



# ENVIRONMENTAL REPORT 2004

環境報告書



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Cover description:  
The five photos show flowers and trees representing the locations of our offices and factories.  
From left:  
Ume (Japanese plum flower), Osaka Prefecture; Ginkgo tree, Tokyo; Sunflower, Toyota City; Maple flower, Shiga Prefecture; Azalea flower, Komaki City

#### ■ Preface

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

Daifuku is also providing other various environment-related data and information on the website (<http://www.daifuku-world.com>). Your comments on Daifuku's activities, products, and reports or website is for our further improvement and would be highly appreciated.

#### ■ Scope of This Report

Period covered: April 2003 to March 2004  
Operations: Main (Osaka) Headquarters, Tokyo Headquarters, Shiga Works, Komaki Works, and Chubu Tokai Branch Office

#### ■ Contact:

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2-14-5 Shiba, Minato-ku, Tokyo 105-0014 Japan  
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### Corporate Citizenship in Tune with Society

In recent years, the responsibilities demanded for companies by society have steadily widened from mainly economic aspects to a concept that embraces environmental and social activities. Daifuku is one of the many business organizations that are paying more attention to relationships with our various stakeholders and seeking greater public respect and trust.

In fiscal 2003, Daifuku set up a Compliance Committee as a cross-departmental structure that oversees divisions and subsidiaries to ensure that operational activities are conducted in compliance with relevant laws and social codes, and to improve management transparency. Daifuku also prepared and published in booklet form a Corporate Code of Conduct, for distribution to all employees, who are required to carry their copies at all time. The aim is to ensure that employees perform their duties legally and fairly, and not violate social codes in the conduct of our corporate activities.

A significant environmental initiative took place in 1999, when Daifuku obtained ISO 14001 certification for our Komaki and Shiga Works. In February, 2004, Daifuku also obtained the same certification for three of our offices: Main Headquarters, Tokyo Headquarters, and Chubu Tokai Branch Office. This resulted in implementation of the integrated, Company-wide Daifuku Environmental Management System, covering all factories and offices, where we have been working to promote and step up our environmental conservation activities. Furthermore, this year, Daifuku obtained ISO 9001 certification for all offices and companies, including service and sales departments, bringing them into line with the already-certificated production units.

Daifuku will continue its efforts to further improve quality, in order to offer products that merit customer confidence and satisfaction. The next step is to obtain ISO 14001 certification for offshore Daifuku plants. To assist in this process, we also published an English version of the Environmental Report on the Company Website.

Daifuku's social mission is to contribute to the "sustainable development" of humankind, society, economy, and overall optimization of logistics in an environmentally oriented manner. To embody those efforts, Daifuku launched the new three-year business plan, "Create & Challenge for the 70th Anniversary". This plan sets forth the following objectives: 1) to contribute to the development of our industry sector as a leader in materials handling; 2) to consistently manage our affairs and operations in strict compliance with Japanese and international laws and social codes, and to step up our risk management programs; and 3) to strive to deliver products and systems that emphasize environment and safety considerations, and to develop a production system. All companies in the Daifuku Group intend to tackle these objectives, by collaborating on preparations for the 70th anniversary of the company, three years from now.

This Environmental Report 2004 details environmental conservation activities conducted by Daifuku in fiscal 2003, and introduces some of our efforts in the social area. Please read this report and let us have your feedback and suggestions for further improvement of our environmental and social performance.

August 2004



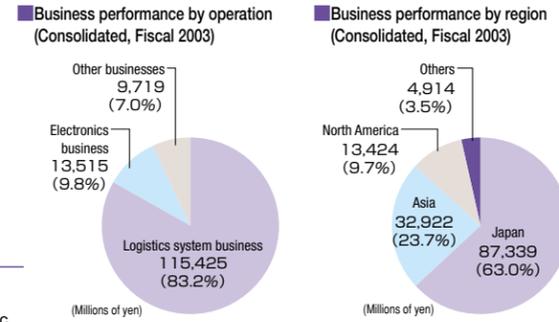
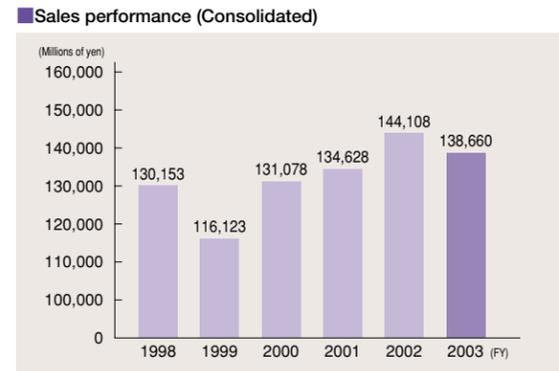
Katsumi Takeuchi,  
President

**Corporate Data**

Corporate name Daifuku Co., Ltd.  
 Headquarters Main (Osaka): 3-2-11 Mitejima, Nishiyodogawa-ku  
 Osaka 555-0012 Japan  
 Tokyo: 2-14-5 Shiba, Mitato-ku  
 Tokyo 105-0014 Japan

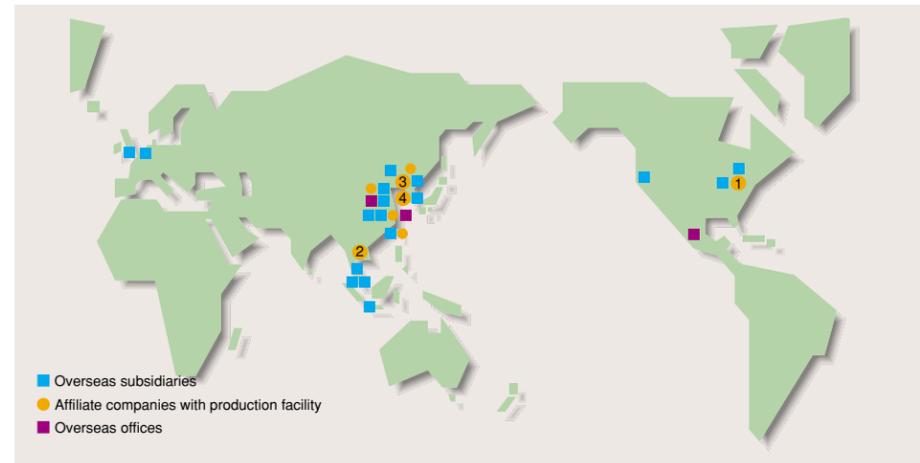
Established May 20, 1937  
 Paid-in capital JPY 8,023 million (As of April 2004)  
 President Katsumi Takeuchi  
 Number of employees Approx. 3,500 (Total of Daifuku Group)  
 (As of April 2004)  
 Net sales: JPY 138,660 million (Consolidated, Fiscal 2003)  
 Business description Comprehensive consultation services on logistics system and total engineering including designing, manufacturing, installation, and after-sales services

Products Conveying system, Storage system, Sorter and picking system, Control system, Material handling equipment, and Others (Such as Car-washing machine and Specialized equipment)



**Daifuku Group**

- Contec Co., Ltd.
- Kyushu Daifuku Corporation
- Daifuku Unix Corporation
- Daifuku Qubica Ltd.
- Overseas offices (Mexico, Tianjin, Shanghai)
- Daifuku America Corporation (USA)
- American Conveyor and Equipment, Inc. (USA)
- Daifuku Canada Inc. (Canada)
- Daifuku Europe Ltd. (UK)
- Daifuku (Thailand) Ltd. (Thailand)
- Daifuku Mechatronics (Singapore) Pte. Ltd. (Singapore)
- Daifuku-Wis Technologies Pte. Ltd. (Singapore)
- Daifuku (Malaysia) Sdn. Bhd. (Malaysia)
- P.T. Daifuku Indonesia (Indonesia)
- Daifuku Automation (Tianjin) Co., Ltd. (China)
- Daifuku (Shanghai) Ltd. (China)
- Daifuku Pioneer Co., Ltd. (Taiwan)
- Daifuku Logistic Technology Co., Ltd.
- Daifuku Institute of Technology Inc.
- Daifuku Business Service Corporation
- Hiniaratakan Corporation
- Daifuku Software Development Co., Ltd.
- Renace Corporation
- Clean Factomation, Inc. (Korea)
- ATS Co., Ltd. (Korea)
- MIMATS Co., Ltd. (Korea)
- Daifuku Carwash-Machine Korea Inc. (Korea)
- Contec Microelectronics U.S.A. Inc. (USA)
- Contec Microelectronics Europe B.V. (The 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)



**In fiscal 2003, Daifuku extended its ongoing environmental conservation program to cover all Five Operations.**

Main Headquarters, Tokyo Headquarters, and Chubu Tokai Branch Office have now gained ISO 14001 certification, following our Shiga and Komaki Works. A system has been organized to facilitate collaboration by all Group Companies on environmental conservation activities.



**Main (Osaka) Headquarters**  
 Location: 3-2-11 Mitejima, Nishiyodogawa-ku, Osaka City  
 Osaka 555-0012 Japan  
 Number of employees: 358  
 Lot area: 14,496 m<sup>2</sup>  
 Floor area: 17,446 m<sup>2</sup>  
 Business: Sales, Engineering, Designing, and Maintenance services of Logistics systems and Material handling equipments, and Administration



**Tokyo Headquarters**  
 ■ Shiba Chitose Building  
 Location: 2-14-5 Shiba, Minato-ku  
 Tokyo 105-0014 Japan  
 Number of employees: 334  
 Lot area: 783 m<sup>2</sup>  
 Floor area: 3,572 m<sup>2</sup> (Ground to 8th floor)  
 Business: Sales, Engineering, Designing of Conveyor, Storage and Logistics systems, and Administration

■ Shiba 2-chome Daimon Building  
 Location: 2-3-3 Shiba, Minato-ku  
 Tokyo 105-0014 Japan  
 Number of employees: 33  
 Floor area: 459 m<sup>2</sup> (Part of the 5th floor)  
 Business: Installation and Maintenance service of Logistics systems and Material handling equipments. Sales and services of Daifuku Unix and Daifuku Qubica



**Chubu Tokai Branch Office**  
 Location: 2-48 Fukada-cho, Toyota-shi, Aichi 471-0841 Japan  
 Number of employees: 70  
 Lot area: 2,784 m<sup>2</sup>  
 Floor area: 2,982 m<sup>2</sup>  
 Business: Sales of Conveyor systems and other equipment



**Shiga Works**  
 Location: 1225 Nakazaiji, Hino-cho, Gamo-gun, Shiga 529-1692 Japan  
 Number of employees: 836  
 Lot area: 1,160,000 m<sup>2</sup>  
 Floor area: 176,000 m<sup>2</sup>  
 Business: Engineering, Designing, and Maintenance services of Logistics systems and Material handling equipments, and Administration and Warehouses



**Komaki Works**  
 Location: 1500 Komakihara-shinden, Komaki-shi, Aichi 485-8653 Japan  
 Number of employees: 538  
 Lot area: 65,000 m<sup>2</sup>  
 Floor area: 48,000 m<sup>2</sup>  
 Business: Sales, Engineering, and Designing of Logistics systems and Material handling equipment, and Administration



① Daifuku America Corporation



② Daifuku (Thailand) Ltd.



