm³	3,000	10	2.5
Trichloroethylene	mg/L	0.3	0	0
Dichloromethane	mg/L	0.02	0	0
Boron	mg/L	10	0.1	0.05
Fluorine	mg/L	15	0	0
Ammoniacal nitrogen Nitrate-nitrogen Nitrite-nitrogen	mg/L	100	3.2	0.72

Fuji Area

Site:78,423m²
Buildings (Total): 58,033m²

Atmosphere

NOx: Nitrogen oxide SOx: Sulfur oxide

Facility	Item	Unit	Regulation value (including agreed value)	Measured value	
				Maximum	Average
Kerosene boiler (2 units)	Soot and dust	g/Nm³	0.1	0.007	0.0070
	NOx	ppm	130	96	73
	SOx	Nm³/H	0.045	0	0
Aluminum-melting furnace (1 unit)	Soot and dust	g/Nm³	0.05	0.005	0.005
	NOx	ppm	100	34	21
	SOx	Nm³/H	0.013	0	0
	Dioxin	mg-TEQ/Nm³	5	0.14	0.140

Water quality

Figures shown in the brackets ( ) for the regulation value are daily averages

Item	Unit	Regulation value (including agreed value)	Measured value	
			Maximum	Average
Hydrogen ion concentration (pH)	—	5.8～8.6	8.0	8.0
Biochemical oxygen demand (BOD)	mg/L	20（15）	1	0.9
Chemical oxygen demand (COD)	mg/L	25（20）	3	2.5
Suspended solids (SS)	mg/L	40（30）	1	0.5
n-hexane extracts (mineral oils)	mg/L	5	0	0
Coliform count	Unit/cm³	1,000	14	7
Dichloromethane	mg/L	0.02	0	0
Boron	mg/L	10	0	0
Fluorine	mg/L	8	0	0
Ammoniacal nitrogen Nitrate-nitrogen Nitrite-nitrogen	mg/L	100	1.3	0.4

Fujinomiya Area

Site:67,698m²
Buildings (Total): 66,756m²

Atmosphere

NOx: Nitrogen oxide SOx: Sulfur oxide

Facility	Item	Unit	Regulation value (including agreed value)	Measured value	
				Maximum	Average
Compact boiler (6 units)	Soot and dust	g/Nm³	0.05	0.01	0.008
	NOx	ppm	100	84	72
	SOx	Nm³/H	0.01	0	0
Metal-heating furnace (3 units)	Soot and dust	g/Nm³	0.01	0.008	0.003
	NOx	ppm	150	140	91
	SOx	Nm³/H	0.01	0	0

Water quality

Figures shown in the brackets ( ) for the regulation value are daily averages

Item	Unit	Regulation value (including agreed value)	Measured value	
			Maximum	Average
Hydrogen ion concentration (pH)	—	5.8～8.6	7.6	7.6
Biochemical oxygen demand (BOD)	mg/L	20（15）	2.6	1.8
Chemical oxygen demand (COD)	mg/L	20（15）	0.7	0.7
Suspended solids (SS)	mg/L	20（15）	0	0
n-hexane extracts (mineral oils)	mg/L	5	0	0
Phenols	mg/L	5	0	0
Copper	mg/L	3	0	0
Zinc	mg/L	2	0.03	0.03
Soluble iron	mg/L	10	0.14	0.14
Soluble manganese	mg/L	10	0.08	0.08
Chromium	mg/L	2	0.02	0.02
Coliform count	Unit/cm³	3,000	0	0
1, 1, 1-trichloroethane	mg/L	0.001	0	0
Boron	mg/L	10	0	0
Ammoniacal nitrogen Nitrate-nitrogen Nitrite-nitrogen	mg/L	100	0.3	0.05

Kakegawa Area

Site:95,522m²
Buildings (Total): 14,954m²

Atmosphere

NOx: Nitrogen oxide SOx: Sulfur oxide

Facility	Item	Unit	Regulation value (including agreed value)	Measured value	
				Maximum	Average
Compact boiler (2 units)	Soot and dust	g/Nm³	0.05	0.002	0.0015
	NOx	ppm	100	67.0	63.0
	SOx	Nm³/H	0.01	0	0

