

Manufactured Capital / Intellectual Capital

Manufactured Capital

Standardization of Manufacturing

Mabuchi Motor has pushed ahead with standardization in terms of manufacturing, and possess technologies and know-how that can be consistently implemented from die design to motor production. This is very positive in terms of delivering the value our customers demand and taking cost leadership. We receive a wide range of requests from customers, and deliver motors to meet this diversifying range of requests by driving the standardization of parts, production technology and equipment, incorporating technology and wisdom that enables us to meet the needs of multiple customers from the product design stage. The Mabuchi Group as a whole has a strong desire to improve, and we draw on the strengths of each of our bases and horizontally deploy good examples of improvement throughout the Group. In this way, we are further promoting standardization of manufacturing and strengthening our manufacturing capital.

Value Created by Labor-saving Equipment and Future Initiatives

We have pushed ahead with labor saving and automation, implementing space saving and creating production lines that continue to operate even when unmanned. When labor-saving equipment is introduced, the jobs of employees working at assembly sites change from assembly to the operation and maintenance of equipment, which has higher added value. We believe that this is an initiative that can build a win-win relationship between our company, which wishes to simultaneously increase the added value of workers and reduce production costs, and the local government and people who wish to increase the sophistication of their work and pay levels.

In the introduction of labor-saving equipment, the idea of standardization is also utilized in equipment design, and basic automated production lines that had been created by automating human movements one by one and connecting those processes together are being rebuilt with consideration for the overall optimality of processes on a zero basis, achieving flexible production response and space saving. By reducing the space required for production and increasing the production output of factories overall, we can lower costs, achieve high efficiency, and secure profits more easily. Future issues to be tackled include automating our inspection processes, which still depend heavily on human eyes and ears. R&D and rollout toward resolving these issues are progressing. In the future, we will utilize IT technology to further automate and improve efficiency, and achieve high level of production efficiency.



Evolution of Production and Development Systems in the e-MOTO Strategy

Managing Executive Officer,
Chief Technology Officer,
Head of Manufacturing Headquarters
Kazuaki MIYAJIMA

The global production structure of Mabuchi Motor ensures a coherent production process from component preparation to final product manufacturing. Each facility directly shares and manages objects and information. We achieve both cost competitiveness and high quality through a system that enables us to efficiently produce many different products by standardizing not only products but also manufacturing using highly versatile production equipment in manufacturing processes. Our people possess diverse skills and a broad range of knowledge. They are experts in their respective fields as well as in all of the functions of our Group, including product design, process design, mold design, automated machine design, and conservation of resources. This enables us to achieve continued improvement following product and component processing and manufacturing and the start of mass production. We have achieved a competitive

advantage due to our ability to flexibly respond to situations based on this foundation.

We have accelerated the development of brushless motors to provide optimal solutions that meet the true needs of the market, mainly in the 3 M fields. Moreover, guided by the e-MOTO concept, we will realize movement that our customers want by providing highly efficient rational actuators, including simplifying motor control, supply chains and structures, going beyond just motors alone. Pursuing the rationality of an actuator as a whole increases the utilization of standardized motors and also reduces the number of components. With a department specialized in control, we can improve our ability to develop software that is the core of motor control to enhance solutions for customers and markets.

It is generally believed that technologies for brush motors have already matured and there is limited room for improvement. However, we will continue to pursue the potential of brush motors and devote ourselves to developing technologies that meet market needs for brush motors, for example, by leveraging our reasonably priced quality DC brush motors for applications in which brushless motors are generally used. To enhance systems and structures, we will enhance the Group's comprehensive technological strengths by transferring functions to overseas engineers and using open innovation involving industry and academia, which has been reinforced in the last several years.

Intellectual Capital

Mabuchi's Proprietary Core Technologies

Mabuchi Motor has core technologies with many advantages, including magnetic circuit technologies, brush / commutator contacts technologies and brushless motor control circuit technologies.

