

# *Forest-In Office*

*Amada Green Action*

AMADA Group  
Environmental and Social Report

2017

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## AMADA Group Environmental Declaration

AMADA Group aggressively promotes environmental activities to its management in order to realize sustainable development of its business and society. AMADA will help to build a bright and prosperous future for people around the world by optimally utilizing the engineering capabilities we have cultivated, and by providing environmentally-friendly, energy-saving products as a general manufacturer of metalworking machinery.

### "Linkage through Eco-conscious Manufacturing"

AMADA Group aspires to become a business enterprise to link with customers, society and the world through eco-conscious manufacturing.

#### Producing eco-friendly machine at eco-friendly business establishment

All AMADA Group's operations are carried out with the aim of achieving optimal compatibility between environmental preservation and business activities through promotion of energy -and resource- saving efforts.

#### Our eco-friendly merchandise assists customers' to manufacture eco-friendly products

AMADA Group's eco-friendly products enable customers to manufacture energy savings and highly efficient products at their plants.

#### Creating eco-friendly environment at customers' plants

AMADA Group contributes to the creation of eco-friendly environments at customers' plants by utilizing its accumulated environmental know-how.

## Environmental policy

### ◇AMADA Group's environmental principles

AMADA Group thinks that preservation of the earth, a small planet in macrocosmos, for the next generation is the biggest theme for human beings. Based on this idea, AMADA Group positions environmental preservation as one of its important management issues, and is committed to contributing to a prosperous future for people around the world through eco-friendly manufacturing, in order to pass down this beautiful earth to our descendants.

### ◇AMADA Group's environmental policies

#### 1. Provision of products and services for preservation of the environment

Evaluate environmental load throughout the product life cycle, provide energy-saving and resource-saving products and services which are free of hazardous substances, and contribute to environmental preservation and the economy.

#### 2. Reduction of environmental load in business activities

In every process of business activities, thoroughly pursue reduction of environmental load by promoting energy efficiency improvements, energy saving, resource saving and recycling. Also, aggressively promote green procurement and try to eliminate the use of hazardous substances.

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**■Editorial policy**

This content consists mainly of the environmental activities of AMADA HOLDINGS CO., LTD. and the AMADA Group in Japan.

This report is intended for the various stakeholders of the company. The report is designed to provide an overview of the environmental activities and social contributions of the AMADA Group.

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**■Referenced guidelines**

Environmental Reporting Guidelines 2012 of the Japanese Ministry of Environment, ISO26000

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**■Issues**

2017 edition	Published	Mar. 2018
2018 edition	Scheduled	Sept. 2018
2016 edition	Published	Nov. 2016

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**■Scope of the content**

FY2016 and first half of 2017 (Apr. 2017 ~ Sept. 2017)

Relevant organizations: 13 domestic and 47 overseas companies

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**■About the name “Forest-In Office”**

“Forest-in” is a neologism created by AMADA.

The AMADA Group seeks to be an office of the forest, rather than an office in the forest. The term thus refers to AMADA as “an office of the forest” that promotes activities that protects the natural environment.

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### 3. Biodiversity activities

Grasp effects of business activities on the natural environment and contribute to building a biodiversity-nurturing society in concert with stakeholders.

### 4. Compliance with environment-related laws

Comply with environment-related laws and other agreements concluded with stake holders.

### 5. Continuous improvement of environment management system

Build an environment management system and make continuous improvement of it. Grasp the effects of business activities, products and services on the environment. Set environmental goals and targets and reduce environmental load as well as prevent contamination.

### 6. Enhancement of education about environment

Provide education aimed at environment preservation to improve employees' sense of responsibility as a member of the company and also boost awareness of environment preservation.

## AMADA Group's management philosophy

### 1. Growing together with our customers

Our company has been sharing this philosophy as a starting point for all of our business activities since its formation. We believe that the creation and provision of new values based on customers' perspectives will strengthen the relationship of mutual trust between our customers and the AMADA Group, and become a source of mutual development.

### 2. Contribute to the international community through our business

Our company recognizes that contributing to "manufacturing" conducted by our customers throughout the world leads to the development not only of local communities, but also the international community as a whole, and we conduct our business activities with the aim of providing the highest quality of solutions in each market around the world by optimally distributing our group's management resources.

### 3. Develop human resources who pursue creative and challenging activities

Rather than being content with the present situation, we are constantly in search of new and better ideas to put into action in order to improve and enhance our business activities. This is the AMADA Group's basic philosophy of human resource development, and we believe that AMADA's unique corporate culture will be further developed by continuing to practice this philosophy.

### 4. Conduct sound corporate activities based on high ethics and fairness

We promote transparency and we comply with regulations in the AMADA Group's management and in all aspects of its business activities, and strive to further enhance its corporate value while conducting sound activities.

### 5. Take good care of people and the earth's environment

By treating the AMADA Group's stakeholders (such as shareholders, customers, business partners, employees and local residents) and the global environment with respect, we strive to continue to be a good company for both people and the earth.

# Top Message

## We will actively contribute to reaching international targets



Chairman and CEO  
Mitsuo Okamoto

Since our founding in 1946, the AMADA Group has upheld the philosophy of “growing together with our customers”, which is the origin of our business. We think about our customers who aspire for monozukuri (product creation) and what it is that they need at the time and in the future. We suggest solutions and in order for them to select us and be happy, we have been quick to deliver their needs attuned to the development of our society while maintaining high quality, speed, energy conservation, and environmental measures.

We recognize that our monozukuri manufacturing activity contributes to the product creation of our customers around the world, leading to the development of regional communities and the international community. Through the style of manufacturing called metalworking, we feel that it is the responsibility of the AMADA Group to continually enrich the futures of people all over the world.

On the other hand, we can assume that the worsening environmental problems around the world in recent years will become serious management risks in the near future. Resource procurement risks due to the depletion of metal resources such as rare metals and the depletion of energy will likely raise prices and abnormal weather due to global warming will not only increase costs but could also very well compromise business continuity itself.

The great impact of such global environmental problems, as well as social issues including population decline, inequalities in society, and poverty and hunger, bring change to the needs and lifestyles of society as a whole, affecting the manner and direction of companies. It is easy to imagine that in effect, this will contribute to constraining the

sustainable growth of these companies.

Under such circumstances, with the Paris Agreement and the Sustainable Development Goals (SDGs), the international community has demonstrated goals that the world needs to address, in order to realize a sustainable society.

As members of the society, companies are expected to play an increasingly greater role, and at the same time, I believe that the responsibilities that they need to fulfill will also grow.

In 2010, we formulated the AMADA Group Environmental Declaration to proclaim our intention to strive to be a company that, through eco-conscious manufacturing, promotes linkage with customers, society, and the world.

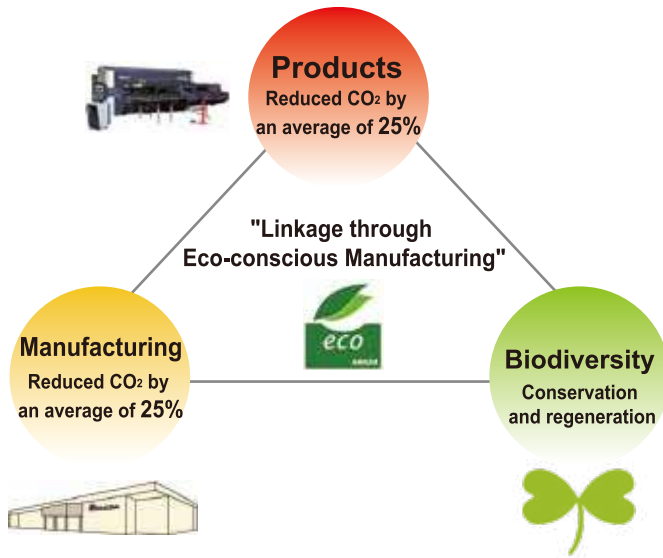
As part of this, we formulated a set of long-term goals to be reached by 2020 entitled AMADA GREEN ACTION and established five key issues.

These activities have been progressing smoothly and we will accelerate our efforts to achieve our goals ahead of schedule. In parallel, we will promote initiatives based on the goals that the world needs to address, such as the Paris Agreement and the SDGs.

As the world's environment and society rapidly change, the AMADA Group will continue to recognize our deep responsibilities and roles that we need to fulfill as a global corporation, in solving issues that society faces, including the global environment. By placing environmental conservation and social contribution as priority management issues, we aim to actively contribute to achieving international targets such as SDGs through eco-friendly manufacturing, a key strength of the AMADA Group.



## "AMADA GREEN ACTION 2020"



## Five key issues

- 1 Preventing global warming
- 2 Effective utilization of resources
- 3 Regulated chemicals control
- 4 Biodiversity
- 5 Environmental management

## AMADA Group promotes Sustainable Development Goals (SDGs) initiatives.

In September 2015, the 2030 Agenda for Sustainable Development was adopted at the United Nations General Assembly held at the UN Headquarters in New York.

This agenda raised 17 Sustainable Development Goals and 169 targets as action plans for humanity, the earth, and prosperity. Every nation that is a member of the UN is required to work hard to resolve the goals for sustainable development between 2015 and 2030, as shown in the figure on the right.

The AMADA Group will promote efforts to achieve these goals for sustainable development.

### SUSTAINABLE DEVELOPMENT GOALS 17 GOALS TO TRANSFORM OUR WORLD



# Commemorative ceremony for AMADA Group's 70th anniversary

## Aiming toward a 100-year-company by linking manufacturing to the future

Thanks to your continued patronage, the AMADA group celebrates its 70th anniversary on September 10, 2016.



Commemorative ceremony for the 70th anniversary of AMADA HOLDINGS held at the Imperial Hotel (Chiyoda-ku, Tokyo)

The AMADA Group celebrated its 70th anniversary in September 2016. On September 16th a ceremony commemorating this anniversary was held at the Imperial Hotel in Tokyo. We welcomed 600 guests including AMADA Group customers and those from the industry, business partners, financial relations, local governments, media, and former AMADA colleagues. Thanking everyone for walking through our history of 70 years together, we relayed AMADA's determination for the future. Since our founding in 1946, the AMADA Group has upheld the philosophy of "growing together with our customers" as the origin of our business, aiming to contribute to society through the monozukuri manufacturing activity. Going forward, we hope to open up the future of metalworking with our customers, "Aiming toward a 100-year company by linking manufacturing to the future."



A 70th anniversary exhibition booth was also set up



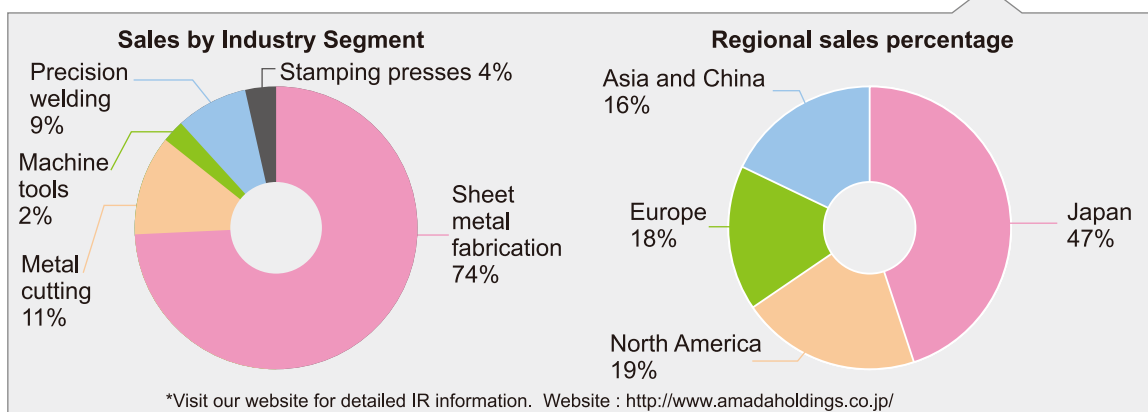
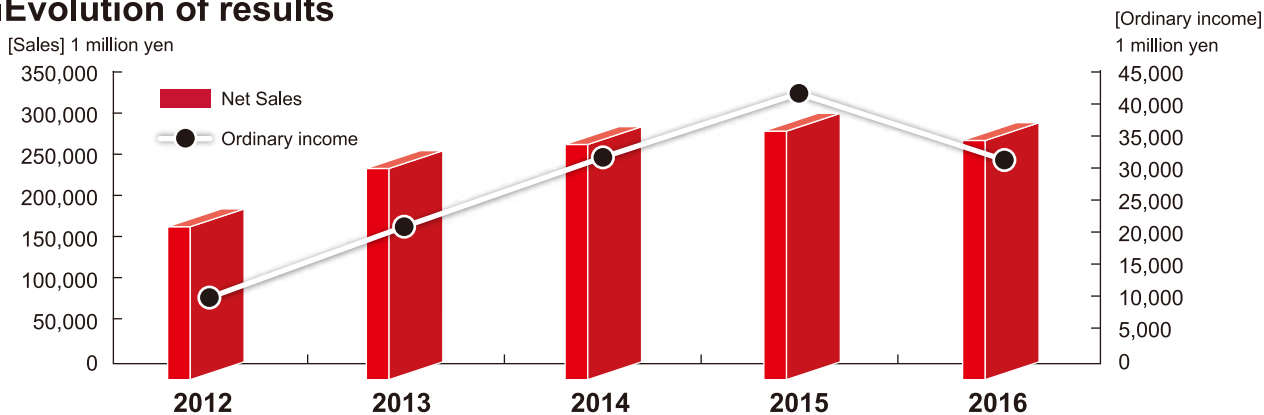
A 70th anniversary commemorative magazine was issued



