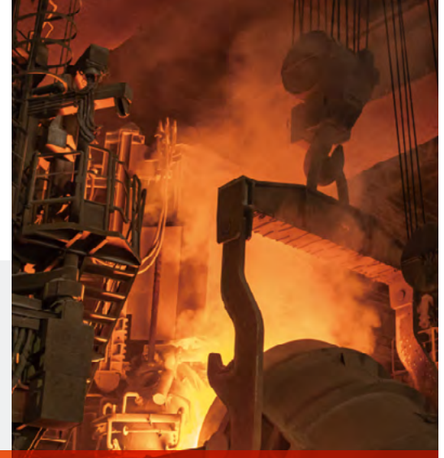
Capital to create value

Manufactured Capital



With its high strength, heat resistance, and a range of other functions and characteristics, specialty steel is one of Aichi Steel's main products, and it merges many cutting-edge technologies of the steel industry and underpins customer manufacturing and society as a material used in the core components of automotive and industrial machines. The source of this success is our manufacturing capabilities focused on high quality and low cost, fostered since the company was founded, and our production systems that enable stable, on-time delivery of products to customers around the world.

Capital expenditures
¥15.8 billion (FY2021) → ¥18.5 billion (FY2022)

Crude steel production
884 thousand tons (FY2021) → 891 thousand tons (FY2022)

Forged product production
261 thousand tons (FY2021) → 225 thousand tons (FY2022)

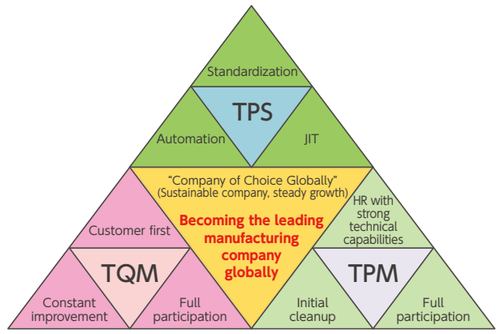
Electronic component production
36.9 million sets (FY2021) → 39.8 million sets (FY2022)

Implementation of Quality Management and Improvement of the Underlying Manufacturing Capabilities

Aichi Steel has always focused on the manufacturing capabilities of integrated forging with steel making processes, which cover everything from material design to production of steel, forged products, and electronic components. We have continued to provide our customers with highly functional and high-quality materials and parts with high strength, durability, and machinability, which are indispensable in the automotive and other industries. This stable supply of high-quality, low-cost products has been supported by the implementation of quality management and the evolution of manufacturing capabilities through the Toyota Production System (TPS), Total Quality Management (TQM), and Total Productive Maintenance (TPM). Using this as a foundation, we are working to build production systems that are resilient to changes as we face increasing uncertainty, including geopolitical risks and sharp price fluctuations.

TPS Activities

Aichi Steel is striving to improve its lean manufacturing capabilities by promoting cost reduction through thorough elimination of waste based on the two pillars of TPS: just in time and automation. Each in-house company is systematically carrying out this effort by identifying specific issues and improvement themes for cost reductions from the perspective of TPS, and incorporating these activities into the Medium-term Management Plan. We are also focusing on human resources development to put TPS into practice. Selected employees serve as TPS promotion leaders, and under the TPS trainee system, they not only learn knowledge through theoretical lectures but also conduct practical studies such as case studies to apply TPS in their workplaces. Furthermore, to develop human resources for improvement necessary for the smooth introduction of TPS to actual manufacturing sites, we are expanding position-specific education for a wider range of employees and promoting the acquisition of TPS methods required according to their roles. With these cost reduction and human resources development activities as two key elements, we are building production systems that can respond flexibly to times of rapid change.

