Research and Development


Muroran Research Laboratory


Hiroshima Research Laboratory


Research & Development Center (Yokohama)

Research and development activities were almost entirely funded by the Company (The Japan Steel Works, Ltd.) during fiscal 2012. Combined spending on research and development for the Steel and Energy Products Business and the Industrial Machinery Products Business in fiscal 2012 amounted to ¥4,054 million (US$43 million).

As a materials and mechatronics company, we strive to develop new products and production techniques using our own technology, while also actively promoting widespread technical alliances and joint development in an effort to put new products and technologies into effect as quickly as possible.

In terms of the direction of research and development, our Research and Development Headquarters continues to promote cooperation with individual business divisions in order to: (1) improve the capabilities, performance and reliability of our core products and (2) develop products in new business fields based on our core and differentiated technologies.

Our Research and Development Headquarters encompasses our headquarters (located at Head Office), the Muroran Research Laboratory (situated on the premises of the Muroran Plant), the Hiroshima Research Laboratory (located at the Hiroshima Plant), and the Research & Development Center (located at the Yokohama Plant).

Our basic research and development policy is as follows

1. We promote the development of new products and businesses by focusing on the technological fields of new energy & energy savings, information & telecommunications, nanotechnology & materials, and new production technologies, which are directly related to our current business activities. In addition, we pursue increased collaboration between the Research and Development Headquarters and our business divisions. Accordingly, we aim to develop our existing business by focusing on expanding and upgrading our core technologies.
2. Promoting not only basic research aimed at future technologies and the needs of 21st century society but also research on component technologies used in existing products, we will develop these into research and development projects that will translate into new products and businesses in the future as well as into innovations and new possibilities for existing products.
3. In product development for Steel Products, we are focusing on energy fields and on further expanding the number of our many No.1 products while commercializing products in new fields. In Machinery Products, we are aggressively promoting the expansion and upgrade of industrial machinery, including plastics machinery and IT equipment. We will prioritize the investment of business resources in these types of machinery by defining a framework for commercialization with an eye toward mergers and acquisitions and the forging of alliances.

Overview of R&D activities by business segment

▷▷▷ **Steel and Energy Products Business**

In terms of the development of steel products centered on materials, we have been carrying out materials development in such areas as clad steel pipes for natural gas transportation, large steel castings and forgings and high alloy materials for high-efficiency thermal power generation, forged steel products for next-generation nuclear power plants, and high-performance nonferrous alloys, as well as manufacturing process technology development. We have also been pursuing technological development to create more advanced materials and component technologies for existing products. In the field of new energy, we have set out to design wind turbine blades for use at wind power generation plants, establish various reliability-related analytical technologies and develop more advanced component technologies for power generators.

For fiscal 2012, spending on steel and energy products' research and development totaled ¥1,567 million (US$16 million).

▷▷▷ **Industrial Machinery Products Business**

In the field of machinery-related products, we have been developing low-cost production technologies for high performance magnesium alloy injection molding machines, the commercialization of aluminum die-casting devices, tightlock couplers and dampers tailored to European specifications, high-precision molding technology for plastic extruders and injection molding machines, and highly functional micro-nano melt transcription molding process equipment. We have also been developing highly functional and higher performance compressors and equipment for making film, as well as systems for cutting-edge laser annealing equipment used in the production of TFT (thin-film transistor) liquid crystal displays, and other applications for laser devices.

Research and development expenses for the fiscal year under review came to ¥2,486 million (US$26 million).