The ceremony venue bustling with about 600 participants

# Overview of performance and employees

## Evolution of results

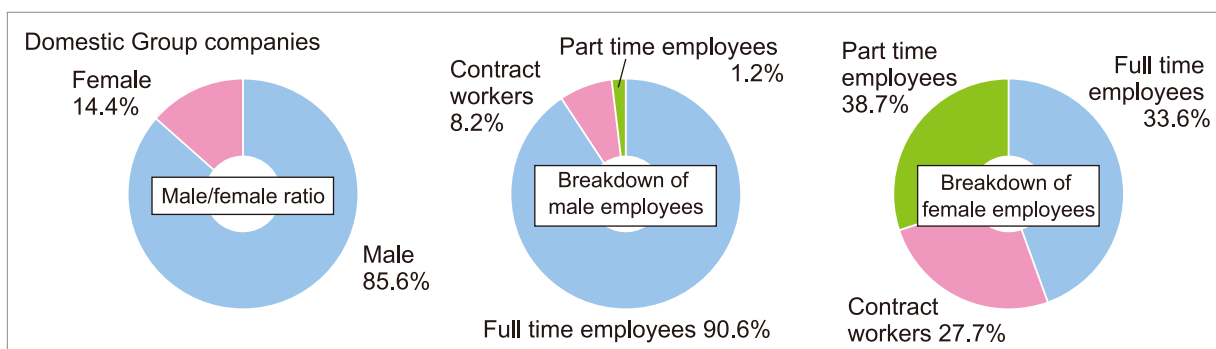
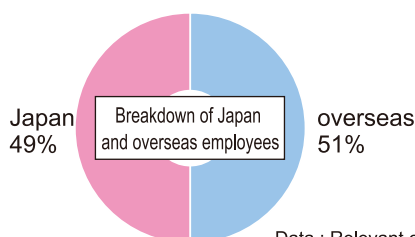


## Employee Data

Number of employees(Global)	NUMBER OF PEOPLE				
	2012	2013	2014	2015	2016
	7,678	7,956	8,083	7,955	8,005

### [Japan and overseas Number of employees]

- Overseas Group companies Employees 4,117
- Domestic Group companies Employees 3,888





# Businesses of AMADA Group

We contribute to the future of manufacturing industry with the strength of our group.

As comprehensive manufacturer of metalworking machinery, the AMADA Group is mainly operating in the sheet metal fabrication machine business, metal cutting machine and structural steel fabrication machine business, machine tool business, stamping press business, and precision welding machine business.

On April 1, 2015, we restructured the group's business.

By further consolidating our operations, we will develop differentiated products and provide services from the perspective of our customers that will contribute to the future of our customers with aspirations in the manufacturing industry.

## AMADA HOLDINGS CO., LTD.

- **AMADA HOLDINGS CO., LTD.**  
(Group strategy, management planning, etc.)
- **Sheet metal fabrication machine business**
  - **AMADA CO., LTD.**  
(Sales and Service business of Sheet metal fabrication machines)
  - **AMADA ENGINEERING CO., LTD.**  
(Development and manufacture of Sheet metal fabrication machines)
  - **AMADA TECHNICAL SERVICE CO., LTD.**  
(Sales and Service business of Sheet metal fabrication machines)
  - **AMADA AUTOMATION SYSTEMS CO., LTD.**  
(Manufacture the automation equipments for sheet metal fabrication machines)
- **Metal cutting, machine tool business and stamping press business**
  - **AMADA MACHINE TOOLS CO., LTD.**
- **Precision welding machine business**
  - **AMADA MIYACHI CO., LTD.**
- **Overseas AMADA Group companies**
  - North American sales companies
  - European sales companies
  - Other overseas companies
- **AMADA Group companies in Japan**

AMADA ENGINEERING CO., LTD.

AMADA CO., LTD.

AMADA

## Sheet metal fabrication machine business

Sheet metal parts are used not only in cell phones, smartphones, clips and mechanical pencils we use every day, but also in traffic signals, elevators, an aircraft and rockets. AMADA's sheet metal fabrication machine business offers all solutions from machines through control software and peripheral devices to maintenance.

- Blanking machines
- Bending machines
- Welding machines
- Software



## Sheet metal fabrication machine business

Laser machines

**ENSIS AJ** SERIES



Machines to open holes and cut or weld thin sheets of metal (sheet metal) using a laser beam. Carbon dioxide lasers are often used for opening holes and cutting. A full line of oscillators is available for both fiber lasers (made in-house) and CO<sub>2</sub> lasers.

Punch and Laser combination machines

**ACIES AJ** SERIES



The machine is capable for cutting and piercing of sheet-metal. In addition to cutting and drilling sheet metal, it is also capable of forming such as burring and tapping.

Bending robot system

**HG 1003 ARs**



Machines for bending thin sheets of metal (sheet metal) between an upper and lower tooling. Also referred to as press brakes.

Welder

**FLW** ENSIS



Welding is the process of joining metals. The three major types of welding are fusing, crimping, and brazing.



TECHNICAL SERVICE CO., LTD.

AMADA AUTOMATION SYSTEMS CO., LTD.

AMADA MACHINE TOOLS CO., LTD.

AMADA MIYACHI CO., LTD.

**Metal cutting machine business**

- Band saw machines
- Structural steel fabrication machines



The machines of AMADA MACHINE TOOLS are at work in many and varied fabrication applications from minute precision parts for "medical equipment to large steel frames for high-rise buildings, bridges and other structures.

**Stamping press business**

- Stamping press machines



**Machine tool business**

- Grinding machines
- Electrical discharge machines



**Precision welding machine business**

AMADA MIYACHI is providing throughout the world welding and processing solutions for automotive body panels and electrical equipment, LCD displays, personal computers, medical devices, and other familiar products.

- Laser welders
- Laser markers
- Fine spot welders
- Systems



**Metal cutting, machine tool business and stamping press business**

**Precision welding machine business**

Band saw machines

**HPSAW 310**



The metal cutting machine cut metal round bars and structural steel with band saw blade or circular saw blade.

Grinding machines

**DV1**



The grinding machine is a machine tool that rotates the grinding wheel in the high speed, and finishes up the structure precisely.

Stamping press machines

**SDE 2017**  
GORIKI



Machines for processing thin metal plates with toolings. Used in processes for manufacturing electronic components such as terminals, and products such as automotive parts that require drawing processing.

Fiber laser welders

**ML-6810C**



These devices are used for fine welding of various metals using laser beams.

\*Visit our website for detailed information about the AMADA Group's products. Website : <http://www.amadaholdings.co.jp/>

# Introduction

## Our Works

AMADA Group is a comprehensive manufacturer of metalworking machinery, a “total solution” company that contributes to the creation of products for global customers.

### ◆Isehara Works(AMADA HOLDINGS)

The Isehara Works are in Isehara City, which is almost in the center of Kanagawa Prefecture, and this is where the Amada headquarters and AMADA Solution Center are located. The AMADA Solution Center is a place for providing “improvement suggestions” to our customers for solving their manufacturing issues. It features an “Exhibition Hall” where people can get acquainted with our products, and serves the function of “demonstration processing” in which AMADA uncovers customers’ issues and proposes solutions. Our manufacturing proposals can be tested here with our equipment as well.



Isehara Works

### ◆Tooling Manufacturing Plant (AMADA TOOL PRECISION)

AMADA TOOL PRECISION deals with the manufacture and sales of dies/toolings, and die peripheral processing devices, which are expendable parts of Amada’s punching and bending machines.

The company has three separate manufacturing plants. One is the seamless and automated “876 Plant” that covers processes ranging from the procurement of raw materials, rough processing, and heat treatment, to grinding processing. Second is the “Resizing Plant” that accommodates quick-delivery orders, and third is the “Special Tooling Plant” that manufactures non standard tools made-to-order.



Tooling Manufacturing Plant (inside Isehara Works)

### ◆Fujinomiya Works (AMADA ENGINEERING)

The Fujinomiya Works (Fujinomiya City, Shizuoka Pref.) is in a scenic location on the south-west side of Mt. Fuji. With responsibility for development and manufacture, this site is a source of innovation.

The Third Factory of Fujinomiya is the world’s largest laser factory that manufactures our latest laser machines, and it has the manufacturing capacity of 140 units per month. The factory’s concurrent design system with the Development Center has made our front loading development\*1 and manufacturing system possible.

There are 4 Innovation Rooms at the Development Center, and with the aid of the latest design systems and video equipment, these rooms can be used by customers and development staff as creation spaces for cutting-edge development. As a result of the module design, created with 3-dimensional CAD, product manufacture can be tested from the design stage, thus allowing for modularization to a high degree of quality.



Fujinomiya Works

\*1Front loading development:

an effective development method where relevant divisions gather from the planning stage to study the products from multiple angles concurrently, and reduce the problems during the latter half of development.

### ◆Toki Works (AMADA MACHINE TOOLS / AMADA / AMADA TOOL PRECISION)

Toki Works (AMADA MACHINE TOOLS / AMADA / AMADA TOOL PRECISION) is in charge of developing and manufacturing metal cutting machines, structural steel machines, and machine tools, and manufacturing sheet metal machinery. In the cutting and structural business, we provide a total solution approach to cutting that maximizes machining performance with machines and blades. We also provide shaped steel processing systems to the steel-frame industry, which is seeing an increase in the size of components in cutting and hole-punching processes, along with a move towards high-speed processing and automatization. Its machine tool segment offers systems that generate precision and value-added products with automation.



The company's well-known creative product developments include profile grinding machines and combination lathe. As AMADA's second base of operation, a tooling Manufacturing Plant (AMADA TOOL PRECISION), started up at Toki Works in September 2017.



Toki Works

### ◆Ono Plant (AMADA MACHINE TOOLS)

Ono Plant is located in Ono City, Hyōgo Prefecture, at the center of Higashi-Harima region, and this area is known for its metal industry from the old days as the manufacturer of blades.

Today, Ono Plant serves the functions of development and manufacturing of band saw blades as the backbone factory of the AMADA Group's consumable business.

With our unique technology and daily pursuit of "QCD"+ "I" (for "innovation"), we have acquired the number one share of the world bandsaw blade market.

Our plant in Japan works together with our affiliated factories in Austria and China to develop products incorporating the latest technologies in response to the needs of our customers worldwide.



Ono Plant

### ◆Fukushima Plant (AMADA AUTOMATION SYSTEMS)

Since it began operations, AMADA AUTOMATION SYSTEMS has handled automated equipment for systems, and in the sheet metal system sector it has grown into a pioneering manufacturer of sheet metal system equipment, backed up by a wealth of experience and achievement.

This company has accumulated various manufacturing technologies and knowhow over the years. It plays an important role as a member of the AMADA Group, and serves as a well-trusted engineering partner of global sheet metal factories, based on providing total solutions for customers' issues.



Fukushima Plant

### ◆Miki Plant (NICOTEC)

NICOTEC manufactures and sells cutting tools, cutting machines, and cutting lubricants. Its headquarters is located inside the Isehara Works, and its manufacturing facilities are located in Hyōgo Prefecture.

The Miki Plant, located in Miki City—a place long known as "the city of hardware"—is mainly in charge of developing and manufacturing metal cutting tools such as bandsaw blades, hole saws, and coils. The hole saws, in particular, are developed as NICOTEC's original products.



Miki Plant



### ◆Noda Works (AMADA MIYACHI)

AMADA MIYACHI offers joining and processing solutions in minute and precision fields to the global market. It manufactures, distributes, and maintains laser welding and processing machines and fine spot welders.

It is an “only one” company that possesses both laser and fine spot welding technologies. With offices in 16 countries, it aims to expand its distribution and services.

We contribute to the world’s manufacturing industry and at the same time tackle the challenge of developing and creating innovative technologies and products. Through superior services, we provide each customer with the ability to reduce their environmental load and with maximum economic rationality.



Noda Works (AMADA MIYACHI)

NEW

### ◆Established AMADA ASIA PACIFIC as the ASEAN regional headquarters

In August 2016, AMADA HOLDINGS newly established the ASEAN regional headquarters, AMADA ASIA PACIFIC (AAP) in Thailand. This will integrate management of the AMADA Group as a whole in the ASEAN region and as strategic headquarters strengthen our future Group activities.