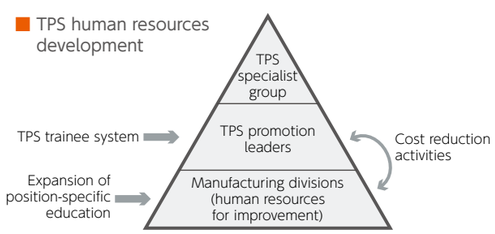


■ Improvement themes

Category	Outline of initiatives
Labor-saving	Improvement of single-person productivity per day, consolidation of equipment
Shortening of lead time	Reduction of production quantity, streamlining of production
Enhancement of production capacity	Reduction of downtime, improvement of specific consumption
Reduction of man-hours	Reduction of downtime, shortening of MCT*

* The time required to machine and assemble a single component

■ TPS human resources development

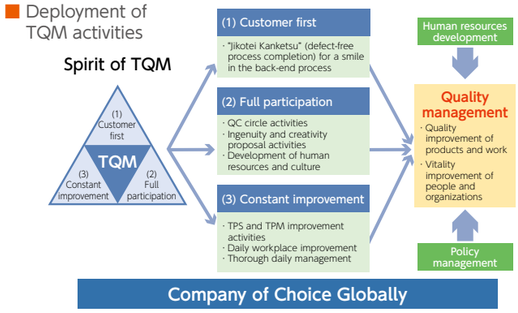


TQM activities

Implementation of quality management based on TQM

Based on the basic TQM principles of "customer first," "full participation," and "constant improvement," the Aichi Steel Group is working as one to build a flexible and resilient corporate structure through quality improvement of products and work and vitality Improvement of people and organizations.

■ Deployment of TQM activities



"Jikotei Kanketsu" with customer first

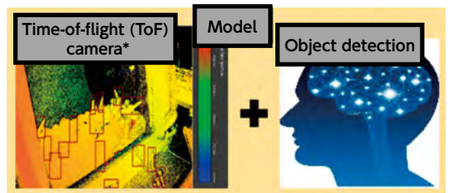
Based on the concept that quality is built in the process, which was born from Toyota Motor Corporation's manufacturing site, Aichi Steel is promoting "Jikotei Kanketsu" activities to ensure that no defective products are passed on to customers, including those in back-end processes, and that products are always delivered on time to satisfy customers. In addition to manufacturing sites, we are also expanding our activities to our administrative divisions with the aim of strengthening our competitiveness.

QC circle activities with full participation

Aichi Steel is working to establish and expand small-group QC circle activities as a means of improving operations in workplaces. We strive to develop human resources and revitalize organizations by encouraging activity teams to identify problems, clarify issues, and propose the implementation of countermeasures. In fiscal 2022, 163 teams were active in QC circle activities, and 14 cases received external awards. In addition, we are actively engaged in efforts by individuals to propose creative and innovative ideas, and in fiscal 2022, we received approximately 3,000 proposals companywide.

Constant improvement toward technological advancement

The automotive industry is undergoing a once-in-a-century revolutionary change, and the quality requirements are changing along with the shift to electrification and other changes. Aichi Steel is working to develop expert human resources capable of utilizing technologies such as IoT, big data, and AI to maintain and strengthen competitiveness while continuing to adapt to changes in quality. We are working on constant improvement by applying the results of these efforts to equipment error detection, automated inspection using image analysis, and automatic calculation of the grain shape of steel materials.



AI practice example: Remaining material detection

* A camera that measures and visualizes three-dimensional information using the time-of-flight of light

TPM Activities

With the goal of efficiently producing high-quality products, Aichi Steel is engaged in TPM activities in which all members working onsite participate in maintenance and perform planned maintenance. We aim to achieve zero failures and zero defects by analyzing production facilities, taking countermeasures, and making improvements before failures occur to transform human behavior and onsite facilities. In 2020, we relaunched TPM activities with the aim of raising the level of activities, and restarted activities involving everyone from top management to operators of manufacturing sites, with the three keywords of "full participation," "initial cleanup," and "human resources with strong technical capabilities." With operator self-maintenance as the most important activity, we have set quantitative targets for activities such as zero failures of production facilities, zero quality defects, zero occupational accidents, and productivity improvement through reduction of production losses, leading to the fostering of comfortable workplace environments. We are implementing the activities in line with the TPM Activity Master Plan formulated at the time of the relaunch, and achieving steady results, with 233 employees having acquired level 1 (top grade) self-maintenance personnel certification (acquisition rate: 17.8%) and a 15% reduction in total facility failures (compared to fiscal 2021) in fiscal 2022. Going forward, we aim to further improve our competitiveness by promoting the newly established Aichi-style TPM (data analysis, visualization, and failure reduction by making full use of DX).

■ TPM Activity Master Plan