Magnetic circuit technology

In particular, there are many ingenious ideas in magnetic circuit technologies. The problem of how to control the flow of magnetic force and switch it using copper wires, iron cores, and magnets is a simple one, but the deeper we dig the more discoveries we will make. Tackling this issue head-on has enabled us to accumulate various knowledge. Even with the same magnet, it is possible to create motors with different characteristics by arranging them in different ways, at different angles, and through circuit control. This magnetic circuit technology can be used not only for brush motors but also for brushless motors.

Brushless Motor Control Circuit Technology

Brushless motors do not have physical contacts, as is the case with brush-type motors, and control circuits are therefore required. We can still maximize product value for our customers by not only providing optimal control for each motor, but also enabling detailed control according to the application of use.

Brush / Commutator contact technology

For the contact between the brush and the commutator, we apply technologies that suppress the amount of sparks generated at the time of switching as much as possible and prevent parts from wearing out. This helps to increase durability, lower electrical noise, and create motors with longer service life. When EVs become more mainstream in the future, the voltage applied to motors may increase, from 12V to 48V. We can meet this challenge through the accumulation of core technologies such as these.

Gear Technology

Gear design technology is another of our strengths. We are able to maintain the same level of durability even if metal gears are replaced with other materials such as plastic, and achieve lighter weight, lower cost, quieter operation and higher efficiency.

Global R&D Activities

We engage in research and development activities not only in Japan but also in China and Europe. As a result of these activities, we are securing a competitive advantage by actively acquiring and protecting intellectual property rights from a comprehensive perspective, and linking this to increases in sales and new applications for our products. In addition, we made the procedures for acquiring intellectual property rights quick and more efficient by changing the route for applying for patents to an international one in 2022 and obtaining public opinions about the possibility of establishing rights at an early stage.

As of December 2023, the total number of industrial property rights owned by Mabuchi Motor is 793 (143 instances in Japan, 650 instances overseas), while the number of new applications is 69, including Japan and overseas. More of the patents that have been obtained recently have dealt with unit or position control in accordance with our growth strategy.

Efforts to enhance intellectual capital for providing "movement" solutions

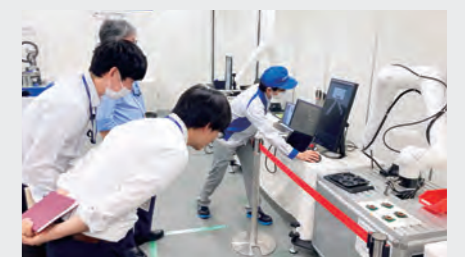
Our motors integrate all of the wide-ranging technical capabilities we have developed over the course of many years, from basic research to product development and improvement, product design, development testing, and the development of production and motor application technologies. Our motors themselves are a mass of know-how and our intellectual capital. To enhance this, we are consciously conducting technical exchanges with external parties in order to follow the rate of acceleration of technological progress in society, in addition to the core technologies cultivated through our own wisdom and ingenuity. We sometimes receive proposals from materials and equipment suppliers, etc., and we are also involved in industry-academia cooperative research.

Today, improvements in simulation technology have accelerated the pace of research and development. Also, collaboration with external parties has accelerated the resolution of technological issues. With regard to internalized manufacturing and selection of outsourcing partners, we aim to achieve efficiency by balancing concentration and selection from the viewpoints of technical value and competitive advantage.

TOPICS

The Company's Exhibition of Technologies and Products under Development

As many of our departments are carrying out research and development activities, we held a company exhibition in October 2023 so that our employees can report and share their results or the progress of their activities. At the venue of the exhibition, employees presented new proposals and perspectives. The exhibition was a useful initiative, serving as an opportunity for employees to interact aiding their future research and development activities and increasing their awareness of our technologies through these interactions.