AMADA ASEAN Technical Center

## The Isehara Works and Fujinomiya Works Received the “Japan Greening Excellence Award” in October 2016.



The Isehara Works and AMADA ENGINEERING’s base Fujinomiya Works received the “Japan Greening Excellence Award” at the Fiscal 2016 Factory Excellence Awards held at the Ishigaki Memorial Hall (Akasaka, Minato-ku, Tokyo) on November 1, 2016.

This award recognizes the efforts of factories that, based on the spirit of the Factory Location Law aimed at harmonizing the factory with its surrounding environment, actively promote greening activities and have made remarkable achievements in improving the environment both inside and outside the factory.

At the awards ceremony, AMADA HOLDINGS represented 15 groups that won this year’s prize and made presentations on experiences in greening activities, efforts regarding biodiversity at Isehara and Fujinomiya, and contributions to the region.



# Newly ISO14001-Certified Plants and Works

## AMADA (China) Co., Ltd.

### Making efforts towards ISO14001 certification with the aim of raising awareness of environmental conservation —

AMADA (China) Co., Ltd. was founded in Shanghai in April 2012 to build a framework capable of making engineering proposals to enhance customer satisfaction with the aim of breaking ground in the continuously growing Chinese market. AMADA (China) mainly manages the AMADA Group subsidiaries in China and conducts local sales and service business of metalworking machinery.

Following that, AMADA SHANGHAI MACHINE TECH CO., LTD. consisting of a manufacturing plant and parts center was newly established in 2013, accelerating management based on a strong business foundation.

AMADA (China) collaborated with the Japanese headquarters, aiming to acquire ISO14001 in December 2015, and set up an ISO secretariat. Former CEO Izumii took command and vice-CEO was appointed ISO secretariat supervisor. Furthermore, under the guidance of the Shanghai Appraisal Center, employees received education in secretariat adjudication and those who became qualified judges took the lead and began planning and preparing for ISO14001 certification.

### ISO14001 certification obtained in July 2016

At the beginning of 2016, operation of the environment system started. The ISO secretariat created environment manuals and environmental system program instructions to build the system, and set up environmental policies and targets.

In environmental education for employees, the focus was on raising awareness of environmental conservation among the employees by giving all employees guidance on the necessity of acquiring the ISO14001 and the commitment required. At the same time, fire drills and other activities were also conducted to raise awareness of disaster prevention and enhance the ability to respond.

As a result of this planned preparation, we were able to receive high evaluation from China CQC Shanghai certification center in the appraisal, but one nonconformity and six necessities for improvement were pointed out. The AMADA (China) ISO secretariat took measures in cooperation with each department within the prescribed time and obtained ISO14001 certification in July 2016.



Environment ISO secretariat members

### Comment from Vice-CEO Limin Yan (ISO secretariat supervisor)

AMADA (China) was able to acquire ISO14001 certification this time, but as China's environmental protection standards are expected to continue to improve, I felt the importance of further efforts on our part. I would like to use this opportunity to continue educating employees to raise their environmental awareness and philosophy awareness so that however small, as a global corporation we can give thought to the environment.



Fire drill



#### AMADA (China) Co., Ltd.

CEO (President)	Shinya Sasaki
Established	April 2012
Location	No.89 Zhuoqing Road, Qingpu District, Shanghai, China
Number of employees	62 (as of March 2017)
Business description	Management of the AMADA Group subsidiaries in China, Regional sales and servicing of metal processing machinery

# About HPSAW-310

## Highly acclaimed for its super fast cutting technology and environmental friendliness

The HPSAW-310 is an ultra fast band saw machine created from the integral development of machine and blade. Shortening the cutting time dramatically improved production efficiency. The newly designed “double gate type guide” and “bridge type saw head frame” allows stable super fast cutting of mild steel. Fastest in its class, mass cutting at an amazing speed. We have developed a revolutionary band saw beyond imagination.



### ■ Main features

#### ◆ Stable super high speed cutting

An innovative saw head with a blade twist angle of zero degrees. Achieving high-speed running of the blade supported super high speed cutting. Eliminating the twist load extended the life of the blade. High rigid double gate guide allows large cutting resistance during super high speed cutting. The bridge type saw head frame with optimum stress distribution based on structure analysis realized stable cutting for extended periods.



#### ◆ Reduced noise

Vibration reduction rollers are mounted on the blade guides of both sides, reducing the noise during the cutting process.

#### ◆ Discharge of chips and collection of cutting oil solution

Proposing a system that automatically treats large amounts of chips generated during the super high speed cutting. The cutting oil is also collected.



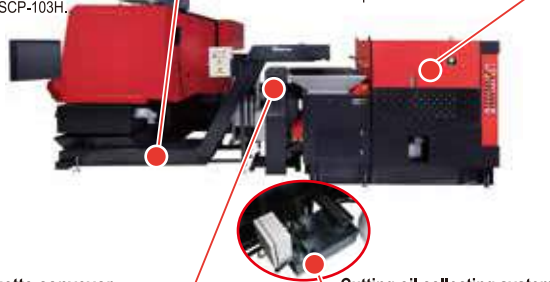
New saw head precision with a twist angle of zero degrees

#### Separately placed chip conveyer

Large amounts of chips discharged to the outer part of the machine are carried to the feeding section of the SCP-103H.

#### SCP-103H (Automatic chip compactor)

Compresses chips fed into the hopper and makes briquettes. Simultaneously dehydrates cutting oil adhered to chips.

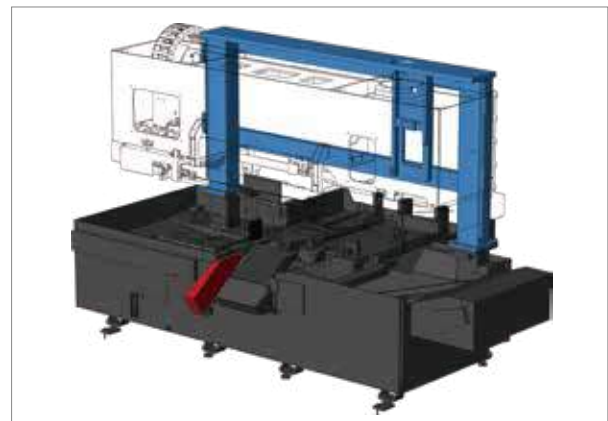


#### Briquette conveyer

Lifts briquettes and automatically carries them out to the accumulation box.

#### Cutting oil collecting system

Collects dehydrated cutting oil and returns it to the main machine.



Double gate type guide



## Awarded 2016 Best 10 New Products Award and 2017 Industrial Machine Design Special Award (Nippon Brand Award)

HPSAW-310 was awarded the 59th Best 10 New Products Award, sponsored by Nikkan Kogyo Shimbun. A certificate and plaque were presented in January 2017. In July 2017,

it won the Japan Brand Award at the Industrial Machine Design Awards. The saw has enjoyed many high evaluations from the experts.



▲ Best 10 New Products Award Ceremony (January 2017)



▲ Industrial Machine Design Special Award Ceremony (July 2017)

### Developer interview ① (HPSAW-310)

**AMADA MACHINE TOOLS Cutting Products / Engineering Department Manager Akio Seto**

#### Goals aimed for during development

The development concept was "from high speed cutting to super high speed cutting". Our aim was our challenge to be the world's fastest cutting. The world's fastest cutting, with the newly developed machine HPSAW-310 (hyper saw) and carbide-tipped band saw blade (AXCELA HP1), is now more than 10 times the universal band saw, twice the productivity of the same-class carbide circular sawing machine.

In addition, it is a band saw that not only has the world's fastest cutting technology but also has an ecology/economy consideration to the environment.

As for cutting cost, the hyper saw is small at 2.5 mm compared to its carbide circular sawing machine counterpart, which is 6.6 mm, meaning that at the same cutting speed, we are able to achieve more than 60% reduction in both energy for sawing (main cutting resistance) and chip discharge. We also were able to achieve low noise (93dB in the case of the same class carbide circular sawing machine down to 78dB) by forcibly cooling the heat generated by super high speed cutting with high-pressure coolant while applying it to vibration damping.



### Developer interview ② (Specialized Carbide Tipped Band Saw Blade AXCELA-HP1)

**AMADA MACHINE TOOLS Ono Plant Manufacturing Division Materials Research Center Director Yūji Nagano**

The HPSAW-310 Specialized Carbide Tipped Band Saw Blade AXCELA HP1 achieves unprecedented high speed cutting and long service life by combining a blade technology accumulated over many years with new coating technology and chamfering to the bottom edge of the tooth portion. Furthermore, compared with circular sawing machines of the same class, chip discharge is reduced by 62%, greatly contributing to improvement of yield and reduction of waste.

We adopted a new processing method as a countermeasure against unexpected cylinder rupture. The hardest part was finalizing in-house production of mass-processing machines by rush construction. As a result of working closely on integrating machine and blade from the early stages of development, we were able to realize a cutting process of the world's highest level.



# Mid-term environmental plan

Themes of activities		Medium term goals (FY 2018)	Goals for FY 2016
Preventing global warming	<b>[Product Development]</b> Contribute to the prevention of global warming by reducing CO <sub>2</sub> emissions*1 throughout the entire lifecycle of a product	<ul style="list-style-type: none"> <li>Reduce average CO<sub>2</sub> emissions of all products sold annually by 25% by 2020 (Benchmark year: 2009)</li> <li>Goal for 2018: 22% reduction</li> </ul>	<ul style="list-style-type: none"> <li>Release of eco-products / CO<sub>2</sub> reduction by sales expansion (Reduction amount: Overall: -18.1%, Sheet metal machinery: -33.0%, Press: -21.4%, Cutting / machine tools: -9.3%, Grinding: -7.6%)</li> </ul>
	<b>[Business Activities]</b> Reduce CO <sub>2</sub> emissions by reducing consumption of energy and resources	<ul style="list-style-type: none"> <li>"Intensity against benchmark year*2: 25.0% reduction" to cut average CO<sub>2</sub> emissions of plants and offices by 25% by 2020</li> <li>Compliance with the Revised Energy Conservation Act: 1% reduction/year (5%/5 years) (designated plants and offices)</li> <li>Goal for 2018: 25% reduction</li> </ul>	<ul style="list-style-type: none"> <li>AMADA Group CO<sub>2</sub> reduced by 1.8% YoY (CO<sub>2</sub> intensity target value: 0.802)</li> <li>Response to the revised energy conservation law (1% reduction per intensity)</li> </ul>
Effective utilization of resources	Contribute to our recycle-base society by promoting the efficient use of limited resources	Achievement of zero emissions at plants • "Achievement of zero-emission ratio of 1% or less for the entire group by 2020" (1% or less of annual landfilled waste, by waste material weight) • Goal for FY2018: zero-emission ratio of 1% or less across the entire AMADA Group	<ul style="list-style-type: none"> <li>Maintain zero emissions at 3 plants (Fujinomiya, Isehara ATP, Toki)</li> <li>Initiatives aimed at achieving zero emissions at 4 plants (Ono, Miki, Noda, Fukushima)</li> <li>AMADA Group's factory zero emission rate 1.3%</li> </ul>
		Initiatives aimed at creating a clean factory • Reduction of waste materials generated during the manufacturing process	<ul style="list-style-type: none"> <li>Continued improvement of IN-OUT measures</li> <li>Source measures</li> </ul>
Regulated chemicals control	Bolster initiatives regarding management of regulated substances	Product development with green procurement (Reduce the use of RoHS directive chemicals) • RoHS compliance rate of 98% or higher in all models of new products • Completion of compliance with category 11 (RoHS compliance of electrical and electronic components)	Initiatives aimed at complete elimination of RoHS directive chemicals • RoHS compliance rate for all models of new products 94% or more • Marketed product non-survey rate of all newly developed machines zero
		Reduce the use of regulated chemicals "Appropriately control chemical substances, and reduce their use within the manufacturing process" (PRTR*4, VOC*5)	Initiatives towards reducing PRTR substances in paints • Expanded use of TX-free paints (Toki, Fukushima) • Reduction of solvent consumption (Fujinomiya, Toki)
Biodiversity	Preserve and regenerate biodiversity to pass on this country, which is rich in the blessings of nature, in good shape to future generations.	Initiatives that contribute to biodiversity conservation "Maintenance and protection for richer biodiversity than current state by 2020" • Quantitative evaluation of each site • Vitalizing linkage with local communities	<ul style="list-style-type: none"> <li>Formulation of biodiversity conservation plan</li> <li>Quantitative evaluation by site</li> <li>Activation of regional collaboration</li> </ul>
Environmental management	Respond faithfully to voices of stakeholders, particularly customers, to fulfill social responsibility as a company	Enhancing group environmental administration • ISO14001: 2015 group certification Promoting CSR initiatives • Active fulfillment of accountability • Enhancement of communication with stakeholders	<ul style="list-style-type: none"> <li>Transition to environmental management system ISO14001: 2015 completed</li> </ul>
			Implementation of CSR communication • Issued 2016 Environmental and Social Report • Conducted survey on level of environmental management
			CSR activities at each site

