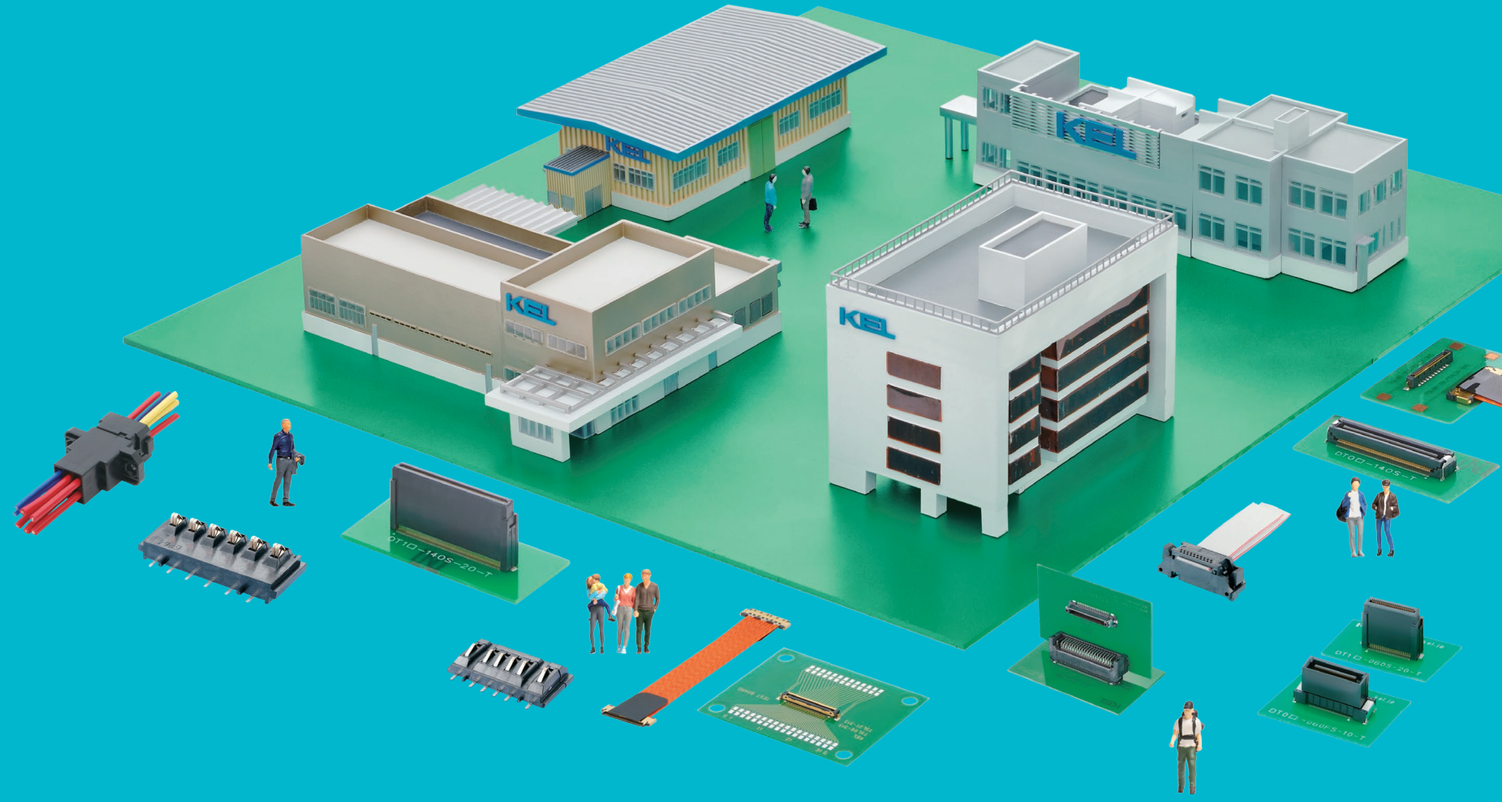
Company profile



KEL

www.kel.jp

6-17-7 Nagayama, Tama-shi, Tokyo 206-0025, Japan
Tel: +81-42-374-5800

Connect, expand, fulfil.

Connecting makes ideas come true.

