Feature story

For a Better Future

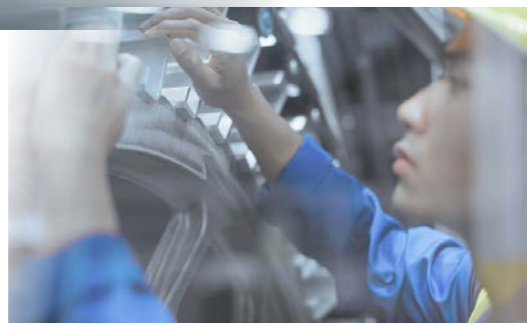
(1) Global Automotive-related Products Division

Manufacturing & talent development for the future

(2) High Performance Material Division

Minimizing loss in product development

Manufacturing & talent development for the future



Global Automotive-related Products Division

Yasushi Nomura, Division Director

As global warming and Japan's aging society along with falling birthrate become bigger problems, society now expects companies to practice sustainability. Consequently, auto manufacturers have begun setting environmental targets and declaring their commitment to improving their business continuity planning (BCP). At the same time, the automotive industry is said to be going through a once in a century revolution, and the mentality is shifting from "offering an even better car" to "offering solutions for mobility society."

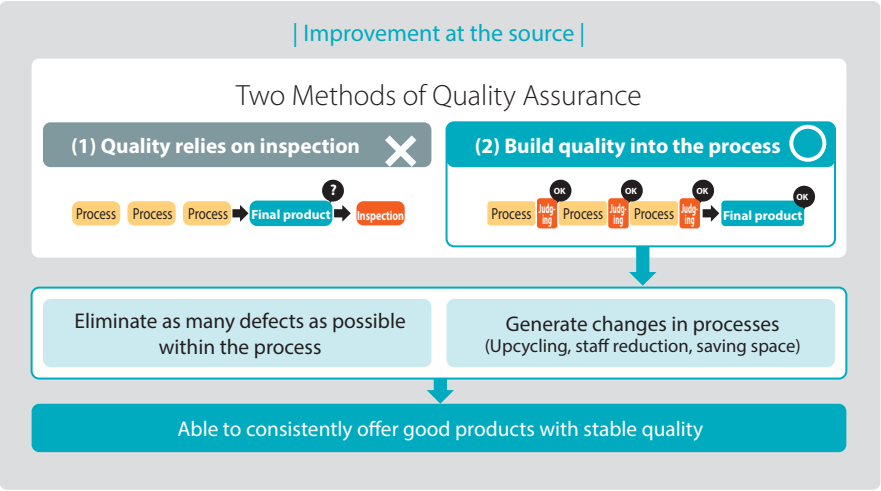
In order to keep up with this change and balance it with sustainability, it is now extremely important for companies to strengthen their business infrastructure. Starting in 2019 we defined our department policy at the Automotive-related Products Division as "Manufacturing & talent development for a changing future," and each of our sections have defined their own, more specific policies. Quality control for products is handled by our Global Quality Assurance Division, which strives to establish in-process quality assurance that does not rely on the final inspection. They accomplish this through best practices in manufacturing & talent development. We set two objectives in establishing quality assurance. First is to provide products with the appropriate quality according to changes in the needs of customers who actually buy the cars. As opposed to simply seeking excessive quality, we set target values from the customers' perspective. Second is to have INOAC's suppliers strive for sustainability that boosts on-site capabilities and competitiveness, with a shared sense of awareness.

I think we will be able to keep up with any changes that could possibly occur in the future by creating "worksites to be proud of" through the quality management activities that I am about to share (problem analysis, human resources development). We will engage in these activities persistently, with the determination to make ongoing contributions to communities.

Quality management - Creating worksites to be proud of

Problem Analysis (PA) in manufacturing

The Quality Assurance Section conducts problem analysis (PA) to manage quality. Rather than stopping defects from being sent on, our aim is to have processes that produce nothing but quality products.
In each process, INOAC workers judge on their own whether or not the quality is up to par, with the aim of establishing in-process quality control that does not rely on the final inspection. This results in improvements at the source, which in turn assures quality within the processes.
This activity was launched as a team effort between INOAC's Quality Control Section, Production Engineering Section, Quality Technology Section, and major suppliers.
It involves drafting Improvement Control Forms, creating opportunities to openly share each other's issues and opinions, correcting the sources of defects within each other's processes, and eliminating problems at the source.
This makes it possible to not only solve problems that are readily visible, but to also solve problems that had previously gone unnoticed. It also deepens mutual understanding between departments and organizations, while improving teamwork.



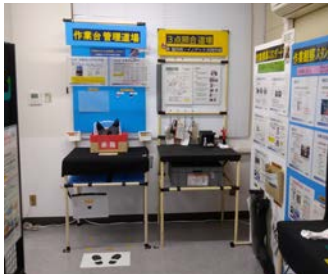
Developing talent

INOAC Standards define rules for how manufacturing operations are handled when abnormalities occur. Activities to spread awareness of these rules are organized not only for our employees to learn them but for our suppliers as well. Rather than thinking of the rules one-dimensionally, it is important to actually experience and understand them. For that purpose, we opened an interactive facility called the Quality Dojo at our business site.
Its purpose is to make people think hard about the very simple concept of "taking common sense actions without a second thought," help them realize just how important it is to keep problems from occurring, and use what they learn in their daily work.