FY 2016 Results	Goals for FY 2017
CO <sub>2</sub> reductions due to release of eco products (Overall: -17.2%)	Reduction of CO <sub>2</sub> through the release and sales promotion of eco-friendly products (Reduction amount: Overall: -20.0%, Sheet metal machinery: -38.0%, Press: -19.9%, Cutting/ machine tools: -12.2%, Grinding: -10.1%)
<ul style="list-style-type: none"> <li>CO<sub>2</sub> intensity 0.840 (-16.0% against the benchmark year)</li> </ul>	<ul style="list-style-type: none"> <li>AMADA Group CO<sub>2</sub> reduced by 4.1% YoY (CO<sub>2</sub> intensity target value: 0.799)</li> <li>Response to the revised energy conservation law (1% reduction per basic unit)</li> </ul>
<ul style="list-style-type: none"> <li>Zero emissions maintained at 3 plants (Isehara ATP: 0.011%, Fujinomiya: 0.009%, Toki: 0.03%)</li> <li>AMADA Group's zero-emission ratio 1.759% (-62.2% from FY2010)</li> </ul>	<ul style="list-style-type: none"> <li>Maintaining of zero emission plants (Fujinomiya, Isehara ATP, Toki)</li> <li>Initiatives towards achieving zero emission plants (Ono, Miki, Noda, Fukushima)</li> <li>Zero emission rate in the AMADA Group's plants: 1.0%</li> </ul>
<ul style="list-style-type: none"> <li>Significant reduction of zero emissions rate (Fujinomiya)</li> <li>Reduction of packaging materials for delivered parts, etc. / material handling (Toki)</li> <li>1,439kg reduction of packing can case (tinplate) use (Miki)</li> <li>14.3% increase in recycling of valuables (57.05⇒65.18t)</li> </ul>	Continuous improvement of IN-OUT measures <ul style="list-style-type: none"> <li>Source measures</li> </ul>
<ul style="list-style-type: none"> <li>RoHS compliance rate in new products: 98.1%</li> <li>RoHS compliant selection for commercially available parts and products. Cutting division response rate 98.1% Machine tool achievement rate 98.5%</li> </ul>	Initiative toward eliminating RoHS directive materials <ul style="list-style-type: none"> <li>RoHS compliance rate for all models of new products 100%</li> <li>Product development through green procurement (reduction of substances subject to RoHS directive)</li> </ul>
<ul style="list-style-type: none"> <li>Tested TX free paint and reached usability level (Fujinomiya)</li> <li>Considered use of TX free paint, 90% reduction per intensity compared to FY2007 using solvent (thinner) recycle and recovery apparatus (Toki)</li> <li>Reduction of 3.5t (7%) YoY of purchased thinners with installment of powder painting equipment (Fukushima)</li> </ul>	Initiatives towards reducing PRTR substances in plants <ul style="list-style-type: none"> <li>TX-free paints use spreading across the group (Toki, Fukushima)</li> <li>Reduction of solvent consumption (Fujinomiya, Toki)</li> </ul>
<ul style="list-style-type: none"> <li>Implemented quantitative evaluation in line with JBIB's Ikimono Symbiosis Office guidelines (Ono)</li> <li>Held a hands-on forest thinning event for participants of our "open factory". (Fujinomiya)</li> </ul>	<ul style="list-style-type: none"> <li>Implemented quantitative evaluation in line with JBIB's Ikimono Symbiosis Office guidelines (Fujinomiya)</li> <li>Activation of regional collaboration</li> </ul>
<ul style="list-style-type: none"> <li>Preparation of ISO14001: 2015 operation manual and preparation for certification</li> <li>In-house seminar for ISO14001: 2015 operation</li> </ul>	<ul style="list-style-type: none"> <li>Completion of transition to environmental management system ISO 14001: 2015 and Certification</li> </ul>
Implementation of CSR communication <ul style="list-style-type: none"> <li>Issue the environmental and social report "Forest-In Office 2016" (Japanese, English and Chinese)</li> </ul>	Implementation of CSR communication <ul style="list-style-type: none"> <li>Issue the environmental and social report "Forest-In Office 2017" (Japanese, English and Chinese)</li> <li>Publicize calculable figures for SCOPE 3</li> </ul>
<ul style="list-style-type: none"> <li>Support for certification and certification of EMS by AMADA (China)</li> <li>Feedback of the results of the 6th environmental impact study to overseas subsidiaries and implementation of 7th survey</li> </ul>	<ul style="list-style-type: none"> <li>Feedback of the results of the 7th environmental impact study to overseas subsidiaries and implementation of 8th survey</li> </ul>
<ul style="list-style-type: none"> <li>Cleaning activities were held at each site as a way to contribute to the local community</li> </ul>	<ul style="list-style-type: none"> <li>CSR activities at each site</li> </ul>

\*1: CO<sub>2</sub> emissions data is calculated based on the calculation manual for the "Act on Promotion of Global Warming Countermeasures" \*2: Benchmark year: FY2007

\*3: RoHS : Stands for "Restriction of Hazardous Substances." A directive that specifies hazardous substances contained in electrical equipment and electronics and prohibits their use.

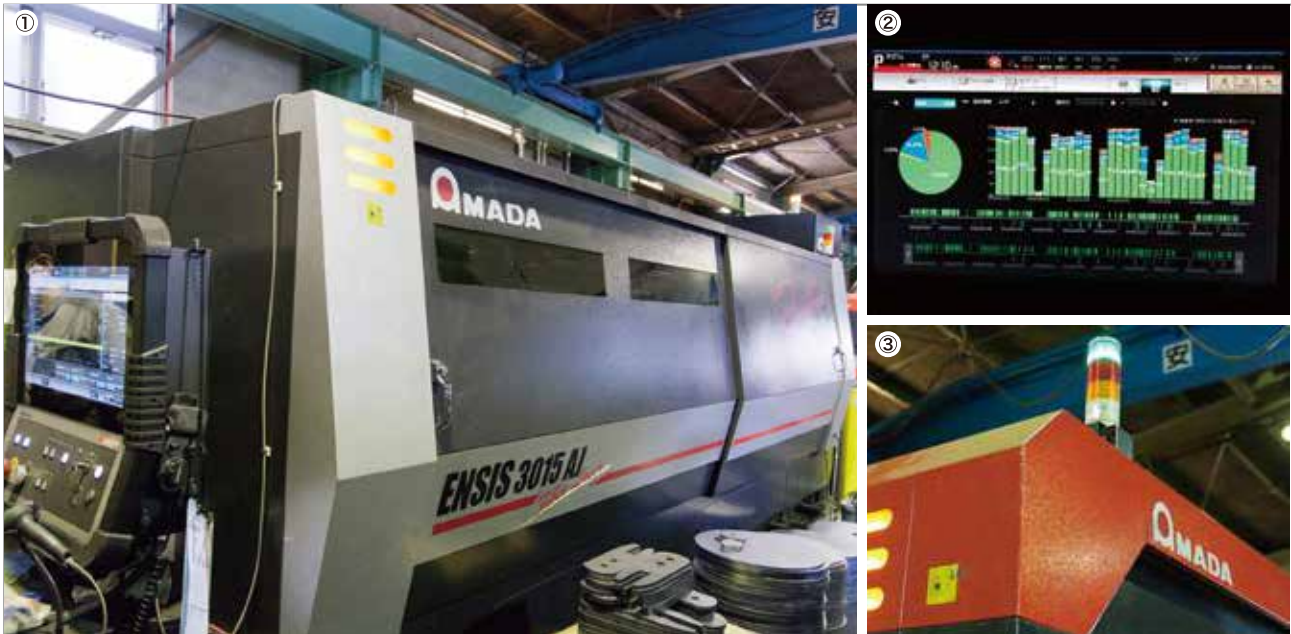
\*4: PRTR : Stands for "Pollutant Release and Transfer Register," in which the emissions and movements of environmental pollutants are registered. A system for compiling and announcing the emission volumes and travel distances of hazardous chemicals.

\*5: VOC : Stands for volatile organic compounds. Regarded as a cause for chemical sensitivity syndrome and sick building syndrome.



# Eco Products at our customers

## SEIKO INDUSTRY Co., Ltd.



① While operating with an output of 2 kW, the fiber laser machine ENSIS - 3015A is made specifically for thick plates of 16 mm or more. / ② One-month operation history displayed on ENSIS-AJ's latest type NC device AMNC 3i. / ③ Operation state (running, standby, stopped) can be seen at a glance with three color lights installed on the three laser machines.

### Full 24-hour operation of three laser machines in two shifts

- Separate use of three laser machines saves electricity costs by 500,000 yen per month -

"Sheetmetal machine & Soft"  
April 2016 Machinist Publishing

Mr. Hiroshi Aoki is the president and founder of SEIKO INDUSTRY Co., Ltd., a company in Higashiosaka, a city known for manufacturing, or monozukuri. After working for many years at a major steel trading company and becoming active as a managing director, he became independent in his 50s and founded this company in 1984. He began the machining and sales of cut steel plates using a shearing and gas cutting machine in Daitō (Osaka).

In 1987 he opened a second factory in Mizuhai (Higashi-Ōsaka) so that he could install a plasma cutting machine. Later, he installed a laser machine to improve processing precision. The second factory became a laser processing factory.

Senior Managing Director Takashi Aoki is President Aoki's son, who told us about the current situation. "In order to respond to the increase in order volume, in early 2014 we set up a new factory in Higashiosaka City and integrated our production bases that had been separated in two. At the same time, we installed the fiber laser machine FOL-3015AJ (6kW) as our third laser machine. In September 2015 we used energy conservation subsidies and upgraded our two laser machines to fiber laser machines ENSIS-3015AJ and CO<sub>2</sub> laser machine FO-MII-4222NT (4kW). Right now we have three systems – two fiber laser machines and one CO<sub>2</sub> laser machine."



Takashi Aoki, Senior Managing Director



Shigenori Tamura, Production Manager

Company profile	<p>Company name: SEIKO INDUSTRY Co., Ltd.          Representative Director: Hiroshi Aoki          Address: 4-3-19, Mizuhai, Higashiosaka, Osaka          Telephone: +81-72-962-5516          Established: 1984          Number of employees: 24          Main business: Full processing including cutting, machining, drilling, and bending steel, stainless steel, copper, brass, and aluminum using laser machines, shearing, gas fusing, and milling machines.          URL <a href="http://www.seikou-eastosaka.com/">http://www.seikou-eastosaka.com/</a></p>
Main equipment and facilities	<ul style="list-style-type: none"> <li>●Fiber laser machines: ENSIS-3015AJ+MPL-3015G, FOL-3015AJ+LST-3015FOL</li> <li>●CO<sub>2</sub> laser machine: FO-MII 4222NT+LST4222FMII</li> <li>●Shearing machine:ESH-3013 ●Two-dimensional CAD/CAM: AP100 x 5</li> <li>●Nesting software: WinNest×4</li> <li>●Operation support system: vFactory</li> </ul>

**Truly feeling the benefits of fiber laser**

**Assigned the ENSIS-AJ to thick plates of 16 mm or more**

ENSIS-AJ has AMADA's proprietary oscillator and proprietary state-of-the-art beam control technology mounted on it, making it possible to process thin plate to thick plate even at an output 2kW. Still it is hard to imagine replacing a 6kW LC-F1Nt with the 2kW ENSIS-AJ.

Production Manager Shigenori Tamura says, "while installing and using the FOL-AJ as early as 2014, I became aware of the benefits that were unique to fiber lasers."

"Our electricity costs drastically decreased, it was no longer necessary to use laser gas, and the number of mirrors were decreased. This lowered our maintenance cost. The protective glass helped the lens to last longer and on the service end, AMADA also made their own fiber laser machine and oscillator, so if anything went wrong, you could get both the machine and oscillator looked at with just one call. This was big. We have the machines in full operation 24 hours a day in order to maintain a one- to two day

turnaround so if it stops, that could be the end of us. Sometimes the trouble is due to operational errors and not just problems that the machine would have, so to have an AMADA service staff be there on command has really helped us out on many occasions."

**Electricity bill saved by 500,000 yen per month**

"After the ENSIS-AJ was officially released, we looked at the machine and checked the cut surface quality and so on at the AMADA Solution Center and decided to install it. The ENSIS-AJ was 2kW to begin with, so processing thin plate would be slower than the 4kW FOL-AJ or FO-MII, but thick plate takes time even with a CO<sub>2</sub> laser, so the difference in processing speed is not so great. On the other hand the running costs, including electricity overwhelmingly lower so I think those benefits overrule."

Mr. Tamura concluded by saying: "Six months since we installed it in September 2015 – our company uses the ENSIS-AJ to process 16-25 mm thick plates. Our monthly electricity costs right now, compared to when we

were using two machines – the FO (4kW) and LC-F1NT (6kW) – are 500,000 yen lower. This reduction is after switching from two machines to three machines so you can see that the effect is tremendous. The cut surface is sometimes tapered or there may be fine lines, but I've heard that this is inevitable due to the characteristics of fiber laser. We haven't had any complaints from our customers, but we also don't know how much longer this will be acceptable, so there are improvements I'd like made."



