

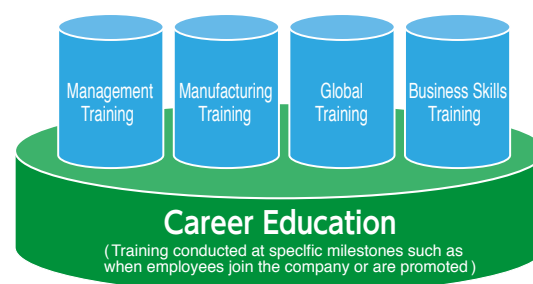
## Human Resource Development

At NGK, people are our most precious management resource. With respect for employee motivation and ambition, we engage in the cultivation of human resources who will lead the next generation. In recent years, NGK has concentrated efforts on the enhancement of training to develop future leaders to take management positions as well as global talented staff to support our overseas business expansion.

In fiscal 2016, we held training programs to develop future executives and future managers.

NGK's global business development has been accelerating every year. For the first time, we had over 100 participants in our global seminar, which aims to develop global talented staff.

Promoting Human Resource Cultivation through the Establishment of Systems in Four Areas



### Promoting Systematic Education through Nearly 120 Programs

NGK is engaged in systematic human resources training covering the four areas based on training conducted at each juncture of an employee's career, such as when joining the company or receiving a promotion. Other than compulsory position-based training, we conduct functional training, offering approximately 120 types of programs throughout the year. NGK conducts management training, including management foundational training targeting newly appointed Group managers, which we are expanding to include younger key personal. Manufacturing training covers categories including worksite capability enhancement and supervisor training, while training for younger employees continued to focus on materials, forming, processing, drying, firing and other ceramics manufacturing fundamentals. Global training includes mindset such as cross-cultural communication, presentation skills, business skills such as international law and labor management, health and safety management, and compliance related education. Foreign language training for various languages is also provided.

Business skills training is provided as a program aimed at enhancing the skills of all our employees. We are engaged in planning optimized training in consideration of not only company needs but also employees' business needs.

#### Training Participant Summary (total participants)

	FY2013	FY2014	FY2015	FY2016
Key personal Men	927	960	876	903
Key personal Women	37	30	16	30
General employees Men	2,779	2,752	2,775	2,697
General employees Women	308	302	321	372
Men (total)	3,706	3,712	3,651	3,600
Women (total)	345	332	337	402

#### Average time spent in training annually per employee

	FY2013	FY2014	FY2015	FY2016
Men	28	22	21.8	25.5
Women	15	14	15.4	20.3
key personal	18	15	15.3	13.1
General employees	28	23	22.5	28.8

#### Average annual cost of training per full-time employee (¥10 thousand)

	FY2012	FY2013	FY2014	FY2015	FY2016
Average expenses	11	11	11	7.8	7

\* With the salary one month after the end of the sixth month

# FY2016 Training Scheme

<b>Management</b>	Management 2 Management 3 / e-learning Global leadership Motivation management Total quality management Accounting Management 4	Business leader III Business leader II	Basic Management P Follow-up for supervisors	Risk prevention II Quality management Cost management Quality control II Quality control I Data analysis	Plant managers Managers Instructors Worksite capability leaders section chiefs worksite leaders Follow of trainees	Practical overseas training English	Innovation III Innovation I, II	Business writing in English (Basic, intermediate, practical) Basic Business English, Presentation skills in English	R business skills SPO logical presentation	All divisions Senior manager development Management Quality, Cost Manufacturing Worksite capabilities Introduction Global seminar Idea generation English Other	Career education Management training Manufacturing training Global training Business skill training
<b>S</b>	Cross-cultural communication Innovation Logical thinking III S	Business leader I Leadership	Leadership	Quality control II Quality control I Q	Quality control I Quality control II Basic quality I Basic quality II Basic quality III P P/Q	English	Innovation I, II Innovation III	Business writing in English (Basic, intermediate, practical) Basic Business English, Presentation skills in English	R business skills SPO logical presentation	All divisions Senior manager development Management Quality, Cost Manufacturing Worksite capabilities Introduction Global seminar Idea generation English Other	Career education Management training Manufacturing training Global training Business skill training
<b>PQR</b>	Logical thinking II P Follow-up Q4 Q Q5 R3 R4	Business leader I Leadership	Leadership	Quality control II Quality control I Q	Quality control I Quality control II Basic quality I Basic quality II Basic quality III P P/Q	English	Innovation I, II Innovation III	Business writing in English (Basic, intermediate, practical) Basic Business English, Presentation skills in English	R business skills SPO logical presentation	All divisions Senior manager development Management Quality, Cost Manufacturing Worksite capabilities Introduction Global seminar Idea generation English Other	Career education Management training Manufacturing training Global training Business skill training
<b>New hire</b>	Logical thinking I Global mindset Introduction	Business leader I Leadership	Leadership	Quality control II Quality control I Q	Quality control I Quality control II Basic quality I Basic quality II Basic quality III P P/Q	English	Innovation I, II Innovation III	Business writing in English (Basic, intermediate, practical) Basic Business English, Presentation skills in English	R business skills SPO logical presentation	All divisions Senior manager development Management Quality, Cost Manufacturing Worksite capabilities Introduction Global seminar Idea generation English Other	Career education Management training Manufacturing training Global training Business skill training

- Legends
- Selecting trainees based on employment status such as new hires, promotion, and service years (Position-based training)
  - Selecting trainees based on job title and position
  - Selecting trainees by picking out or needs

※P : Young career-track Q : Technical jobs R : General employment jobs

## Quality Improvement Training for manufacturing

In line with a younger workforce and an increase in mid-career hires coming from a variety of backgrounds, it is necessary to create training programs that cover a variety of needs. Given these conditions, we provide quality improvement training for employees in manufacturing divisions in four classes based on the skills and experience of the participants. The trainees learn and try practical exercise based on their level of understanding and type of job.