Human Capital

Approach to Human Capital

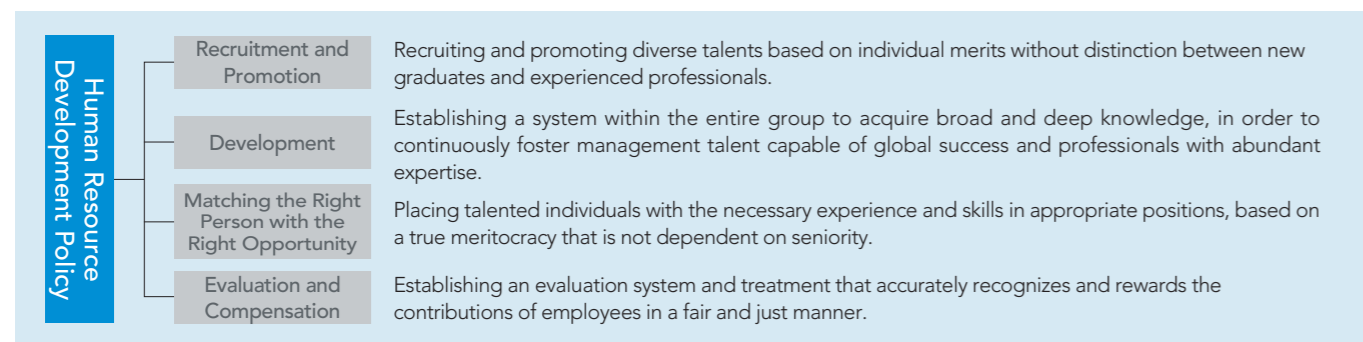
It goes without saying that the most important factor for a company to achieve sustainable growth in the global socioeconomic environment, which is changing drastically on a daily basis, is "people".

In our Management Markers, which indicate how we should realize our Management Principle of "Contributing to International Society and Continuously Increasing Our Contribution", we have defined "by placing highest value on our people, we empower and encourage them to realize their potential and contribute to society". We believe that the most important driving force for us to continue contributing to the international society through our business activities is for our employees to demonstrate their individual abilities and thoughts in their respective jobs.

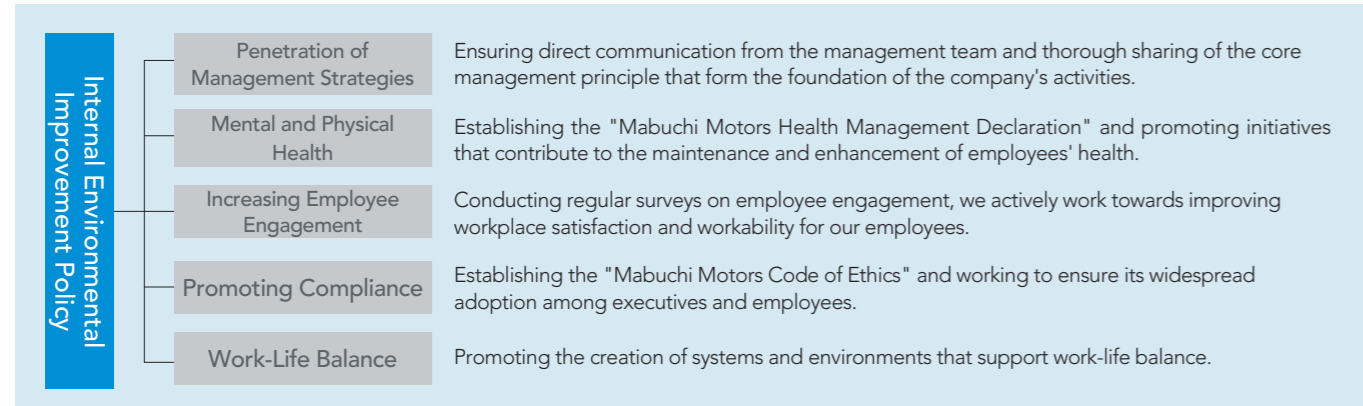
To this end, we will promote the creation of an organization in which each and every employee can play an active role while developing their own strengths and demonstrating individuality, thereby realizing our Management Principle and "continuing and expanding our contribution to the happiness of all stakeholders" as stated in our Long-term Management Policy.