① CO<sub>2</sub> laser machine FO-MII4222NT(4 kW) capable of supporting 4x2m plate with thickness of up to 22 mm. / ② Nesting data for FO-MII. Nesting multiple parts in parts with no gaps on SPH 5' x 10' plate with thickness of 6mm.

**[ECO PRODUCTS in use]**



ENSIS-3015AJ Fiber Laser Machine

**ENSIS-3015AJ**

The ENSIS-AJ series is equipped with AMADA's own developed fiber laser oscillator and the latest unique beam control technology, maximizing energy efficiency while supporting higher efficiency in v-mix v-lot production

- Feature ① Thin-to-thick plate cutting with a single machine
- Feature ② Improvement of energy efficiency with energy-saving effects
- Feature ③ Pursuit of small footprint by oscillator downsizing and built in machine
- Feature ④ Flexible layout

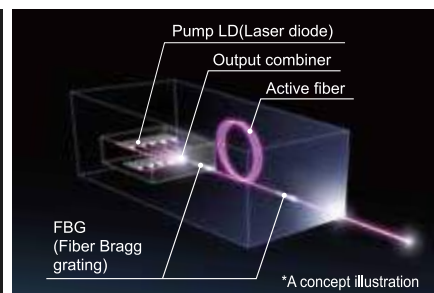
\*The ENSIS-AJ series was awarded the Agency of Natural Resources and Energy Director's Award at the 36th Energy-Efficient Machinery Awards hosted by the Japan, Machinery Federation (JMF) for its excellent energy-saving performance.

**Low-cost processing through energy conservation and high speed cutting with AMADA's in-house built fiber laser oscillator**

- 1: The fiber laser is simpler in construction and beam delivery than the CO<sub>2</sub> laser. This means that the maintenance cost of its oscillator and optical parts is much lower.
- 2: The fiber laser is capable of high energy conversion. It is three times higher in energy efficiency the CO<sub>2</sub> laser. The power consumption is sharply cut. No need for warm-up operation and laser gas has resulted in a running cost reduction of more than 70%.



Electric Consumption



Laser Module

\*A concept illustration

# Reducing CO<sub>2</sub> emissions associated with our products

AMADA Group supplies its customers with products (industrial goods) including metalworking machines, consumables and software together with maintenance services.

Believing that the most effective strategy to control our products' lifecycle contribution to global warming is to limit CO<sub>2</sub> emissions (by reducing power consumption) in the customer use stage, we offer low carbon emission products.

## Product environmental assessment system and AMADA ECO PRODUCTS certification system

The AMADA Group has put in place two systems for evaluating product environmental performance: the product environmental assessment system and the AMADA ECO PRODUCTS certification system.

Carried out as part of the design review (DR)\* at each step of the development process, the product environmental assessment aims to ensure that we do not supply products with a severe environmental impact. The assessment of product environmental performance consists of 25 assessment items in 8 categories, including energy consumption during customer use (CO<sub>2</sub> emissions) and non-usage of restricted chemical substances.

All new products in development undergo this assessment, and our rule is that, in principle, any product failing to meet the assessment criteria must not be marketed.

Like the product environmental assessment, the AMADA ECO PRODUCTS certification system is part of the Design Review and is intended to appeal to customers as an evaluation of our products' environmental performance (energy efficiency) and improved productivity.

Certified products are granted the AMADA ECO PRODUCTS mark.

### ECO PRODUCTS Mark



Trademark  
#4631897

The green color symbolizes the protection of the environment, while the mark depicts a new leaf bud formed from the letters 'E' and 'P' (standing for 'eco products').



**Resource-Saving Machine** : Indicates a machine that saves natural resources by consuming less oil, gas etc. than conventional models.



**Low-Noise Machine** : Indicates a machine that produces less noise during use than conventional models.



**Energy-Saving Machine** : Indicates a machine that saves energy by consuming less power than conventional models.

\*Design Review: In order to develop products that satisfy our customers, all the relevant business divisions assess the design plans created by our design teams from various perspectives and request improvements as necessary.

## Introducing AMADA ECO PRODUCTS

### ■ENSIS-3015AJ

ENSIS-3015AJ has improved beam quality with the upgraded AMADA's exclusive fiber laser oscillator and with the ENSIS technology, our latest unique beam control technology, it enables continuous high speed thin-to-thick (mild) cutting with a single machine, while conserving energy without the need for setup. Its main features are:

- ① Laser beam configuration controlled using beam control technology. Machining with optimum beam configuration according to plate thickness.
- ② High beam quality specifically for sheet metal processing. Enables processing of thick mild steel using 2 kilowatts.
- ③ Full range cut without lens exchange.
- ④ Improvement of energy efficiency with energy-saving effect.
- ⑤ Space saving by electro-mechanical integration.



ENSIS-3015AJ

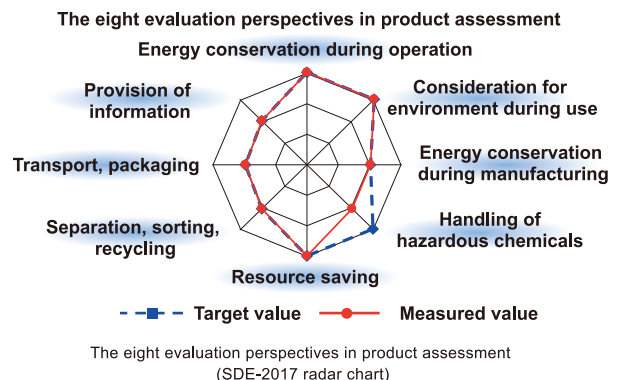
### ■SDE-2017 GORIKI

The SDE-2017 GORIKI made possible the reduction of power consumption, oil, and noise by combining a servomotor made for press machines with a proven crank mechanism. In addition, as it specializes in progressive specification, it has achieved high productivity due to its short stroke.

For high added value production, we adopted a wide slide area, making it possible to install multi-process progressive tooling.



SDE-2017 GORIKI





# Reducing CO<sub>2</sub> emissions associated with our business activities

## Achieving environmentally responsible workplaces (initiatives in FY2016)

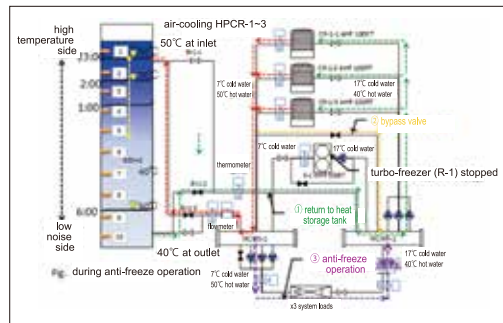
The main manufacturing facilities of the AMADA Group pursue efficiency in business and production processes, implementing energy and resource saving and making constant and drastic improvements to reduce the environmental impact of our factories. Furthermore, we regard the use of renewable energy to be an important theme, and we incorporate it actively in the design of new operation sites and plants.

### Toki Works (AMADA MACHINE TOOLS / AMADA ENGINEERING)

Toki Works installed a water heat storage system that uses the water stored in the heat storage tank for air conditioning, aiming to level the amount of electricity. This system takes advantage of the low late night electricity charges, storing cold water in the summer and warm water in the winter, with the intention of reducing power consumption by using this for daytime air conditioning.

From the time of completion, the target heat accumulation was rarely met during the night and the heat source system was in a state of inefficient operation. Thinking that if the target heat accumulation could be stored in the heat storage tank at an early stage of heat accumulation hours, the heat source system would automatically stop and we could expect a reduction in power consumption. From FY2014, we have been working with the Chubu Electric Power Company to improve the operation of our system.

As a result of this improvement of operation, we were able to reduce power consumption by the heat source system by 24% (about 85,000 kwh) in FY2016 compared with before improvements (FY2012 and FY2013). Based on our knowledge gained through operational improvement, we will continue to strive for further energy conservation by continuous operation management the of heat source system.



Routing for winter heat source system operation (Toki Works)

### Ono Plant (AMADA MACHINE TOOLS)

At the Ono Plant, in order to remove the oil on the saw blade, the cleaning solution had to be raised to 60°C. Due to the inefficiency of the electric heater during heating, we investigated whether waste heat from the adjacent heat treatment process could be used effectively and worked on improving the efficiency by heat recovery using a heat pump.

For installment, we had the cooperation of Kansai Electric Power Co., Inc. to make a joint analysis to find optimal operation conditions in order to effectively utilize outer hot air (waste heat), and began operating a high efficiency heat pump in June 2016. As a result, we reduced CO<sub>2</sub> emissions by 16.0 tons over six months, which also led to the reduction of power consumption of the washing equipment.



Waste heat use (Ono Plant)

### Fukushima Plant (AMADA AUTOMATION SYSTEMS)

In conventional peripheral device production at the Fukushima Plant, in order to cope with customer needs (quick delivery, customized specifications, delivery month), the production load was at times low and at times overwhelming. This resulted in wasted materials, wasted energy, wasted man-hours, and excessive overtime.

Considering our customers' needs, we installed the Module MARS, building a module production system to equalize the production load and to shorten lead time (reduction of man-hours, JIT).

Full-scale operation began in FY2017, but electricity was reduced by 1.9% (55,300 kWh/25.9t-CO<sub>2</sub>), and LP gas by 10.9% (14.7 t/44.5t-CO<sub>2</sub>).

Looking forward, we will further promote the reduction of CO<sub>2</sub> emissions through this Module MARS production system.



Module MARS production system (Fukushima Plant)

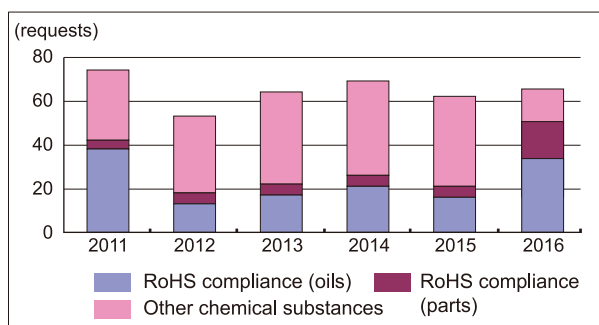
# Chemical substances control

**We promote initiatives in controlling regulated chemical substances.  
We are committed to providing safe machines made of safe materials.**

## Green Procurement

AMADA Group positions “green procurement,” procuring materials with small environmental loads, as one of its important environmental preservation activities for providing environmentally-friendly products to customers. We request our suppliers for chemical substance analysis and information on materials being used in parts based on the “AMADA Group Green Procurement Guidelines”<sup>\*1</sup> that we established in April 2004.

**Number of chemical substances user survey requests**



## Chromate Treatments

With regard to surface treatment of in-house design mechanical parts, we have shifted from hexavalent chromium, which has a large environmental burden, to the more environmentally-friendly trivalent chromate.

## Lead-free solder circuit boards

We developed a lead-free solder substrate as an electronic circuit board used in the control section of AMADA-made machines and completed switching to, and mounting the lead-free solder substrates in our new products.

## Oils

All oils marketed by the AMADA Group, including hydraulic fluid, lubricants and cutting oil, are RoHS compliant. Information on their GHS<sup>\*2</sup> physical and health/environmental hazard classifications is stated on the SDS<sup>\*3</sup>.

## RoHS Compliance

In response to the European Directive RoHS I (Directive 2012/95/EU), which restricts the use of specified hazardous substances in electrical and electronic equipment, the AMADA Group has carefully selected and procured RoHS I compliant products since April 2004. We are continuing to comply with the European Directive RoHS II (Directive 2011/65/EU) that was set in place of RoHS I after it was abolished on January 2, 2013.

In the RoHS directive, AMADA Group products are classified under the exceptions LSSIT (large-scale stationary industrial tools). To ensure the safety of our customers using these products, AMADA Group is preparing to comply with Category 11 standards to be enforced on July 22, 2019.

## Reduction of use of chemical substances and emission control in the manufacturing process

In addition to products to be offered to our customers, AMADA Group’s manufacturing plants are working to reduce the amount of regulated chemical substances during manufacturing processes, based on a company-wide mid-term plan.

### FY2016 Results

#### •Fujinomiya Works

Paint reduction activities are now in place with the introduction of a spray gun with high coating deposition efficiency. Currently, we are conducting tests to reduce xylene/ethylene benzene by bringing in a new “environmentally friendly special primer”.

#### •Toki Works

Introducing toluene / xylene free paint and solvent (thinner) recycling and recovery equipment resulted in a reduction per unit of 90.0% compared with FY 2007.

#### •Fukushima Plant

Thanks to the introduction of power coating equipment, the amount of cleaning thinner was reduced by 3.5 ton (7%) over the previous year.

<sup>\*1</sup> The AMADA Group Green Procurement Guidelines are revised according to amendments in the laws.