KEL is a specialist connector manufacturer founded in 1962.
As a key part of electronic devices,
KEL connectors play an integral role in vast markets
ranging from industrial equipment to medical devices,
communications infrastructure, and automobiles,
and their scope continues to expand.
Our mission is to bring people's
ideals and ideas to life through connectors
and fulfil their dreams of a better future.

Company Profile

Trade Name	KEL Corporation
Founded	July 23, 1962
Capital	1,617 million yen
Business Purpose	The manufacture, sale, and import/export of electric machinery/appliances, precision machinery/appliances, synthetic resin products, chemical products, metal industrial products, and miscellaneous goods, and other incidental business

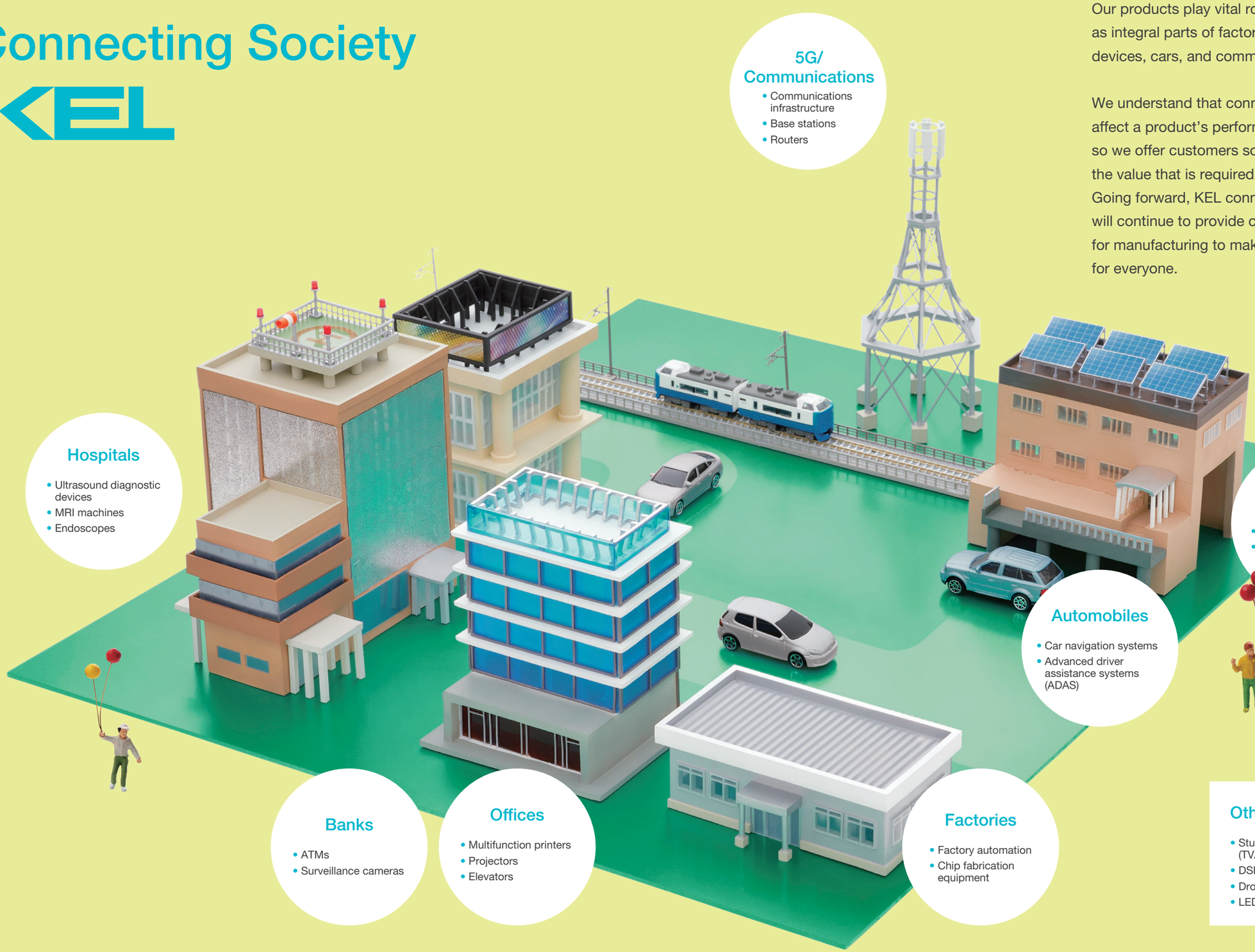
BUSINESS DOMAIN

Connecting Society

KEL

KEL products have been progressively refined to meet customers' diverse needs. Our products play vital roles in society as integral parts of factory equipment, medical devices, cars, and communications infrastructure.