Water quality

Figures shown in the brackets ( ) for the regulation value are daily averages

Item	Unit	Regulation value (including agreed value)	Measured value	
			Maximum	Average
Hydrogen ion concentration (pH)	—	5.8～8.6	7.4	6.9
Biochemical oxygen demand (BOD)	mg/L	20（15）	8.1	2.4
Chemical oxygen demand (COD)	mg/L	80（60）	29.7	16.9
Suspended solids (SS)	mg/L	20（10）	11.0	2.9
n-hexane extracts (mineral oils)	mg/L	3	0.0	0.0
Phenols	mg/L	2.5	0.0	0.0
Copper	mg/L	0.5	0	0
Zinc	mg/L	2	0.11	0.1

Water quality

Figures shown in the brackets ( ) for the regulation value are daily averages

Item	Unit	Regulation value (including agreed value)	Measured value	
			Maximum	Average
Soluble iron	mg/L	5	0.8	0.65
Soluble manganese	mg/L	5	0.03	0.025
Chromium	mg/L	1	0.0	0.0
Coliform count	Unit/cm³	3,000	84	6.29
Cadmium	mg/L	0.03	0.0	0.0
Cyan	mg/L	0.5	0.0	0.0
Organic phosphorus	mg/L	1	0.0	0.0
Lead	mg/L	0.1	0.0	0.0
Hexavalent chromium	mg/L	0.25	0.0	0.0
Arsenic	mg/L	0.1	0.0	0.0
Total mercury	mg/L	0.0005	0.0	0.0
Alkyl mercury	mg/L	Undetected	Undetected	Undetected
PCB	mg/L	0.001	0.0	0.0
Trichloroethylene	mg/L	0.1	0.0	0.0
Tetrachloroethylene	mg/L	0.05	0.0	0.0
Carbon tetrachloride	mg/L	0.01	0.0	0.0
1, 1, 1-trichloroethane	mg/L	1	0.0	0.0
Boron	mg/L	10	0.0	0.0
Ammoniacal nitrogen Nitrate-nitrogen Nitrite-nitrogen	mg/L	100	17.1	4.4

Kyoto Area

Atmosphere

NOx: Nitrogen oxide SOx: Sulfur oxide
ND: Below the lower limit of the fixed quantity

Facility	Item	Unit	Regulation value (including agreed value)	Measured value	
				Maximum	Average
Compact boiler (1 unit) Instructions	Soot and dust	g/Nm³	0.1	0.003	0.003
	NOx	ppm	150	34	34
	SOx	Nm³/H	0.00	ND	ND
City gas boiler (1 unit)	Soot and dust	g/Nm³	0.1	0.003	0.003
	NOx	ppm	150	42	42
	SOx	Nm³/H	0.00	ND	ND

Yagi Area

Site:233,323m²
Buildings (Total): 68,277m²

Atmosphere

NOx: Nitrogen oxide SOx: Sulfur oxide
ND: Below the lower limit of the fixed quantity

Facility	Item	Unit	Regulation value (including agreed value)	Measured value	
				Maximum	Average
Compact boiler (11 units)	Soot and dust	g/Nm³	0.1	ND	ND
	NOx	ppm	150	56	36
	SOx	Nm³/H	0.00	ND	ND
Continuous carburizing furnace (11 units)	Soot and dust	g/Nm³	0.1	0.02	0.002
	NOx	ppm	150	120	40
	SOx	Nm³/H	0.00	ND	ND