<sup>\*2</sup> GHS: abbreviation for “Globally Harmonized System of Classification and Labeling of Chemicals”

<sup>\*3</sup> SDS: Safety Data Sheet (SDS) is a document mentioning the hazardous and harmful chemical substances of a product, and is delivered when the product is given or provided to another company.

# Effective use of resources

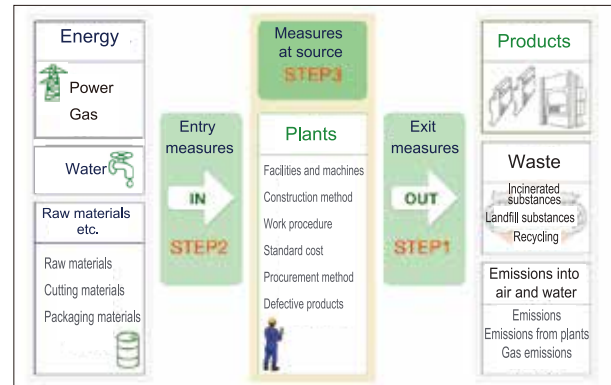
## Efforts to effectively use resources in business activities

AMADA Group's Japan manufacturers prioritize the shift to a sustainable society by achieving and maintaining zero emissions at plants. We have stipulated our achievement standard for a zero emissions at plants to be, "less than 1% (zero emission rate) of all waste used as landfill for a continuation of at least one year," through efforts according to three steps of activity.

### ■Zero-emission factories

Of AMADA Group's manufacturing bases, three locations have achieved zero emissions factories: AMADA Tool Precision Isehara Works for tooling, Fujinomiya Works, and Toki Works.

Works that have not yet achieved zero emissions aim to achieve zero emissions at plants by separating and recycling waste at the disposal stage and promoting efforts of not bringing trash in, in accordance with the activity steps.



Steps towards achieving zero emissions at our plants

### ■Toki Works (AMADA MACHINE TOOLS / AMADA ENGINEERING)

#### ■Reduced packaging materials, through custom materials handling and MDL of parts delivered

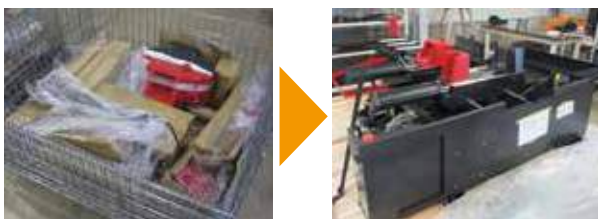
When delivering large parts, it is common to use wooden pallets and vinyl packaging to prevent scratches. This creates waste after every delivery.

In May 2010, with the cooperation of our dealers, we started using custom materials handling for delivery, according to the shape of the parts.

In FY2016 we were able to reduce about 640 kg of waste by using seven types of material handling to deliver 80 machines.



From wooden material to custom materials handling



From vinyl and corrugated cardboard to MDL

### ■Fukushima Plant (AMADA AUTOMATION SYSTEMS)

#### ■Promotion of packaging-less delivery

In the past, brush table manufacturers put products one by one in corrugated cardboard boxes and sheet metal processing companies packed products by putting them on wooden pallets and wrapping them in Air Cap stretch film, before delivery. Because of this, unpacking and sorting took extra time and the packaging materials were all discarded in the end as waste. We then promoted packaging-less delivery by providing nearby suppliers with transporting jigs, plastic pallet containers, and in FY2016, reduced corrugated cardboard waste by 1.9% (560kg) and the amount of wasted wood chips by 20% (6,520 kg), over the previous year.



brush table transporting jig

sheet metal parts (cover) replacement jig



# Biodiversity

## Fujinomiya Works / AMADA's Forest

Approximately 60% of the Fujinomiya Works premises, or roughly 43 hectares is left as forest. About 80% of that is man-made cypress forest. It has already been 40 to 50 years since reforestation and AMADA is making positive improvements, proceeding systematically in order to transform it into a forest rich in animals and plants.



### Fujinomiya Works / Experiencing Forest Thinning

During the “open factory” held every year as part of AMADA Group’s environmental activities, participants took part in the forest thinning experience, through which they enjoyed nature and deepened their understanding of forest cultivation.



## Isehara Works / Quantitative Evaluation of Biodiversity

AMADA Group’s domestic works strive to make systematic improvements by conducting quantitative evaluations in order to gain a concrete understanding of the progress in their biodiversity initiatives and to clarify such questions as, “What types of positive possibilities there are within the premises?” and “Where are the main factors of environmental load?”

The approach was evaluation using the tools promoted by the Office of the Symbiosis of Living Things from the Japan Business Initiative for Biodiversity. By improving the score, we aim to promote initiatives in biodiversity. These evaluations were conducted at Ono Plant in FY2016 and will be carried out at each of the other operation sites every year.



Quantitative evaluation of biodiversity conducted at the Ono Plant in September 2016.

## Fostering Unicorn Beetles (Ono Plant)

At Ono Plant, we capture adult unicorn beetles, collect their eggs, and grow the larvae. Our biodiversity promotion efforts includes receiving logs that our client had used for shiitake mushroom cultivation and no longer needs, and crushing them to so they can be used for taking care of the larvae.

The grown larvae were given out to local children who wished to have them at the “Hanami-cation,” a community social event held at the Ono Plant every April.



Employees crushing logs to be used for beetle care. (Lower right: One of the unicorn beetle larvae that were given out to local children)



# Environmental accounting

**AMADA Group has adopted environmental accounting to use for reasonable decision making by understanding the costs and benefits related to environmental preservation activities.**

## The adoption of environmental accounting

AMADA Group has adopted environmental accounting since FY2005 for the purpose of understanding the costs and the economic impact associated with environmental preservation measures, and providing information useful for decision making by stakeholders.

We made consecutive expansions of scope with the Ono Plant in 2008, Fujinomiya Works in 2009, Toki Works (AMADA MACHINE TOOLS) in 2011, and the Miki Plant (NICOTEC) in 2013.

To summarize the cost and economic impact (profit of actual results) associated with the environmental preservation measures, an “environmental accounting” item was added to the monthly accounting system for automatic calculation.

## Environmental preservation cost

R&D costs are calculated on the basis of the total cost, within the research and development theme, of developed product types that are newly certified as eco products in addition to models currently certified as eco products. The main content is the cost of test material and jig production, and does not include expenses for experimental research or employee man-hours needed for development.

In terms of cost ratio, R&D costs are the highest, followed by global environmental conservation costs to promote global warming prevention and energy conservation, and pollution preventions costs to prevent air pollution and water pollution.

## Economic impact associated with environmental preservation measures

The main economic impacts for fiscal 2016 were business income, including income from recycling waste products of business activities, and capital investment.

The main sources of recycling income are metals such as iron, aluminum and stainless steel.

Unit : 1000 yen

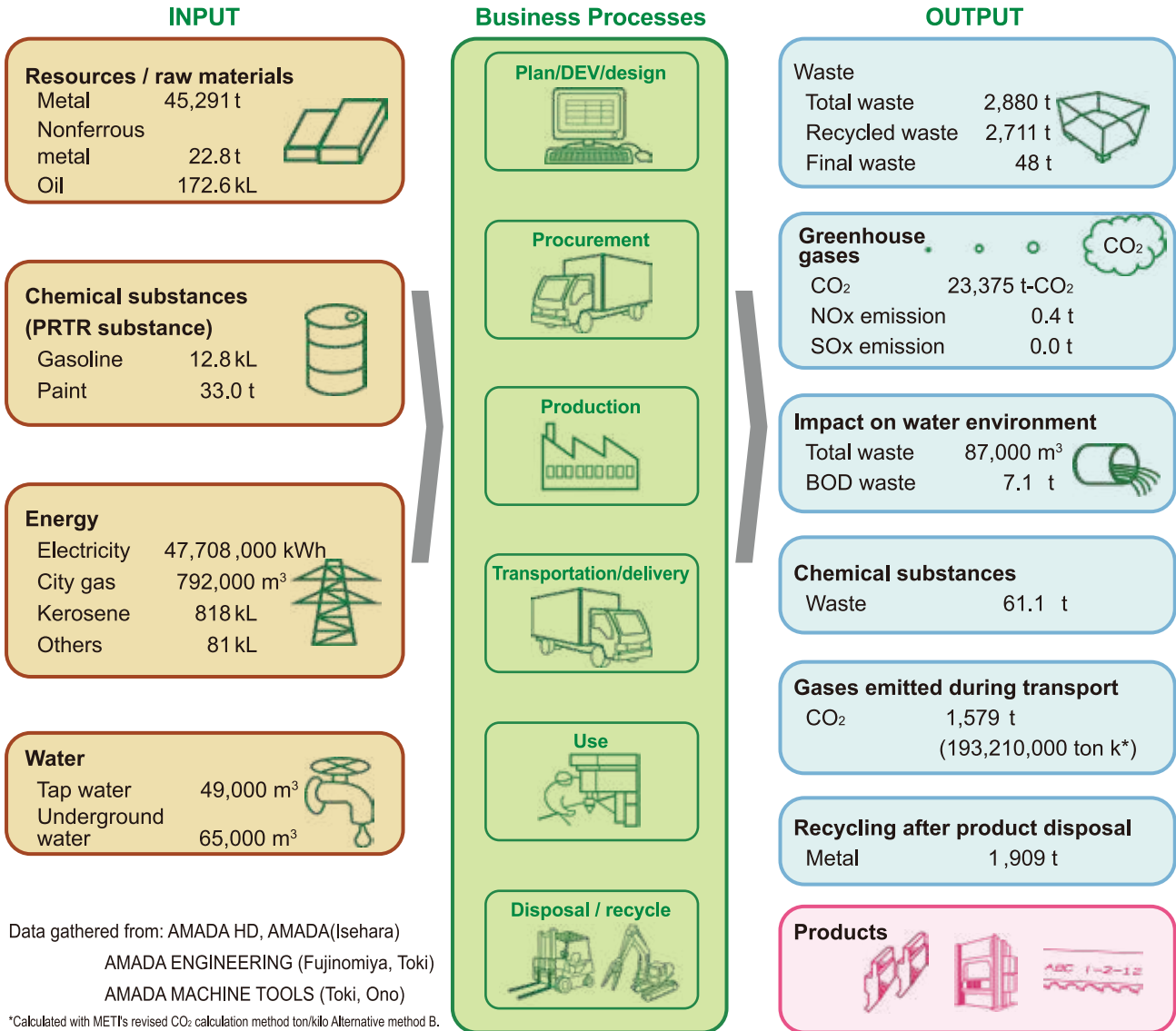
Environmental accounting items		2012	2013	2014	2015	2016
Environmental preservation cost	Cost	540,557	1,257,432	891,509	382,331	1,041,022
	Investment	8,207	1,233	36	53	33,827
	Total	548,764	1,258,665	891,545	382,385	1,074,849
Economic impact accompanying environmental preservation measures		23,403	32,640	26,485	17,581	20,969

Environmental accounting items		Unit	2013	2014	2015	2016
The material effects related to the environmental conservation policy	CO <sub>2</sub>	Tonnes of CO <sub>2</sub> per year	957.0	790.3	969.6	820.6
	Waste	Tonnes per year	57.5	16.0	18.9	46.0

# Data

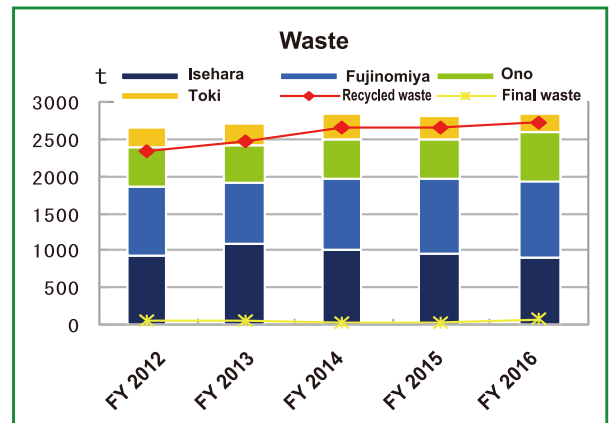
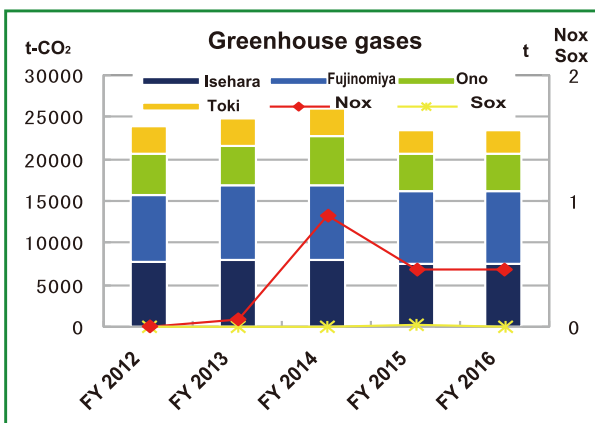
## Material balance

### <Domestic>



Data gathered from: AMADA HD, AMADA(Isehara)  
 AMADA ENGINEERING (Fujinomiya, Toki)  
 AMADA MACHINE TOOLS (Toki, Ono)

\*Calculated with METI's revised CO<sub>2</sub> calculation method ton/kilo Alternative method B.