We understand that connector technology can greatly affect a product's performance, so we offer customers solutions that provide the value that is required in this age. Going forward, KEL connector solutions will continue to provide critical components for manufacturing to make society a better place for everyone.



5G/ Communications

- Communications infrastructure
- Base stations
- Routers

Hospitals

- Ultrasound diagnostic devices
- MRI machines
- Endoscopes

Rail

- High-speed trains
- Automatic ticket gates

Automobiles

- Car navigation systems
- Advanced driver assistance systems (ADAS)

Banks

- ATMs
- Surveillance cameras

Offices

- Multifunction printers
- Projectors
- Elevators

Factories

- Factory automation
- Chip fabrication equipment

Other Uses

- Studio & broadcast cameras (TV/cinema)
- DSLRs
- Drones
- LED video walls

STRENGTHS

Making Products Better by Making Things Possible

At KEL, we do our best to make connector development and manufacturing exciting, enjoyable, and interesting.
Every step of production, from the initial consultation through to planning, design, parts manufacturing, assembly, and quality checks,
is completed in-house with robust collaboration between each department.
KEL engineers proactively attend meetings with customers,
and the Quality Assurance Department checks products during the design stage.
In this environment, we engage with our customers and work to produce products that solve their problems.


Plating Area


Fully Automated Production Line


Inspection Area


Environmental Testing Center

Connector Production Process

and the Quality Assurance Department verifies products at the design stage.

Sales × Eng From Consultation to Manufacturing

KEL designs and produces samples based on your requirements, and incorporates your feedback in the adjustment and verification process to prepare for mass production.

Consultation

Our sales representatives will note your required specifications, budget, and schedule. Feel free to specify your requirements down to the tiniest detail: e.g., “As small as possible,” or “Easy to install (in your product).” This will enable us to offer a more optimal proposal.

Design/ Verification

At our Environmental Testing Center at KEL Headquarters, to verify product performance, we conduct electromagnetic field analysis with Ansys HFSS and Dassault CST, run thermal shock tests to examine deformation under changing temperatures, and perform gas corrosion testing to verify plating durability. Before beginning mass production, the specifications are checked by the Quality Assurance Department.

Sample Production

On the right is the finished product, and on the left is a 3D-printed sample. ▼

We can produce samples based on proposals. After consultation, we 3D-print the design you envisage. If you commission the product, we continue with development, making molds in the prototyping and mass production stages to verify the completed samples as we proceed.

Product Development

Product development is handled by two teams. One team is assigned to develop the product, and the other provides support by performing evaluations and managing testing facilities. We have created a system to consistently produce high-quality products, which includes in-house training to improve our engineers’ development skills.

MFG × QA Mass Production & Quality Control

Pressing & Plating (Contacts)

In the pressing stage, thin coiled copper alloy sheet is cut, bent, and forged with dies to form contact terminals. The terminals are then coated with highly precise gold plating in the necessary areas with proprietary KEL plating equipment and jigs.

Molding (Insulators)

Our molding machines range in tonnage from 18 to 80 tonnes, allowing the production of everything from narrow-pitch to large insulators. To save energy, both fully motorized and hybrid machinery are used.

Assembly

All stages from component supply through assembly, inspection, and packing are completed with cutting-edge equipment.

Inspection

The assembly facilities include image inspection devices, which enable product quality to be maintained without a separate inspection step.

Shipping

The manufactured products are stored at KEL warehouses in Japan or abroad, and shipped in accordance with your deadlines. Products are systematically managed in logistics warehouses to ensure that they are delivered safely and accurately.

Delivery

After delivery, consultations are held to improve product quality even further.

ADVANTAGE

01

Materialize your vision

EFFECTIVE PROPOSALS

KEL's Sales Department offers proposals that meet customer's needs by collaborating with other departments to provide tailored solutions.

Flexible, Inter-departmental Consultation

Consultations are quick and efficient thanks to close cooperation between the Sales, Engineering, Manufacturing, and Quality Control departments. We are ready to meet your every need, from producing samples and small lots, to customized products and bespoke niche items. Our manufacturing infrastructure enables us to immediately respond to the smallest of demands.