Business skills training is provided as a program aimed at enhancing the skills of all our employees. We are engaged in planning optimized training in consideration of not only company needs but also employees' business needs.

## Measuring Human Resource Development Achievements Using Quantitative Indices

We introduced quantitative indices to objectively evaluate the results of human resource development. We aim to accelerate employee skills development by making use of these objective evaluations.

## Onsite Leader Human Resource Development

As veteran employees retire in large numbers, the ratio of employees with limited experience is increasing at manufacturing sites. The NGK Group is systematically promoting training aimed at strengthening worksite capabilities.

### Progress of Training Aimed at Strengthening Worksite Capabilities

**Fiscal 2011** NGK began training to develop in-house instructors with the aim of educating human resources able to lead the manufacturing divisions. Three courses, the longest of which was 18 days in duration, were held on low-cost management and set-up improvement guidance.

**Fiscal 2013** 12 employees who completed leader training attended. In addition to the 13 employees already trained, bringing the total number of instructors to 25.

**Fiscal 2014** We held training to brush up skills of trained instructors. As of fiscal 2013, a total of 21 employees had participated in instructor development training. To further enhance skills, improvement activity examples were shared and examples from all plants were collected to create in-house case studies.

**Fiscal 2015** Employees who had completed in-house instructor development training served as lecturers and taught methods for reducing and improving manufacturing cost using case studies. The contents of training programs were formulated by the instructors in charge of each program, and they incorporated their worksite experiences as instructors.

**Fiscal 2016** The content of leader training for worksite capabilities was revised by the in-house instructors to enhance individual guidance. The revised textbooks are also shared with Group companies.

Furthermore, in fiscal 2011, NGK began training for all manufacturing site worksite leaders aimed at improving the leadership qualities and communication skills of on-site leaders that guide and cultivate younger employees. In fiscal 2016, 29 newly appointed worksite leaders underwent training on labor management and recognition of the role of the worksite leader. We evaluate effects of the improvements made through the training in financial terms by converting them into specific monetary values.

### Number of Participants in Quality Improvement Related Training in FY2016

Leader training for worksite capability enhancement	13
Leader training for worksite capability enhancement at Ishikawa Plant	8
Follow-up training for worksite capability enhancement	61
Instructor development training for worksite capability enhancement	0
Instructor brush-up training for worksite capability enhancement	12
Worksite IE basic	13
Quality control I	20
Quality control II	86

### Quantitative Indicators to Measure the Outcomes of Human Resources Development

- Implementing assessments of understanding and satisfaction level after training using post-training surveys
- Checking the achievement level by the TOEIC test and instructors (native speakers of the target language)
- Tests during and after the training
- Calculated cost of loss
- Evaluation scores by judges etc.

### FY 2016 Training Results

Leader training for worksite capabilities: 18 days	13 completed
Brush-up training: 2 days	12 completed
Worksite leader training: 2.5 days	29 completed
Financial effects of the improvements through the training (Total amount)	10.47 million yen
Financial effects of the improvements per person	0.81 million yen

## Voice of an In-House Instructor

### Encouraging and Developing Young Employees

Manufacturing Section, Insulator Division, Power Business Group  
In-House Instructor

#### Masato Sujino

As global competition intensifies, we urgently need to develop human resources at overseas factories. Accordingly, in-house instructors are taking innovative measures by introducing various mechanisms to develop talented young workers within the context of the daily work environment.

During training and education, I focus on encouraging each employee to take the initiative and on introducing trainees to the joy of work and collaboration with their colleagues. I strive to give trainees a sense of joy and accomplishment at the end of the program.



### English Instruction for New Employees

With the aim of rapidly cultivating global human resources, we began English language instruction in fiscal 2011 targeting all new hires in general positions.

The training is provided for one year, consisting of foundation development training led by Japanese instructors and training to develop practical business skills led by native speakers according to the individual achievement levels. In addition, teams are formed with trainees of different levels of ability in an attempt to enhance capabilities through mutual encouragement.

Moreover, in order to reinforce employees' awareness of globalization and to raise their motivation, we also provide global mindset training and personal counseling. Through these measures, we encourage employees' self-driven initiatives. In fiscal 2016, we also provided guidance on effective learning methods at the beginning of training to increase trainees' motivation to learn.

Time spent Learning English  
per employment new hire  
(fiscal 2016 results)

**128** hours per year

### Practical Overseas Training

NGK conducts overseas practical training over a period of six months at global Group companies with the aim of developing global human resources. The training focuses on developing practical business and communication skills in a cross-cultural environment targeting young employees who are future candidates for overseas postings.