

## Global Promotion of Sales of Recycled Copiers Based on the “Comet Circle”

### ● Concept

Based on the concept of the Comet Circle that puts “Priority on Inner Loop Recycling\*,” the Ricoh Group is working on recycling materials with less environmental impact and high economic efficiency. Our efforts are thus focused on the following activities (in order of priority)—recovering products, reusing parts, and recycling materials. Ricoh, with recognition that the flow from collection of used products to the recycling of materials is one business unit, is making efforts to improve profitability in the recycling business on a global scale by increasing sales of recycled products. Improvement of profitability will make continuous activities to reduce environmental impact possible. \*See page 14.

### ● Targets for Fiscal 2007

- ◎ Improve the quantity of reusable parts used by a factor of at least five (compared to fiscal 2003 figures in Japan).
- ◎ Increase the quantity of recycled plastics used to 1,000 tons or more.
- ◎ Increase the number of recycled copiers marketed by a factor of at least 10 (compared to fiscal 2003 figures in Japan).

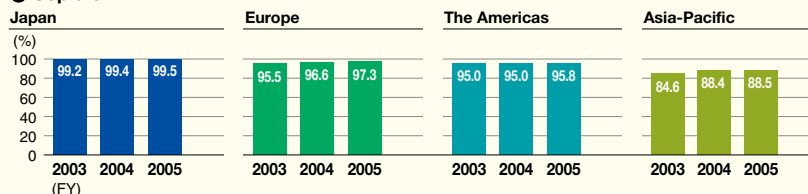
### ● Review of Fiscal 2005

In addition to various environmental targets, in fiscal 2005 we set a target for the amount of recycled plastic to be used in products. In fiscal 2005, the recycled plastic used in our products increased 2.3 times compared with the amount used in fiscal 2003. Meanwhile, sales of recycled copiers in Japan increased 3.1 times compared with fiscal 2003. The recycling rate of used products remains at a high

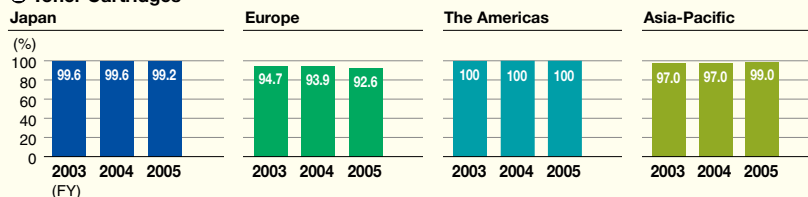
### <Global>

#### Resource Recovery Rate

##### ① Copiers

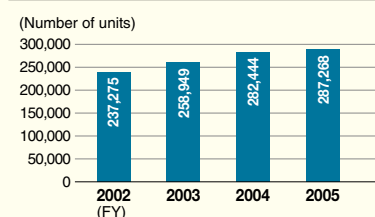


##### ② Toner Cartridges

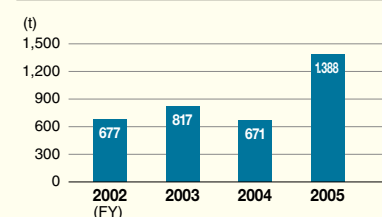


#### Collection Results

##### ③ Number of Copiers Collected



##### ④ Amount of Toner Cartridges Collected\*



\* The method of calculating the quantity of collected cartridges in Japan was revised in fiscal 2005. (The average weight per cartridge that was used to calculate the quantity of collected cartridges was replaced by the latest actual figure.)

#### Segment Environmental Accounting of the Product Recycling Business (Japan)

Costs		Effects			
		Economic benefits		Effect on environmental conservation	
Items	Costs	Items	Benefits		
Product recycling cost	¥740 million	Sales	¥6,421 million	Amount of resource recovery: 31,660 (t) Down 1,436 (t) from that in the previous year	Amount of final disposal: 199 (t)
Collection/resource recovery cost	¥3,053 million	Social effect	¥2,533 million		
Total cost	¥3,793 million				

\* Social effect refers to the cost of waste disposal that customers no longer have to pay.

level (see graphs ① and ②). The number of collected copiers has been steadily increasing on a global basis (see graph ③). In addition, the quantity of collected toner cartridges shows substantial growth, which is due to an increase in sales of heavier cartridges and the revision of the basis of calculating the quantity of cartridges in Japan from fiscal 2005 (see graph ④).

### ● Future Activities

While endeavoring to further improve the collection rate and collection quality of used products, we will increase production and sales of recycled copiers as well as the use of recycled parts and materials. By utilizing used products more effectively, we will provide customers with products with less environmental impact and higher economic efficiency.

## Practicing Recycling with Less Environmental Impact Based on the Comet Circle

The Ricoh Group clearly prioritizes recycling methods to promote its recycling activities. Recycling collected products into commercially useful products generates less environmental impact and creates greater associated economic benefits than if they were disassembled and sorted to be recycled into resources/energy. This idea is represented in the Comet Circle.\* The flow of the recycling process, from the recovery of copiers collected from the market to the launch of recycled copiers on the market again, is shown in the second innermost loop. The recycled copier business contributes to the creation of a recycling-based society, and we will, without a doubt, develop it.