Joint Development with Knowledgeable Sales Representatives

The Sales Department attends medical society lectures and seminars held by the Engineering Department to stay well-versed in specialized connector technology and our customers' own products. This daily pursuit of knowledge enables them to provide customers with sound consultation and grasp exactly what the market is asking for. KEL always aims to provide proposals from the customer's own perspective, and works to develop new products collaboratively.

Comprehensive Proposals that Leverage Strengths

Besides our connector business, we produce harnesses using a variety of cables, and have over 40 years' experience manufacturing racks. These enable us to combine and leverage each department's strengths to offer comprehensive proposals, tailored to customers' products and needs, and provide new products with high added value.

ADVANTAGE

02

Connector tech for the future

MANUFACTURING EXPERTISE

The experienced Engineering Department participates from the planning stage to deliver product proposals and R&D that go beyond customers' needs.

Early Engineering Department Participation

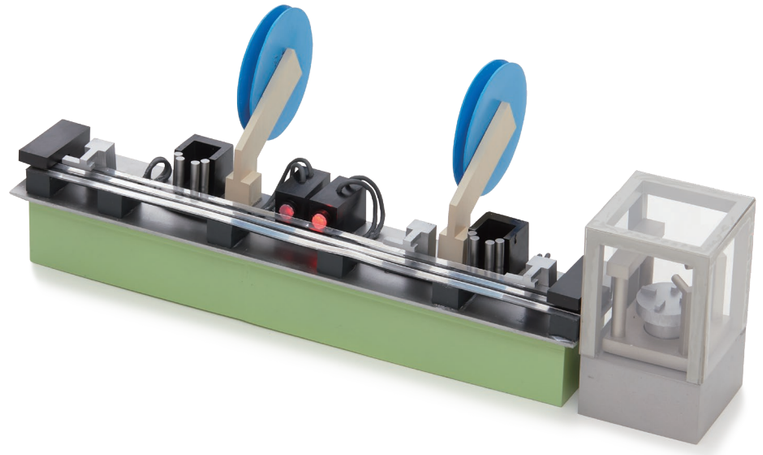
From planning to design and verification, sample production, and preparation for mass production, our Engineering Department participates in every step until completion to ensure that product specifications exceed customers' requirements. Moreover, KEL engineers proactively visit customers' businesses to ensure that proposals grasp what is required and go a step further.

Pursuit of Sophistication and Miniaturization

We actively invest management resources in cutting-edge R&D in pursuit of greater sophistication and miniaturization. This has enabled us to swiftly respond to the market's ever-changing needs and produce the state-of-the-art connectors required by the electronics industry. KEL engineers can begin development based on customer's needs in a timely manner as the R&D facilities are located at the company headquarters.

Strong Demand Abroad

KEL technology is attracting global attention. Our connectors, which are essential in state-of-the-art automotive development and user-friendly designs that reflect customers' needs, are highly regarded overseas. Going forward, we will continue to create products in demand worldwide by applying our unique technical R&D expertise.



ADVANTAGE

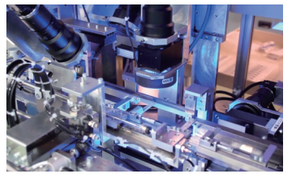
03 STABLE PRODUCTION

The result of reliable technology

The Manufacturing Department plays a central role at KEL production sites, earnestly confronting the ever-diversifying range of connectors with technology backed by experience.

A Production Systems that Meets Customers' Needs

Thanks to our flexible-capacity integrated production infrastructure, we can supply products in step with customers' preferred development and production schedules while constantly putting quality first. This stable infrastructure is made possible by strict adherence to production manuals and the application of technology backed by experience.