Quality Dojo is a place for learning and sharing what INOAC quality management is all about.

To improve quality management at manufacturing sites we also hold weekly training sessions for smaller numbers of staff. We develop instructors by holding certification tests after the training.
In order to deliver accurate instruction of the daily management of worksites, employees from sections not directly related to manufacturing such as sales and accounting also participate in this training in addition to employees from sections ranging from production to quality control. They utilize the training to make improvements in their own daily operations.


At a PA meeting with open mutual communication


Interactive learning at Quality Dojo

Comments from a PA participant

Global Automotive-related Products Division
Second Quality Control Section, Quality Control Department, Quality Assurance Division
Akinobu Tokunaga

Initially, PA began with exploratory activities between INOAC and suppliers to see what could be done, but as improvements were made the atmosphere became increasingly open.
With these activities now entering their second year, we are beginning to see effects on site. Our results in terms of quality have improved to the point of being hardly recognizable from before. Going forward, we intend to continue these activities while working even more closely with our manufacturing sections and suppliers.

Minimizing loss in product development

High Performance Material Division

Division Director Motoyuki Asano

Society now places stronger expectations on companies to take action toward solving environmental pollution-related problems such as marine plastic waste, and to engage in sustainable use of resources. The Food Loss Reduction Promotion Act was passed in 2019, since which time efforts to protect limited resources and eliminate waste as much as possible have gained even more momentum.

As a manufacturer, INOAC is addressing the situation with aggressive efforts to contribute to a sustainable society and use less energy and resources. We produce a wide range of products at the High Performance Material Division, from industrial materials to consumer products, and we are striving to develop products in a way that minimizes energy loss and scrap materials produced in manufacturing. While we have pursued eco-friendly initiatives actively in the past, we are now working to not only reduce loss that is currently visible but also reduce energy loss by revising product specifications and processes, and to fundamentally minimize material loss by creating new products from waste and scrap.

Revising and simplifying production methods while maintaining functionality allows us to use less processes and thus manufacture while consuming little energy. The work also requires less space, which improves productivity. Processes leading up to waste recycling and reuse had previously required large amounts of energy. Now, in addition to saving energy we are creating products with new added value by developing products out of scrap materials as they are, without processing.

We will continue contributing to a sustainable society, reducing energy consumption and waste by minimizing all types of loss in manufacturing, from materials to processes.

Loss reduction in product development

Simplified cleaning rollers for OA equipment

The Information Devices Department is reducing the energy used and scrap materials produced in manufacturing by revising specifications for more simplified methods to manufacture cleaning rollers for office automation (OA) equipment, such as copiers and printers. There had previously been a sanding process, which presented problems with scrap materials and sanding powder getting stuck to the products after sanding.
We addressed this by changing the processing method from sanding to processing that directly wraps polyurethane foam around the metal shaft, which reduced waste materials and processes while retaining the cleaning function. Reducing processes also saved space at the worksites. We were able to use this freed up space to produce other new products, and it also helped improve productivity at the production plant as a whole.
We will continue striving to minimize loss and make products that satisfy our customers while using less energy and creating no waste in production.

Previous: Sanding processed rollers

Simplified

Improvement: Roll processed rollers

Comments from a developer

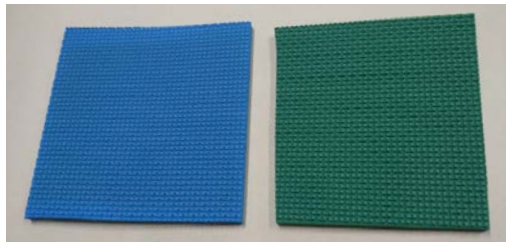
High Performance Material Division,
Information Devices Department,
Technology Section
Urethane Group
Toshinari Hayashi

We are working to reduce waste at production plants starting from the design and development phases. There are various processes involved in creating the functionalities that products require. Processes that are considered necessary can still be eliminated by applying ingenuity and ideas during the design phase. I think the important thing is to determine what added value to give products in each process, and propose the optimal production methods accordingly.

Development of textured sponge, reusing skin layer material loss

The Rubber & Elastomer Division is developing products that reuse the skin layer of rubber sponges which has previously been disposed of as waste.
The skin later of rubber sponges used to be considered nothing more than scrap from products and was discarded without being put to use.

In order to reduce waste, we had been turning this skin layer into chips and remolding them into recycled products. The biggest problem was that this involved a long energy-intensive manufacturing process before completion. We overcame that by developing textured sponge, using the skin layer as-is for a new product.
Textured sponge is a product that takes the skin layer part as-is and applies wrinkle treatment to the surface. Since it produces no leftover unused materials and wastes no energy, it helps reduce waste.
Taking advantage of the features of the material in order to reuse it reduces waste loss and energy expenditure from recycling, while at the same time creating new product value.
We will continue to eliminate as much waste as possible and create new eco-friendly products. As a manufacturer we consider that to be our mission. We are working hard to achieve it.



Comments from a developer

High Performance Material Division
Rubber & Elastomer Department
Production Engineering Section
Keisuke Okawa

Textured sponge helps reduce waste by turning material scrap into new products without consuming additional energy.
The anti-slip effects of texturing combined with the cushioning of rubber sponge allow for a wide range of potential applications, from floor mats at worksites to cushioning, and more. We will be expanding the range of texture patterns and color variations to address our customers' needs.