Water quality

Figures shown in the brackets ( ) for the regulation value are daily averages

Item	Unit	Regulation value (including agreed value)	Measured value	
			Maximum	Average
Hydrogen ion concentration (pH)	—	5.8～8.6	8.0	7.8
Biochemical oxygen demand (BOD)	mg/L	20（10）	2.0	1.5
Chemical oxygen demand (COD)	mg/L	30（20）	3.7	2.8
Suspended solids (SS)	mg/L	30（20）	1.3	0.7
n-hexane extracts (mineral oils)	mg/L	2.5	0.5	0.5
Phenols	mg/L	0.5	0.1	0.1
Copper	mg/L	1.5	0.01	0.01
Zinc	mg/L	2.5	0.02	0.02
Soluble iron	mg/L	5	0.1	0.1
Soluble manganese	mg/L	5	0.1	0.1
Chromium	mg/L	1	0.01	0.01
Coliform count	Unit/cm³	1,500	0	0
Nitrogen	mg/L	16（12）	130	8.5
Nickel	mg/L	1	0.01	0.01
Phosphorus	mg/L	1（0.5）	0.2	0.15
Boron	mg/L	10	0.3	0.2
Fluorine	mg/L	7.5	0.2	0.2

JATCO Mexico, S.A.de C.V.

Atmosphere

NOx: Nitrogen oxide

Facility	Item	Unit	Regulation value (including agreed value)	Measured value	
				Maximum	Average
Metal-heating furnace (2 units)	Soot and dust	mg/mf	421	12.560	11.980
	NOx	kg/hf	—	—	—
Aluminum-melting furnace (2 units)	Soot and dust	mg/mf	461	10.430	9.360
	NOx	kg/hf	375	0.1190	0.0907
Metal-heating furnace (2 units)	Soot and dust	mg/mf	520	81.460	61.540
	NOx	kg/hf	—	—	—

Water quality

Item	Unit	Regulation value (including agreed value)	Measured value	
			Maximum	Average
Hydrogen ion concentration (pH)	—	5～10	7.61	7.15
Biochemical oxygen demand (BOD)	mg/L	150	131	99.25
Chemical oxygen demand (COD)	mg/L	700	650	401.25
Suspended solids (SS)	mg/L	150	137.6	43.65
n-hexane extracts (mineral oils)	mg/L	15	14.32	13.963
Copper	mg/L	4	0.25	0.2125
Zinc	mg/L	10	0.75	0.3375

JATCO (Guangzhou) Automatic Transmission Ltd.

Atmosphere

TSP: Total suspended particulates

Facility	Item	Unit	Regulation value (including agreed value)	Measured value	
				Maximum	Average
Heat treatment line (18 units)	TSP	mg/m³	—	—	—
	Nonmethane hydrocarbons	mg/m³	120	5.3	4.7
Machining line (4 units)	TSP	mg/m³	120	9.5	8.5
	Nonmethane hydrocarbons	mg/m³	—	—	—

Water quality

Item	Unit	Regulation value (including agreed value)	Measured value	
			Maximum	Average
Hydrogen ion concentration (pH)	—	6～9	7.28	7.08
Biochemical oxygen demand (BOD)	mg/L	300	85	48
Chemical oxygen demand (COD)	mg/L	500	245	146
Suspended solids (SS)	mg/L	400	106	78
n-hexane extracts (mineral oils)	mg/L	20	0.12	0.04

JATCO (Thailand) Co., Ltd.

Atmosphere

TSP: Total suspended particulates

Facility	Item	Unit	Regulation value (including agreed value)	Measured value	
				Maximum	Average
Vacuum carburizing furnace VF No. 1	TSP	mg/m³	400	9.99	7.30
Vacuum carburizing furnace VF No. 2	TSP	mg/m³	400	14.62	13.97

Water quality

Item	Unit	Regulation value (including agreed value)	Measured value	
			Maximum	Average
Hydrogen ion concentration (pH)	—	5.5～9.0	8.3	7.7
Biochemical oxygen demand (BOD)	mg/L	500	91.0	20.0
Chemical oxygen demand (COD)	mg/L	750	242.0	85.8
Suspended solids (SS)	mg/L	200	64.0	27.1
n-hexane extracts (mineral oils)	mg/L	10	8.9	2.7

Jatco

The mission is passion.

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