



DAIFUKU DAIFUKU CO., LTD.

<http://www.daifuku-world.com>

Environmental Report 2003

DAIFUKU

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Preface

This Environmental Report is to introduce Daifuku's performance related to global environment protection through Daifuku's line of business activities to supply distribution system and equipment, for better communication with the customers, shareholders, and all other stakeholders. This is the second version report for the whole organization of Daifuku. This will be updated once every year.

Daifuku is also providing various other data and information on the issues of environmental aspects and activities in its website (<http://www.daifuku-world.com>). Please access it to review any time as you like. Your comments on Daifuku's activities, products, and report or website itself for their improvement would be highly appreciated.

Scope of This Report

Period: One year from April 2002 to March 2003
 Offices and Works: Osaka Head Office, Tokyo Head Office, Chubu Office, Shiga Works, and Komaki Works
 Note: All numeric values in this report are the total of Shiga and Komaki Works unless otherwise noted.

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As a Good Global Citizen

Daifuku has contributed to the society through the company business for more than 65 years since its establishment. It is our pleasure to know that our products and technologies has tied in well with resource saving and energy saving both directly and indirectly.

Thirty years ago, in 1973, Japanese people faced the oil shock and were aware of the importance of energy saving for the first time. In that year Daifuku developed the first refrigerated automated warehouse in Japan which realized drastic reduction of electricity consumption by adopting the construction of storing cooled air in the steel racks themselves, while allowing workers to be released from load handling work under the very low temperature of -40°C. With this as a turning point the refrigerated automated warehouse spread widely, initiated changes in the food circulation patterns and was exported to overseas.

Daifuku's spirit to tackle unknown problems and to expand its business into all over the world for the purpose of satisfying customer's needs has been succeeded from the time of establishment. For example, for the production lines of liquid crystal panel having a better energy saving feature compared to CTR, Daifuku has supplied the cleanroom conveying systems manufactured in Korea and Taiwan. For the automobile industry having a great interest in ecology, Daifuku has delivered automobile production lines to major automobile manufactures located in Europe, United States, Asian countries and other countries. Consequently the 35% of consolidated sales amount of the last fiscal year was derived from overseas projects.

One of the most important business challenges of Daifuku is to promote the production at optimum location through the cooperation with our factories and subcontractors in North America and Asia. To do so, in addition to observing applicable laws and regulations of penetrated countries, Daifuku is required to deal with the environmental issues more positively.

Our production sites have already been the holders of ISO 14001 certificate. Now Daifuku is going to expand the scope of certification to the whole company by the fiscal year 2003, covering all non-production sectors including administration in Osaka and Tokyo Head Offices. Also as the next step, we are planning to expand the scope to our overseas subsidiaries. To introduce Daifuku's environmental activities worldwide, the English version of Environmental Report is uploaded in our website.

We Daifuku take it as our mission to develop the activities for environment protection, not only for contribute to the development of optimum logistics focusing on environment but also for contribution to the "sustainable development" of human being, society, and economy. This "Environment Report 2003" is the summary of our environment protection activities in the fiscal year 2002 introducing our attitude and performance in environmental issues. It would be appreciated if you would let us have your comments if any for the purpose of reference of our future activities.

August 2003



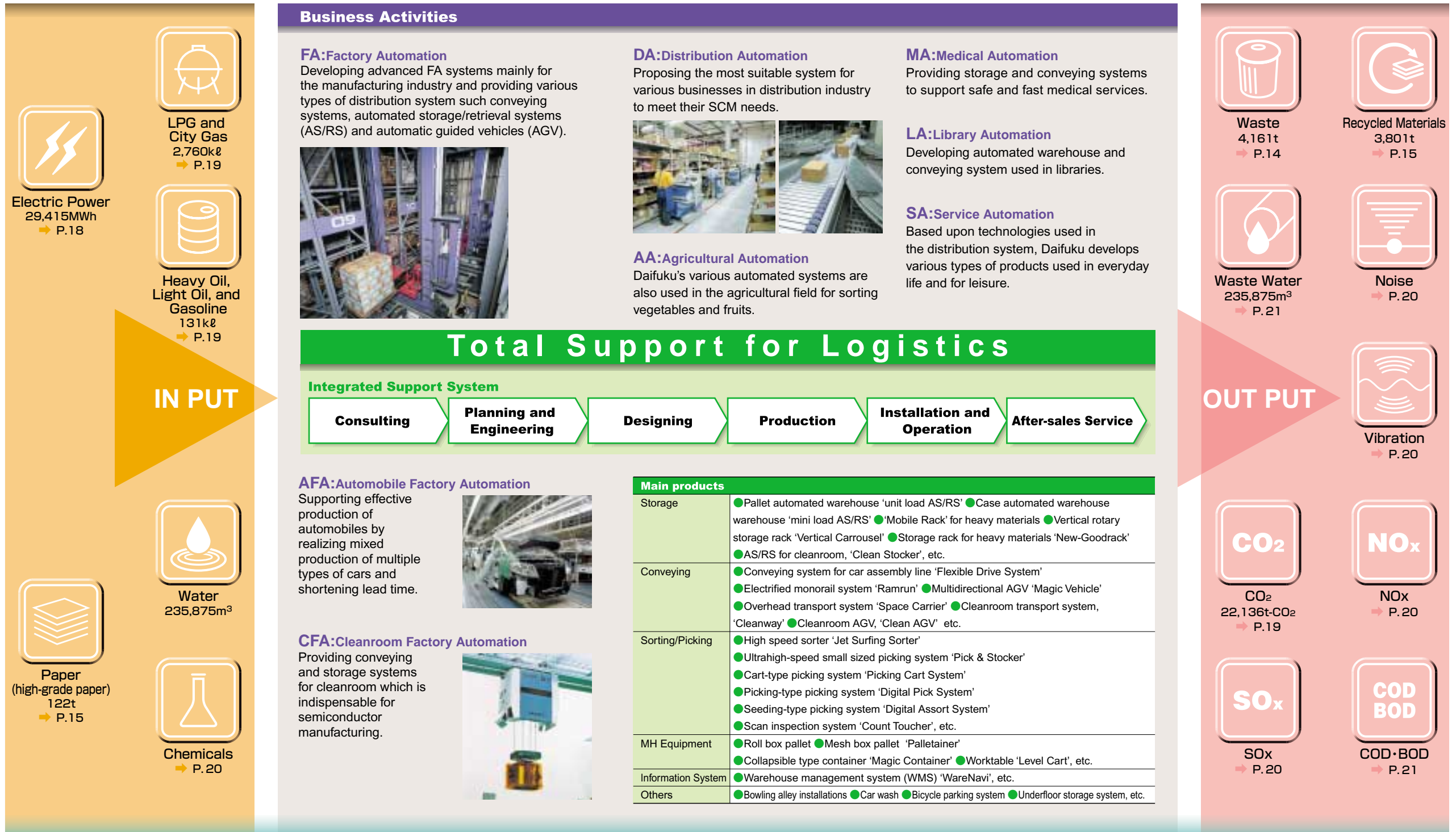
K. Takeuchi

Katsumi Takeuchi
 President of DAIFUKU CO., LTD.

Relationship between Daifuku Business and Environment

Daifuku is trying to measure, analyze and figure out the environmental impacts generating through our line of business activities to supply distribution system and equipment.

Daifuku is exerting efforts to reduce the environmental impacts of its own activities while reducing environmental impacts of the total society by comprehensively supporting logistics in order to contribute to the establishment of the resource recycling society.



Environmental Impact Reduction Activities

For Sustainable Resource Recycling Society

Daifuku Products with Consideration of Environment

Daifuku is exercising efforts to provide products considerate of overall global environmental issues by developing or improving the products for environment protection. These include the energy saving consideration in designing, recyclability of products, containers for collection of scrapped home electric appliances and refuses, and automated warehouse for efficient inventory control.

In FY 2002, our automated warehouse system was employed in the newly built West building of National Diet Library with high appreciation.

Daifuku will continuously providing products with giving active attention to the global environment.

Products with Consideration of Energy Saving

Daifuku is focusing on the energy saving consideration in designing the transportation and storage system. For example, in designing the stacker crane "S/R Machine H series" for automated warehouse, Daifuku achieved the energy saving by separating the material carriage and maintenance operator's cab, and enabling to move up and down only carriages upon automated operation. The "Magic Sorting System (MIII)", mini load AS/RS has been designed to save energy during operation by saving the weight of main body.

Through these products, Daifuku is supporting customer's energy saving activities.



"Magic Sorting System"



"S/R Machine H series" having Good Energy Saving Device Award presented by the Japan Machinery Federation

Equipment and Devices for Environment Protection

Daifuku Mesh Box Pallet, "Palletainer", a returnable container serves for reduction of packing and packaging materials. This pallet can be stacked during use and folded during nonuse, and be helpful for the efficient use of space.

Daifuku is supplying also the products for collecting and recycling the scrapped home electric appliances and collection of home refuse. The Containers for collection of scrapped electric appliances has considerably shortened the loading and transportation time by means of unit loading of the electric appliances. In the field of home refuse collection, Daifuku is supplying the refuse containing cage, "Gomi-Clean" preventing the refuse from being pecked and littered by crows and cats, to keep the cleanness and beauty of surrounding area.



Mesh box pallet, "Palletainer"



Container for unit loading of scrapped home electric appliances



Refuse containing cage, "Gomi-Clean"

Case Examples

■ LAWSON, INC. Introducing Noise-Silencing Roll Box Pallets for Regional Environment

LAWSON, INC. (Head Office: Suita City, Osaka) has adopted the easy lock type CTE as the roll box pallets used for supplying goods to shops, and achieved noise reduction and the extensive improvement of work efficiency.

The CTE reduces collision noise and the noise during moving by the adoption of double pipe structure for panel frames. It can be folded easily by moving the side panels inward and lifting the resin base with foot. The CTE has been selected

because its silencing design and easy operation meet the needs of convenience stores requiring the commodity supply in night time and having the increased number of female part time workers. In addition the established collection and recycling route of components such as steel panels and wheels was also appreciated.



'Easy Lock Type CTE' suitable for night time distribution

■ Ichikawa Kankyo Engineering Co., Ltd. Utilizing Various Types of Material Handling Equipment in Game Machine Dismantling Plant

Ichikawa Kankyo Engineering Co., Ltd. (Head Office: Ichikawa City, Chiba) established the dismantling plant mainly for game machines such as pinball machines and pinball machines fitted with slot machine by modifying the existing Makuhari Recycling Center in 2002. This plant has started its operation from April 2003.

In this center, the collected game machines are loaded to the pallet and stored in the vehicle-based tilted moving

shelf 'Gravity Cart' temporarily. It allows keeping the dismantling space as much as possible. Components such as printed boards and motors are sorted in the FS Containers located at the storage shelf for medium-duty materials 'Goodshelf.' When the FS container is filled up, it is moved to the mesh box pallet 'Palletainer' which is then shipped to the recovery plant as a tote box.