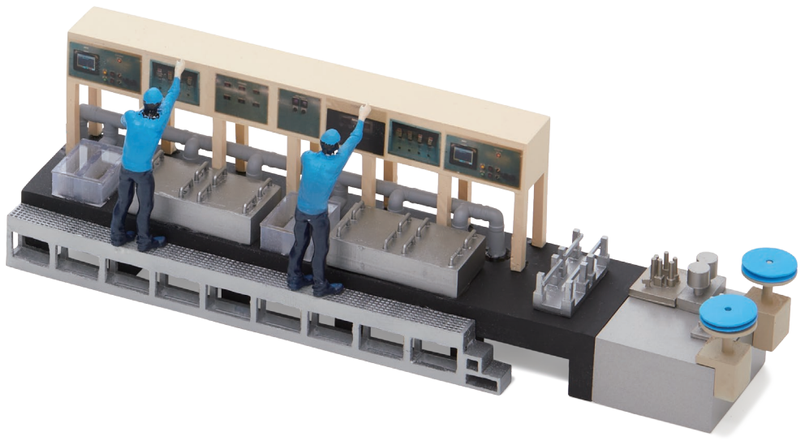


Responding to Diversifying Demand

To flexibly accommodate customers' required specifications and functions, we have established an automated multipurpose production line that can meet demand for high-mix low-volume production, including special orders. We also emphasize improving employees skills to handle assembling a wide variety of products, and have accumulated a wealth of proprietary technical expertise that enables us to achieve exceptional production quality with products that are difficult to assemble.

Domestic Production Sites

We have two factories in Yamanashi Prefecture (one handles manufacturing and assembly, and the other, parts processing), and another in Nagano Prefecture, which enable us to flexibly meet customer demand without delay. High product quality is also achieved through close collaboration with other departments in every step from production process setup to product delivery. The Manufacturing Department plays a central role at KEL production sites and is ready to meet any possible need.



ADVANTAGE

04 RELIABLE QUALITY

A trusted partner

KEL is proud to offer dependable, high-quality products thanks to the unshakable reliability conferred by its quality control systems.

Uncompromising Quality Control

Connection reliability, our greatest focus, is achieved with rigorous quality control. We have established a management infrastructure based on a deep understanding of products developed through decades of experience, and operate a total quality control system covering everything down to post-delivery quality records. This diligent, serious posture underlying all aspects of production is reflected in KEL products' "plain, robust excellence."

Quality Assurance Based on Global Standards

KEL is certified under ISO 9001 (quality management systems), ISO 14001 (environmental management systems), and IATF 16949 (automotive quality management systems). Quality control is implemented based on these standards in every step from development to delivery. From bespoke orders to mass production, KEL is able to always provide the very highest level of quality.

Transparent Feedback

All departments share quantified customer sales records to identify issues and hammer out solutions. Punctuality and cost advantage are assessed along with quality and other factors to ensure that departments have a comprehensive understanding of what is required, even if they are not in direct communication with the customer. This helps to improve overall awareness and deliver high quality even more reliably.

SUSTAINABILITY

KEL is committed to achieving a sustainable society as
a global connector manufacturer with customers around the world.

SUSTAINABLE VISION

KEL Corporation will

“contribute to an abundant, sustainable society with connector technology.”

KEL’s management vision is to “Be a company that can contribute to the world as a maker of connectors.”
We strive to grow sustainably and achieve a sustainable society, giving consideration to the environment, society, and governance while helping people to live abundant, convenient, and comfortable lives.

ENVIRONMENT Environmental Initiatives

Materiality Topic

Climate action, including resource recycling and nature conservation

Efforts

Climate action	Recycling/ nature conservation

SOCIETY Social/Workforce Initiatives

Materiality Topic 01 **Building an organization that ensures the well-being of its diverse workforce**

Efforts

Well-being/diverse workforce

Materiality Topic 02 **Business efforts to solve social problems**

Efforts

Safe and comfortable local communities
Making products to support lives globally

GOVERNANCE Corporate Governance Initiatives

Materiality Topic **Strengthening governance to increase quality, safety, and customer satisfaction**

Efforts

Governance	Communication with stakeholders

History & Network

History

1962 KEL Corporation founded in Shibuya City, Tokyo

Began manufacturing **printed circuit boards and circuit board connectors**

1964 Manufactured **Japan's first** molds for **cross-shaped connector contacts** in preparation for domestic production

1967 Relocated and integrated factory and headquarters in Shinagawa City, Tokyo

Developed **KEL RACK**

1972 Opened Osaka Branch Office

1975 Opened Nagoya Branch Office

1976 Commercialized **IC connectors**

1980 Opened Utsunomiya Branch Office

1981 Commercialized **optical fiber connectors**

1982 Commenced operations at Yamanashi Factory (now Minami-Alps Factory)

1984 Commercialized **half-pitch connectors**

1987 Relocated headquarters to Tama City, Tokyo

1988 Opened Mito Branch Office

1989 Opened U.S. Representative Office (KEL Connectors, Incorporated)

1990 Listed as an OTC stock (now on the TSE Standard Market Index)

Parts processing line completed at Yamanashi Factory (now Minami-Alps Factory)