Human Resource Development Policy



Internal Environmental Improvement Policy

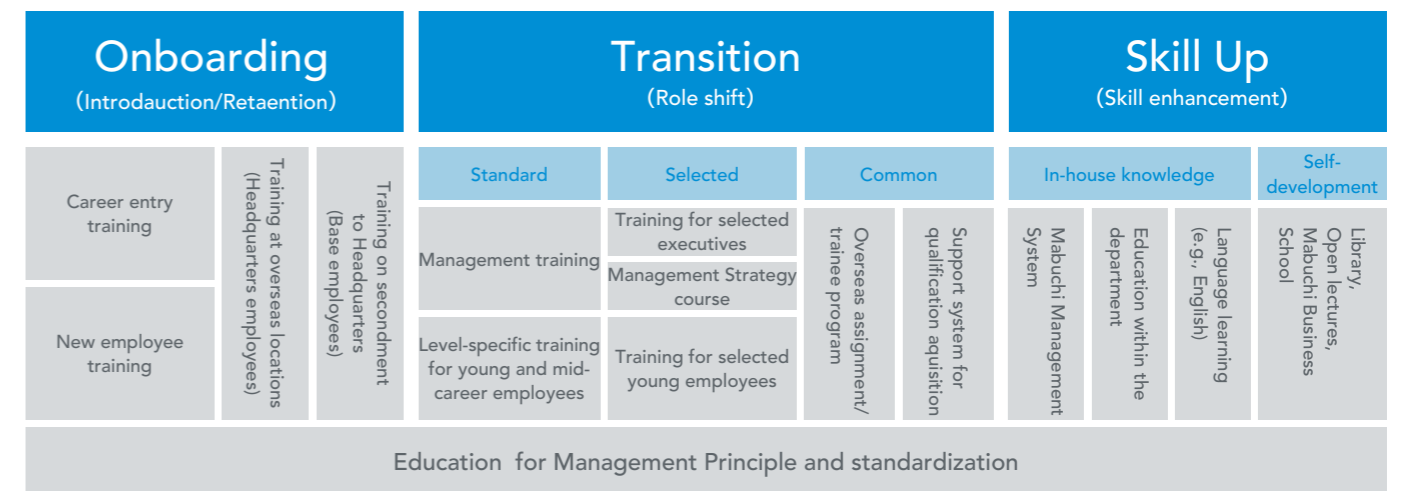


Global Talent Development Program

In our Mabuchi Global Management System, which emphasizes the robust interconnections between the bases and leverages diverse human resources, it is crucial to have an education system in place that promotes the development of local talent and facilitates the departments and bases mutual understanding of their respective responsibilities. We implement a job rotation system and conduct a global executive candidate training program to continuously cultivate management talent capable of playing an active role globally, including employees at our overseas bases.

The Mabuchi Learning Institute (MLI), which is the organization in charge of education, is the driving force behind the training based on our unique education system. We have established a system that enables the entire Mabuchi Group to obtain broad and deep knowledge by fostering a learning organizational culture and quickly developing specialists through the improvement of expertise and technology levels by utilizing a global education environment that utilizes online learning by MLI.

Education and Training System



● New employee training

Beginning with an awareness shift from student to working adult, participants gain an overview of Management Principle, organization, work, and rules, as well as basic knowledge about motors and their production. The program also includes training at overseas factories, where students experience actual production sites and enter specialized fields such as production systems and equipment.

● In-house Internship Program (Engineer)

This is a system for new hires in the technical field to experience the duties of multiple departments in the form of an in-house internship before being officially assigned to a department. This program is useful not only as an opportunity to learn technology, but also to build a network of contacts within the company.

● Education within the department

In addition to developing an educational curriculum necessary for each department to acquire specialized skills, we regularly evaluate and visualize the specialized skills possessed by employees, and implement the education necessary for career advancement based on an annual education plan, thereby realizing systematic and planned acquisition of specialized skills.