'Goodshelf' installed in dismantling plant: Shelves are tilted to keep the better view of contents in 'FS Container'

■ Toyota Motor Corporation Adopting Mesh Box Pallet as Tote Box for Exporting Pressed Parts

The solid and collapsible mesh box 'Palletainer' is used in Kamigo Distribution Center of Toyota Motor Corporation (Head Office: Toyota City, Aichi) as tote boxes for exporting pressed parts to the US.

Palletainer has been adopted and replaced cardboard plastic boxes and steel boxes because of the following advantages.

- Toyota has improved working environment by automating hard works which had been carried out by personnel.

The pressed parts are now loaded by robot directly and Palletainer can endure such impact.

- It can be used repeatedly while cardboard plastic boxes are disposable and steel boxes should be dismantled and returned.



Light and solid 'Palletainer'

■ Nerima Ward, Tokyo Introducing Multistory Bicycle Parking System as Effective Parking Means

Nerima Ward of Tokyo introduced the multistory bicycle parking system 'Rotary cycle' in the parking facility located in front of the Oizumigakuen station of Seibu Railway. It allows parking 208 bicycles in the space of 37 m² by parking 4 bicycles on each pallet and rotating the pallets vertically to store them in high layers (height: approx 18 m).

Bicycles are handy and environmental friendly transportation means and recognized as the important means of

urban transport. However, illegally parked bicycles are now getting one of large social problems. Nerima Ward expects that multistory parking in the limited space will contribute to the reduction of illegally parked bicycles.



Image of 'Rotary Cycle'

Environmental Management Policy

Daifuku laid down the environmental management policy for whole organization in 1999 based upon that of Komaki Works and Shiga Works. This environmental management policy will be communicated not only to all Daifuku employees but also be given access to the general public by displaying it at the entrance of each Works.

In FY 2002, the management policy was partially modified to strengthen the environmental management system.

With a goal of getting certified to ISO 14001 for the whole organization in 2003, all employees of Daifuku is now implementing environmental protection activities.

Environmental Management Policy

Principles

Daifuku, intending to be a global organization, has recognized that it is one of the most important objectives of the human being to protect the global environment. With this, Daifuku will give consideration to the saving of resources and prevention of contamination of global environment in every aspect in its development and production of material handling system equipment.

Management Policy

(1) Daifuku will proceed in its continual environmental protection activities by special task force in production sectors and ISO steering committee meetings.

(2) Daifuku will promote the environmental protection based on the environmental objectives and targets established after the appropriate assessment of environmental effects, for the continual improvement of management system and its performance.

(3) Daifuku will establish its own standards complying with all applicable laws, codes and regulations for environmental protection.

(4) Daifuku will take environmental protection into consideration at every stage of the design, development, production, use and disposal of all products it provides.

(5) Daifuku will put the priority in the following environmental aspects in its business activities:

- efficient use of energy at all factories,
- waste reduction,
- prevention of contamination by wastes from its production activities.

(6) Daifuku will enhance education and support to the subvendors and communication with local community for collaboration.

This environmental management policy will be communicated not only to all Daifuku employees and all subvendors but also be given access to the general public.

Issued on January 7, 1999
Revised on October 1, 2002

Environmental Objectives, Targets and Performance

In FY 2002, Daifuku has implemented the environmental protection activities mainly at Shiga Works and Komaki Works, which were certified to ISO 14001.

The following tables show the status of performance and results of self-assessment at Shiga and Komaki Works. Since FY 2002, the target values have been set at higher level.

From now, these activities are going to be extended to the whole company including non-production areas for the improvement of environmental protection.

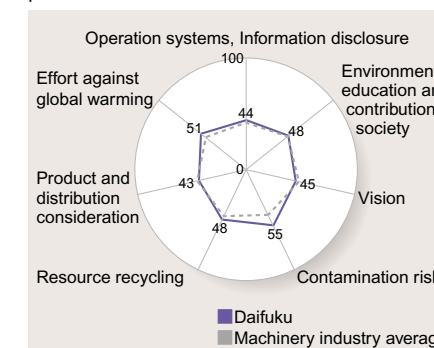
Column Environmental Management Scale

Daifuku Was Appraised as 371st Place in 2047 Manufacturing Companies

According to the announcement of Nippon Keizai Shimbun (the biggest economic journal press in Japan) in December 2002, Daifuku was appraised as the 371st place in 2047 manufacturing companies at 6th Environmental management Scale Survey.

It was lower than last year's 277th but this was because the evaluation method was changed from this fiscal year and overseas branches were also subject to the evaluation.

Daifuku will enhance the environmental management with considering the improvement at overseas production bases.



*This announcement is based on the research of the 2,047 top rank manufacturing companies in Japan including construction and energy industries.

Shiga Works

| | Objective / Target (FY 1998 to 2003) | Objective for FY 2002 | Result in FY 2002 | See |
|-----------------------------|--|--|---|--------------|
| 1. Environmental protection | Strengthening the control of waste | Against water pollution | Good | →P21 |
| | | Against air pollution | Good | →P20 |
| | | Against soil pollution | Good | →P21 |
| | | Compliance with PRTR | Good | →P20 |
| 2. Reduction of Energy Use | Reduction of Utilities Energy (Power and LPG) (By 20% of FY1998 by FY2003) | - Saving power consumption of compressors - Saving power consumption of lightings by 15% of FY 1998 | Good | →P18 |
| | | Reduction of LPG consumption By 15% of FY 1998 | Good | →P19 |
| 3. Waste reduction | Reduction of waste from utilities (general refuse and industrial refuse) by 60% of FY 1998 by FY 2003 (Recycling of waste paper is included as the sub-objective.) | 55% reduction of industrial waste | Good | →P14 |
| | | Recycling 42% of waste high grade paper | Good | →P15 |
| | | Reduction of high grade paper by 15% of that used in FY 2000 | NG | →P15 |
| 4. Indirect effects | Support and education to green suppliers and subvendors | Implementation of support and education to green suppliers and subvendors | Not Enough | →P17 |
| | | Reduction of packaging materials for procured items | Planning reduction of packing and packaging materials | Not Enough |
| 5. Product assessment | Reduction of product weight, and reduction of the number of parts (By 10% of FY 1998 by FY 2003) | Reduction of weight of materials, and reduction of the number of parts | Not Enough | →P12 |
| | | Reduction of packaging materials for products (By 20% of FY 1998 by FY 2003) | With the support from production sectors | NG |
| | Reduction of power to be used for operation of products (By 10% of FY 1998 by FY 2003) | Reduction of number and capacity of drive motors to be used | Not Enough | →P13 |
| | | Planning and implementation of reduction | Good | →P20 →P21 |
| | Improvement of recyclability of products upon disposal (By 10% of FY 1998 by FY 2003) | Analysis of materials to be used | Not Enough | →P12 |
| | | Improvement of indication of names of non-ferrous materials (By 10% of FY 1998 by FY 2003) | Analysis of materials to be used Indication of names of plastic resin being used | Not Enough |

Komaki Works

| | Objective / Target (FY 2001 to 2004) | Objective for FY 2002 | Result in FY 2002 | See | |
|--|---|---|--|--|------|
| 1. R&D for reduction of environmental impact | Providing environment oriented products | Reduction of environmental impact | Good | →P12 | |
| | | Energy saving products | Development of energy saving products | Good | →P13 |
| | | Selection of materials for recyclability | Improvement of recyclability | Good | →P12 |
| | | Selection of materials for resource protection | Resource protection | Good | →P12 |
| 2. Reduction of environmental impact | Reduction of energy use | Reduction of electric power consumption at factory (by 3% of FY 2001) | Good | →P18 | |
| | | Reduction of waste (by 90% of FY 2000) | Reduction of waste in weight By 75% of FY 2000 Increasing recyclable items | Good | →P14 |
| | | | Improvement of recycling of copying paper (50% higher than FY 2000) | Promoting paper recycling (by 35% higher than FY 2000) | Good |
| | | Reduction of exhaust gas at the time of idling stop of vehicles | Idling stop of cars | Good | →P11 |
| 3. Prevention of Contamination | Prevention of contamination by wastes (such as waste oil and waste water) | Prevention of water and soil pollution, including prevention of oil leakage from MC pit | Good | →P21 | |
| 4. Social activities for reduction of environmental impact | Support and education to green suppliers and subvendors | Implementation of support and education to green suppliers and subvendors | Not Enough | →P17 | |
| | | Collaboration with local community | More active participation in the local community activities Planning and implementation of environment related events | Good | →P22 |

Environmental Accounting

In order to promote the environmental protection activities together with the continuous development of business of the organization, it is desirable to grasp the investment costs and benefit related to such activities.

For that purpose, Daifuku has adopted the environmental accounting system to be used as the measurement of its performance since 2001. As an example of positive effects of environmental accounting on environmental protection activities, lighting is changed to the inverter-controlled ones.

Environmental Accounting

In order to quantitatively grasp the costs and benefits related to environmental protection activities, Daifuku started the accounting system in accordance with the Guideline for Environmental Accounting System for Machinery Industry based on the guidance by the Ministry of the Environment of Japanese government.

The table below is the data for the year of 2002 for Shiga and Komaki Works. The total cost is about Yen 225,000,000.

As Shiga Works is adjacent to Lake Biwa, the costs for waste water treatment facilities and their running costs became so high as 41% of the total cost.

The benefit turned out to be about Yen 60,000,000. The benefit due to the development of new products is not

included in this report because it was quite difficult to calculate it accurately at the present time.

We are going to extend the scope to the non-production divisions and set the environmental indicators for evaluation in order to promote the continuously improved environmental accounting and to make it as an effective tool for environmental management.

Environmental Accounting Report for the fiscal year 2002

(Shiga and Komaki Works for the period from April 1, 2002 to March 31, 2003)

Costs for Environmental Protection Activities

Unit: 1000 yen

| Type | Activities | Cost |
|--|--|---------|
| Reduction of Environmental Impact in Production Activities | - Waste water contamination protection activities such as waste water treatment facilities - Prevention of air pollution from painting facilities | 91,341 |
| Measures against industrial waste | - Waste treatment - Introduction of garbage disposal machine - Use of sludge dryer | 51,646 |
| Use of materials fit for environmental protection | - Elimination of individual packaging by adopting tote boxes - Reuse of transportation jig | 3,278 |
| Development of products having less environmental impact | - Recycle of water used in car washer - Development and design of energy saving products | 17,103 |
| Recycling of Daifuku products | - Collection of car washers - Collection of used packaging materials | 5,456 |
| Emergency preparedness | - Training for emergency | 456 |
| Environmental protection at offices | - Energy-saving of lightings and air conditioners - Education and support to subvendors | 12,808 |
| Consideration of environment for overseas operation | - Replacing wooden package with steel frame | 420 |
| Environmental management | - Environmental education of employees - Labor cost for operation of environmental activities | 42,372 |
| Collaboration with communities | - Participation fee of the Eco Foster - Joining the Environmental Protection Association - Greening and tree planting | 414 |
| Total | | 225,294 |

Economic Benefit

Unit: 1000 yen

| Description | Benefit | Amount |
|--------------------|---|--------|
| Saleable materials | - Sales profit of ferrous and non-ferrous scrap materials, and waste high grade paper | 9,389 |
| Energy saving | - Reduction of electric and heat energy | 36,476 |
| Cogeneration | - CFA air conditioning (in terms of energy) | 6,000 |
| Tote boxes etc. | - Use of tote boxes and reuse of shipping frame | 8,340 |
| Total | | 60,205 |

*The cogeneration expenses were calculated in terms of reusable waste heat energy in the thermal power generation.