③ ATS Co., Ltd.



④ Clean Factomation, Inc.

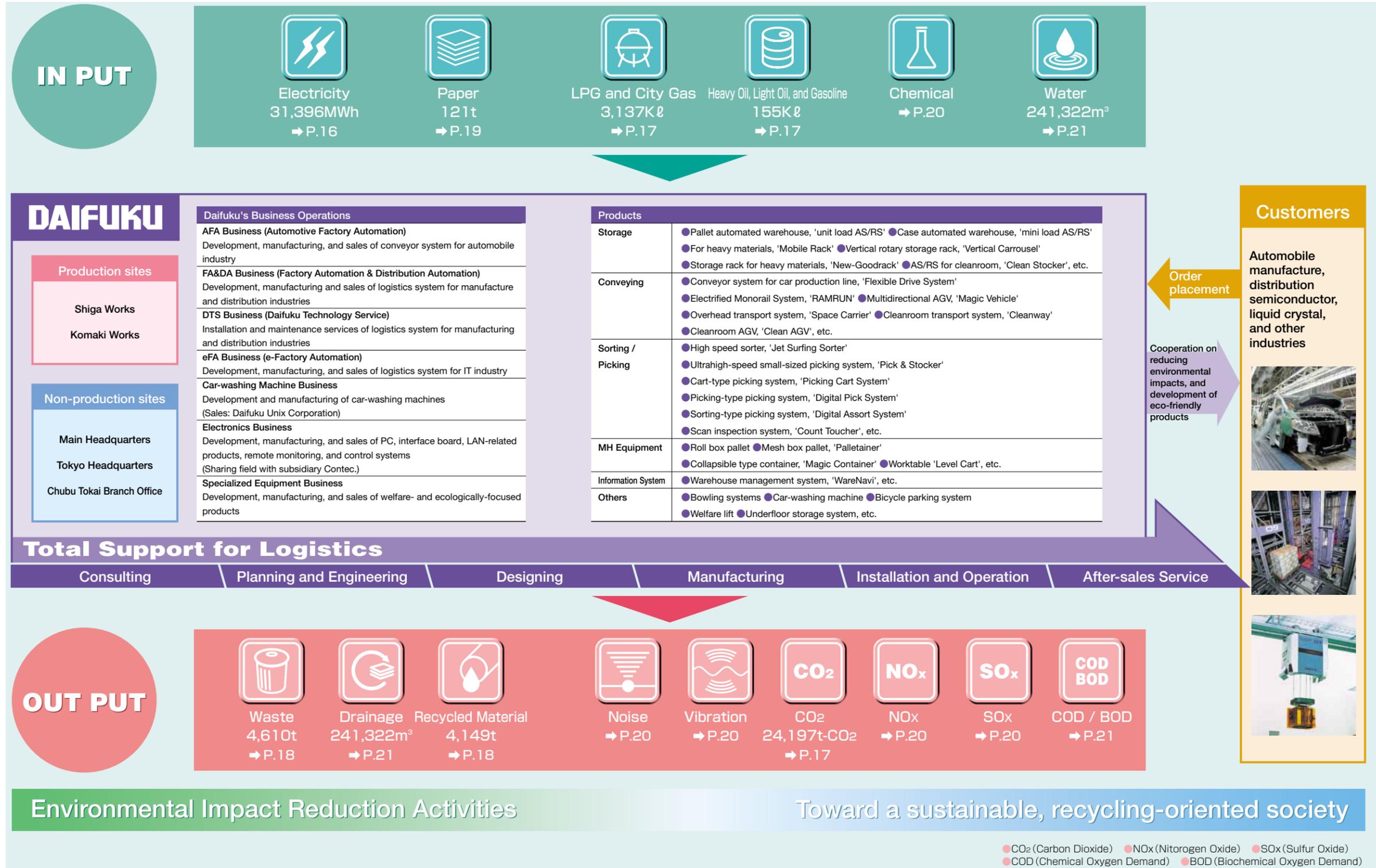
# Business Operation Material Balance

Daifuku operates with the aim of combining sound development of the business with environmental solutions, in order to meet our social responsibilities.

Daifuku engages in a wide range of business operations, both domestic and international, as a manufacturer of a comprehensive range of logistics systems and material handling equipment.

We use objective numerical measures to identify various environmental impacts generated by such company activities and plants, in order to minimize any impacts through monitoring and analyzing current conditions.

As our Supply Chain Management (SCM) progresses on a global scale, Daifuku is putting comprehensive support into the logistics area, thus reducing the environmental impact on society in general, and contributing to the development of a recycling-oriented society.



● CO<sub>2</sub> (Carbon Dioxide) ● NO<sub>x</sub> (Nitrogen Oxide) ● SO<sub>x</sub> (Sulfur Oxide)  
● COD (Chemical Oxygen Demand) ● BOD (Biochemical Oxygen Demand)

# Environmental Management Policy

Daifuku has established "Principles" and "Management Policies", intended to enable the company to operate in a manner that helps conserve global resources and prevent deterioration of the environment.

## Environmental management policy

### Principle

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

- Daifuku will proceed in its continual environmental protection activities by special task force in production sectors and ISO steering committee meetings.
- Daifuku will promote the environmental protection based on the environmental objectives and goals established after the appropriate assessment of environmental effects, for the continual improvement of management system and its performance.
- Daifuku will establish its own standards complying with all applicable laws, codes and regulations for environmental protection.
- Daifuku will take environmental protection into consideration at every stage of the design, development, production, use and disposal of all products it provides.
- Daifuku will put the priority in the following environmental aspects in its business activities:
  - efficient use of energy at all factories,
  - waste reduction, and
  - prevention of contamination by wastes from its production activities.
- Daifuku will enhance education and support to the cooperation companies and communication with local community for collaboration.

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

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

# Environmental Objectives, Goals, and Achievements (Fiscal 2003)

Daifuku's objectives, goals, and plans in relation to environmental conservation activities, and achievements for fiscal 2003 are presented.

In fiscal 2003, Daifuku extended its ISO 14001 certification to non-production sites, thereby extending our efforts to help preserve the environment.

The table at right indicates production sites considered to have high environmental impacts, together with current implementation status and self-assessment of important objectives during fiscal 2003 at the Shiga and Komaki Works.

The Shiga Works failed to reduce consumption of woodfree paper and product packaging materials, due to a rise in production output.

The Komaki Works failed to achieve its goals, due to an increase in wastes resulting from factory relocation.

## Shiga Works

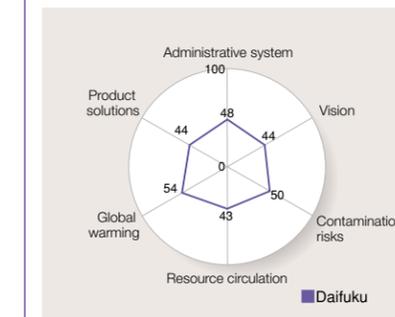
	Objectives / Goals (FY 1998 to 2003)	Goals for FY 2003	Result in FY 2003	
1. Environmental conservation	- Step up emissions control	- Prevent water contamination	Achieved	⇒P21
		- Prevent air pollution	Achieved	⇒P20
		- Prevent soil contamination	Achieved	—
		- Observe the PRTR law	Achieved	⇒P20
2. Energy consumption reduction	- Reduce energy unit requirements (Electricity and LPG) Reduce 20% from fiscal 1998 level by fiscal 2003	- Save electrical energy of compressors	Achieved	⇒P16
		- Reduce the energy requirement for lighting Reduce 20% from fiscal 1998 level	Achieved	⇒P17
3. Waste reduction	- Reduce unit wastes (General wastes and industrial wastes) Reduce 60% from fiscal 1998 level by fiscal 2003 (Sub-objective: Recycling of waste paper)	- Reduce 60% industrial wastes from fiscal 1998 level	Almost Achieved	⇒P18
		- Recycle 45% of high quality waste paper	Almost Achieved	⇒P19
		- Reduce 15% of high quality waste paper from fiscal 2000 level	Not Achieved	⇒P19
4. Indirect impacts	- Assist and guide green suppliers and cooperation companies. - Reduce packaging materials for procured items	- Plan and implement assistance and guidance	Achieved	⇒P22
		- Plan reduction of packing and packaging materials	Almost Achieved	—
5. Product assessment	- Reduce product weight and number of parts Reduce 10% from fiscal 1998 level by fiscal 2003	- Reduce weight of materials and number of parts	Achieved	⇒P12
		- With the support from production sectors, implement backups	Not Achieved	—
	- Reduce operation energy (electricity) of products Reduce 10% from fiscal 1998 level by fiscal 2003	- Reduce number and capacity of drive motors to be used	Achieved	—
		- Plan and implement reduction	Achieved	⇒P12
	- Improve recyclability of products upon disposal Improve 10% from fiscal 1998 level by fiscal 2003	- Analyze materials used for products	Almost Achieved	⇒P12
		- Analyze materials used for products	Almost Achieved	—
- Improve indication of non-ferrous material names Improve 10% from fiscal 1998 level by fiscal 2003	- Indicate names of plastic resin used for products	Almost Achieved	—	

