







1 KEL COMPANY PRO



#### **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.

#### **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



On the right is the finished product,

to install (in your product)." This will enable us to offer a more optimal proposal



#### **Sample Production**

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.

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.



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.











Nagano Factory

Plating Area

Fully Automated Production Line

Inspection Area

**Environmental Testing Center** 

#### 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.



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



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



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.

KEL COMPANY PROFILE

#### **ADVANTAGE**



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**



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**

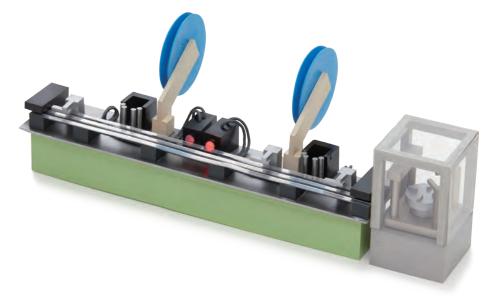
We actively invest management resources in cutting-edge R&D in pursuit of greater sophistication and miniaturization. This has enabled us to swiftly respond to the market's ever-changing needs and produce the state-of-the-art connectors required by the electronics industry. KEL engineers can begin development 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**



The result of reliable technology

# O3 STABLE PRODUCTION

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.





#### **STRENGTHS**

#### **ADVANTAGE**

A trusted partner 4 RELIABLE QUALITY

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



#### **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.









1 KEL COMPANY PROFILE

## **History & Network**

#### History

962	KEL Corporation founded in Shibuya City, Tokyo	1994	Commercialized battery connectors
	Began manufacturing printed circuit boards and circuit board connectors	1996	Obtained ISO 9001 certification
964	Manufactured Japan's first molds for cross-shaped connector contacts in preparation for domestic production	1998	Commercialized micro coaxial cable connectors
		1999	Commercialized smart card connectors
967	Relocated and integrated factory and headquarters in Shinagawa City, Tokyo	2002	Obtained ISO 14001 certification
	Developed KEL RACK		Built and began operating Environmental Testing Cer
972	Opened Osaka Branch Office	2004	Established KEL Taiwan Co., Ltd. in Taiwan
975	Opened Nagoya Branch Office	2005	Commercialized floating connectors
976	Commercialized IC connectors	2008	Established KEL (Shanghai) Corporation in China
980	Opened Utsunomiya Branch Office		
981	Commercialized optical fiber connectors	2009	Commercialized crimp connectors
982	Commenced operations at Yamanashi Factory (now Minami-Alps Factory)	2010	Received JSA award for long registration of a management system
984	Commercialized half-pitch connectors	2012	Celebrated 50th founding anniversary
704	Commercialized than pitch connectors	2013	Began operations at Yamanashi Factory
987	Relocated headquarters to Tama City, Tokyo	2015	Obtained ISO/TS 16949 certification (the automotiv
988	Opened Mito Branch Office		quality management system standard, now IATF 10
989	Opened U.S. Representative Office	2017	Established KEL Europe GmbH in Germany
	(KEL Connectors, Incorporated)		Established KEL Electronics (Hong Kong) Limited in Hong Kong
990	Listed as an OTC stock (now on the TSE Standard Market Index)		Expanded clean area at Yamanashi Factory
	Parts processing line completed at Yamanashi Factory (now Minami-Alps Factory)	2018	Commercialized waterproof crimp connectors
992	Began operations at Nagano Factory	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

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

Nagoya 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 Fax: +81-55-225-5620

#### Nagano Factory

1400-5 Nakau, Ikeda-cho, Kitaazumi-gun, Nagano Prefecture 399-8603, Japan

Tel: +81-261-62-6511 Fax: +81-261-62-6555

#### Minami-Alps Factory

454-1 Miyazawa, Minami-Alps-shi, Yamanashi Prefecture 400-0415, Japan

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#### 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

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