Environmental Management System

Daifuku has implemented the environmental management system as the bases of its environmental protection activities to identify and assess the impacts and results of performance for further development of their effectiveness.

This will be expanded and strengthened by establishing "Total Daifuku Environmental Management System" covering also the non-manufacturing sectors while developing its logistic system business activities.

Status of ISO Certification

Komaki Works and Shiga Works have been certified to the International Environmental Management Standard ISO 14001 in 1999 for their environmental management system implementation. Both of them are intending the continual improvement of environmental management performance by spiraling up by repeating the P-D-C-A cycle in planning, implementing, checking, and improving the system to their respective environmental management policy, objectives and targets.

In FY 2002, the systems of Komaki and Shiga Works have been integrated. In FY 2003, the management system is being expanded to all non-production sectors in Osaka Head Office, Tokyo Head Office and Chubu Office for the "Total Daifuku Environmental Management System."



Environmental Management System

In FY 2002, ISO Steering Committee consisting of environmental management representatives from each Department and the project team as the core organization has been held periodically consisting of Komaki Works General Manager and Shiga Works General Manager. The management review has been held every six months for continual improvement by evaluating the performance of activity plans of each Department and project team.

In addition to the existing project teams such as Design and Development, Waste Disposal, Energy Saving, Green Procurement, PRTR and Statistical Research, the Water Quality Management team was set up FY 2002 for the cross-functional development of the environmental management.

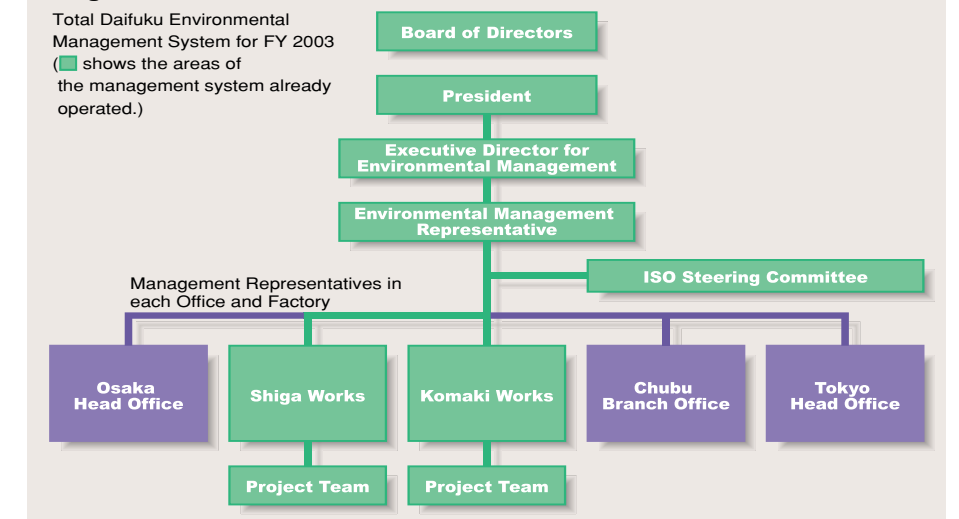
In FY 2003, Osaka Head Office, Tokyo Head Office, and Chubu Office are to join to this system for the whole company environmental management system under the President as the top authority.



Management Review

Organization

Total Daifuku Environmental Management System for FY 2003 (■ shows the areas of the management system already operated.)



Environmental Management Audits

In order to verify the adequacy of the management system, the compliance with laws and regulations, and the effectiveness of implementation of the management system, the internal audits are conducted periodically, besides the external audits by the third party audit (certification organizations).

In the internal audits, the management system implementation, the result or progress status of plans for accomplishment of objectives and targets in addition to the compliance with the applicable laws and regulations are being checked, and if

any nonconformity is identified, the audited area shall take the corrective action.

The results of internal audits are to be reported for the management review and followed up for the corrective action.

External Audit Result (Biannually)

| | Shiga Works | Komaki Works |
|------------------------|-------------|--------------|
| Serious non-conformity | 0 | 0 |
| Minor non-conformity | 1 | 1 |
| Observation | 10 | 8 |



External audit at Shiga Works

At Komaki and Shiga Works



**Komaki Works (Certified to ISO 14001 in February 1999)
Promoting Environmental Protection Activities Emphasizing 3R
Eijiro Urushizaki, Executive Director and Komaki Works General Manager**

For the purpose of preventing global warming and achieving recycling-oriented society, Komaki Works has been implementing its business activities.

In August 2002 Aichi prefecture, where Komaki Works locates, established the environmental policy referring to the importance of the close cooperation of the government, residents, and the enterprises in this area to achieve environmental protection. As a part of it we are participating in "ISO Network" which was set up under the initiation of local government, Komaki City. With the 25 member companies of ISO Network, we are positively promoting our environmental protection activities among citizens.

Daifuku considers Energy Saving, Improvement of Recyclability and Resource Saving in the development and design of products. For Energy Saving, we set up the objective of 10% reduction of consumption power from the existing model when developing the new model. For Improvement of Recyclability, the objective is 'the use of more than 99% of recyclable components.' In order to achieve 'Resource Saving', giving a longer life for components is considered in product design. Also for the reduction of waste and energy consumption for which we have been exerting efforts since 1994, we have achieved the objectives consequently and contributed to reduce environmental impact.

In FY 2002, according to the amendment of Energy Saving Law, we reported the electrical power consumption to the government while complying with the laws and regulations. With taking 3R — Reduce, Reuse and Recycle — into consideration, we are planning to positively promote the supply of product with lower environmental impacts and further development of the global environmental protection activities.



Komaki Works Profile
Address: 1500 Komakihara-Shinden, Komaki-City, Aichi 485-8653, Japan
The number of workers: Regular employees 538
Persons from outside companies 150
Total 688
Started operation: In April 1963
Site area: 65,000 m²
Building area: 48,000 m²



**Shiga Works (Certified to ISO 14001 in November 1999)
Establishing Water Quality Project Team to Strengthen Management System
Hihumi Katsuragi, Director and Shiga Works General Manager**

Shiga Works has implemented environmental protection activities and contributed to the local society, while discharging a social responsibility by complying with the laws and regulations.

In Shiga Prefecture, the local government is promoting the "Mother Lake 21 Program" to recover the water quality to the level at 1955's in 50 years. For leaving the beautiful Lake Biwa to the next generation, the close cooperation of the government, residents, and the enterprises in this area is important.

Three years have been passed since Shiga Works got certified to ISO 14001. We have been promoting the reduction of CO₂ emission and exerting effort to achieve "zero emission." In FY 2002 we set up the Water Quality Management team to strengthen implementation system. Also for the products, improvement of environmental performance such as lengthening of product life, downsizing, energy saving and recyclability is taken into account toward establishment of resource recycling society. At the same time, we are improving the productivity to promote the sustainable development of enterprise.

We will continue our efforts and improvement to promote the activities considering environment protection in the close cooperation of the government, residents, and the enterprises by participating in the regional environmental protection workshop held by the local government, implementing local cleanup activities and so on.



Shiga Works Profile
Address: 1225 Nakazaiji, Hino-Cho, Gamo-Gun, Shiga 529-1692, Japan
The number of workers: Regular employees 826
Persons from outside companies 379
Total 1,205
Started operation: In March 1975
Site Area: 1,160,000 m²
Building Area: 176,000 m²

Education and Training of Environmental Management

Shiga and Komaki Works are carrying out the training program for all employees and subvendors to enhance their awareness in environmental management for dissemination of the management program.

The in-house electrical bulletin board system 'ISO 14001' has been operated since 1999 for exchanging opinions and sharing information on environmental protection activities.

Shiga and Komaki Works have posted signboards saying "ISO Certified Factories" at their gates and the entrance of factory buildings. This is intended to let the visitors recognize that Daifuku is conscious of environmental issues and to raise employee's awareness. In addition, we put the idling stop signboards in the parking areas requesting all employees and visitors to make idling stop for their cars.

For the internal auditors, the environmental management system and internal auditing procedures are being taught to the candidates for the consistency and uniformity of audits and professional development of internal auditors or candidates.

The number of internal auditors is gradually increasing. Currently there are 103 auditors in Komaki Works, 68 in Shiga Works and 16 in Osaka Head Office.

Employee's awareness regarding the environmental issues is also increasing and now about 10% of whole proposals and suggestions from employees (total of 3740) are related to environmental improvement.



ISO session



Signboard saying "ISO Certified Factories"

Risk Management System

To prevent the environmental impacts by the emergency situation and its escalation, each factory is conducting the training for simulated virtual emergency situations once a year.

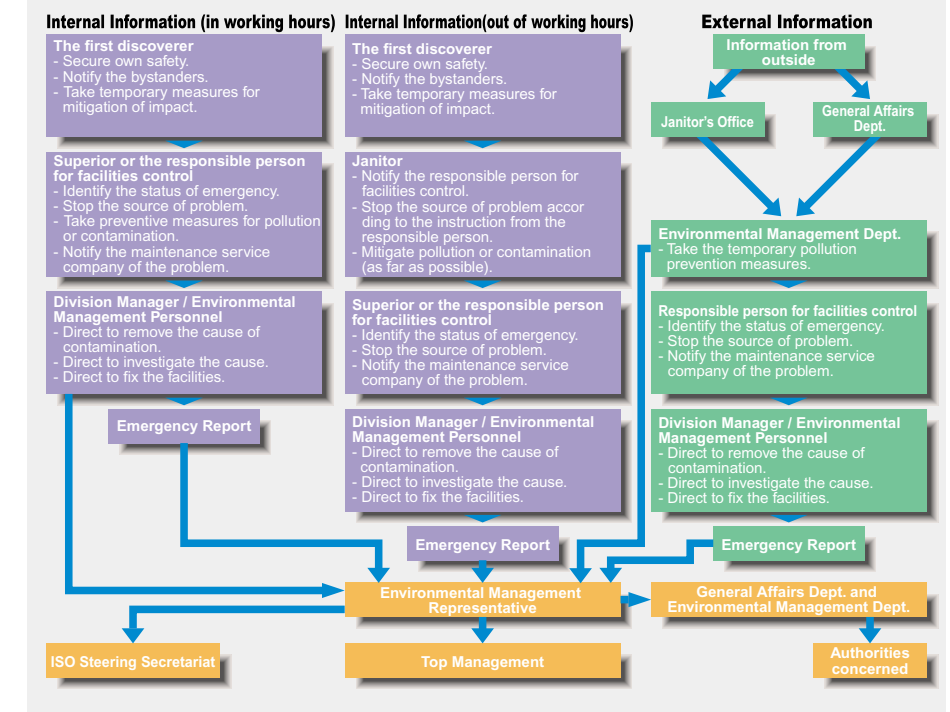


Simulated training at Shiga Works

Compliance with the Environment Related Laws and Regulations

Daifuku is in compliance with the environment related laws and regulations applicable to the environmental aspects of its activities, products and services. In FY 2002, no violation of law and regulations was made and no fine was imposed.