## Komaki Works

	Objectives / Goals (FY 2001 to 2004)	Goals for FY 2003	Result in FY 2003	
1. Research and development for reduction of environmental impact	- Provide eco-friendly products - Provide energy saving products - Select materials for recyclability - Select materials for resource protection	- Reduce environmental impact	Almost achieved	⇒P12
		- Develop energy saving products	Achieved	⇒P12
		- Improve recyclability	Almost achieved	—
		- Resource protection	Almost achieved	—
2. Reduction of environmental impact	- Reduce energy consumption - Aim for zero emission of waste Recycle 95% of the single-year total wastes - Improve recycling of copying paper (Recycle 50% from fiscal 2000 level)	- Reduce 5% of electric power consumption at factory from fiscal 2002 level	Achieved	⇒P16
		- Reduce weight of waste Recycle 95% of the single-year total wastes Increase recyclable items	Not Achieved	⇒P18
		- Promote paper recycling (Recycle 50% from fiscal 2000 level)	Achieved	⇒P19
3. Prevention of environmental pollution	- Reduce exhaust gas at the time of idling - Prevent deterioration of environment from emissions Prevent soil contamination caused by waste oil and drainage - Prevent deterioration of environment due to PCBs	- Avoid idling stop of cars	Achieved	—
		- Prevent water and soil contamination due to the oil leakage from MC pit	Achieved	—
4. Social activities for reduction of environmental impact	- Assist and guide green suppliers and cooperation companies. - Collaborate with local community	- Control of PCB-containing capacitors	Achieved	—
		- Plan and implement to assist and guide green suppliers and cooperation companies Assist and guide green procurement at each division	Achieved	⇒P22
		- Actively participate in the local community activities	Achieved	⇒P14
		- Plan and implement environment related events.	Achieved	⇒P14

## Column Environmental Management Level

**Ranked 350th among 1,772 manufacturers**  
In December 2003, Nihon Keizai Shimbun, Inc. announced the results of its seventh "Corporate Environmental Management Level Survey". Daifuku was ranked the 350th among 1,772 manufacturers. It was a ranking-up from the last year's 371st place. The assessment method for this year was based on a comprehensive review of the entire Daifuku Group domestic companies, the eco-friendly design, and the performance in terms of social responsibilities.



\*This survey was conducted amongst the 1,772 leading companies in manufacture industry (including construction and energy) that is listed, over-the-counter, and unlisted. (Of these, 599 provided effective responses.)

# Environmental Objectives and Goals (Fiscal 2004)

Daifuku's new mid-term business plan clarified the environmental objectives and goals over a three-year period. During the first year of this plan, fiscal 2004, Daifuku is aiming the goals defined in the table below.

## ■Daifuku's ISO-related Environmental Objectives and Goals

	Objectives / Goals (FY 2004 to 2006)	Goals for FY 2004
1. Environmental conservation	<ul style="list-style-type: none"> <li>- Observe environmental laws and regulations.</li> <li>- Emphasize emissions control</li> </ul>	<ul style="list-style-type: none"> <li>- Prevent water contamination</li> <li>- Prevent air pollution</li> <li>- Prevent soil contamination</li> <li>- Observe the PRTR law</li> <li>- Observe environmental laws and regulations</li> </ul>
2. Energy consumption reduction	<ul style="list-style-type: none"> <li>- Reduce energy unit requirements (Electricity and LPG)</li> <li>- Reduce 10% from fiscal 2003 level by fiscal 2006</li> </ul>	<ul style="list-style-type: none"> <li>- Save electrical energy.</li> <li>- Reduce the energy requirement for lighting</li> <li>- Reduce 3% from fiscal 2003 level</li> <li>- Reduce LPG consumption</li> <li>- Reduce 3% from fiscal 2003 level</li> </ul>
3. Waste reduction	<ul style="list-style-type: none"> <li>- Reduce unit wastes (General wastes and industrial wastes)</li> <li>- Recycle 95% of total wastes by fiscal 2006</li> <li>- Reduce 20% of total wastes from 2003 level by fiscal 2006</li> <li>- Reduce paper consumption</li> <li>- Reduce 10% from fiscal 2003 level by fiscal 2006</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce 7% of total wastes from fiscal 2003 level</li> <li>- Promote to recycle 95%</li> <li>- Reduce steel scrapping (at each manufacturing unit)</li> <li>- Reduce 3% of paper consumption from fiscal 2003 level</li> <li>- Increase 5% of paper recycling from fiscal 2003 level</li> </ul>
4. Indirect impacts	<ul style="list-style-type: none"> <li>- Assist and guide green suppliers and cooperation companies</li> <li>- Promote green procurement (Prohibit the use of hazardous substances)</li> </ul>	<ul style="list-style-type: none"> <li>- Plan and implement assistance and guidance companies</li> <li>- Establish green procurement guidelines</li> <li>- Review purchases and materials</li> </ul>
5. Product assessment	<ul style="list-style-type: none"> <li>- Work on the 3Rs (Reduce, Re-use, Recycle) for products</li> </ul>	<ul style="list-style-type: none"> <li>- Plan and implement 3Rs for products</li> </ul>
	<ul style="list-style-type: none"> <li>- Reduce the electrical energy requirement of products</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce number and capacity of drive motors to be used</li> </ul>
	<ul style="list-style-type: none"> <li>- Efforts toward lifecycle assessment (LCA)</li> <li>- Promote green procurement (Prohibit the use of hazardous substances)</li> </ul>	<ul style="list-style-type: none"> <li>- Plan and implement LCA</li> <li>- Establish green procurement guidelines</li> <li>- Review purchases and materials</li> </ul>

Up to fiscal 2003, Daifuku conducted the environmental conservation activities according to the objectives and goals separately established by the Shiga and Komaki Works. In fiscal 2004, we began to expand the target sites with the Shiga Works as the senior operation base. With clear corporate objectives and goals for each year up to fiscal 2006, Daifuku is currently working to attain the fiscal 2004 goals.

Our common objective is to reduce energy consumption and wastes. Daifuku is also working to prohibit the use of hazardous substances while seeing the importance of the promotion of green procurements.

### Comment from Environmental Officer

All of Daifuku's Group companies will collaborate to meet our objectives and goals for fiscal 2006.

Daifuku observes relevant laws and regulations to meet the social responsibilities, and works to conserve the environment with the aim of being perceived as a company that can coexist with the community.

In pursuit of these objectives, we obtained ISO 14001 certification for the Komaki Works in February 1999, for the Shiga Works in November 1999, and for Main Headquarters, Tokyo Headquarters, and Chubu Tokai Branch Office in February 2004.

All Group companies will now collaborate to reduce energy consumption and emission to zero, in an effort to reach our goals for fiscal 2006. In the product area, we are devoting energies to those developments that will improve products' environmental performance (longer life, size reduction, energy saving, and recycling) in line with a recycling-oriented society, working to enhance production efficiency, and contributing to development of a sustainable society. As for the domestic industries, automobile and home electronics manufacturers are leading the way in promoting green procurement (to prohibit the use of hazardous substances). Similarly, Daifuku intends to set standards in the materials handling industry, by becoming even more environmentally aware, and accelerating the efforts.

Daifuku is also committed to work on these issues as a member of the community in partnership and cooperation with local administrations, residents, and corporate customers.



Hifumi Katsuragi, Managing Director, Shiga Works

# Environmental Accounting

Fiscal 2003 saw economic achievements in "energy-saving effects".

Daifuku believes that it is important to monitor the Group's investments in and expenses for environmental conservation, and their returns, in order to be able to implement environmental solutions while ensuring ongoing corporate developments.

To that end, Daifuku has been using environmental accounting as a guideline for the corporate activities since fiscal 2001.

Environmental accounting has also been used for non-production units since fiscal 2003, in an attempt to enhance our efforts and further improve the results of it.

## Concept of environmental accounting

Daifuku conducts accounting according to "Environmental Accounting Guidelines in the Machinery Industry"\*, established by the Ministry of the Environment, in order to quantitatively monitor the cost and results of environmental conservation within overall corporate activities.

The total cost for environmental conservation activities amounted to about 265 million yen, as shown in the table below. Since fiscal 2003, environmental cost analysis also covers non-production units.

At Main Headquarters, Tokyo Headquarters, and Chubu Tokai Branch Office, which are non-production units, "environmental education for employees", "personnel expenses for managing environmental activity structure",

and related items account for most of the cost.

The cost of "virtual" economic effects amounted to about 61 million yen. Effects of product development are excluded from the reports and results because we currently have no clear-cut formula for the calculation.

Daifuku intends to use environmental accounting as a tool for "environmental management" by setting indices against which to assess performance, thereby promoting environmental accounting efficiency.