1992 Began operations at Nagano Factory

1994 Commercialized **battery connectors**

1996 **Obtained ISO 9001 certification**

1998 Commercialized **micro coaxial cable connectors**

1999 Commercialized **smart card connectors**

2002 **Obtained ISO 14001 certification**

Built and began operating Environmental Testing Center

2004 Established KEL Taiwan Co., Ltd. in Taiwan

2005 Commercialized **floating connectors**

2008 Established KEL (Shanghai) Corporation in China

2009 Commercialized **crimp connectors**

2010 Received JSA award for long registration of a management system

2012 Celebrated 50th founding anniversary

2013 Began operations at Yamanashi Factory

2015 **Obtained ISO/TS 16949 certification (the automotive quality management system standard, now IATF 16949)**

2017 Established KEL Europe GmbH in Germany

Established KEL Electronics (Hong Kong) Limited in Hong Kong

Expanded clean area at Yamanashi Factory

2018 Commercialized **waterproof crimp connectors**

2022 Installed new clean booth at Nagano Factory

Network

Branch Offices

Headquarters
6-17-7 Nagayama, Tama-shi, Tokyo 206-0025, Japan
Tel: +81-42-374-5800 Fax: +81-42-374-5887

Mito Branch Office
3600-35 Higashiishikawa, Hitachinaka-shi, Ibaraki Prefecture 312-0052, Japan
Tel: +81-29-274-9001 Fax: +81-29-274-9005

Utsunomiya Branch Office
9F, Imon Utsunomiya Building, 2-3-1 Odori, Utsunomiya-shi, Tochigi Prefecture 320-0811, Japan
Tel: +81-28-610-7271 Fax: +81-28-634-9151

Nagoya Branch Office
7F, Marunouchi Sanchome Building, 3-14-32 Marunouchi, Naka-ku, Nagoya-shi, Aichi Prefecture 460-0002, Japan
Tel: +81-52-209-8655 Fax: +81-052-203-8610

Osaka Branch Office
9F, Shin-Osaka Meiko Building, 4-3-12 Miyahara, Yodogawa-ku, Osaka-shi, Osaka 532-0003, Japan
Tel: +81-6-6150-8111 Fax: +81-6-6150-8801

Production Sites

Yamanashi Factory IATF Certified
1-1 Otsuka, Ichikawamisato-cho, Nishiyatsushiro-shi, Yamanashi Prefecture 409-3611, Japan
Tel: +81-55-225-5611

Nagano Factory
1400-5 Nakau, Ikeda-cho, Kitaazumi-gun, Nagano Prefecture 399-8603, Japan
Tel: +81-261-62-6511

Minami-Alps Factory
454-1 Miyazawa, Minami-Alps-shi, Yamanashi Prefecture 400-0415, Japan
Tel: +81-55-283-5121 Fax: +81-55-283-5120

Representative Office

U.S. Representative Office KEL Connectors, Incorporated
830 Stewart Drive, #179, Sunnyvale, CA 94085-4513, U.S.A.
Tel: +1-408-720-9044 Fax: +1-408-720-1989

Overseas Subsidiaries

KEL Taiwan Co., Ltd.
2F, Building A006 No.1 Weiwang St. Shulin Dist., New Taipei City 238032, Taiwan
Tel: +886-2-8686-9200 Fax: +866-2-8686-6925

KEL (Shanghai) Corporation
Room 1203, Zhaofeng Plaza, 1027 Changning Rd., Changning Dist., Shanghai 200050, P.R. China
Tel: +86-21-64400051 Fax: +86-21-64400053

KEL Electronics (Hong Kong) Limited
Room1805, 18/F, 1Hung To Road, Kowloon, Hong Kong
Tel: +852-35905813 Fax: +852-35909059

KEL Europe GmbH
Am Seestern 4, 40547 Düsseldorf, Germany
Tel: +49-211-542368-0