Organizational Channels for Emergency



Challenges in Design and Development of Products

In design and development of products, Daifuku is taking into consideration the total life cycle of products including the environmental impact at the stage of usage and disposal by the customer, besides the impacts at the production stage at our facilities.

We will positively implement the research and development of products and proceed the continuously improvement to reduce the environmental impact.

-  denotes reduction of product weight and number of parts
-  denotes energy saving
-  denotes increasing recyclability



Reduction of Product Weight and Number of Parts

Daifuku is challenging the energy saving at the design and development of its products, by reducing the product weight and the number of their parts.

■ Car production line conveying system "Flexible Drive System (FDS)"

The weight of trolley bracket, which is a part of Overhead type, was reduced by 20% by brushing up the casting components of it. For Floor type, the weight of basic modules (merge, divergence, turn drive, straight drive and stopper) was reduced by 9% and the number of parts by 11%.



  Flexible Drive System

■ Electrified monorail system "Ramrun (RR)"

For the vertical type, the weight was reduced by 25% and the number of parts by 30%.

■ Cleanroom conveying system "Cleanway (CLW-07)"

Compared to the existing model, the weight was reduced by 20% and the dimensions were downsized by 31%.

■ Automated warehouse peripheral system "Chain Conveyor (CH-100)"

Compared to the existing model, the weight was reduced by 12%.



 Cleanway

Reduction of Number, Capacity of Motor Drive

Reduction of energy consumption at the time of product use has the great effect in the life cycle of the product. Therefore, Daifuku has given high priority to it at the stage of product design and development.

■ Car production line conveying system "Flexible Drive System (FDS)"

The number of motor drives was reduced by 10% by placing the driving section and storage at a regular interval. In addition the use of energy saving operation control reduced the operation time of motor drives to one-third.

■ Cleanroom conveying system "Cleanway (CLW-07)"

Compared to the existing model, the power consumption was reduced by 20% by reducing the weight, downsizing and changing motor capacities.

■ Automated warehouse peripheral system "Chain Conveyor (CH-100)"

Changing the twin drive to the single drive reduced friction coefficient, resulting in the reduction of consumption power by 34% compared to the existing model.

■ Cleanroom storage system "Clean Stocker (CLS-50)"

Compared to the existing model, the power consumption was reduced by 30% by improving the power distribution panel of non-contact power supply system, adoption of loop method to reduce current, and using energy saving mode in the primary side.


■ Storage system "Flexible-path Type Mobile Rack"

Use of special type of urethane wheels and adoption of inverter parallel running at direct current section reduced the running resistance, resulting in the reduction of consumption current by 30%. Since this system does not need traveling rail, it can be moved flexibly without any floor work. Also it does not generate any waste material and is good for environment.




  Chain Conveyor



 Clean Stocker



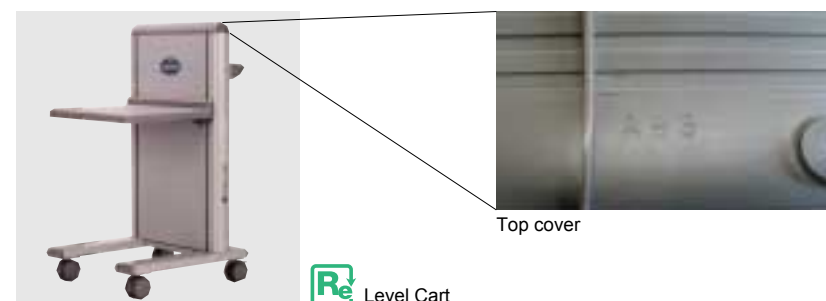
 Flexible-path Type Mobile Rack

Analysis of Materials, Indication of Names of Materials such as resins

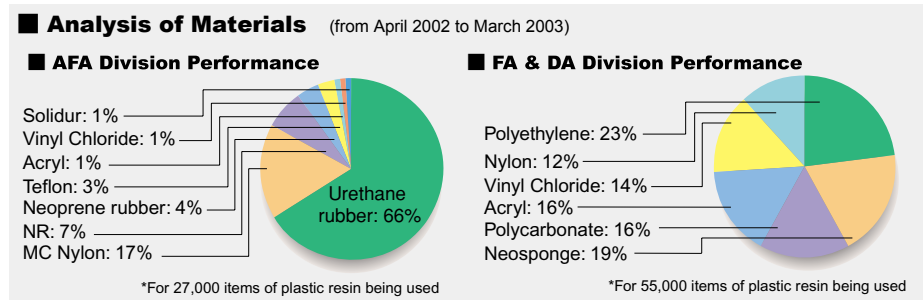
At the time of product development, the materials to be used for the product are analyzed and the type of plastic resin materials being used for the product are indicated on the product body, in order for the user to identify the material upon disposal or recycling of plastic resin materials.

In FY 2002, FA & DA Division and AFA Division calculated the quantities of plastic resin materials used for their products like they did in 2001.

From now, this practice is going to be applied to all products.



 Level Cart



Column Car Washer Waste Water Recycling Equipment and Green Liquids

■ Supporting Customer's Environmental Impact Reduction Activities

Car-Washing Machine Division developed the wastewater recycling equipment called "Fresh Membrar." It uses the "condensation, deposition and UF membrane filter" for the first time in the industry. It allows cleaning up 75% of wastewater for reusing. It solves several problems reported to the existing recycling equipment such as bad smell in summer time, deceleration of wax effect and damage to car washing machine. This equipment also contributes to lower water and swage bills and to reduce environmental impact.

The division also developed new shampoo, wax and water-shedding coating material used for the car washing machine. These are the highest level of green liquids without including any chemicals subject to the PRTR law, environmental endocrine disrupter and regulated phosphorus and are both human friendly and environmental friendly.



Car Washing Machine and "Fresh Membrar"

Message from Environmental Representative



Gokichi Hatouchi

■ Shiga Works To Be an Environmentally-advanced Company in Material Handling Industry

Three years have been passed since Shiga Works got certified to ISO 14001. In early stage we evaluated the environmental effect of the aspects having larger environmental impact and have reviewed and improved such aspects. From now on we are going to develop products with improved environmental performance that can be a sales point in the nonprice competition. Also we will positively implement the reduction of industrial waste by reviewing production processes.

Although the Japanese economy is sluggish, Japanese enterprises are now considered as environmentally-advanced companies in the world, especially in the automobile industry and consumer-electronics industry. Daifuku is trying to be an environmentally advanced company in the material handling industry by continuously raising employee's awareness regarding the environmental issues.

Waste Reduction

Daifuku is exerting efforts to reduce all types of waste including waste plastic resin materials, waste oil and sludge from each factory.

The project team for waste reduction is promoting the activity to accomplish "Zero Emission" for the objective of 95% recycling of waste materials. We will improve our recycling system by centrally controlling emission of waste.

Segregated Collection of Waste

Daifuku set up the standards for the containers, collection methods and collecting stations for each type of waste such as waste plastic resin materials, waste oil and sludge to promote the environment conservation.

Shiga Works is collecting the refuse and waste in the following manners:

- (1) Using the different containers for each type of refuse and waste.
- (2) Indicating the type of refuse or waste on each container.
- (3) Using sealable containers for the inflammable hazardous wastes with low flash points such as organic solvents, thinner, and alcohol, and storing them in the storage house for oils and greases after sealing.
- (4) For other types of refuse and waste, using the collection and storage method authorized by the Waste Disposal Project Team.

In FY 2002, the environmental patrol was carried out under the initiative of Waste

Disposal Project Team and, with the cooperation of each division, contributes to attain the reduction objective (by 55% of FY 1998). Consequently 60% of waste was reduced as compared with the year of FY 1998.

Komaki Works is collecting the refuse and waste following the similar methods to those of Shiga toward Zero Emission. In FY 2002, training for waste segregated collection was performed for each division under the initiative of Waste Disposal Project Team and contributed to attain the reduction objective (by 75% of FY 2002). Consequently 89% of waste was reduced as compared with the year of FY 2000.

The effort to reduce waste by segregated collection will be continued actively from now on.

Reduction of Paper Consumption and Recycling

Daifuku is promoting waste paper recycling to protect forest resources which has a great effect for environmental protection.

Shiga Works is mostly purchasing and consuming the high-grade paper recycled from waste paper, while using backside of all waste paper at the office. The waste paper used for both sides is to be recycled for the high-grade paper. Although the objective was the reduction by 15% of FY 2000, the purchase volume in FY 2002 was increased by 18% from that in FY 2000 due to the increase of overseas business and increase of workers moved from Komaki Works. However, the recycle volume increased by 43.5% in FY 2002 by the efforts of leaders in all Departments while the objective was 42% of the purchase volume.

At Komaki Works, in order to reduce the purchase volume, the use of backside of all waste paper is carried out thoroughly. Also the waste paper used for both sides are to be recycled for the high-grade paper. In FY 2002, we set up the objective of increasing recycled amount by 40% compared with FY 2000. Consequently 44% increase was attained. In addition, cleanroom paper, colored paper, catalogues and newspapers are also collected separately and recycled as used paper.