\*"Survey Report Concerning the Standardization of Environmental Accounting and Environmental Reports" Published by The Japan Machinery Federation

## Environmental Accounting Report for the fiscal 2003

Main Headquarters, Tokyo Headquarters, Shiga Works, Komaki Works, and Chubu Tokai Branch Office April 1, 2003 to March 31, 2004

### ■Costs for Environmental Conservation Activities

Unit: 1000 JPY

Classification	Activities	Amount
Reduction of environmental impact in production activities	<ul style="list-style-type: none"> <li>- Drainage contamination protection activities such as drainage treatment facilities</li> <li>- Prevention of air pollution from painting facilities</li> </ul>	74,425
Implement of industrial waste measures	<ul style="list-style-type: none"> <li>- Waste treatment costs</li> <li>- Introduction of garbage disposal machine</li> <li>- Use of sludge dryer</li> </ul>	48,561
Use of materials fit for environmental conservation	<ul style="list-style-type: none"> <li>- Elimination of individual packaging by adopting tote boxes</li> <li>- Reuse of transportation jig</li> </ul>	4,584
Development of products with less environmental impact	<ul style="list-style-type: none"> <li>- Development and design of energy saving products</li> </ul>	66,910
Recycling of company products		0
Reduction of environmental impact from transportation	<ul style="list-style-type: none"> <li>- Introduction of low-emission vehicles</li> </ul>	2,100
Emergency preparedness	<ul style="list-style-type: none"> <li>- Training for emergency</li> </ul>	176
Environmental conservation activities at management offices	<ul style="list-style-type: none"> <li>- Energy-saving of lightings and air conditioners</li> <li>- Education and support to cooperating companies</li> </ul>	15,582
Environmental consideration for overseas operation	<ul style="list-style-type: none"> <li>- Replacing wooden package with steel frame</li> </ul>	520
Implement of environmental management	<ul style="list-style-type: none"> <li>- Environmental education to employees</li> <li>- Labor costs for operation of environmental activities</li> </ul>	51,923
Collaboration with communities	<ul style="list-style-type: none"> <li>- Participation fee of the Eco Foster</li> <li>- Joining the Environmental Conservation Association</li> <li>- Greening and tree planting</li> </ul>	1,128
Total		265,909

### ■Economic Effect

Unit: 1000 JPY

Effect from	Activities	Amount
Sale of valuable resource	<ul style="list-style-type: none"> <li>- Gain on sale of ferrous and non-ferrous scrap materials, and high grade waste paper</li> </ul>	41,612
Energy saving	<ul style="list-style-type: none"> <li>- Reduction of electric and heat energy compared to last fiscal year</li> </ul>	0
Cogeneration	<ul style="list-style-type: none"> <li>- CFA building air conditioning (in terms of energy)</li> </ul>	6,117
Tote boxes, etc.	<ul style="list-style-type: none"> <li>- Use of tote boxes and reuse of shipping frame</li> </ul>	13,520
Total		61,249

# Environmental Management System

Daifuku obtained ISO 14001 certification for Main Headquarters, Tokyo Headquarters, and Chubu Tokai Branch Office. We intend to operate the system integrating all Group members, and to foster development of an even better system.

The Environmental Management System is the basis for environmental conservation. Daifuku monitors and assesses environmental impacts and the results of solutions, thereby achieving efficiency.

Being engaged in the logistics system business, Daifuku has developed an Environmental Management System that covers both production and non-production units. Subsidiary Company Kyushu Daifuku Corporation is scheduled to obtain certification by the end of fiscal 2004. The system is thus being extended.

## Status of ISO certification acquisition

Main Headquarters, Tokyo Headquarters, and Chubu Tokai Branch Office obtained ISO 14001 certification in February 2004. This was the result of preparations begun in April 2003, with the aim of establishing a company-wide system for ISO implementation. These are the first offices that obtained such certification.

Kyushu Daifuku is another entity aiming to obtain certification. Thus, the system relating to environmental activities is scheduled to cover all domestic Group companies within fiscal 2004, and Daifuku is scheduled to proceed to integrated monitoring.



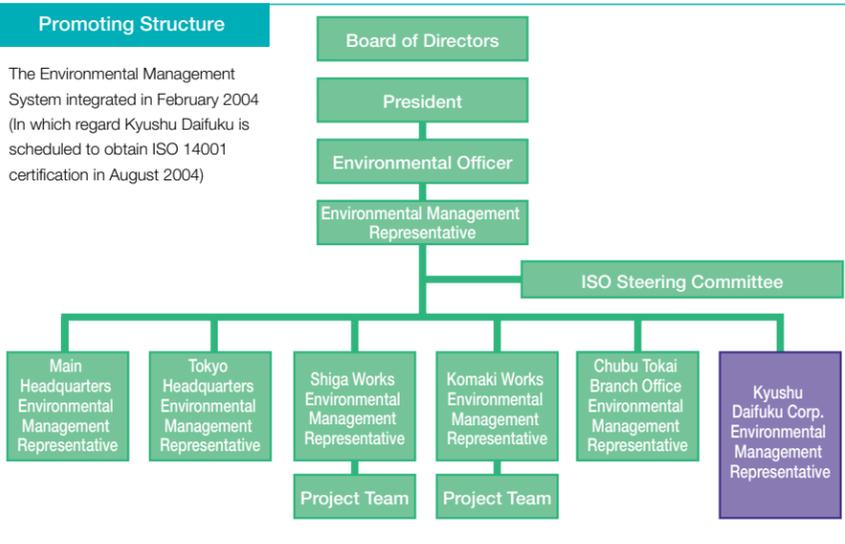
## Environmental Management System

Daifuku has developed a company-wide Environmental Management System with the President as the top-ranking representative.

Since fiscal 2003, we have been holding regular meetings of an ISO Steering Committee, which consists of management representatives from each office and factory and heads of environmental section committees. In addition, the management review by executives is held biannually (in May and

October) to assess the implementation status of the action plans of each unit and sectional committees.

The environmental section committees include Development Design, Waste, Green Procurement, PRTR, Statistical Survey, and Water Control, thereby providing responses and solutions to various environmental challenges as cross-departmental issues for the divisions.



## Environmental auditing system

We periodically commission external audits, wherein a third party (certification agency) checks that the Environmental Management System is appropriate, laws and regulations are being observed, and the system is operating effectively.

And, we also conduct internal audits, with in-house monitors examining such factors as how the system is operated, how plans for committee objectives and goals are being carried out and progressed, and how well laws, regulations, and voluntary standards are being observed. Units found to be non-conforming must file correction plans and implement them.

Audit results are reported in management reviews where solutions are presented and follow-ups are conducted.

### External Audit Results (Biannually)

First half of FY 2003		
	Shiga Works	Komaki Works
Correction requests	0 items	0 items
Observations	4 items	3 items
Latter half of FY 2003		
	Main Headquarter, Tokyo Headquarters, Shiga Works, Komaki Works, and Chubu Tokai Branch Office	
Findings	1 item	
Observations	13 items	



Management review



External audit (Main Headquarters)

## Environmental education and training

An intra-unit environmental activity plan is implemented as part of general education for all employees, cooperation companies, and other stakeholders, in order to establish environmental activities and encourage each and every member to participate in the program. In addition, environmental education and designated employee education, along with other programs, are conducted to cater for the technicality of specific operations, in an effort to ensure observance of relevant laws and regulations.

An in-house electronic bulletin board "ISO 14001" was initiated in 1999, and this has since been used to share comments and

information about environmental conservation activities.

In the area of internal auditor education, the number of internal auditors has been increased (to 211 as of March 2004) in order to allow time for training in sound judgment ability, and improving their skill levels.

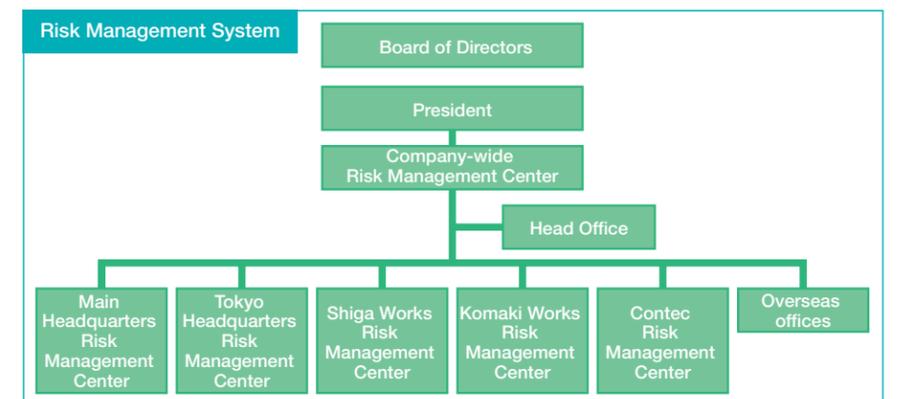
As for suggestion making by small groups, suggestions regarding operational improvements, cost cutting, quality, safety, environment, and other matters number as many as 4,330, to date, which is more than double the target figure, showing that the active operations are underway.



Environmental education

## Risk management system

A risk management system has been established across the Group, including Daifuku subsidiary Contec, in order to prevent emergencies and minimize the environmental impacts if emergencies did occur. Each office provides education and simulation exercises on potential emergencies once a year.



### Comment from Environmental Activity Representative



**Achieved the goal for electricity reductions with consumption meters**

In preparation for obtaining certification, we completed initial environmental education within our unit by August, and advanced to implementation of solutions in September.

We succeeded in achieving our electricity reduction goals by installing meters so that electricity consumption would become visible to unit members. Wastes are more difficult to measure. Therefore, we ensured that they were collected separately, helping to heighten unit members' awareness of "Mix, you get garbage. Separate, you get resources".

As for reductions in paper consumption, our consumption rose 18% over the preceding term. That is because we are the design unit. Consequently, the greater the workload, the higher the consumption. Reducing paper consumption is one of our challenges that needs to be addressed further.

Fiscal 2004 is the year for full-scale implementation of our activities. We will be promoters for our unit in an attempt to achieve our goals.

# Daifuku's Eco-friendly Products

Daifuku works to develop products designed to reduce environmental impacts, and to improve the manufacturing process, thereby producing stable results.

Daifuku works to produce products that help conserve the environment. As a result, we have been developing products and other commodities that meet approval as items designated under the Law on Promoting Green Purchasing, and products that can help user companies engage in eco-friendly activities.

In the manufacturing process, too, Daifuku has produced results in energy saving by increasing the productivity. We have thus been working to protect the environment in many different areas.

Daifuku will continue to offer a comprehensive range of products and systems that demonstrate awareness of global environmental concerns.

## Three products certified as conforming to the Law on Promoting Green Purchasing

"Cell Rack", "New-Goodrack", and "Goodshelf", which can also serve as office furniture, were certified as "designated procurement items" based on the Law on Promoting Green Purchasing (Law concerning the promotion of eco-friendly goods and services procurement by the State and other entities).

Those products were certified as eco-friendly, in terms of such aspects as use of reprocessed plastics and long-lasting design.

This allows us to affix a "Conforming Product Mark" to each certified product, and guarantees acceptability by government departments and related establishments.