● Level-specific training for young and mid-career employees

This program is designed for participants to reconfirm their approach to work at a time when their professional skills have improved, and to gain new insights and recognize their own challenges.

● Management training

In order to pass on our Management Markers of "By placing highest value on our people, we empower and encourage them to realize their potential and contribute to society." as our DNA, we deeply discuss and put into practice the concept of subordinate development that all of our managers should share and cherish.

● Management Strategy course

We invite university professors as lecturers to hold in-house courses to help top management understand values and management principles and strengthen basic knowledge about management. We nurture future management leaders who can independently identify issues, find solutions to issues, and move people and organizations to solve problems.

Human Resources Exchanges That Support the Mabuchi Global Management System

To enable young employees to learn to work efficiently at sites, we have a trainee system. Employees work overseas as trainees for six months to a year to experience how overseas sites carry out business. There is also a trainee system for overseas base employees that allows them to work at the Headquarters. We interviewed an employee of Thailand Mabuchi who came to Japan to work at Headquarters from April to October 2023.



From Thailand Mabuchi to the Headquarters

Since joining Thailand Mabuchi in 2019, I have worked in the sales department. I have accumulated multifaceted experience including management skills to energize the base as well as sales and marketing skills. While participating in the trainee system, I was engaged in customer support for automotive products from April to October 2023. Having worked at Headquarters, I was deeply inspired by our management plan/strategy and administrative systems, understood the perspective of the staff at Headquarters and their workstyles, and achieved a good balance between the perspectives of sales base and Headquarters. I realized that the global personnel exchange including the trainee system resulted in a sense of unity and shared values across the facilities in the Group.

Human Capital

Creating an organization that makes the most of diverse human resources

Diversity and Inclusion



The goal of our diversity and inclusion initiatives is to ensure that all of our employees, regardless of nationality, age, gender or other factors, have a global mindset and leverage their individuality to generate new value. Since our first overseas expansion in 1964, our long history of doing business globally has meant that our approach to employment has always been flexible, fair, and equitable. In recent years, we have placed even greater emphasis on this stance, proactively recruiting and promoting individuals who share our Management Principle, regardless of age, gender or nationality. By encouraging diverse talent to compete and collaborate, we aim to stimulate the creation of new value. Furthermore, we take a proactive approach to the creation of a workplace that respects diverse work styles, enabling each individual to achieve self-actualization, personal growth and fulfillment. We will continue to aim to build a truly global professional environment, where Mabuchi Group employees can further their careers without being constrained by geographic boundaries.

Systems Supporting Diverse Work Styles

At Mabuchi Motor, we offer a range of options for work styles, encouraging our employees to choose the one that suits them best. By doing this, we aim to improve overall productivity and create added value throughout the company. We ensure that our policies and work environments accommodate diverse lifestyles and support our employees' balancing of work and their personal lives.

- Parental leave (until the child is 3years old) / Nursing leave (365 days)
- Support for professional development during nursing leave and parental leave
- Spouse leave for childbirth (5 days of special leaves)
- Short working hours and exemption from overtime work for parental and nursing leave
- Flextime System (without core time) and Discretionary Labor System introduced
- Promote remote work



Systems to Support the Success of Diverse Human Resources

In order to make the most of the abilities of our diverse human resources, we support the self-realization and personal growth of our employees and promote the creation of a workplace where each employee can develop his or her own strengths and demonstrate his or her individuality.