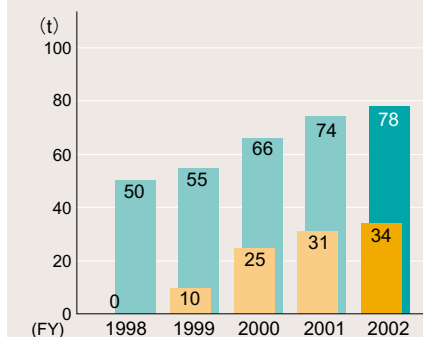


Collection of waste high-grade paper

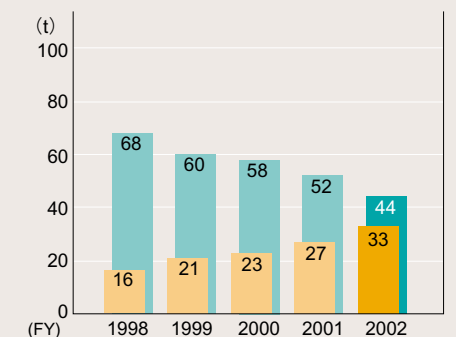
Recycling of Waste High-grade Paper

Purchase volume
Recycle volume

Shiga Works Performance



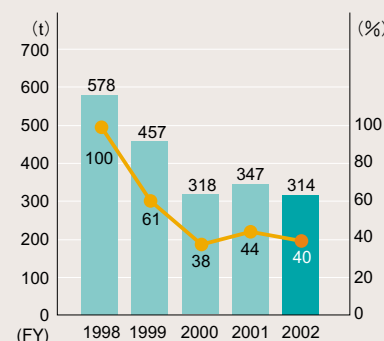
Komaki Works Performance



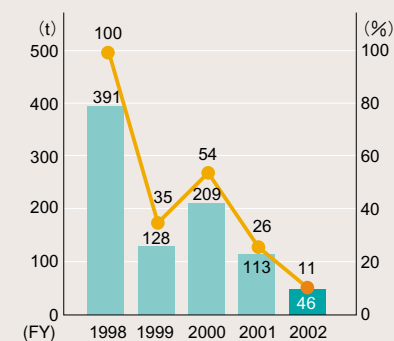
Volume of Waste Disposal to the Soil (for Land Reclaiming, etc.)

Ultimate total
Index per utilities for production (100 for FY 1998)

Shiga Works Performance



Komaki Works Performance



Dust carts for segregated collection of waste (office)



Palletainers for segregated collection of waste (factory)

Promotion of Recycling

Daifuku is promoting the recycling of used or waste materials, taking them not as the waste but as the resource.

In FY 2002, in accordance with the new "Law for Recycling of Home Electric Appliances", Daifuku contracted the specialized waste disposal company who is a subsidiary company of home electric appliance manufacturer dispose of all refuse of used scrapped television sets, air conditioners, refrigerators, and computers and their peripheral equipment. This contributed to the reduction of the refuse to be thrown away for land reclaiming.

Column In-house Recycling of Garbage

Reduced Garbage Disposal Volume to 1/5 !

Shiga Works has installed the biological garbage disposal machine to reduce the garbage from the staff canteen being sent to the municipal incineration site. Both First and Second Canteens have started their operation and the garbage volume was reduced to 6 ton from 30 ton per year, which is one fifth of the previous year. The garbage processed through the machine is recycled as the fertilizer to the plants in the site. It is also used for vegeculture trial in employee's farm.



Garbage disposal machine at the Second Canteen



Vegetable farming

Column Recycling of IC Case Material

Used as Car Stop

Disposable IC cases used for transportation and storage of IC boards at Komaki Works are made of vinyl chloride and cannot be used for thermal recycling.

In 2002, Daifuku verified a suitable treatment method for recycling vinyl chloride as material. Now all recyclable IC cases generated in Daifuku are collected and recycled.

These IC cases are crushed and changed to reusable material by treatment plant and then processed to car stops and placed on the market.



IC cases



Car stop

Message from Environmental Representative



Yoshihiko Fujio

Komaki Works
Reviewing Products and Production Facilities to Reduce Environmental Impact

We have implemented environmental activities for three years since 1999 when Daifuku started operating environmental management system.

For the products, we have promoted the recycling of plastic resin parts, development of energy saving techniques and reduction of the number of parts. Also for production facilities, in order to reduce chemical material, we adopted water-based paint for painting products and water-soluble lubricant for machine tools.

We will continuously promote the development of products taking lifecycle assessment into account.

Green Procurement

Reduction of Packaging Materials

As a part of resource saving activities, Daifuku is promoting the reduction of consumption of packaging materials for the products as well as for the parts and components from suppliers in cooperation with them. Especially, the increase in use of plastic containers is contributing to the reduction of waste considerably.

In FY 2002, the packaging of geared motor was changed to tote box (Palletainer). Daifuku is planning to increase items for which such tote boxes can be used.



Tote box for sensors



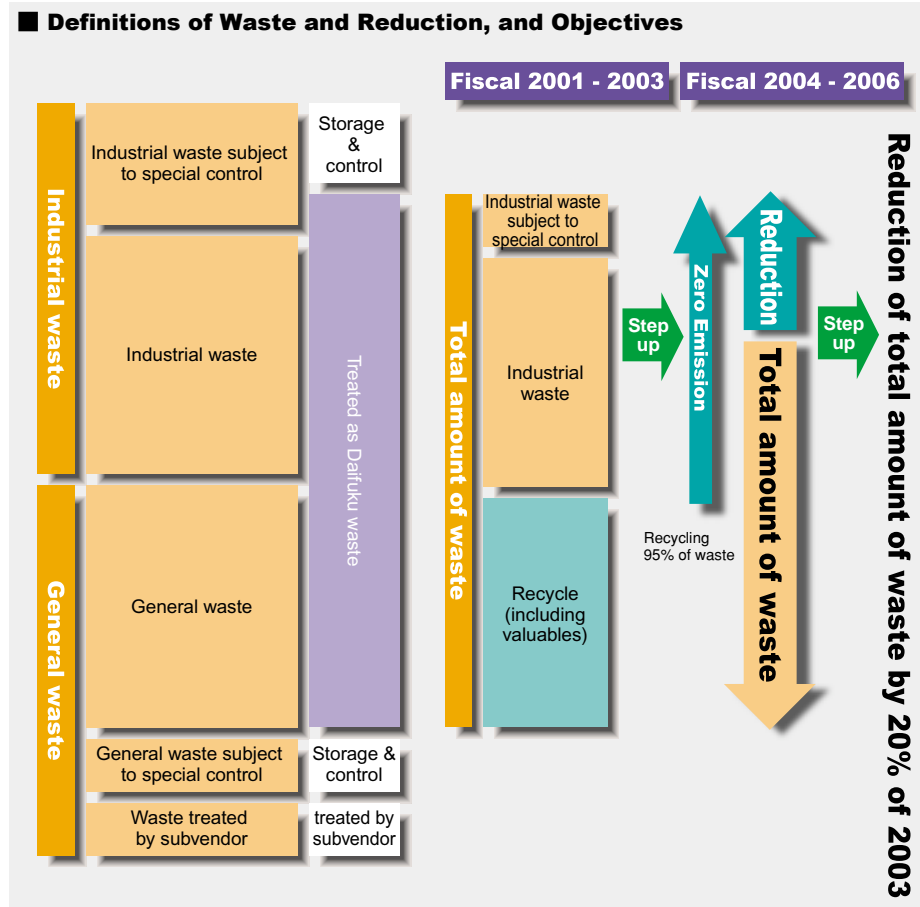
Tote box for geared motors

Toward Zero Emission

Aiming at realizing the environment-conscious society living with nature, Daifuku is implementing zero emission activities to recycle all waste. The following points are especially considered.

1. Evaluates the qualification of each waste treatment plant for the treatment of waste classified according to the laws and regulations.
2. Selects recycling method having less environmental impact. For example, selects material recycling rather than thermal recycling.
3. Develops products taking recyclability into account.

Daifuku is going to promote the production activities generating less waste from the recycling point of view.



Daifuku is thinking that the green procurement and its purchasing activities are important factors for environmental consideration because they are giving the impact to the products though indirectly.

Therefore, Daifuku is promoting the "Green Procurement" practice for establishing and implementing management system to ensure to supply the products with environmental consideration to the customer in cooperation with subvendors and suppliers of parts, components and materials.

Promoting Green Purchasing

Daifuku is promoting "Green Purchasing" also for office supplies and expendables. As the basis for selection for it, network database and Eco labels of products are being used.

For office supplies, the purchasing guideline was established for convenience in selection of suppliers that are considerate of environmental impact of their products.

From FY 2002, the "Office Supplies Reuse Box" is placed at each office to promote the reuse of office supplies which are not used and just left in the desk of each employee.



Purchasing green office supplies



Office supplies reuse box

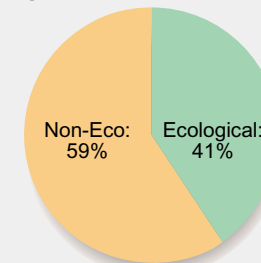


Reuse of used files

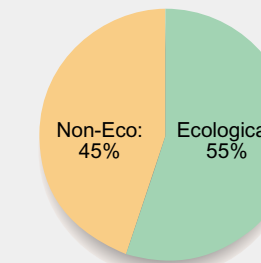
Purchase of Ecological (with Less Ecological Impact) Office Supplies and Expendables

(for one year from April 2002 to March 2003)

Shiga Works Performance



Komaki Works Performance



Support and Education to Subvendors

Daifuku is asking all subvendors to cooperate in our "green procurement" system.

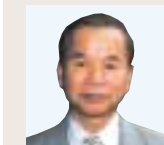
In FY 2002, we performed the field inspection of the environmental management implementation status at several main suppliers site. After analyzing and evaluation of inspection, we exchanged information to improve the environmental activities.

Daifuku is continuing to enhance the environmental consciousness of employees and suppliers for raising the level of green procurement, as well as preparation of our own Green Procurement Guideline.



Field inspection and assistance to subvendors

Message from Environmental Representative



Yukio Ozaki

Osaka Head Office Setting up ISO 14001 Steering Committee in February 2003

In order to obtain ISO 14001 certification within FY 2003, Osaka Head Office established the ISO 14001 Steering Committee in February 2003 and has tackled several environmental issues such as waste reduction, energy saving and resource saving.

While each division sufficiently understands the importance of these activities and has implemented positively, educational activity subject not only to all Daifuku employees but also to all subcontractors and temporary employees is performed simultaneously.

Under combined effort of all related persons, these activities are implemented as scheduled.

Energy Saving and Resource Saving

As the energy consumption results in emission of carbon dioxide, it is pointed out that it will cause the impact on environment through global warming. Daifuku is trying its best to reduce the consumption of electric power and LPG for energy saving. Also, Daifuku adopted the demand control system for reduction of power consumption.

Daifuku is exerting effort to reduce the consumption of resources with efficient use and recycling.

Reduction of Power Consumption

Daifuku is promoting the efficient use of electrical power, the main energy of each Works.

Shiga Works is proceeding with various research and development activities for the energy saving for the production equipment and facilities. It covers the study of energy saving of such equipment as compressors, hydraulic equipment, lighting equipment and air conditioners, and the development of low temperature baking paints and coating materials.