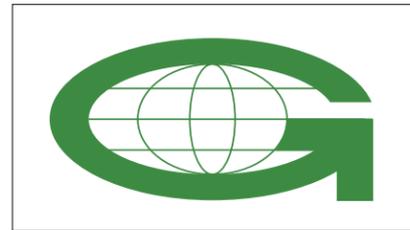
\*As for the "New-Goodrack", its shelf boards (and optional particle boards) are covered.



Cell Rack



Goodshelf



Conforming Product Mark

## User of Daifuku's compost recycling plant wins the "Excellent Leading-edge Works Award"

Asahi Environmental System Co., Ltd. was one of the companies that won the "Nikkei Excellent Leading-edge Works Award" for 2003. These awards recognize domestic and international works that are highly acclaimed for increasing productivity, providing environmental solutions, etc. Asahi Environmental System operates the Nagoya Organic Biocenter, a processing plant for composting and recycling food residues (collected kitchen garbage).

Daifuku supplied an automated warehouse designed to store kitchen garbage. Kitchen garbage is stored for 14 days, allowing time for fermentation and drying. With this system, date control is simple and it requires much less land area than conventional garbage plants.

The automated warehouse is large enough to house two stacker cranes and about 1,500 pallets, and can produce about

1,800 tons of compost per year (or 50 tons a day).



Nagoya Organic Biocenter

## Internally manufactured equipment halves scrapping

The CRT Equipment Group of the Shiga Works specializes in processing pipes used mainly in roll box pallets. Under conventional practice, an annual molding output of 3,250 tons would produce 246 tons of scrap (7.6%).

In an effort to up-shift the recyclability, we revised the specifications for the production equipment and modified the manufacturing

line. When it came to the transfer conveyors, we made various special efforts: We switched to a new, internally manufactured device that reflected various conceptual inputs, in an attempt to stabilize quality.

As a result, we saved 12.6 tons per month, while increasing recycling rate to 96.8%, which exceeded the target, thereby producing an environmental solution while making cost cuts.



Roll box pallet manufactured on the new line

## A new-type, eco-friendly automatic carwash system

A new type of carwash system that gives consideration to drainage, noise, visual impact, and other issues, thus making it more eco-friendly, is now in operation at the Omiya branch (Saitama Prefecture) of "Delice-town", a chain of "super-service" convenience stores operated by am/pm Japan, with self-service gasoline pumps, restaurants, and other facilities on the same sites. The name of the carwash system is "Delice's Car Wash". The system also comes with a cascade-like "water curtain", a dome-shaped tunnel and other touches to provide users with "pleasure".

To wash their cars, customers follow the guide instructions, and select method of payment, carwash menu, vehicle model, and other options. Once a customer has paid, the

shutoff device rises and advances the vehicle (see photo) through the "streaming water curtain". The dome contains a continuous car washer equipped with a brush made of special rubber. As the vehicle is transported on a low-bed roller conveyor, it is continuously processed through washing, water-shedding coating and drying.

Epoch-making is the fact that the system comes with the world's first "coagulating sedimentation and UF filtration membrane system" to recycle carwash drainage. The water, oil, and turbid components are quickly separated and cleansed of all impurities, even microscopic mosses and viruses, by a super-thin filter membrane with pores 0.01 micrometers in diameter. No one complains of "smelling in summer" or "processing water

becoming turbid". Accordingly, the system has been highly acclaimed as capable of ensuring a steady supply of high-purity processing water equivalent to tap water.



Delice Car Wash

## Development of a new, energy-saving version of high-performance driverless Sorting Transfer Vehicle, "STV"

A "Sorting Transfer Vehicle" (STV) connects a number of automated warehouses with facilities for loading items in and out of the warehouse in order to ensure smooth transfer. Now there is a new type of STV: an energy-saving version.

The new type is a structurally improved version of a transfer unit and a travel drive

motor, in which a twin-drive system is replaced by a single-drive system, thereby reducing power consumption by 26% below the level of conventional models. Use of the single-drive system has reduced the number of components, while reducing weight by 30% below the level of conventional models.



STV

### Comment from Environmental Activity Representative



**Working to develop eco-friendly product designs**

Kazumasa Miyoshi, Design & Development Team, Komaki Works

We focused on "energy-saving products", "long-lasting designs", and "recyclability of products when scrapped" to aim the developing of environmentally friendly products. "Energy-saving products" aims to reduce power consumption by reducing product weight and using components based on new sources of energy in all future models. Our efforts in "long-lasting designs" produced guidelines for research into long-lasting parts and long-lasting designs. In "recyclability of products when scrapped", we outlawed the use of polyvinyl chlorides in all future models. Resin parts were marked with a label identifying the materials used, allowing them to be separated when scrapped.

We intend to increase the percentage of green procurement components, while ensuring that hazardous substances are "not loaded", "not used", and "not generated". This is our plan for developing eco-friendly products.

## Environmental Communications

Daifuku aims to work actively, as a good corporate citizen, on information disclosure, environmental cleanliness preservation, and other activities..

Daifuku participates in various events and discloses information through various media in order to ensure that our environmental efforts are widely known and appreciated.

We also encourage our employees to engage positively in clean-up activities as a contribution to keeping the environment clean, and to express our gratitude to citizens of our host communities.

We will continue to effectively communicate with society, as befits a good corporate citizen.

### Talk about Prefectural Politics Everywhere session

A session of "Kensei Dokodemo Talk" (meaning "Talk about Prefectural Politics Everywhere") was held on the premises of the Higashi Omi Regional Promotion Bureau in September 2003, as part of regional enterprise activities in Higashi Omi, Shiga Prefecture. There was an active exchange of views on environmental issues under the theme, "Aiming to Become a Resource-saving, Resource-Recycling Society". The Shiga Works is another corporate entity engaged in the environment of the Higashi Omi region,

actively participating in this joint activity between the public and private sectors.



Talk about Prefectural Politics Everywhere session

### Member seminars by the Environmental Conservation Association of Shiga Prefecture

The Environmental Conservation Association of Shiga Prefecture, in which one of our Shiga Works employees is a director, offers member seminars to encourage learning about environmental conservation and to upgrade members' expertise. In fiscal 2003, members made a field trip to the "Konan Chubu Purification Center, Kusatsu City", and boarded an environmental seminar vessel, for a seminar designed to encourage the trainees to respect Lake Biwa and other familiar aquatic environments.

Daifuku will continue to not only implement environmental solutions as a company,

but also tackle environmental issues as a member of community networks.



Member seminars by the Environmental Conservation Association of Shiga Prefecture

### Public relations for Daifuku's environmental efforts at the Komaki Environment Fair

A Komaki Environmental Fair held in the Park Arena Komaki, near the Komaki Works, in November 2003, attracted about 20,000 visitors, including families. We were one of the exhibitors, with a corporate booth. We displayed Daifuku introductory video clips and panels featuring a presentation on environmental issues, and distributed copies of our Environmental Report, thereby introducing our environmental activities to community members.



Komaki Environment Fair

### Cooperation with other companies through the Komaki City ISO Network

Komaki City actively seeks cooperation from locally based companies in providing sessions for exchange of information about efforts to protect the environment, and meetings about further activities. We actively participate in the network as a member of the

community. There, we associate with other companies in presenting case studies on waste management and energy reduction in an effort to improve the overall community environment.

## Observance of Regulations

Daifuku will continue, as always, to observe relevant laws, regulations, and social codes.

### Compliance with environmental laws and regulations

As Daifuku has always been doing, we will continue to observe not only environmental laws and regulations but also general codes, including laws, internal regulations, and socially accepted thinking.

#### [Observance status]

Fiscal 2003 saw no issues in respect of our conformity to relevant laws and regulations. We will continue to monitor the status of each of our units.

#### [Revision of laws and regulations and other details]

We monitor revisions to laws and other environmental information, and communicate these to other units in September each year. Laws and regulations are responded to on a Company-wide basis.

### Establishment of Compliance Committee

Compliance (observance of laws), including not only the observance of laws and internal regulations but also of socially accepted thinking, common sense, and ethics, is becoming a very important challenge. At

Daifuku, we prepared a "Corporate Code of Conduct" and established a Compliance Committee to encourage all employees to obtain a deeper understanding of these issues.

## Contributions to Society

Daifuku is committed to both continuing our current activities and engaging in new initiatives, with the aim of being perceived as a valuable corporate contributor to society.

Daifuku is involved in helping to keep the community clean by participating in clean-up activities as volunteers, accepting interns, developing safe products, and in other ways, thus contributing to society in a variety of areas.



Ohmi Eco-Foster activities

### The prefectural government recognized our involvement in keeping the community clean, and conducting cleaning activities, by presenting us with a signboard

Our Shiga Works personnel have been cleaning National Route 307 and other areas surrounding the Works during lunchtime or outside regular working hours once every month since December 2001.

The Shiga Prefecture recognized our performance by presenting us with a signboard that reads: "Ohmi Eco-Foster" (a volunteer association for keeping the community clean, and conducting cleaning and related activities,

in prefecture-managed public places), together with a "banner" that promotes these activities.

We tidied the area surrounding the Komaki Works in October 2003, as part of the "Aichi Cleanup Campaign" undertaken by all citizens of Aichi Prefecture. This was an example of participating in regional environmental activities.

### Daifuku design unit accepts an intern from the USA

Mr. Warren Robison, an intern, came to Japan from Brigham Young University, Utah, USA. We trained him in analyzing components using CAD and creating 3-D models, for about three months from May 2003.

"The training helped me to understand the profession of engineering, which I aspire to

take up. So this training has been good experience. I was able to actually watch how a component I analyzed went into production. I will surely use what I learned here in the future," said Mr. Robison.

# Energy and Resources Saving

Energy use is related to the emission of carbon dioxide. Such emissions are reported to affect the environment in the form of global warming and other problems. Daifuku works aggressively to reduce energy consumption.

Daifuku has been working to reduce power and fuel costs, and improve energy efficiency on a company-wide basis, including non-production units. The Shiga Works is a factory designated for energy control of the first kind, while the Komaki Works is a comparable factory of the second kind. In each case, an appropriate control procedure is used to promote the recycling of energy.



Lights lit with string switch just when it is necessary

## Power-saving

Daifuku works to increase power use efficiency in all situations.