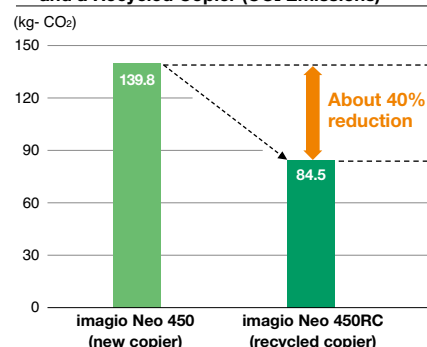
\*See page 14.

## Increased Sales of Recycled Copiers

### <Ricoh (Japan)>

Since the launch of the recycled multifunctional digital copier, imagio MF6550RC, in December 2001, Ricoh has increased the number of models available. In fiscal 2003, recycled machines with a copying productivity ranging from 35 pages/min. to 70 pages/min. became available. In fiscal 2004, the new recycled digital copier imagio Neo 350RC/450RC was added to the lineup. This new model is equipped with Ricoh's original QSU energy-saving technology that improves energy consumption and gives a fast warm-up period of only 10 seconds. Thanks to our efforts to respond to the needs of more customers, environmentally-friendly businesses, governments, and schools have become more interested in our products, which is leading to a steady increase in sales of recycled machines. Because more than 82% (mass

## ① LCA Comparison Between a New Machine and a Recycled Copier (CO<sub>2</sub> Emissions)



\* A comparison is made by calculating the annual environmental impact of new and recycled copiers over a 5-year period and 10-year period, respectively.

\* Figures for CO<sub>2</sub> emissions by copiers in operation at customer sites were not included in the calculation of the data.

ratio) of the parts used in recycled machines are recycled parts, the imagio Neo 350RC/450RC gives around a 40% reduction in environmental impact over its whole lifecycle compared with newly-produced machines.

# INTERVIEW

## Customer Interview

## TAIYO YUDEN Co., Ltd., Case Report on the Introduction of Recycled Copiers

TAIYO YUDEN contributes to reducing environmental impact in society as a whole by developing user-friendly and Earth-friendly "green products" through "green processes," which have less environmental impact. TAIYO YUDEN has developed a number of green products, including lead-free high capacitance ceramic capacitors and CD-Rs with less packaging material. TAIYO YUDEN has introduced 29 imagio Neo 350RC/450RC copiers to its offices.

## We Like the Idea of Reducing Environmental Impact and Costs at the Same Time

### Adding a cost perspective to green purchases

Keywords in our green purchasing are cost, quality, delivery, environment, speed, and partnerships. Ricoh's proposal to use recycled copiers was excellent in terms of the environment, cost, and speed. When Ricoh was taking the cost perspective into account, in addition to conventional green purchasing, the company proposed the use of recycled copiers to simultaneously reduce environmental impact and costs.

**Mr. Kimio Hayashi**  
Deputy General Manager,  
Supplies and Purchasing  
Department, Supplies and  
Logistics Control Management  
and Administration Headquarters,  
Egi Plant, Takasaki Global Center



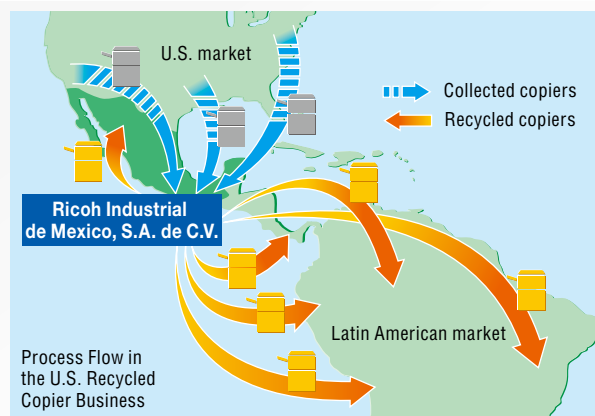
## We appreciate recycled copiers from an environmental viewpoint

Generally, people want to purchase brand-new products. However, this does not apply to us. We greatly appreciate recycled copiers because they reduce both environmental impact and costs. There is no problem with copy quality, and nobody notices that the machines are recycled because they look new. When we successfully implemented green purchasing in Japan, as we did this time, we began sharing our know-how with overseas offices to promote green purchasing globally.

## Recycled Copier Business in the Americas

### We promote the recycled copier business for environmental management in the Americas.

For the Ricoh Group to achieve environmental management, success in the recycled copier business is the critical key. In 2004, all Ricoh Group subsidiaries in North America and Latin America as a whole started a project to launch the full-scale business of recycled copiers. Subsequently, June 2005 saw the start of a Pan-American recycled copier business to recycle used copiers collected in the North American market at Ricoh Industrial de Mexico



(RIM), one of Ricoh's manufacturing subsidiaries, and sell the recycled copiers through Ricoh Latin America (RLA), which manages sales in Central America and South America.

