Establishing a Recycling-based Society

To establish a recycling-based society, it is necessary to use limited resources in efficient and sustainable ways. Because a variety of resources, including metals, resins, and solvents, are used in the automotive parts that the Tokai Rika Group produces, we are promoting the effective use of resources in all processes.

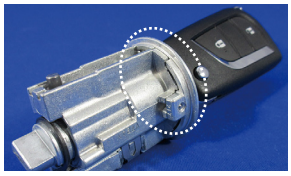
Promoting product designs and technological developments to make recycling easy

We are developing technologies that make use of recycled materials and to improve our products' ease of disassembly, and are promoting product manufacturing that will contribute to the formation of a recycling-based society.

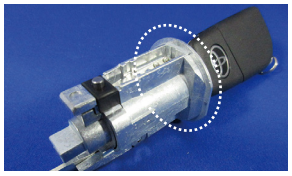
Improved ease of disassembly resulting from a review of the design of an ignition key cylinder

Through a review of our design and production processes, we are working on product manufacturing that does not use any press fitting or caulking, and makes things very easy to disassemble. With ignition key cylinders, we have changed the direction in which the rotors are attached and have discontinued the use of case covers that had been attached by means of press fitting fixing pins. By a design review, we have also discontinued the use of caulking in the stopper pin and rotor cover sections. These improvements are contributing to energy saving by raising production efficiency through improved ease of manufacturing.

☐ Caulking of the rotor cover section.



Before the improvements: Attachment of case cover using pin press fitting



After the improvements: Elimination of case cover by reviewing the design

Discontinuation of swaging and press fitting **3** locations

Voice

Because ignition key cylinders have an anti-theft system and a structure that should essentially be difficult to disassemble, we spent more than half a year debating with related departments over what kind of structure should be adopted to achieve our goal without reducing performance. We are going to work with related departments to develop better products.

SEC Engineering Division
Toshiaki Yamaguchi (Left)
Hiroshi Tsuruta (Right)

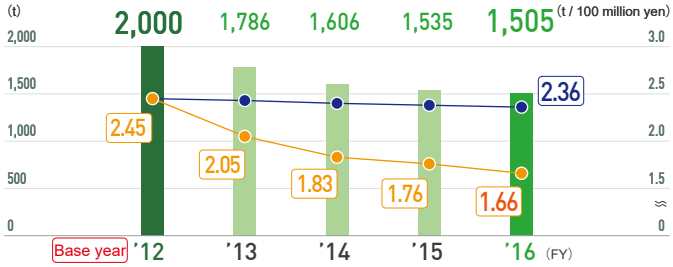
Effective use of resources and reduction of waste materials in production activities

We are working toward thoroughly establishing the Three R's, for example by making waste materials recyclable and improving production yields. In FY 2016, against a basic-unit target of 2.36 t per 100 million yen for discharge of waste materials, we achieved our target with an actual result of 1.66 t per 100 million yen.

Trends in discharge of waste materials per processing expenses

Target value for FY 2016: **2.36** t / 100 million yen

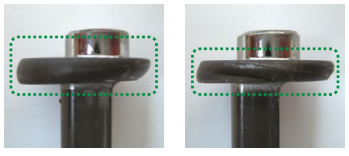
Actual result for FY 2016: **1.66** t / 100 million yen



Reduction in materials through improved yields for cold-forged products

In the manufacture of pistons, after completing a six-stage forging process starting from wire rods, the products are brought into being by a process of die punching the scrap sections. While the scraps are generated in order to secure the required shape, we have made the wastes as small as possible by optimizing the output volume and the shape of the forging punch. As a result of the improvements, we were able to raise the yield from 89% to 91.3%.

☐ Piston forging process



Before the improvements

After the improvements

Finished product
After die punching the scrap section

Minimization of scrap section

Amount of materials used **14%** reduction

Effective use of resources and reduction of packaging and wrapping materials in logistics activities

By simplifying packaging and making packaging and wrapping materials returnable, we are promoting activities to reduce the amount of materials we use. In FY 2016, against a basic-unit target of 0.504 t per 100 million yen for the amount of packaging and wrapping materials used, we achieved our target with an actual result of 0.463 t per 100 million yen.

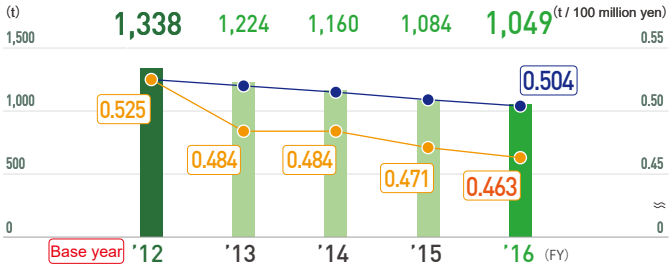
Trends in amounts of packaging and wrapping materials per sales

Target value for FY 2016

0.504 t / 100 million yen

Actual result for FY 2016

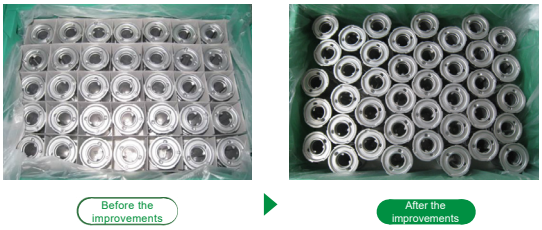
›0.463 t / 100 million yen



Reduction in amounts used resulting from discontinuation of the use of wrapping materials

Previously, owing to concerns about dents arising from contact between parts, we used to use paper partitions to pack seat belt parts that we were going to ship overseas. However, as we were already shipping similar products made from different materials without using any partitions, we worked to discontinue the use of partitions by using the packing methods for those as a reference. The result of transportation tests was no problems with quality, and we currently ship without any partitions

Storage method



Before the improvements ▶ After the improvements

Reduction in amount of materials **8.8** t/year

Reduction of use of water in production activities

Water is a limited source; therefore to reduce the amount we use, we are promoting making effective and recyclable use of water.

Semiconductor plant: Recycling water

Pure water is used in the production processes for semiconductors. By collecting, re-treating, and then recycling the concentrated wastewater discharged in the process of manufacturing that pure water, we are aiming to reduce the amount of water we use. We also collect and recycle the pure water used in production processes once it has been used.

Water purification apparatus

Water recycling rate **30** %

Topics

TRT (Thailand) garbage recycling project

TRT (Thailand) is working on separating out and recycling garbage. The profits from the sale of recycled resources are used to contribute to local communities, and in FY 2016, they donated school educational materials and sports equipment to elementary schools that employees had graduated from. Delighted to be able to contribute to local communities, all the employees are actively getting involved.

Project participants

Providing educational materials for local elementary schools