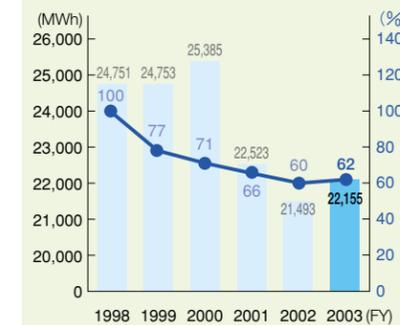
The Shiga Works has been saving energy in production equipment by making a wide range of efforts such as employing the lighting string switch or the ON control sensor type equipment in the office building. Although fiscal 2003 saw a 2% rise in power consumption over the preceding year, we were able to generally exceeded the target,

20% cuts from the fiscal 1998 level, with a 38% reduction.

The Komaki Works upgraded its air-conditioners to power-controlled type, and replaced old lighting equipment with inverter-controlled equipment as a continuation of the previous year's activity. Headquarters and other offices ensure that air-conditioning temperatures are optimized, and that unnecessary lights are always switched off.

## Power Consumption

### Shiga Works performance



### Komaki Works performance



	Company-wide	Main Headquarters	Tokyo Headquarters	Shiga Works	Komaki Works	Chubu Tokai Branch Office
Power consumption (MWh)	31,396	1,360	513	22,115	7,038	370

## Status of environmental impacts in transportation, and reduction measures

Since 2000, the Shiga and Komaki Works have been working to monitor the traffic in product-shipment trucks, while centrally controlling consignment information, improving methods of transportation, and restructuring products, thereby saving cargo space in the trucks, in an effort to improve transport efficiency and, in turn, to reduce carbon dioxide

emissions.

As for adopting better methods of transportation, the stacking jig was redesigned to increase the loading efficiency for each truck, thus reducing the total number of trucks used. This reduced the total travel distance.

### Number and Travel Distance of Trucks, and CO<sub>2</sub> Emission

(FY)	2000	2001	2002	2003
CO <sub>2</sub> emission (t-CO <sub>2</sub> )	9,050	7,574	7,083	6,718
Travel distance (km)	8,569,808	7,172,269	6,707,850	6,361,524
Number of trucks (in 10 tons)	21,859	17,578	19,586	17,735

(Total of Shiga and Komaki Works)

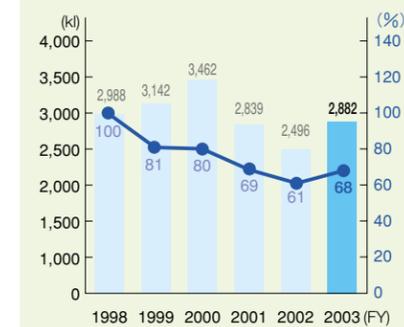
## Reducing fuel consumption

The Shiga Works uses liquefied petroleum gas (LPG) to dry the painting line, employs a sheet shutter to prevent declines in the temperatures of cold degreasing agents, cold baking paints, and baking booths, and controls the operation of cleaning equipment appropriately in an attempt to reduce fuel consumption.

At the Komaki Works, air-conditioning is set to energy-saving mode (28°C in summer and 20°C in winter) in an effort to reduce city gas consumption. Company-owned vehicles are replaced, progressively, with vehicles that consume less fuel and produce lower gas emissions, in an effort to reduce environmental impacts.

## Fuel Consumption

### Shiga Works performance



Consumption (In terms of crude oil)  
Index per unit for production (100 for fiscal 1998)

### Komaki Works performance



### Fuel Consumption Breakdown

Shiga Works (FY)	1998	1999	2000	2001	2002	2003
LPG (t)	2,260	2,362	2,615	2,144	1,881	2,170
Light oil (k)	43	44	51	40	41	50
Gasoline (k)	7.9	11	12.7	12.8	11.5	11.6
Total	2,988	3,124	3,462	2,839	2,496	2,882

Komaki Works (FY)	1998	1999	2000	2001	2002	2003
City gas (1,000 m <sup>3</sup> )	200	197	198	182	186	194
LPG (t)	110	108	105	113	88	82
Gasoline (k)	120	119	118	92	88	103
Total	468	462	458	428	395	410

## Carbon dioxide emissions and reduction measures

Daifuku works to reduce emissions of carbon dioxide and other greenhouse gases, which contribute to global warming.

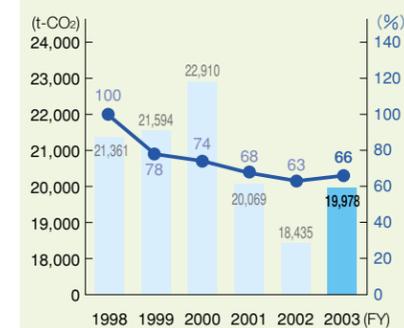
At the Shiga Works, fiscal 2003 saw a 3% rise in carbon dioxide emissions over the preceding fiscal year, due to increased production.

At the Komaki Works, carbon dioxide emissions were successfully reduced by 15%, from the viewpoint of unit rate for production, with increased production and the effects of energy-saving lighting equipment and other facilities.

During fiscal 2003, carbon dioxide emissions, including those at non-production sites, were monitored, and new reduction goals will be set in due course, based on Japan's carbon dioxide reduction goals set forth in the Kyoto Protocol (COP3).

## CO<sub>2</sub> Emission

### Shiga Works performance



CO<sub>2</sub> Emission  
Index per unit for production (100 for fiscal 1998)

### Komaki Works performance



	Company-wide	Main Headquarters	Tokyo Headquarters	Shiga Works	Komaki Works	Chubu Tokai Branch Office
CO <sub>2</sub> emission (t-CO <sub>2</sub> )	24,197	485	183	19,978	3,419	132

# Waste reduction

A zero-emissions drive is underway with the aim of recycling wastes as a corporate responsibility, in an effort to help establish an eco-friendly society.

Daifuku contributes to environmental conservation by setting such standards as containers, methods, and places for collecting various wastes discharged from specific works.

Waste emissions are also centrally controlled to further enhance recyclability.

## Waste reduction

Wastes discharged from the Shiga Works are separated and collected so as to satisfy the following requirements:

- (1) Collect wastes in specialized separate containers.
- (2) Apply labels indicating the type of waste material stored in each container, and only collect predetermined wastes.
- (3) Use empty, sealable cans or similar to collect waste solvents and other dangerous substances that have low flash-points (such as thinners and alcohol). After collection, securely seal the cans and store them in an oils warehouse.
- (4) If any other special waste is generated, designate a separate container, method of collection, storage procedure, and other details, in advance, and seek the consent of the waste sectional committee before collecting it.

In fiscal 2003, we conducted an environmental inspection tour centering on the waste sectional committee. With the cooperation of specific units and taking into account

the increased production, the reduction target was lowered to 50%, as opposed to the fiscal 1998 reduction target of 60%.

Same as the Shiga Works, the Komaki Works has been working to reduce emissions by separately collecting wastes in an effort to attain the zero-emission target.

The Komaki Works relocated some of its factories in April and May 2003. Wastes generated at that time exceeded our expectations. We then worked actively on separate recycling but achieved only 92%, as opposed to the initial recycling target of 95%. If fiscal 1998 were regarded as a unit, the recycling percentage would be almost identical to that of fiscal 2002.

All units, including Main Headquarters, Tokyo Headquarters, and Chubu Tokai Branch Office, which are non-production units, are encouraging the use of both sides of paper, in order to ensure that waste paper is separated and to cut down on paper purchases.

## Promoting zero-emissions

A zero-emissions campaign is underway, in an effort to recycle wastes as part of our corporate responsibility to contribute to realization of an eco-friendly society that coexists with a rich natural environment. This campaign is focused on:

1. Processing legally classified wastes after carefully reviewing the appropri-

ateness of particular recycling agents.

2. Recycling wastes with greater consideration of potential environmental impacts such as efforts to increase materials recycling in place of thermal recycling.
3. Developing products with enhanced recyclability attributes rather than

waste potential. Daifuku will aim to engage in production activities that minimize waste generation.

## Reducing paper use and recycling

Daifuku has been recycling paper in an effort to help protect the forests, which play an important role in environmental conservation.

The Shiga Works purchases recycled woodfree paper, and ensures that both sides of paper sheets are used, in order to reduce paper purchases. However, woodfree paper purchases rose by 18%, as opposed to the targeted reduction 15% from the fiscal 2000 level due to an increase in personnel as a result of the move from the Komaki Works, and a greater number of overseas inquiries.

Paper used on both sides, and with other measures taken, is recycled as high-grade waste paper. Fiscal 2003 saw 45% of paper purchases as the recycling target. However, we fell short with 43%.

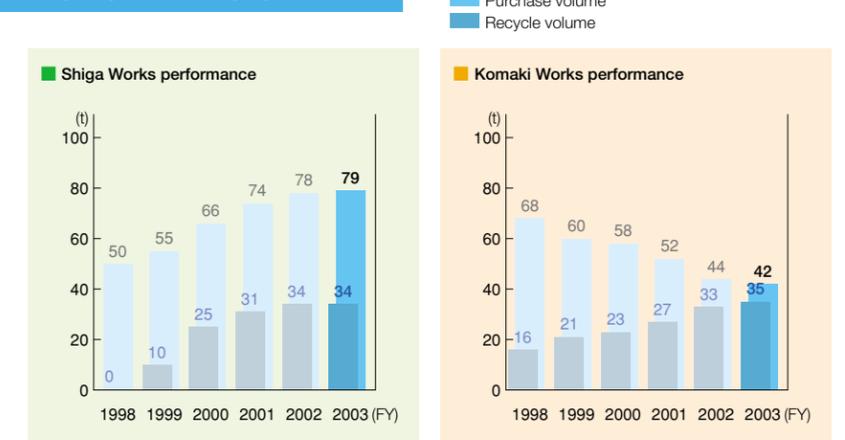
At the Komaki Works, each unit collects miscopied plain copy paper and non-glued and/or sticker-free unused paper as high-grade waste paper, to provide the materials

for recycled paper. Also, clean paper, colored copy paper, catalogs, and newspaper are collected separately as waste paper for recycling at a paper mill. In fiscal 2003, we mounted a campaign to achieve a recycling target of 50% from the fiscal 2000 level. The result was 52%.