## INTERVIEW

### The sales and marketing unit interview

### Business model for recycled copiers in the Americas

**We created a mechanism to provide high-quality recycled copiers that we, as a manufacturer, can guarantee.**

**The Latin American market has wide-ranging needs, from new machines to used ones.**

The sales volume of used copiers reportedly surpasses that of new machines in the copier market in the Latin American countries. Therefore, it is worth providing high-quality recycled copiers to the Latin American market, where many customers do not necessarily look for new products. Because global companies from Europe and the United States have entered the large markets of Latin America, such as Mexico, in recent years, high-quality recycled copiers may also have an advantage in doing business with these large corporate customers.



**Kiyoshi Shimizu**  
President, Ricoh Latin America, Inc.

**We promote environmental management using a business model specific to the Americas.**

The mechanism of recycled copiers collected in the North American market at a factory in Mexico and selling them in the Latin American market is a business model specific to the Americas.

Machines that may have no other option but to be recycled in the North American market can be recognized as having high commercial value in the Latin American market. In the recycled copier business, joint efforts of Ricoh Group subsidiaries in the Americas would expand business opportunities and ensure the effective use of resources. Accordingly, we are committed to making the recycled copier business a success, recognizing that it is important from the environmental perspective as well as business perspective.

### Manufacturing subsidiaries interview

### Production of recycled copiers

**We will gain the customer's trust with our high-quality recycled copiers.**

**We built a production line for high-quality recycled copiers that we, as a manufacturer, can guarantee.**

Ricoh Industrial de Mexico (RIM) started the production of recycled copiers in April 2005 and moved into mass production in June of the same year. RIM is committed to developing human resources that have the skill to recycled copiers and building up the recycling process under the technical support of Ricoh Electronics, Inc., Ricoh's manufacturing subsidiary in the United States that has expertise in producing recycled copiers. These recycled copiers, which have the manufacturer's guarantee for quality, are shipped to RLA after



**Ranulfo Gómez B.**  
Plant Manager  
Ricoh Industrial de Mexico, S.A. de C.V.

going through a quality inspection according to Ricoh standards.

**Providing products that better meet market needs through improved communication with the market**

In addition to the recycling technology, supply chain management (SCM) holds the key to offering high-quality recycled copiers to customers. We continue to provide recycled copiers that better meet market needs by actively listening to the opinions and comments of dealers and customers in establishing a production system that enables us to respond to market needs in a timely fashion and reviewing packing materials and transportation routes.

## Promoting "Packageless" Delivery and Factory Kitting

### <Ricoh Group (Japan and Europe)>

Ricoh Group companies in Japan have introduced resource-recirculating eco-packaging, which enables the repeated use of packaging materials, and simple packaging, which means wrapping products simply, in order to reduce the use of packaging materials. Today, more than 80% of mid- and high-speed copiers are shipped in resource-recirculating eco-packaging. Also, by implementing "factory kitting" in which machines are equipped with options in the factory according to each customer's specifications and directly delivered to customers, we considerably reduce the use of packaging materials and delivery time required at the customer's site. When copiers furnished with the kitting are delivered in a simple packaging to customers, delivery time is shortened by approximately 50% compared with the conventional method. The same approach is adopted at Ricoh Group companies in Europe. Products shipped from factories in European countries are temporarily gathered in a warehouse, where the kitting operation takes place, and then delivered to customers.



Resource-recirculating eco-packaging used in Japan

## Used PET Bottles as Cushioning Material

### <Ricoh Group (Japan)>

The Ricoh Group has started using used PET bottles as cushioning material in the resource-recirculating eco-packaging of large copiers. Looking at the shock absorbing characteristics of PET bottles, we have been working to verify the feasibility of using them as cushioning material since fiscal 2004. For a copier that weighs 300 kg, 130 used 500-ml PET bottles were used as cushioning material at the bottom and on the sides of the packaging. Because cushioning material made of PET bottles, which has a higher shock absorbing ability than conventional materials, can be used at least 20 times, CO<sub>2</sub> emissions will be reduced by around 10 tons over four years compared with the use of traditional cushioning materials. This new cushioning material has been used in delivering the imagio MP 1350, a large copier produced at Tohoku Ricoh, since February 2006. Used PET bottles collected at the Tohoku Ricoh office are used to produce the material. We are going to apply this material to other products and develop it as a Ricoh Group business model.



A total of 130 used PET bottles are used at the bottom and on the sides of the package.

## Collection of Used Toner Cartridges via Post Offices

### <Ricoh Norge A.S. (Norway)>

Ricoh Norge A.S., a sales company in Norway, runs a system to collect used cartridges via post offices, with post office delivery labels included in the toner cartridge packages to promote collection. Furthermore, the company introduced a new system in August 2005 to automatically print out labels asking for cooperation in collection when an order for toner cartridges is accepted. These labels are then put on the packing boxes at the time of shipment. The collection of used cartridges via post offices has steadily increased since the introduction of this system, resulting in approximately a 30% increase from the previous year.

Of the used cartridges collected, the reusable ones are sent to the European Green Center, the group's collection and recycling base, to be refilled and sold as recycled products. Those that are not reusable undergo material recycling by recycling companies.



The green seal on the package asking for cooperation in collecting used products