## < Detailed Data >

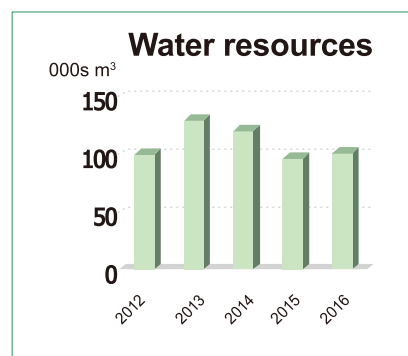
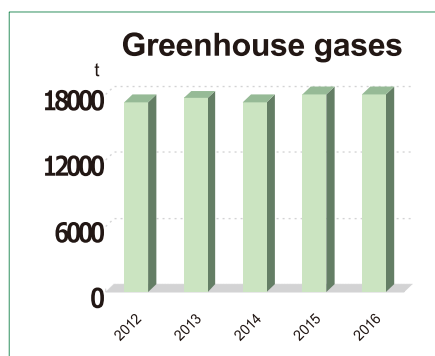
		2012	2013	2014	2015	2016	H1 2017
CO <sub>2</sub> intensity	Isehara Works	0.0375	0.0384	0.0356	0.0362	0.0372	0.0332
	Fujinomiya Works	0.1776	0.1709	0.1421	0.1512	0.1619	0.1495
	Ono Plant	1.8145	1.6142	1.6490	1.7168	0.9770	1.0046
	Toki Works	0.3480	0.2639	0.2114	0.2112	0.1940	0.1538

		2012	2013	2014	2015	2016	H1 2017
PRTR-reportable chemical substances in tons	Isehara Works	0.0048	0.0049	0.0049	0.00252	0.00195	0.00066
	Fujinomiya Works	50	44	52	52	52	16.1
	Ono Plant	0	0	0	0	0	0
	Toki Works	24	26	33	14	0	2.8

		2012	2013	2014	2015	2016	H1 2017
Amount of water resources used in 000s m <sup>3</sup>	Isehara Works	65	70	76	84	84	34
	Fujinomiya Works	73	77	65	64	64	63
	Ono Plant	9	8	7	8	8	4.1
	Toki Works	13	17	11	10	11	5.8

		2012	2013	2014	2015	2016	H1 2017
Impact on the aquatic environment (waste) in 000s m <sup>3</sup>	Isehara Works	43	44	44	50	49	23
	Fujinomiya Works	30	27	27	26	26	13
	Ono Plant	7	4	6	6	6	3.8
	Toki Works	8	7	8	5	5	3.4

## < Overseas >



Scope of coverage : Greenhouse gases and water resources Overseas 46 companies

Waste

Overseas Main production centers

# Communication

## Social contribution of AMADA Group

# Europe



Visiting the company at Sandwell Academy / demonstration processing AMADA U.K. (UK)



Acceptance of student factory tour AMADA EUROPE S.A. (France)



A school was added to the ASEAN Technical Center to contribute to local human resource development AMADA THAILAND (Thailand)



Opened the Tainan Technical Center that has an educational function for developing local human resources AMADA TAIWAN (Taiwan)

## With our customers

### AMADA SCHOOL

The AMADA SCHOOL was established in 1978 as Japan's first vocational training corporation specializing in metalworking machinery and as an educational institution that uses its extensive technology and cutting-edge facilities. The school is built upon the two pillars of skills education (manufacturing) and support education (personnel development) and teaches students about machines, CAD/CAM operation, and the fundamentals of sheet metal processing. In addition, the school offers preparatory courses for the National Trade Skill Test (factory sheet metal work) theory and practical examinations. The school also provides courses with the goal of supporting human resource development for new employees, administrative staff, and supervisory staff at small- and medium-sized businesses and offers lectures on education including Junior Management College (JMC) courses, for managerial successors.



Subsidized JMC educational course for managerial successors (JMC)

### Support for Sheet Metal Industry Associations

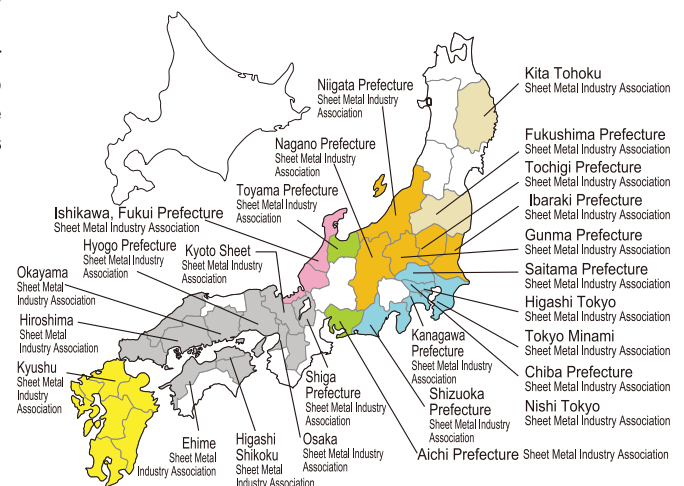
Sheet metal industry associations are established in each region of Japan by companies involved in the sheet metal processing industry to promote the planning, proposal, implementation, and research of activities for the prosperity and global expansion of member companies. To date, 26 such industry associations have been established in Japan. To help improve the skills of all association member companies, train human resources, and promote industry development, AMADA provides assistance through the industry association secretariats and takes such measures as dispatching lecturers for workshops.



We hold seminars and various other events



Skill Examination



# Asia America



Entering into a disaster prevention agreement with Fujinomiya City, Shizuoka Prefecture  
AMADA ENGINEERING (Japan)



Company visitation by members of Isehara Little League  
AMADA AMERICA, INC.



Co-sponsored the Genesee Community College Tech Wars  
AMADA TOOL AMERICA, INC.

## The Precision Sheet Metal Technology Fair

The Precision Sheet Metal Technology Fair is a competition established in 1989 by the AMADA SCHOOL to promote the improvement of sheet metal processing technology and skills. Currently, the school starts soliciting products from five categories in around May each year and, following judgment, holds an award ceremony the following March. The 29th Precision Sheet Metal Technology Fair awards ceremony was held in March 2017. Of the 267 submitted entries, 93 were submissions from overseas. Thirty of the submissions were from students, which was a record number in the fair's history. The Minister of Labour, Health, and Welfare Award; the Minister of Economy, Trade and Industry Award; the Japan Vocational Ability Development Association Chairman's Award; the Nikkan Kogyo Shimbun Award; the Judging Committee's Special Award; and the AMADA Award were given to superior submissions. Additionally, gold, silver, bronze awards in each category of "sheet metal parts," "sheet metal assemble parts," "welding fabrication," "formative arts fabrication," and "student's fabrication" were also given out.



The 29th Precision Sheet Metal Technology Fair awards ceremony

### The Main Award Winners



Winner of the Minister of Labour, Health and Welfare Award



Winner of the Minister of Economy, Trade and Industry Award



# With our employees

## AMADA Group's Human Resource Strategy

The AMADA Group management philosophy, “Develop human resources who pursue creative and challenging activities” says that “Rather than being content with the present situation, we are constantly in search of new and better ideas to put into action in order to improve and enhance our business activities.” This is the own basic philosophy of human resource development, and we believe that AMADA's unique corporate culture will be further developed by continuing to practice this philosophy.” We build our human resource strategy based on this philosophy, the basis of which is for employees to grow by gaining extensive experience through OJT education and overseas rotations within the organization to which he or she belongs. In addition, we work to raise the morale and motivation of new employees toward the Company by implementing in-depth educational activities in a friendly manner. In this way, we support the active role of young employees from the early stages. Furthermore, educating employees in managerial positions is essentially to lead young employees in the right direction. As such, we are also focusing our efforts on management education. To remedy the issue of manpower shortage, we have recently been pouring efforts into human resources utilization, addressing recruitment, training, retention, and labor management. Through our “work style reform” that shifts the focus from “hours” to “results,” we are also taking positive steps to reduce long working hours and to increase productivity.

## Developing global human resources

In order to actively recruit human resources in the global market, the AMADA Group firmly communicates that we are a global company at the recruiting stage and actively hire people with a wealth of skills and knowledge regardless of nationality.

Starting this fiscal year, we have adopted a new theme for our incoming employees training—“awareness of being a member of the local community”—and incorporated such activities as climbing Mount Oyama in Isehara City and training on regional revitalization proposals for Isehara City. Through our training, our new employees are acquiring a broad perspective, in addition to skills for teambuilding.



FY2017 new employee training (Mount Oyama climbing)

## Woman's career support

We are aware of the fact that there are few female employees currently taking roles of leadership in Japan, as a place of activity for women, we are promoting their appointment to core positions (Development, CE, Sales) within the AMADA Group. Each year, a number of new female employees join the company and are working in jobs related to development and CE.

In addition, many female employees who have studied the humanities are proficient in linguistics and demonstrate their expertise through presentations at exhibitions and communication with foreigners. They have had various experiences, including overseas assignments.

In addition, we will continue to provide an environment that enables women to carry on working through life events like marriage and childbirth, fostering a corporate culture that allows motivated employees to play an active role as a matter of course.



Recruiting female employees for core positions (photo: a Blank Development Division employee who joined in FY2013)

## Promoting Support for Childcare

The AMADA Group is encouraging male employees to take child care leave by establishing an independent child care leave system, which differs from the original system by allowing employees who want to participate in childcare to redeem unused paid holidays that have expired.

Moreover, to encourage employees to take paid leave, in addition to systematic paid holidays and recommended days to redeem paid holidays, we have also established leave for special events, such as school-related events, which are separate from normal paid holidays.

Additionally, we support our child-rearing employees in taking active part in raising their children through such activities as having each operation site hold family visitation days.

Number of employees who took childcare leave

Gender	2014	2015	2016
Male	5	3	3
Female	9	13	14
<b>Total</b>	<b>14</b>	<b>16</b>	<b>17</b>

Target: employees of domestic group companies

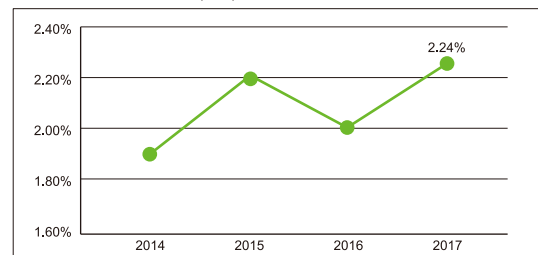


Promotion of childcare support  
(photo: a No.1 Blank Processing Engineering Division employee who joined the company in FY2012)

## A Workplace Where People with Disabilities Play a More Active Role

AMADA Group employs people with disabilities, to assist them to be autonomous and participate in the social community. We accept workers with intellectual challenges on a trial basis and offer workplace experience training for students attending special needs schools to prepare them for future employment. In June 2015 we established a special subsidiary for the employment of people with disabilities within the Group, the first of its kind in the metalworking machinery industry.

AMADA Group's employment rate for people with disabilities



## Safety Management

The AMADA Group strives to prevent the recurrence of labor accidents that have taken place within the group by sharing causes and recurrence prevention strategies throughout the group. In 2016, we prioritized safety education by strengthening cooperation between the work sites and the headquarter in order to prevent occupational and traffic accidents. Aiming for zero occupational accidents, our education is not only limited to lectures, but also includes practical training curriculums and individual driving instructions based on objective evaluation.



Safety education for new service agents

## Health Management

By developing an industrial health and hygiene system and through collaboration with the health insurance union, the AMADA Group pours great effort into ensuring that our employees are provided with various mental and physical healthcare. We strive to enhance our employees' mental and physical health as it is the foundation that supports each one of them to work eagerly and with vitality.

In FY2016, we proposed health enhancement based on three main aspects—exercise, diet, and sleep. Furthermore, we conducted stress-checks as a mental illness prevention measure. The analysis of the stress-check results was reported back to each operation site and used to help improve work environments.



Lower back pain seminar at the Fujinomiya Works

## Communication

# With our local community

### Community cleanup activities at the various operation sites

Regional cleanup programs are conducted at each of the operation sites around the country. In FY2016, Clean Campaign was held at Ono Plant and Miki plant (both in Hyogo Prefecture), as well as other locations. Employees at the Fukushima Plant (Fukushima Prefecture) participated in cutting the grass around the Mizuhara River that runs in the neighborhood. The Noda Works (Chiba Prefecture) has continued to participate in the “To-né Canal oneseed bur cucumber elimination project” which works to eradicate the oneseed bur cucumber, which is identified as a non-native plant.