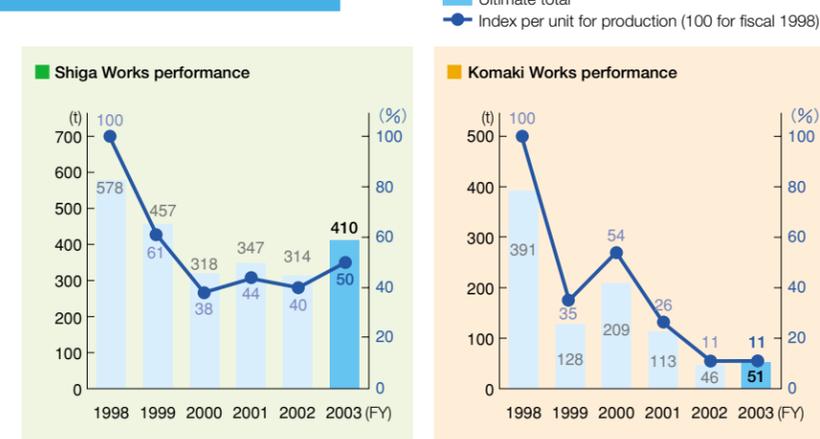


Collection of waste high-grade paper

### Recycling of Waste High-grade Paper



### Volume of Landfill Waste Disposal



### Comment from Environmental Activity Representative



**We conduct waste recycling and are aiming at a target of 95% or greater**

Kazuto Okada, Waste Reduction Team, Shiga Works  
Up to fiscal 2003, we were implementing environmental improvements in an effort to achieve a 60% reduction from fiscal 1998 level, but we failed to hit that target due to a rise in waste paint resulting from increased production.

However, thanks to the cooperation of sectional committee members at each factory, employees' awareness improved, and we managed a 50% reduction. I believe this to be a major accomplishment.

Daifuku is currently transforming itself into a structure that can expect a downturn in total emissions with a decline in unsuccessful products and factory inspection tours by sectional committee members to check on environmental and quality issues within the works. The sectional committee will promote environmental activities through a program whose primary goal is to recycle 95% of wastes.

# Inhibiting and Controlling Discharge and Emissions of Environmental Contaminants

Efforts are made to thoroughly monitor and control the status of chemical substances used in production activities, air pollutants generated in the process, and other impurities.

In its production activities, Daifuku uses a wide variety of chemical substances, including some that produce significant environmental impacts.

As with other substances, environmental contaminants are periodically reviewed and strictly controlled to reduce their use wherever possible. Efforts are also underway to replace such contaminants with safer substances.

## Pollutant Release and Transfer Register (PRTR) control

We have established provisions for ad-hoc PRTR sectional committees at each works, in order to control and reduce emissions based on the "Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management" (PRTR Law).

A review was conducted for purchased, consumed, scrapped, and in-stock quantities of target chemical substances in four departments: Procurement, Environmental Control, General Affairs, and Design and Manufacturing. Safety data sheets were collected and the selection of materials, includ-

ing designated chemical substances, is now complete. In due course, we will act to prohibit the use of materials that produce significant environmental impacts.

Furthermore, PRTR control will also be extended to other units in an effort to ensure that the consumption status of chemical substances is monitored and controlled.

At the Komaki Works, it was decided that aqueous paints would be used to coat 70% of components manufactured in the plant, in an effort to reduce the use of hazardous chemical substances. The result was a reduction of about 75% in use of xylene and other hazardous substances.

## PRTR Law Related Chemical Materials Consumption (In fiscal 2003)

Unit: kg

Control No.	Chemicals	Transaction volume	Emission to:					Transfer to:		
			Air	Public water	Soil	Land	Total	Product	Waste	Total
1	Water soluble compounds of Zinc	251	0	0	0	0	0	199	53	252
29	Bisphenol A	1293	0	0	0	0	0	841	453	1294
40	Ethyl benzene	5704	5704	0	0	0	5704	0	0	0
43	Ethylene glycol	493	493	0	0	0	493	0	0	0
63	Xylene	46570	46570	0	0	0	46570	0	0	0
69	Hexavalent chromium compounds	974	0	0	0	0	0	0	55	55
224	1,3,5 - trimethyl benzene	681	681	0	0	0	681	0	0	0
227	Toluene	20479	20479	0	0	0	20479	0	0	0
230	Lead and its compounds	704	0	0	0	0	0	627	77	704
309	Nonyl phenyl ether	2402	0	0	0	0	0	0	2402	2402

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

## Prevention of air pollution

The Shiga Works is designated as a "place of business subject to a plan to reduce its environmental impacts on the air", based on Ordinance No.25, clause 1, of the Ordinance Concerning the Reduction of Impacts on the Air Environment of Shiga Prefecture. Because the plant has a built-in cogeneration system, efforts are made to control and reduce smoke-induced air pollutants. And, as for maintenance and inspection of equipment, all equipment specified in applicable laws and ordinances is, of course, periodi-

cally inspected, while other, non-specified equipment is voluntarily inspected as appropriate.

## 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	807
	Hot water boiler	120	78
Dust (g/m <sup>3</sup> N)	Electric generator	0.1	0.007
	Hot water boiler	0.2	0.005
SOx (g/m <sup>3</sup> N)	Electric generator	2.31	0.06
	Hot water boiler	0.567	0.011

## Total drainage levels and reduction measures

The basic understanding is that water contamination is a serious problem that can affect soil, agricultural products, living environments, and various other areas. Accordingly, efforts are made to control and reduce drainage from works with meticulous care, while, of course, observing relevant laws and regulations.

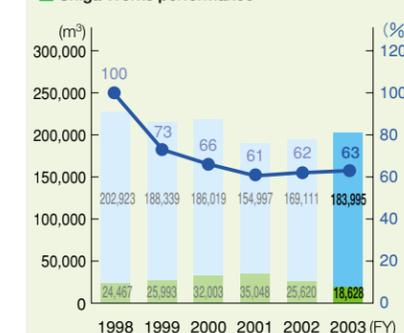
Drainage from production activities in the Shiga Works is processed at a comprehensive drainage treatment plant on the premises, before being discharged into the Sakura River, which has the Class-A clearness. Fiscal 2003 saw a 1% rise from the fiscal 2002 level.

Drainage from rainwater drains is channeled to a pond that stores water for firefighting. For that reason, the equipment in the works is thoroughly maintained and inspected, while water discharged from the drainage treatment plant is measured. Living environmental organisms are measured once a month. Meanwhile, hazardous substance items are measured twice a year.

On the other hand, the Komaki Works has three facilities or equipment requiring water contamination control: car wash, kitchen (canteen), and painting equipment. Water control involves strict management according to both regional treatment standards and voluntary benchmarks, while monthly monitoring measurement is conducted by an external specialist agency.

## Water Consumption

### Shiga Works performance



### Komaki Works performance



## Measurement Result of Final Effluent Quality

Shiga Works (In accordance with Clean Water Law, Shiga Prefecture ordinance, and Hino Town environmental pollution control agreement)

Item	Item	Measurement result		
		Max	Min	Avg
Amount of drainage (m <sup>3</sup> )	—	752	270	460
PH	6.0~8.5	7.6	7.4	7.5
SS (mg/l)	20	4.8	0.9	2.9
COD (mg/l)	20	4.9	2.4	3.9
BOD (mg/l)	20	2.0	1.0	1.3
Total phosphorus (mg/l)	1.0	0.5	0.1	0.2
Total nitrogen (mg/l)	10	4.8	0.5	1.5

\*An average value is the weighted average.

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

Item	Item	Measurement result		
		Max	Min	Avg
PH	5.7~8.7	7.3	6.0	6.5
SS (mg/l)	Less than 300	31	23	28
BOD (mg/l)	Less than 300	35	20	30
n-hexane mineral oil (mg/l)	5 or lower	1	1 or lower	1 or lower
n-hexane animal and vegetable oil (mg/l)	30 or lower	1.2	1 or lower	1 or lower

## Column Measures to Reduce Noise and Vibrations

### Pollution Control Agreement observation and status monitoring

Daifuku sees measures to reduce noise and vibrations as an important challenge that must be continuously addressed.

Noise is monitored and measured, and efforts are made to observe the Pollution Control Agreement. All measurements taken in fiscal 2003 fell short of the treaty-specified levels. Vibrations did not affect surrounding areas.

### 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 - 6 pm	6 pm - 10 pm	10 pm - 6 am
Komaki City limit value	60	65	60	50
Measured value	53	55	54	47

## Comment from Environmental Activity Representative



Yoshio Iwakura, Water Quality Control Team, Shiga Works

### Strict control of Drainage, which has significant impact on the community

Our sectional committee's mission statement is: "With Lake Biwa downstream of our works, we will observe the laws and regulations governing factory drainage, and will work to prevent environmental contamination and reduce environmental impacts".

Factory drainage can have a major effect on the local community and is perceived as an important issue. Therefore, we inform persons responsible of drainage issues and conduct inspection tours of our drainage-generating facilities.



Product using water-based aqueous paints (Carriage of Stacker Crane)



Paint shop



Water survey

# Green Procurement

Daifuku has established green procurement guidelines and prioritized actions to be taken in order to ensure that we do not incorporate, use, or produce any hazardous chemical substances, and can thereby offer eco-friendly products.

Daifuku believes that one of its most important eco-friendly priorities is to reform procurement and purchase activities that may indirectly affect the environment, as well as those that have direct environmental impacts.

We developed an integrated Environmental Management System that also involves its customers and suppliers, and it works in-house to promote green purchasing, in order to be able to offer eco-friendly products.

## Assisting and guiding green suppliers and cooperation companies

Daifuku asks suppliers to cooperate in green procurement.

We set up a supplier assessment system in fiscal 2003 and, based on the assessment results, introduced an "S.Q.D. Award" (Supplier Quality Development Award) to recognize excellent suppliers. During the first fiscal year, we assessed 90 of the suppliers with processed goods and presented awards to three of them. This recognition will be extended gradually to control, design, and construction companies.