As an energy saving measure for pumps used in cogeneration air conditioners, control system of three pumps used for the cleanroom air conditioning in the Building 1 was changed to the inverter control (55 kW, 37 kW, and 18 kW) to reduce consumption power. In office buildings, energy consumption has been reduced by adopting one-light lighting

utilizing reflection panels, control fan of ventilator by timer, inverter control of air conditioning system and sensor control of toilet lighting. Applying low-temperature baking paint to lighting also contribute to power consumption reduction. The power consumption at Shiga Works was reduced by 6% as compared with the previous year.

Komaki Works employed power control (on-off control of compressor) to air conditioning system, inverter control of lighting and partial lighting using string switches. The power consumption at Komaki Works was reduced by 4% as compared with the previous year.

Daifuku is going to continue the energy saving activity for further efficient utilization of electric power.



Cleanroom

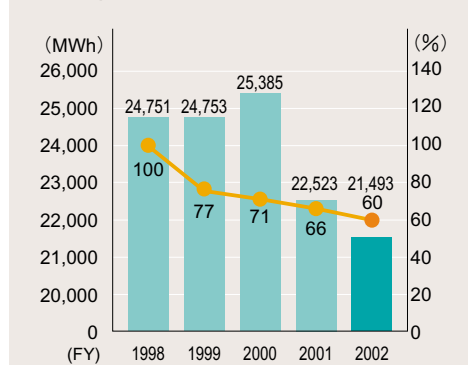


String switches for energy saving of office lighting

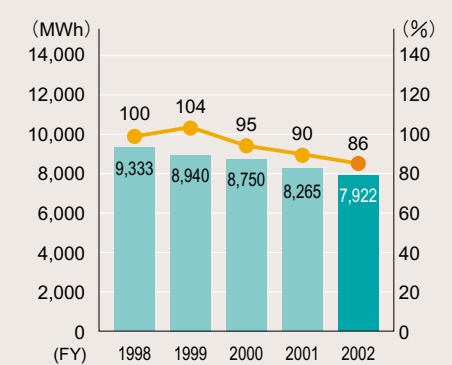
Power Consumption

■ Power consumption
● Index per utilities for production (100 for FY 1998)

Shiga Works Performance



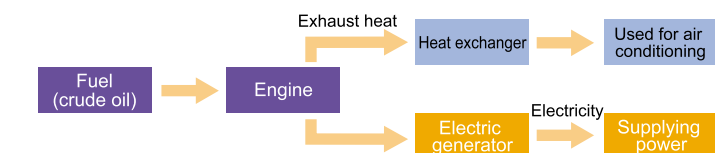
Komaki Works Performance



Column Cogeneration System

At Shiga Works, about 70% of Electricity Is by Its Own Power Generator!

Shiga Works, being designated as the Class 1 energy controlling factory by the Japanese government regulation because of its large scale electric power demand, has started the cogeneration system since 1997 for effective utilization of electric energy. Currently, Shiga Works is using about 70% of needed electricity from its own power generator in this cogeneration system. The waste heat energy from this system is effectively utilized as the heat source for air conditioning of cleanroom.



Started operation since January 1997

Reduction of Fuel Consumption

Daifuku is also actively promoting the reduction of fuel consumption.

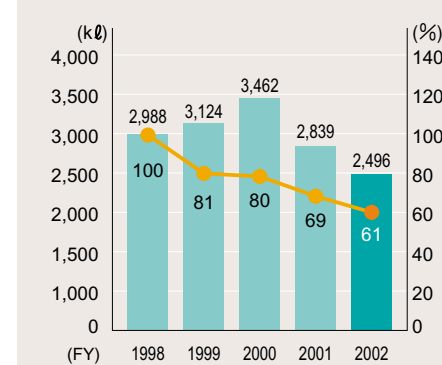
Shiga Works, where the liquefied petroleum gas (LPG) is employed at the drying of coating line, is reducing the thermal energy consumption by adopting the low-temperature degreasing agents and low-temperature baking coating materials.

Komaki Works is reducing the city gas consumption by energy saving setting of the temperature of air conditioning in the buildings (at 28°C for summer time and at 25°C for wintertime). Also, in order to reduce the gasoline consumption, they reduce the use of company-owned cars and encourage all employees to use public transportation instead of their own cars.

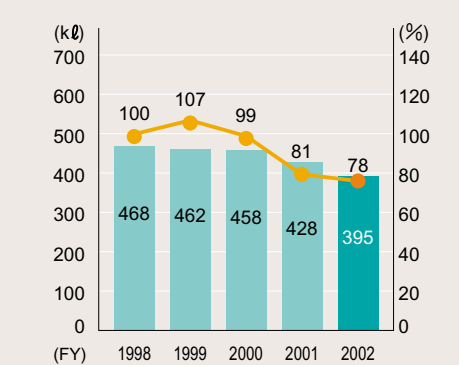
Fuel Consumption

■ Consumption in terms of crude oil
● Index per utilities for production (100 for FY 1998)

Shiga Works Performance



Komaki Works Performance



Fuel consumption breakdown

| Shiga Works (FY) | 1998 | 1999 | 2000 | 2001 | 2002 |
|----------------------------|-------|-------|-------|-------|-------|
| LPG (ton) | 2,260 | 2,362 | 2,615 | 2,144 | 1,881 |
| In terms of crude oil (kℓ) | 2,938 | 3,071 | 3,400 | 2,787 | 2,445 |
| Light Oil (kℓ) | 43 | 44 | 51 | 40 | 41 |
| In terms of crude oil (kℓ) | 43 | 44 | 51 | 40 | 41 |
| Gasoline (kℓ) | 7.9 | 11 | 12.7 | 12.8 | 11.5 |
| In terms of crude oil (kℓ) | 7 | 10 | 12 | 12 | 10 |
| Total | 2,988 | 3,124 | 3,462 | 2,839 | 2,496 |

| Komaki Works (FY) | 1998 | 1999 | 2000 | 2001 | 2002 |
|----------------------------------|------|------|------|------|------|
| City Gas (1,000 m ³) | 200 | 197 | 198 | 182 | 186 |
| In terms of crude oil (kℓ) | 216 | 213 | 214 | 197 | 201 |
| LPG (ton) | 110 | 108 | 105 | 113 | 88 |
| In terms of crude oil (kℓ) | 143 | 140 | 137 | 146 | 114 |
| Gasoline (kℓ) | 120 | 119 | 118 | 92 | 88 |
| In terms of crude oil (kℓ) | 109 | 108 | 107 | 84 | 80 |
| Total | 468 | 462 | 458 | 428 | 395 |

For Efficient Transportation of Products

Since 2000, both Shiga and Komaki Works started to grasp the data on transportation volume, running distance and frequency of all trucks for product transportation for centralized control of shipping information, improvement of transportation system and reduction of space for loads by reviewing product construction, in order to reduce the emission of carbon dioxide.

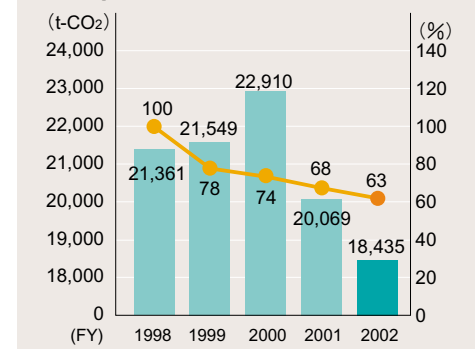


Improving loading efficiency of chain conveyor rails

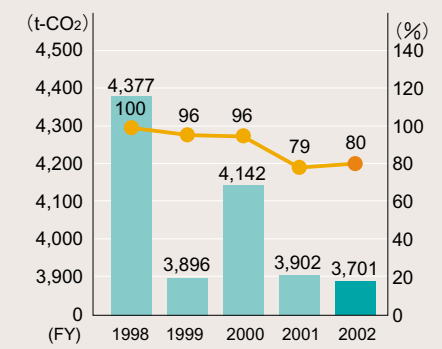
Emission of Carbon Dioxide (CO₂)

■ Emission of CO₂
● Index per utilities for production (100 for FY 1998)

Shiga Works Performance



Komaki Works Performance



Number and Running Distance of Trucks, and CO₂ Emission

| (FY) | 2000 | 2001 | 2002 |
|---|-----------|-----------|-----------|
| CO ₂ emission (t-CO ₂) | 9,050 | 7,574 | 7,083 |
| Running distance (km) | 8,569,808 | 7,172,269 | 6,707,850 |
| Number of trucks (in terms of 10 t) | 21,859 | 17,578 | 19,586 |

(Total of Shiga and Komaki Works)

Control of Pollutant Emission

Daifuku uses various types of chemicals including the ones having large impact against environment.

Daifuku is trying to reduce the amount of pollutant emission by conducting regular inspection and promoting strict control as well as encouraging the use of safer substitution materials.

Pollutant Release and Transfer Register (PRTR) Control

To promulgate the control and reduction of the pollutant generation and emission in accordance with the Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (also called the PRTR Law), Daifuku formed PRTR task forces at each factory.

At each sector for Procurement, Environmental Control, General Affairs, and Design/Parts Production, the quantities

of purchase, consumption, use, disposal and inventory are being investigated, and the data on chemicals are being gathered to be input into the safety data sheet. Up to now, such chemicals were identified, and their use will be prohibited or reduced hereafter.

Such activities at these sectors will be reinforced for more in-depth control and its promulgation.

PRTR Related Chemical Materials Consumption (in FY 2002)

Unit: kg

| Control No. | Name of Chemical | Q'ty | Emission to: | | | | | Transfer to: | | |
|-------------|---------------------------------|--------|--------------|--------------|------|------|--------|--------------|-------|-------|
| | | | Air | Public water | Soil | Land | Total | Product | Waste | Total |
| 1 | Water soluble compounds of Zinc | 368 | 0 | 0 | 0 | 0 | 0 | 291 | 77 | 368 |
| 29 | Bisphenol A | 197 | 0 | 0 | 0 | 0 | 0 | 128 | 69 | 197 |
| 40 | Ethyl benzene | 5,250 | 5,250 | 0 | 0 | 0 | 5,250 | 0 | 0 | 0 |
| 63 | Xylene | 39,669 | 39,669 | 0 | 0 | 0 | 39,669 | 0 | 0 | 0 |
| 69 | hexavalent chromium compounds | 658 | 0 | 0 | 0 | 0 | 0 | 599 | 59 | 658 |
| 224 | 1,3,5- trimethyl benzene | 904 | 904 | 0 | 0 | 0 | 904 | 0 | 0 | 0 |
| 227 | Toluene | 12,785 | 12,785 | 0 | 0 | 0 | 12,785 | 0 | 0 | 0 |
| 230 | Lead and its compounds | 764 | 0 | 0 | 0 | 0 | 0 | 590 | 174 | 764 |
| 309 | Nonyl phenyl ether | 270 | 0 | 0 | 0 | 0 | 0 | 0 | 270 | 270 |

*The chemicals used in a smaller quantity than 100 kg per year were omitted because they are negligible.

