

# Efforts to Reduce Waste, Promote Recycling

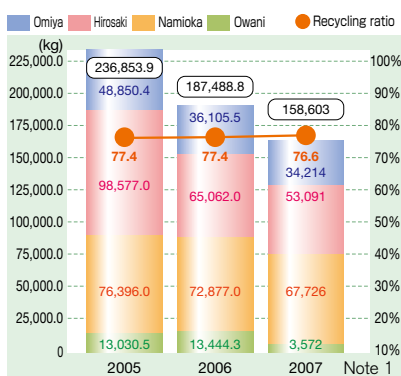
Tamron works to reduce waste and promote recycling.

## Efforts to Reduce Waste

### General Waste from Business

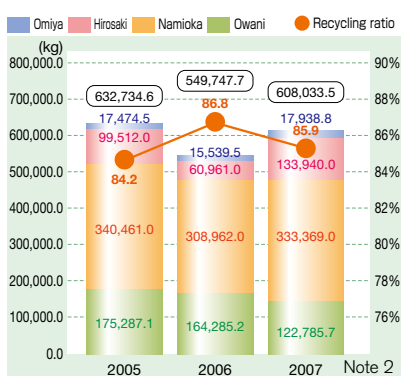
Emission levels of general waste from business declined at all business sites, and the total group volume of general waste in 2007 was reduced by 16% compared to 2006. Emissions from the three domestic factories in

Aomori were reduced mainly because of shifting operations to manufacture some mass-production items at TOF. Our recycling ratio in 2007 remained almost flat at 76.6% from 2005. Reducing the volume of waste from the Namioka factory, a major source of general waste from business, enhancing its recycling ratio and establishing a system to determine the volumes of waste emissions from TOF with increased output capacity are our important tasks for 2008 and beyond.



### Industrial Waste

Waste levels during 2007 increased at all sites, except for the Owani factory, mainly due to the disposal of discontinued items in inventory in large amounts. Our recycling ratio in 2007 declined by approximately 1% year-on-year to 85.9%. We must take additional measures to refine our systems to decide production volumes to match demand and manage inventories.



Notes 1 and 2

Environmental objectives and targets of the Omiya head office, three factories in Aomori and TOF are planned for integration from 2008. Checking methods to calculate volumes of general waste from those sites, we found differences in rules to calculate emissions volumes. We revised our calculation methods as outlined below, and emissions volumes and recycling ratios are changed from the figures in reports for 2005 and 2006.

Major changes	Effects on emissions volumes and recycling ratio
Cardboard emissions from Hirosaki and Namioka factories changed from industrial waste to general waste	Enhancement of recycling ratio of industrial waste
Metal and wood scraps (including valuable resources) were added to industrial waste from the Omiya head office	Increase of emissions volume because of the decrease of metal scraps (300 tons) in 2007 in particular

## Efforts to Enhance Recycling Ratio

In 2007, as a new approach, we checked the practical possibility of recycling waste plastic materials as materials for products. Conventionally, we thought that using injection-molded plastic components as recycled materials would involve problems for durability and accuracy. Therefore, we had not worked on a feasibility study. Up to 2007, a large volume of runner materials<sup>(3)</sup> was generated during injection molding operations in every year. The total volume of plastic materials disposed of in 2007 at the Owani factory, where plastic materials are molded, reached 113 tons, accounting for about 90% of all industrial waste from the factory in 2007. Recycling waste plastic materials is the key for reducing industrial waste.

Therefore, with the assistance of our plastic pellet supplier, we converted waste plastic to pellets, making prototype components by mixing the pellets with injecting molding plastic materials. After going through processes to evaluate performance to withstand drastic changes in temperatures and humidity, durability and external appearance, we confirmed that no quality problems were involved for components for our products. We will continue to work on further evaluation of the degree of precision in actual injection molding processes to ascertain the possibility of using such components on a large scale. We will also strive to reduce runner materials themselves.

<sup>(3)</sup> Materials used in portions equivalent to paths to route resin for making plastic components

## Interview with a Product Recycling Subcommittee member



**Yasunori Watanabe**  
Deputy Section Manager, Production Engineering Section, Manufacturing Division, Owani Factory

Recycling runner materials for reducing environmental risks and lowering production costs was a dream for a long time. Due to the problems involved, those of us at the Owani factory had to delay pursuing this dream. In 2007, we were finally able to start working on the project jointly with the head office amid the increasing need for recycling.

There were no material suppliers with the capability to convert runner materials into pellets in Aomori, but we found such a supplier in Akita. We hope that we will be able to introduce new facilities in the future as soon as the possibility of using recycled plastic materials is confirmed, enabling us to re-pelletize runner materials that have so far been only waste. Reliability and freedom from harmful chemical substances must also be confirmed. We will continue to work on this project, aiming at recycling runner materials as resources.