



MACHINERY & ENGINEERING

Machinery & Engineering Group

Strengthening our technology capabilities to reinforce the competitiveness of the Fastening and AP businesses

The Machinery and Engineering Group contributes to the growth of the YKK Group from the aspects of both the development and manufacturing of machinery as the core of YKK Group technologies.

The YKK Group has grown globally by developing an integrated production system that encompasses materials, manufacturing facilities, and products.

The Machinery and Engineering Group supplies machinery specialized for the Fastening and AP businesses to YKK Group plants all over the world by developing materials, developing machinery and equipment, and manufacturing machinery parts.

While strengthening our elemental technology for specialized machinery, we are introducing leading technologies from other companies and institutes.

Machinery and Equipment Development Suitable for Production Sites

Development of Manufacturing Technology The Machinery and Engineering Group develops and designs specialized machinery for zipper production suited to the Fastening business plants in each country and region. It also makes the production lines and systems for Architectural Products, especially for windows.

Machinery Manufacture The manufacture and supply of machinery developed by the Manufacturing Technology Development Division helps to support the high quality and cost competitiveness of both the Fastening and AP businesses. Furthermore, the Group manufactures the molds that support this quality using a wide range of precision processing technology.



Further Engineering Development from a Mid- and Long-Term View

Development of Foundational Technology We also develop materials used in products and innovative technology for manufacturing processes. Furthermore, we are engaged in development of materials for molds, which are essential for product manufacture, development of their processing technology, and of the elemental technology needed for machinery and equipment.

Analysis & Simulation We support technological development for the YKK Group through material development and analysis essential for improving product quality, including trace components in materials and microstructures. Furthermore, we use simulation technology to forecast product capability and product quality, and develop our own systems to support improved speed in development within the business.



The YKK Group's Integrated Production System

The YKK Group implements an integrated production system for in-house development and production encompassing everything from materials to manufacturing equipment and products. The YKK Group has achieved its characteristic worldwide standardized quality through processes for the stable worldwide supply of high quality products. This involves elemental technology, such as development of various materials and processes; recycling technology suited to the environment; and even constructing logistics, sales, and manufacturing systems.



Talent Development to Support the Integrated Production System

With the advancement of automation for machinery component and mold machining, it is important to address the matter of nurturing engineers and technicians who correctly understand the underlying principles of processing and assembly so that they can correctly carry it out.

The Machinery & Engineering Group established its Gino Dojo (processing and assembly skills training center) in FY2009 to nurture fundamental knowledge and skills for processing and assembly, and is tackling *monozukuri* training. The Gino Dojo provides individual training by highly experienced and skilled instructors, mainly for new employees and young engineers and technicians. Some trainees have even gone on to become winners at the World Skills Competition. The center will continue to pass on valuable skills which have been accumulated since the company's foundation.



Teaching at the Gino Dojo

Precision Machinery Plant with Windows

The Specialized Zipper Machinery Components Plant, which began full-scale operations in Kurobe, Toyama Prefecture in April 2016, is a dedicated machinery component processing plant. It specializes in equipment and lines for the Fastening business, and operates on the concept that each employee can think independently and continue evolving. In order to be ready for the evolution of *monozukuri* in the future, and to maintain competitiveness, it is designed with a modular layout that incorporates flexibility whereby lines can be readily restructured. In addition, it is equipped with sophisticated temperature, humidity, and vibration controls to ensure stable production of precision machinery components. Furthermore, it actively incorporates natural lighting to create a better work environment for employees, making this the world's first precision machinery plant with windows.



The Slide Fastener Machine Parts Plant