In pursuit of compliance of Daifuku products with environmental regulations, we will survey hazardous chemical substances used in manufactured products and consider alternative substances.

Daifuku also asks suppliers to survey hazardous chemical substances, and will purchase components that do not contain such substances.



S.Q.D. Award Ceremony

## Promoting green purchasing

Daifuku is actively committed to promoting green purchasing, and internal and external dissemination of information through that activity. Criteria for green purchasing supplier selection include the database of the Green Purchase Network and the presence of an environmental label.

Daifuku establishes green purchase guidelines for office equipment, checks each item before purchase, and selects products that have the least environmental impacts.

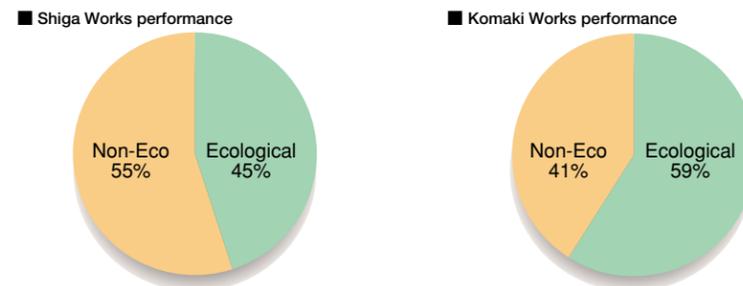
Daifuku established an "office equipment re-use box" at each works in fiscal 2002. In

this way, the company is encouraging employees to share and re-use office equipment that may be lying dormant in their desk drawers.



Purchasing green office supplies

## Purchase of Ecological Office Supplies and Expendables (April 2003 to March 2004)



### Comment from Environmental Activity Representative



**Encouraging often-away salespeople to become more environmentally aware**

Kiyoko Sumiya, Logistics System Department, Tokyo Headquarters

At Tokyo Headquarters, our sales personnel performed their tasks inside their own floor unit. Because their jobs require them to be "on the road" much of the time, salespersons are seldom in the office. Consequently, they are the hardest people to reach with communication and directions about environmental goals and related matters. Therefore we launched our campaign for attaining the goals of "reducing wastes (making sure that wastes are collected separately and reducing consumption of high-grade waste paper)", and "reducing power consumption". To promote the campaign, we displayed slogans and circulated email notices. This has gradually helped to increase environmental awareness, resulting in constantly improving monthly waste reductions. We hope to conduct a meaningful campaign that will reach all members of the department.

# Industrial Safety and Hygiene

Daifuku's basic policy is to "put safety before everything else", and we have established a 5S campaign (Sort, Set in order, Shine, Standardize, and Sustain).

## SARS-compatible risk management

The Severe Acute Respiratory Syndrome (SARS), which spread mainly in China and Taiwan, came as a major shock to the ever-globalizing contemporary world. This was also a pressing problem for Daifuku, which was implementing a number of projects in those regions. A total of nine SARS-related notices were issued by the general affairs unit. They called employees' attention to the

need for thorough checking of safety information; SARS prevention by gargling, hand washing, and other means; making a short list of personnel on overseas trips; requesting personnel returning to Japan to stay at home on standby; and other measures. As the result of these measures, none of our employees or family members contracted SARS.

## Contributing to increased cleanroom safety

On the initiative of the Safety Sectional Committee of the Semiconductor Equipment Association of Japan, the personnel of a cleanroom factory gave full cooperation through operation and observation, when a video was produced about safe working practices in cleanrooms. The video emphasizes that human errors may cause danger even if ideal safety measures are taken with the equipment and machinery. The aim is to assume less-than-perfect behaviors and equipment status, and motivate each worker to check and verify any such situation, thereby encouraging them to anticipate risk and keep things neat and tidy.

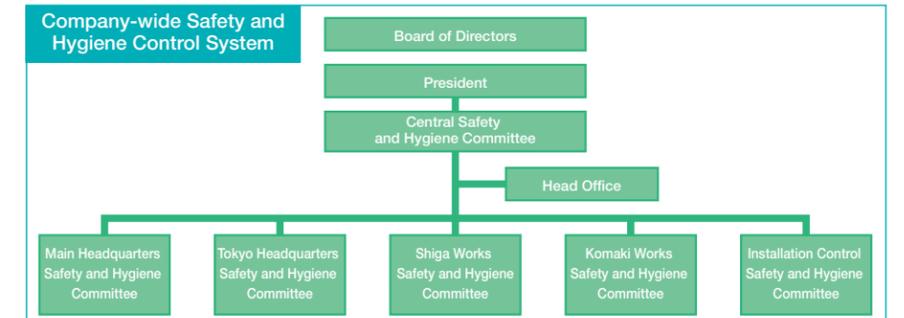


Contributing to increased cleanroom safety

## Safety and hygiene control system

Safety measures and safety control are top-priority considerations in Daifuku. Since the foundation, Daifuku has been committed to "safety first, zero accidents" on a company-wide basis. Part of the campaign is to establish a "company-wide safety and hygiene control system", which aims to define a quick information transmission route in the event of an unexpected incident, and to step up

safety control systems both domestically and in overseas operations. For construction and installation personnel, we have established a "Safety and Hygiene Committee for Integrating Construction and Installation", which aims to inherit and establish a cross-departmental safety culture, and to ensure that accidents do not happen.



# Human Rights and Employment

Daifuku respects the rights of the employees and stakeholders and works actively to create a worker-friendly environment.

One of Daifuku's management philosophy is to "create a lively company culture which respects personality and individuality of each employee", and we regard this as an important management challenge.

### Opening a "Personnel Counselors' Office"

Daifuku introduced a "New Personnel Treatment Program" in fiscal 2003. As part of a company-revitalizing measure within that program, we opened a "Personnel Counselors' Office", and established an easily accessible contact point for employees who have queries or problems. The office receives inquiries about the New Personnel Treatment

Program, assessment and treatment issues, workplace environment, and health control, and can help employees resolve their problems.

Daifuku also established a "Group Talk with Officers Program" at the same time, in an effort to facilitate communication between executives and rank-and-file employees.

# Product Safety

Daifuku has established a Product Safety Sectional Committee since fiscal 2003. Using this facility, we have and will continue to implement mechanisms and regulations for "guaranteeing product safety, as a corporate responsibility.

Daifuku has prepared regulations for "product risk assessment", as required by the ISO and the Ministry of Health, Labor and Welfare. This work was undertaken mainly by the engineering and design units.

### Conducting risk assessment

To ensure product safety, Daifuku has established a unique set of regulations directed to the engineering, development, and design units. Risk assessment (RA) is conducted on both newly developed products and existing models. The regulations document was edited in line with machinery safety overviews, the Industrial Safety and Health

Law, safety JIS and other safety rules, JIS risk assessment, guidelines on the comprehensive safety standards for machinery, and other safety standards. We also intend to conduct such RA on production equipment, installation worksites, and other situations.

# Corporate Code of Conduct

Daifuku observes all applicable laws, regulations, and social codes, both domestic and foreign.

### Strictly observing the Corporate Code of Conduct

Daifuku launched the "New Three-year Business Plan" in April 2004. One of the basic management policies is to "Effectuate a management that complies with social rules and principles of each country, together with strengthening risk management".

Daifuku has produced a booklet containing the complete text of the Corporate Code of Conduct, and requires all employees to carry it with them at all times. This is to ensure that they conduct their operations legally and fairly.



# Personal Information Protection

Daifuku takes meticulous care in handling any information that we might obtain about individuals and corporate customers.

### Code concerning personal information

The Corporate Code of Conduct contains provisions regarding protection of personal information.

- Daifuku will never abuse the confidential information, which it has obtained in ordinary course of business service, about employees, customers, cooperation companies, dealers, competitors, and other interested parties.
- Daifuku will respect every employee's privacy and pay careful attention to personal information and exercise prudence in the management and handling of such information.
- Daifuku employees will recognize the value of the company's confidential information (technology, know-how, etc.), and strictly manage such information in order to safeguard it.

- Daifuku employees will never abuse or reveal the company's confidential information (technology, know-how, etc.) whether during active service or after retirement.
- Daifuku will never obtain any confidential information about employees, customers, cooperation companies, dealers, competitors, and other interested parties using illegal methods.

All employees of Daifuku must observe the above code and pay meticulous attention in handling personal information.

### Hini Arata Kan

Hini Arata Kan, the world's largest full-scale comprehensive logistics showroom, mobilizes Daifuku products with the advanced technology and know-how that Daifuku, a leader of material handling industry, has developed for more than half-century since its establishment.

The facilities exhibit some 300 products of 100 types, together with more than 100 products related equipment from 40 logistics vendors, which can be integrated into new systems. Visitors can view the actual equipment and performance of the stage-of-the-art systems in the demonstration of an automobile assembly line, as well as of storage, conveying, sorting and picking systems.

The full-time tour staff will introduce all of our products with comprehensive expla-

nation to all visitors. Besides, Hini Arata Kan conducts various seminars, user meetings, training and fact-finding tours for companies and organizations, thereby acting as an information conduit for leading-edge logistics.

Many guests and groups including elementary and junior high schools' filed trips have come there. And, in Hini Arata Kan, "Environment-related Equipment Section" introduces how Daifuku is working on the environmental activities.

- Facts
- Building area: 6,049 m<sup>2</sup>
- Building height: 25.1 m
- Floor area: 19,482 m<sup>2</sup>
- Parking space: 5 buses, 50 cars
- Hours open: 9:00 am - 5:00 pm (Reservation needed)
- Closed: Sundays, National Holidays
- Website: <http://www.daifukuworld.com/daifuku/global/hiniaratakan/index.asp>
- Phone: (Toll Free) 0120-074-854
- Operated by: Hiniaratakan Corporation c/o Shiga Works, Daifuku Co., Ltd. 1225 Nakazaiji, Hino-cho, Gamo-gun Shiga 529-1692 Japan



Hini Arata Kan



Storage systems section



Environment-related equipment section