Column Noise and Vibration Prevention Measures

Monitoring Noise in Accordance with Environmental Pollution Control Agreement

Daifuku is continuing the effort to minimize the noise and vibration as it is an important aspect to be dealt with.

We are complying with the Environmental Pollution Control Agreement by measuring noise level once a month. All the results of measurement in FY 2002 were below regulated noise levels. For vibration, no impact on surrounding area was reported.

Noise Levels Measured

Shiga Works

Unit: dB

| | Morning | Daytime | Evening | Nighttime |
|-----------------------|-------------|-------------|--------------|--------------|
| | 6 am - 8 am | 8 am - 6 pm | 6 pm - 10 pm | 10 pm - 6 am |
| Hino Town limit value | 60 | 65 | 60 | 55 |
| Measured value | 42 | 45 | 53 | 50 |

Komaki Works

Unit: dB

| | Morning | Daytime | Evening | Nighttime |
|-------------------------|-------------|-------------|--------------|--------------|
| | 6 am - 8 am | 8 am - 5 pm | 5 pm - 10 pm | 10 pm - 6 am |
| Komaki City limit value | 60 | 65 | 60 | 50 |
| Measured value | 53 | 55 | 54 | 47 |

Air Pollution Prevention

Shiga Works is designated as an "Air environmental impact reduction plan implementing company" according to the first paragraph of Article 25 of the ordinance related to the reduction of impact to air environment regulated by Shiga prefecture. Shiga Works is exerting efforts to control and reduce the emission of soot and smoke from cogeneration facilities to prevent the air pollution. All the equipment and facilities are being checked and maintained in accordance with the applicable laws and regulations, besides routine self checks.



Air measurement at Shiga Works

Measurement Result of Air Pollutant

Shiga Works (according to Hino Town environmental pollution control agreement)

| Material | Facility | Limit value | Measured value |
|---------------------------|--------------------|-------------|----------------|
| NOx (ppm) | Electric generator | 950 | 934 |
| | Hot water boiler | 120 | 104 |
| Dust (g/m ³ N) | Electric generator | 0.1 | 0.009 |
| | Hot water boiler | 0.2 | 0.009 |
| SOx (g/m ³ N) | Electric generator | 2.31 | 0.122 |
| | Hot water boiler | 0.567 | 0.120 |

Soil Pollution Prevention

At production process where heavy metals and organic solvents are being used, the scrupulous care is taken to prevent their leakage to the environment.

Shiga Works is always monitoring lines and processes to prevent the soil pollution by the leakage of heavy metals, oil, grease, and organic solvents, and planning the measures for the leakage by unforeseen incidents. For example, the concrete paved leakage stopping fence was installed in the area of the facilities to trap the emitted oil and metal pollutants to prevent their emission to soil. Also the oil trapping fence was installed around the oil

feeding equipment. All these devices are being periodically checked with the check-lists for each of them.

Komaki Works has changed operating oil and lubricant of machining center to vegetable oils having lower environmental impact. Also to reduce environmental impact as low as possible, cutting fluid is changed from the one containing 60% oil to 10% one.



Machining Center using vegetable oils

Prevention of Water Pollution

Recognizing the water pollution has the significant impact on the soil, agricultural produce and living environment, each factory is exerting efforts to control and reduce the wastewater emitted from its production process and activities, as well as to maintain compliance with the laws and regulations.

At Shiga Works, the wastewater from production lines are treated at its own treatment facilities and discharged to Sakura River which is Class 1 river. The rainwater from its conduits is reserved in the fire-fighting reservoir. In addition to the maintenance of water treatment equipment and facilities, the discharged water quantity is being measured periodically; once a year for living environment elements, and twice a year for hazardous materials elements.

At Komaki Works, car washers, canteens for employees, and coating lines are the subjects of wastewater discharge control. The wastewater discharged from

them is, after being treated by Daifuku's own water treatment facilities, drained to the public sewage conduit. The water quality control is being ensured in accordance with the local standards and Daifuku's voluntary standards, and being measured and monitored by the external organization once a month. In FY 2002, the Water Quality Management Team was set up to strengthen water pollution prevention activities.

Taking advantage of an opportunity of Fire Defense Law amendment, Daifuku is trying to change paints to water-based ones in order to reduce the use of chemicals designated in the PRTR Law. The use of water-based paint has been realized since January 2003 for several items. Daifuku is promoting the use of water-based paint including no xylene and toluene, which are subject to PRTR, continuously and supplying products having lower environmental impact.



Product using water-based paint (carriage of Stacker Crane)



Paint shop

Final effluent quality measurement result

Shiga Works (in accordance with Clean Water Law, ordinance of Shiga prefecture, and Hino Town environmental pollution control agreement)

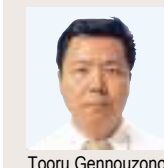
| Item | Limit value | Measurement result | | |
|---|-------------|--------------------|-----|---------|
| | | Max | Min | Average |
| Amount of waste water (m ³) | — | 608 | 9.8 | 360 |
| PH | 6.0 to 8.5 | 7.9 | 7.0 | 7.5 |
| SS (mg/ℓ) | 20 | 8.4 | 1.0 | 3.2 |
| COD (mg/ℓ) | 20 | 9.7 | 1.8 | 5.5 |
| BOD (mg/ℓ) | 20 | 9.0 | 1.0 | 2.6 |
| Total phosphorus (mg/ℓ) | 1.0 | 0.9 | 0.1 | 0.3 |
| Total nitrogen (mg/ℓ) | 10 | 9.5 | 1.4 | 5.4 |

* An average value is weighted average.

Komaki Works (in accordance with sewage water law and Komaki City waterworks department environmental pollution control agreement)

| Item | Limit value | Measurement result | | |
|---|---------------|--------------------|------------|---------|
| | | Max | Min | Average |
| PH | 5.7 to 8.7 | 6.9 | 6.2 | 6.6 |
| SS (mg/ℓ) | Less than 300 | 140 | 14 | 77 |
| BOD (mg/ℓ) | Less than 300 | 150 | 19 | 84.5 |
| n- hexane mineral oil (mg/ℓ) | 5 or lower | 1.4 | 1 or lower | 1.2 |
| n- hexane animal and vegetable oil (mg/ℓ) | 30 or lower | 9.5 | 1 or lower | 5.3 |

Message from Environmental Representative



Tooru Gennouzono

Chubu Office
Implementing Environmental Activities in Cooperation with Local Community and Customers

We are implementing environmental activities focusing on the observation of laws and regulations, recycling of waste and reduction of electricity consumption. Also in cooperation with Toyota City local government as well as our customers, we positively participate in environmental activities presented by local community.

In order to obtain ISO 14001 certification within FY year of 2003, we are doing our best in close cooperation with all related divisions.

Communication and Relationship with Community

In order to let the public know of Daifuku's environmental activities, Daifuku is promoting various events and making the information open to the public through various media.

For beautification of local environment and expressing our feeling of gratitude to the people in the local community, Daifuku is vitally having its employees participate in the cleaning activities.

As a good global citizen, we will continuously keep smooth communication with society.

Making Contribution to Local Community in Close Relation with Local Government

Each Works of Daifuku is promoting to make contribution to local communities.

Shiga Works attended the meeting for Environment Protection in East Shiga Area held by the Environment Protection Institute of Shiga Prefecture Government in July 2002 and made presentations and vivid discussion about updated regulations, recent incident cases, and activities at each of Daifuku factories. In the Regional Environmental Protection Seminar held in September 2002, Daifuku participated in the explanatory meeting on the soil pollution prevention law and risk communication presented by the local government and exchanged opinions. Also, Shiga Works participated in "Fresh Water Eco Foster Program" instituted by Shiga Prefecture government and performed the environment beautification campaign once a month and employees are cleaning their commute routes periodically.

Komaki Works is having its employees clean the area around its site twice a year and also around the employee's dormitory house in Komaki. Daifuku participated in the Industrial Festa held in May 2002 and introduced our production system based upon ISO 14001 management system to visitors.

In addition Daifuku used reusable booth materials in the Tokyo International Material Handling Exhibition 2002 (held in October 2002) to appeal our environmental protection consideration.

* The program for the volunteers from local community to clean and beautify the environment of local area enhance the awareness of residents in the area, supported by Shiga Prefecture government.



Regional Environmental Protection Seminar



Agreement of Fresh Water Eco Foster Program Pamphlet of Fresh Water Eco Foster Program



Cleaning of communal facilities based on Fresh Water Eco Foster Program



Tokyo International Material Handling Exhibition 2002



Cleaning at Komakiyama



Exhibition booth at Industrial Festa

Hini Arata Kan

Hini Arata Kan is the world largest full-scale private exhibition center for logistics in which all Daifuku know-how acquired through its experience in cargo and material handling equipment business for the period exceeding half a century is compiled.

There are exhibited Daifuku's 100 items of equipment, totaling 300 pieces in number, together with more than 100 pieces of logistics related equipment from 40 manufacturers. Visitors can see the actual products and demonstration of advanced systems such as automobile production line, storage, conveying, sorting and picking systems.

In Hini Arata Kan, for easy understanding, the dedicated guides are giving comprehensive explanation to all visitors. Various types of seminars and tours for users are also held as needed.

Hini Arata Kan is implementing environmental activities such as electricity saving, reduction of paper consumption and recycling. There is also the section of environment-related equipment in Hini Arata Kan to introduce Daifuku's environmental activities.

Facts

Building area: 6,049 m²
 Building height: 25.1 m
 Floor space: 19,482 m²
 Parking space: for 5 buses and 50 cars.
 Hours open: from 9:00 am to 5:00 pm. (Reservations required.)
 Closed: Sunday and National Holidays
 Website: <http://www.daifuku-world.com/daifuku/global/hiniaratakan/index.asp>
 Phone No.: (Toll Free) 0120-074-854
 Run by: Hiniaratakan Corporation
 Address: c/o Shiga Works, DAIFUKU CO., LTD.
 1225 Nakazaiji, Hino-Cho, Gamo-Gun, Shiga 529-1692, Japan



Hini Arata Kan



The section of storage system



The section of environment-related equipment

Column

Corporate Information System Rating

Daifuku Rated to the Top Grade AAA

Daifuku earns the top grade of AAA as a result of corporate information system research carried out by Nikkei Sangyo Shinbun. This research was made for 2,082 top rank manufacturing companies in Japan and 65 companies are rated to AAA.

Daifuku set up the work restructuring project in very early stage to improve the information system. Our positive attitude toward establishment of information system such as assignment of personal computers to whole employees, introduction of groupware, development of WAN and LAN, website improvement and development of intranet has been evaluated and did contribute to earn the top grade.