- **Transfer request system**
The goal of this system is to confirm the intention of employees to ensure the right employee is given the right job. Using the system, employees can voice their opinions about their career development independently at any time, including requesting to be transferred to another department.
- **Multilayer personnel system**
In order to create an environment in which employees can develop their careers according to their aptitudes and desires, we have a system in which careers are divided into managerial and professional positions at the upper levels of qualification grades.
- **Side job licensing system**
If you meet the prescribed conditions, you are allowed to work a second job. Side hustles provide opportunities to gain a wide range of skills and experience and broaden one's horizons.
- **Correspondence courses**
A selective correspondence course system is in place, and the company will subsidize the course fee if certain criteria are met.
- **Support for English language learning**
We try to create the culture that encourages employees to learn foreign languages including English so that they can contribute to the international community. Specifically, we provide them with English learning tools and hold TOEIC tests internally twice a year so that they can check their English proficiency.
- **Qualification Incentive System**
We are promoting employees' self-development by establishing the Qualification Incentive System with a view to creating a self-learning atmosphere in the company and encouraging employees to acquire a wide range of knowledge useful for business operations.

Fair and Equitable Evaluation System

The basic philosophy of our human resources system is fairness and equity. Regardless of length of service with the company, age, gender or nationality, we aim to promote and appoint employees based on their abilities and the expertise that is required for their roles and responsibilities. This is based on the principle of matching the right person with the right opportunity. We ensure fair and equitable evaluations and rewards according to the employee's role, performance and duties.

Specifically, the system clarifies roles and responsibilities in their job description for determining compensation. It was first introduced for people in managerial positions in 2020, and general employees were included in 2024.

We have also put in place a number of other systems to properly identify the contributions of each individual employee across the company's many different job roles. These systems are more than just management tools, serving to underpin talent development.

- **Job-type personnel system (for managerial positions)**
The job grades (JGs) of managerial and specialist positions are decided according to the scale of roles and duties, and remuneration is decided according to the JG and the result achieved, without depending on individual elements such as age or length of service.
- **Job-type personnel system (for general jobs)**
Based on the job-type personnel system for managerial positions, the system values personnel development over a certain period of time after joining the Company, considering differences between managerial and general positions. The goal of the system is to more closely connect roles and remuneration as employees accumulate experience and are assigned to higher positions.
- **Trust-type stock issuance plan for management-level employees**
In addition to regular salaries and bonuses, we have introduced an incentive program for management-level employees that allows them to receive shares in the Company as compensation. The value of the shares received increases as the stock price rises, allowing employees to work with a high level of motivation to contribute, and the Company and employees work together to increase the value of the Company.
- **Point-based retirement benefit system**
Retirement points are awarded annually based on roles and evaluations. Annual contributions and results are directly reflected in retirement benefits.

Improving Employee Engagement

Improving employee engagement is vital in the sustainable growth of corporations. We implement employee engagement surveys regularly. The results of the surveys are reported to the Board of Directors and the Executive Committee, and we analyze the results of the surveys and identify issues. We are also working on developing human resources strategies that reflect our analysis of the survey data (the strengths and challenges identified by the surveys).

The survey in July 2023 collected responses from about 95% of the employees. It revealed that while employees were highly satisfied with the discretion they were allowed and with their pay, we recognized that there was still room for improvement in the items related to validity of employee commendations. Based on the results, we reviewed the system for employee commendation that is conducted every January. We revised the system to select winners based on more objective criteria to increase the validity of employee commendations. Additionally, we informed all employees that the company would appreciate initiatives in addition to achievements to reform employee awareness.

We will continue to conduct surveys on an ongoing basis to understand and analyze employee engagement and strengthen our efforts to improve employee job satisfaction and work-life balance.

Employees opinions about Mabuchi-ness and its positive qualities

Celebrating the 70th anniversary of the founding of Mabuchi Motor in January 2024, we conducted a questionnaire to ask employees about Mabuchi-ness and Mabuchi's positive qualities. We received positive feedback from many respondents who said that the beauty of Mabuchi was its comprehensive development capabilities in the process from the creation of a standardization strategy and molds to products. They said that many of the staff members were sincere, kind, and honest. They also said the power of unity and the potential of employees in a critical moment and the peaceful atmosphere where employees can easily share opinions and propose ideas were a part of the beauty of Mabuchi. The survey results were shared internally through the in-house newsletter, helping us again recognize our strengths and Mabuchi-ness as we reach our milestone 70th anniversary.