Specified non-native plant “oneseed bur cucumber” elimination project (Noda Plant)

### Engaging in environmental activities with the local community

The Ono Plant (Hyogo Prefecture) is currently enhancing its efforts on biodiversity. Led by the Ono Plant director, the plant has organized various teams including the “gardening team,” “insects team,” and “photography team,” and has many volunteers who engage in activities. The “plant team” set up a green curtain made with bitter melon and morning glory plants as a way to shield the inside of the factory from heat during the spring and summer months. In FY2016, they created a green curtain made with the plant of the passion fruit—a certified “delicious food brand” of Ono City—in cooperation with local producers.



Green curtain at the Ono Plant

### Co-sponsoring regional sports events

The AMADA Group actively co-sponsors regional sports events as well. We co-sponsor the Mt. Oyama Climbing Marathon held annually in Isehara City, Kanagawa Prefecture, which is where the AMADA Holdings headquarters is located. We have also co-sponsored the Yokohama Marathon since it was first held in 2015. Many of our employees support the tournaments by volunteering in the operation of the event.



Mt. Oyama Climbing Marathon

### Opening the plant for visitation by the local community

The Fujinomiya Works (Shizuoka Prefecture) has been promoting the conservation of energy and resources by streamlining work and production processes. “Environmental dojo” are held as a way to provide education on various environmental efforts and issues. The Fujinomiya Works, whose efforts were recognized by the local government, was selected to represent the eastern region at the Environmental Education Network Promotion Conference held by Shizuoka Prefecture and opened its site and plant for tour, after which participants engaged in a dialogue and vigorously exchanged opinions.



Opening the plant for visitation by the local community (Fujinomiya Plant)

### Presented commemorative gifts to municipalities in commemoration of AMADA’s 70th anniversary of its founding

As part of its 70th anniversary project, the AMADA Group presented local municipalities that it has relations with (Isehara City, Kanagawa Prefecture; Fujinomiya City, Shizuoka Prefecture; Toki City, Gifu Prefecture; Nihonmatsu City, Fukushima Prefecture).



Presenting a bronze statue of Isehara City's official mascot



# ISO26000 Comparative Table

The below table was created for this report to verify that we are engaging in activities and information disclosure in line with the core subjects of the international standard ISO26000 (guidance on social responsibility), which was published in November 2010.

Core subjects of ISO26000	Subjects	Mention in this report	Page number
Organizational governance	Organizational governance	·Foreword	P03
Human rights	1. Due diligence 2. Human rights risk situations 3. Avoidance of complicity 4. Resolving grievances 5. Discrimination and vulnerable groups 6. Civil and political rights 7. Economic, social and cultural rights 8. Fundamental principles and rights at work	·With our employees ·With our local community	P29-30 P31
Labor practices	1. Employment and employment relationships 2. Conditions of work and social protection 3. Social dialogue 4. Health and safety at work 5. Human development and training in the workplace	·With our employees	P29-30
Environment	1. Prevention of pollution 2. Sustainable resource use 3. Climate change mitigation and adaptation 4. Protection of the environment, biodiversity and restoration of natural habitats	·Reduction of CO <sub>2</sub> in products ·Reduction of CO <sub>2</sub> in labor activities ·Chemical substances control ·Effective use of resources ·Biodiversity ·Environmental accounting ·Data Material balance	P19 P20 P21 P22 P23 P24 P25-26
Fair operating practices	1. Anti-corruption 2. Responsible political involvement 3. Fair competition 4. Promoting social responsibility in the value chain 5. Respect for property rights	·AMADA Group Environmental Declaration and Policy, Our Management Philosophy	P02
Consumer issues	1. Fair marketing 2. Protecting consumers' health and safety 3. Sustainable consumption 4. Consumer service, support, and complaint and dispute resolution 5. Consumer data protection and privacy 6. Access to essential services 7. Education and awareness	·Reduction of CO <sub>2</sub> in products ·Social contributions of the AMADA Group	P19 P27-28
Community involvement and development	1. Community involvement 2. Education and culture 3. Employment creation and skills development 4. Technology development and access 5. Wealth and income creation 6. Health 7. Social investment	·Social contributions of the AMADA Group ·With our employees ·With our local community	P27-28 P29-30 P31

## SDGs response chart

Content	Page	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
AMADA Group Environmental Declaration and Policy, Our Management Philosophy	P02																		
Foreword	P03-04																		
70th anniversary project	P05																		
Business summary (business performance progress, employee data, etc.)	P06																		
AMADA Group operations list (sheet metal operation, press operation, etc.)	P07-08																		
Our Works	P09-10																		
Won the Japan Greenery Research and Development Center's Chairman Award	P11																		
Special Feature No.1 Newly ISO14001-Certified Plants and Works	P12																		
Special Feature No.2 About HPSAW-310	P13-14																		
Mid-term environmental plan	P15-16																		
Eco Products at our customers	P17-18																		
Reducing the CO <sub>2</sub> emissions of products	P19																		
Reducing CO <sub>2</sub> emissions from business activities	P20																		
Chemical substances control	P21																		
Effective use of resources	P22																		
Biodiversity	P23																		
Environmental accounting	P24																		
Data	P25-26																		
Communication ■Social contributions of the AMADA Group ■With our customers■With our employees ■With our local community	P27-31																		

# Third party opinion



**AMITA CORPORATION**  
Senior Consultant

**Yoichi Inomata**  
(Specialty: Environment /  
CSR Strategy, CSR Communication)

Tokyo Chamber of Commerce  
and Industry Eco Test Award  
Jury Member  
Publication: Introduction to CSR  
Digital Communication. Impress  
R&D. Co-authored.

This is my second time in providing a third-party opinion in this Environmental and Social Report by the AMADA HOLDINGS, as I also had the opportunity to do so last year.

Last year, I advised on the following points that needed to be addressed going forward: (1) approach to social issues suited to AMADA's global business development, (2) adjusting the working environment for women, (3) report that is conscious of international standards, and (4) reviewing the operational framework by back-casting.

I would like to start with a review of how the company has handled these points over the last year.

The first points I would like to address are "approach to social issues suited to AMADA's global business development," and "report that is conscious of international standards."

At the UN Summit in September 2015, the decision was made that Sustainable Development Goals (SDGs) would be pursued until 2030.

The SDGs are made up of 17 goals and 169 targets for realizing a sustainable world. All UN member states are to make effort to resolve the existing global social and environmental issues.

In this report, the SDGs are mentioned in the "Top Message" (p.3-4), "ISO26000 Comparative Table, SDGs response chart" (p.32), and "SDGs icons" (various pages).

The AMADA Group's determination to pour its efforts into the SDGs in earnest is expressed in the Top Message, and this likely will have great significance in the future promotion of AMADA's sustainability efforts.

As noted in that message, corporations will face even greater expectations regarding their roles as members of society and, simultaneously, will see an increase in responsibilities that they must fulfill.

I have great hopes that AMADA HOLDINGS will promote the SDGs as a prominent leader in working to resolve the various environmental and social issues that exist in the world today.

Furthermore, as an organizational foundation for promoting the SDGs in this report, you first outlined your current efforts by referring to the international CSR guidelines ISO26000, and I see this as a major step forward for AMADA.

The seven core subjects covered by ISO26000 are (1) organizational governance, (2) human rights, (3) labor practices, (4) environment, (5) fair operating practices, (6) consumer issues, and (7) community involvement and development, and they serve as guidelines regarding corporate social responsibilities.

In the coming fiscal year and thereafter, I would like to see this framework be thoroughly disseminated throughout your organization.

The next point I would like to note is about the "active recruitment of female employees."



I took a look at the data on female employees (p.6), and I see that the ratio of female employees has increased since last year (from 11.8% to 14.4%), indicating that you are steadily working toward the employment of more women. Additionally, in the page on the promotion of utilizing female workforce (p.29), I could see that women are being appointed to core competency jobs, and that new female employees are being placed in a wide range of positions every year.

Particularly, women will need adjustments in the working environment so that they can continue to work while undergoing major life events such as marriage and childbirth.

As Japan's birthrate goes down, increasing the retention rate of female employees will likely have great impact on your business.

Further, in examining the breakdown of AMADA's female employees, there are greater ratios of part-time and contract workers than last year, and therefore, I predict that making environmental adjustments for non-fulltime employees will also become necessary.

I hope you will continue to further develop a comfortable working environment for full-time, contract, and part-time employees as well as employees with disabilities.

Based on these points I reviewed, I carefully reread this report. Just as last year's edition, it does not disappoint the reader, as it offers a thorough report on the activities carried out at the respective operation sites, showing that the entire company is diligently putting forth effort.

The Top Message (p.3-4) cited the five critical issues of the AMADA GREEN ACTION 2020, the mid-term goals that were established in 2010.

These goals are (1) preventing global warming, (2) effective utilization of resources, (3) regulated chemicals control, (4) biodiversity, and (5) environmental management. Regulations regarding CO<sub>2</sub> emissions are expected to become more stringent in the future due in particular to the influence of the Paris Agreement.

Perhaps the carbon taxes will produce extra burden on your company, leading to a financially risky situation.

However, even under such circumstances, you are actively maintaining the AMADA's Forest at the Fujinomiya Works as one of your biodiversity efforts, and this presents a possible way to



offset your CO<sub>2</sub> emissions. Furthermore, winning the Japan Greenery Research and Development Center's Chairman Award in October 2016 (p.11), I believe, is proof that your greening activities and biodiversity protection efforts at the Isehara and Fujinomiya Works were on point, and I extend my sincere congratulations.

Additionally, regarding your efforts in chemical control, AMADA Group's products do not fall under the Restriction of Hazardous Substances II (RoHS II) directives, which restricts the use of certain hazardous substances in electric and electronic devices. However, to ensure customers' safety, AMADA is actively making effort to be in compliance with the RoHS category 11, scheduled to go into effect in July 2019. This is truly commendable.

It is my hope that AMADA will continue with its stubbornly honest environmental efforts in the future.

While AMADA has made great leaps in the past year as I have summarized thus far, I would like to offer my advice on two points so that the company may gain even greater trust from its stakeholders and enhance its corporate value. First, while your core environmental issues have been clarified in this report, I would like to ask how we are to understand your efforts regarding non-environmental issues—namely, those related to society and organizational governance.

When considering the seven core subjects under ISO26000, for example, how are you prioritizing each subject as you work on them?

You currently publish an environmental report, but more and more companies around the world are disclosing information on non-financial matters, and I believe it is time for AMADA to also start working on CSR and organizational governance reports.

Recent scandals about manufacturers who were found falsifying their data are sending shockwaves throughout the world and shaking the very foundation of Japanese spirit of monozukuri (manufacturing).

This is seemingly due in part to the fact that awareness

about CSR is not being disseminated throughout the entire organization.

AMADA has taken the first steps with regards to ISO26000 and SDGs and this was extremely important. However, in order for you to move forward as an organization, it is still absolutely imperative that you develop a system for reviewing the company's CSR.

This year, you have organized in charts your current efforts regarding your CSR and SDGs.

I would like for this to be a catalyst for you to move forward in making incremental steps, starting with the internal dissemination of ISO26000, establishing top priority issues (materiality) while considering the CSR policies and impact on the company and stakeholders, and formulating mid-to-long-term CSR plans.

It will take time, but from a medium-to-long term perspective, it will most certainly boost AMADA's corporate value.

The second point is to create new businesses based on social issues.

In 2015 the SDGs were adopted, 2016 is said to be the inaugural year for Environmental, Social and Governance (ESG), and 2017 was a year in which SDGs and ESG gained great public attention.

Without a doubt, we are now at an era where corporations are evaluated for their environmental and social activities not related to their economic value.

In response to the greenhouse gas emissions restrictions put in place through the Paris Agreement in 2015, the UK and France are moving toward terminating the sales of automobiles that run on gasoline and diesel by 2040.

What automakers would consider a phenomenon that fundamentally upends their business strategies is already taking place.

Let us say that you are no longer able procure the necessary materials. This could bring your machine production in your current sheet metal business to a halt.

A way to overcome such a situation would be to consider a sustainability strategy that keeps the SDGs in mind, as it should provide clues for your company to transform into a sustainable corporation.

For a company like AMADA with such a high rate of overseas sales, advancing Creating Shared Value (CSV) businesses that simultaneously resolve social issues and fulfill economic value would attract ESG investments that have recently been gaining the attention of foreign institutional investors. International agencies such as the World Bank and Japan International Cooperation Agency (JICA) have also been actively investing in and offering financing to such corporations.

I urge you to consider, for the coming fiscal year and beyond, developing new businesses based on SDGs.

I look forward to reading your report again next year.





**AMADA HOLDINGS CO., LTD.**  
**Environmental Ecology Promotion Dept.**

200, Ishida, Isehara-shi, Kanagawa 259-1196, Japan

Phone: 0463-96-3275 Fax: 0463-96-3403

E-mail : [env\\_csr@amada.co.jp](mailto:env_csr@amada.co.jp)

URL : [www.amadaholdings.co.jp](http://www.amadaholdings.co.jp)