The latest information related to environmental issues as well as the Environmental Report is introduced in our website. Inside the company the intranet dedicated database is used to shear environmental-related information.



Personal computers assigned to each employee

Message from Environmental Representative



Yasushi Tanaka

**Tokyo Head Office
 Reducing Electricity
 Consumption to Overcome
 Electricity Shortage This
 Summer**

Tokyo Head Office, which is a non-production sector, set up the ISO 14001 Steering Committee in February 2003 and whole employees are now dealing with several environmental issues such as reduction of office waste as well as increasing recycling rate and reduction of electricity consumption.

Besides promoting the use of backside of used papers that basically leads to very much waste reduction, we set up the sectional committee to take measures against electricity shortage in June 2003 and started electricity consumption reduction activities.

Having global awareness of environmental issues and accumulating small but important activities are essential to implement the effective ISO-related activities.

Environmental Glossary

CO₂ (Carbon Dioxide)

Carbon dioxide is a non-toxic gas generated as a result of animal breath, burning of fossil fuels such as oil and coal. It has a greenhouse effect and absorbs heat discharged from the ground. Exhaust amount of CO₂ is increasing and causing the serious global warming.

NO_x (Nitrogen Oxide)

It is harmful gases causing breathing problem, photochemical smog and acid rain. It is generated as a result of burning of petroleum. The major sources of NO_x are boilers used in factories and buildings, and automobiles. One of the most serious sources of NO_x is exhaust gas from diesel vehicles.

SO_x (Sulfur Oxide)

Sulfur oxide is generated from the combustion of sulfur contents in fossil fuels such as oils and coal. It can be a cause of breathing problem and acid rain.

COD (Chemical Oxygen Demand)

Chemical oxygen demand is the amount of oxygen required to chemically dissolve pollutant in the water with oxidant. Higher number indicates that the water is dirtier.

BOD (Biochemical Oxygen Demand)

Biochemical oxygen demand is the amount of oxygen required to chemically dissolve pollutant in the water by the bacteria. Higher number indicates that the water is dirtier.

Zero Emission

Zero emission is a concept of achieving no generation of industrial waste by using the waste from the production process as a reproduced material for other industries.

Idling Stop

Idling stop is to stop engines during stopping at red light or during loading and unloading as much as possible. It contributes to the reduction of energy consumption, resulting in the reduction of air pollutant and CO₂ emission causing global warming.

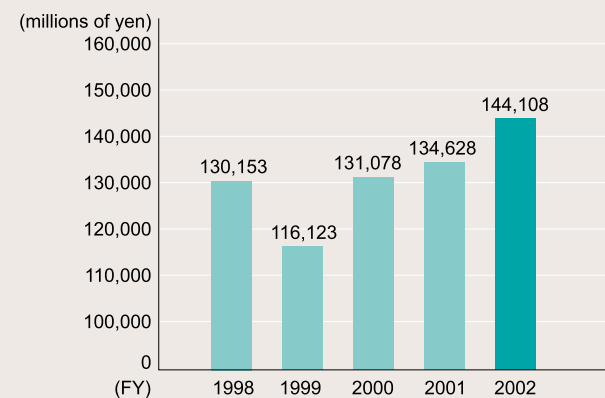
Dioxin

It is the generic name of coplanar PCB, polychlorinated dibenzo-p-dioxin (PCDD) and polychlorinated dibenzofuran (PCDF). It is a chlorinated organic compound not intentionally made by human but made during burning products including chlorine. There are more than 200 types having different number of chlorine and different layout. Toxicity of dioxin varies depending on types.

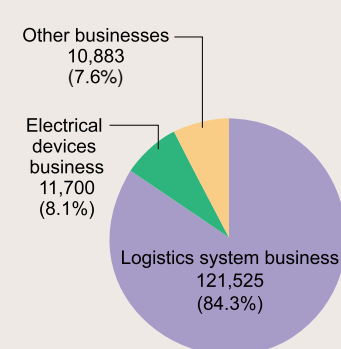
Corporate Profile

| | |
|-----------------------------|--|
| Corporate name | DAIFUKU CO., LTD. |
| Established | May 20, 1937 |
| Paid-up capital | 8,023 million yen (as of March 31, 2003) |
| President | Katsumi Takeuchi |
| Employees | Approx. 3,500 (Total of Daifuku group, as of March 31, 2003) |
| Sales | 144,108 million yen (Consolidated, Fiscal 2002) |
| Business description | Comprehensive consultation services on physical distribution system and total engineering including designing, manufacturing, installation and after-sales service |
| Products | Conveying System, Storage System, Sorting and Picking System, Control System, Distribution System and others such as Car Washing Machine and Bowling |
| Address | Osaka Head Office 3-2-11 Miteijima, Nishiyodogawa-ku, Osaka 555-0012 Japan Tokyo Head Office 2-14-5, Shiba, Minato-ku, Tokyo 105-0014 Japan |

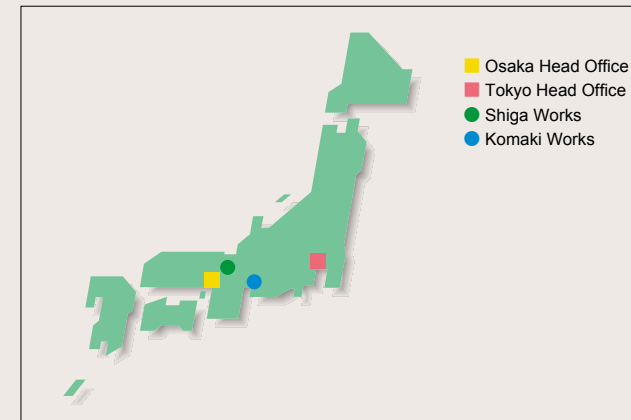
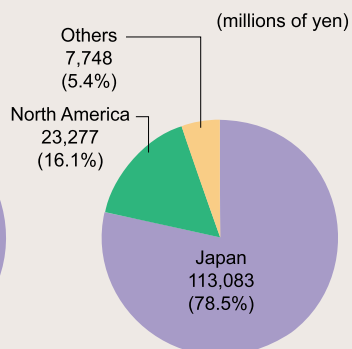
Sales (Consolidated)



Business performance (Consolidated, Fiscal 2002)



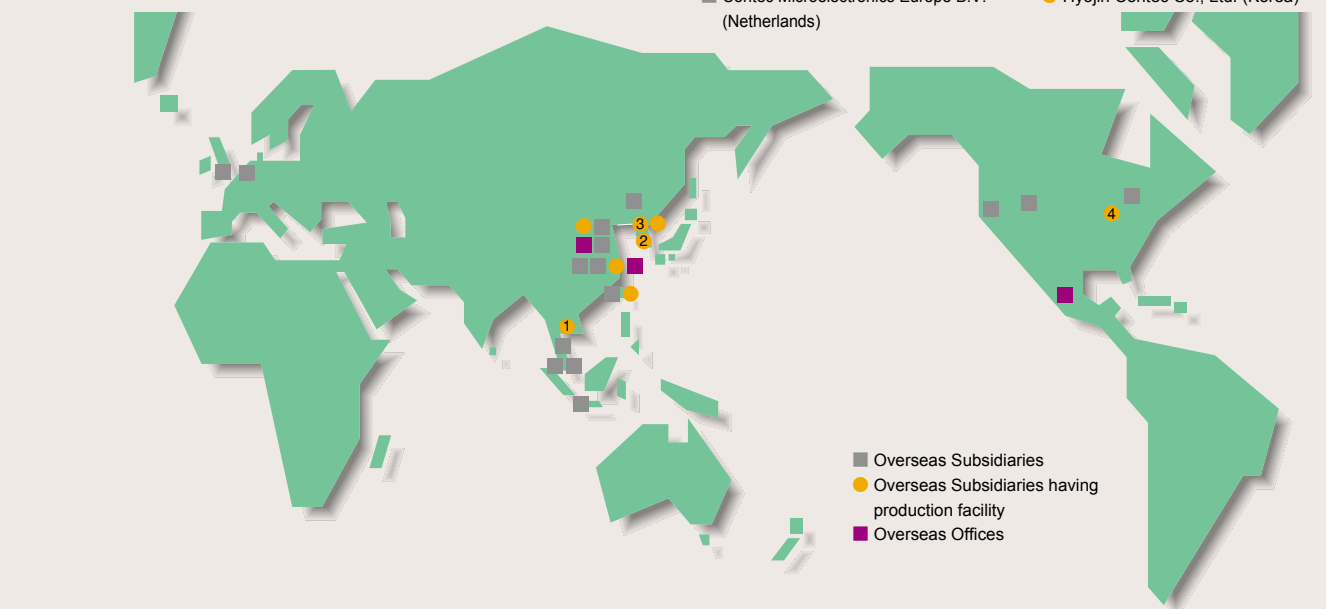
Business performance by region (Consolidated, Fiscal 2002)



Daifuku Group

- Contec Co., Ltd.
- Kyushu Daifuku Corporation
- APS Inc.
- Daifuku Institute of Technology Inc.
- Hiniaratakan Corporation
- Daifuku Business Service Corporation
- Daifuku Unix Corporation
- Daifuku Qubica Ltd.
- Daifuku Software Development Co., Ltd.
- Renace Corporation
- Overseas Offices (Mexico, Tianjin, Shanghai)
- Daifuku America Corporation (USA)
- SK Daifuku Corporation (USA)
- Daifuku Canada Inc. (Canada)
- Daifuku Europe Ltd. (UK)
- Daifuku (Thailand) Ltd.
- Daifuku Mechatronics (Singapore) Pte. Ltd.
- Daifuku-Wis Technologies Pte. Ltd. (Singapore)
- Daifuku (Malaysia) Sdn. Bhd.
- P. T. Daifuku Indonesia (Indonesia)
- Daifuku Automation (Tianjin) Co., Ltd. (China)
- Daifuku (Shanghai) Ltd. (China)
- Daifuku Pioneer Co., Ltd. (Taiwan)
- Clean Factomation Inc. (Korea)
- ATS CO., LTD. (Korea)
- Contec Microelectronics U.S.A. Inc. (USA)
- Contec Microelectronics Europe B.V. (Netherlands)
- Beijing Contec Microelectronics Corporation (China)
- International Contec Technology Co., Ltd. (China)
- Shanghai Contec Microelectronics Corporation (China)
- Shanghai Contec Digital Equipment Co., Ltd. (China)
- Shenyang Contec Microelectronics Co., Ltd. (China)
- Macromate Corp. (Taiwan)
- Hyojin Contec Co., Ltd. (Korea)

● Companies having production facility



1 Daifuku (Thailand) Ltd.



2 Clean Factomation Inc.



3 ATS CO., LTD.



4 Daifuku America Corporation



Osaka Head Office



Tokyo Head Office