

# Company brochure



Pioneerig of New Technologies.



**SHIHEN TECHNICAL Corporation**

# Message from the president



Our company was established in 1946 as the only transformer manufacturer in the Shikoku region. Starting with the repair of pole transformers, we have built a history of over 70 years of contribution and service to society through the supply of electric power equipment.

We are with "serving through creation" as our corporate philosophy, we are striving to further improve our technology. And our company motto of building strong and lasting relationships of trust with our stakeholders, based on the spirit of cooperation and harmony expressed in our corporate motto of "Respect, Affection and Reliance" is alive and well in our long history and tradition.

Today, we have earned the trust and high reputation of our customers by meeting their various needs with our different technologies, such as electric power equipment that contributes to the stable supply of electric energy, power supply equipment that is indispensable for semiconductor manufacturing equipment and office equipment, precision molds that realize advanced press work, and electric water heaters that provide comfortable living.

In the 2020s, the demand for decarbonization increased due to the deterioration of the global environment such as rapid global warming. And the environment surrounding companies are changing rapidly due to drastic changes in lifestyles and work styles.

In response to these changes in the business environment, there is a strong need for companies to take action on ESG management (Environmental, Social and Governance) and SDGs (Sustainable Development Goals).

Our company is based on pursuing further improvement of energy efficiency of conventional electric power equipment, electric power equipment for offshore wind farming power generation, which is attracting attention as a promising renewable energy, transformers that use vegetable oil that is harmless to the soil as insulating oil, power supply for deep uv led sterilizers that contribute to ensuring safe drinking water, we will create new value with our specialty technologies.

We appreciate your continuous support and advice.

President 小嶋 唯司  
Tadashi Kojima

## Corporate philosophy

創造奉仕

Serving through creation

Shihen Technical Corporation serves society with creativity and ventures into the path of true prosperity and endless happiness through this service.

## Company motto

敬・愛・信

Respect, Affection and Reliance

The company cultivates relationships connected by respect, affection, and reliance to work together with society and grow and develop with local communities.



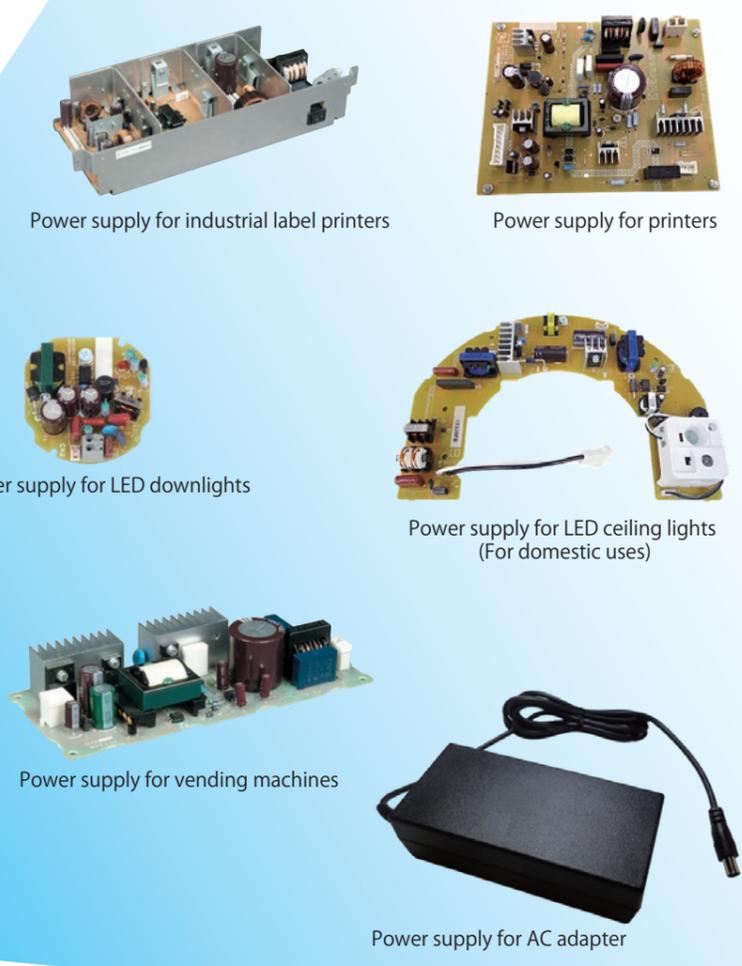
Shihen Technical Corporation is working on five business domains based on “technologies to ensure stable power supply” that the company has accumulated in its history.

Used for converting and controlling electricity at substations, utility poles, and factories

Distributes, controls, and protects electricity at substations, factories and offices



Built-in power supply supports stable operation of office appliances, LED lights, and industrial machinery.



Transformer, Reactor

Switchgear, Control panel

Power supply for industrial purposes and lighting

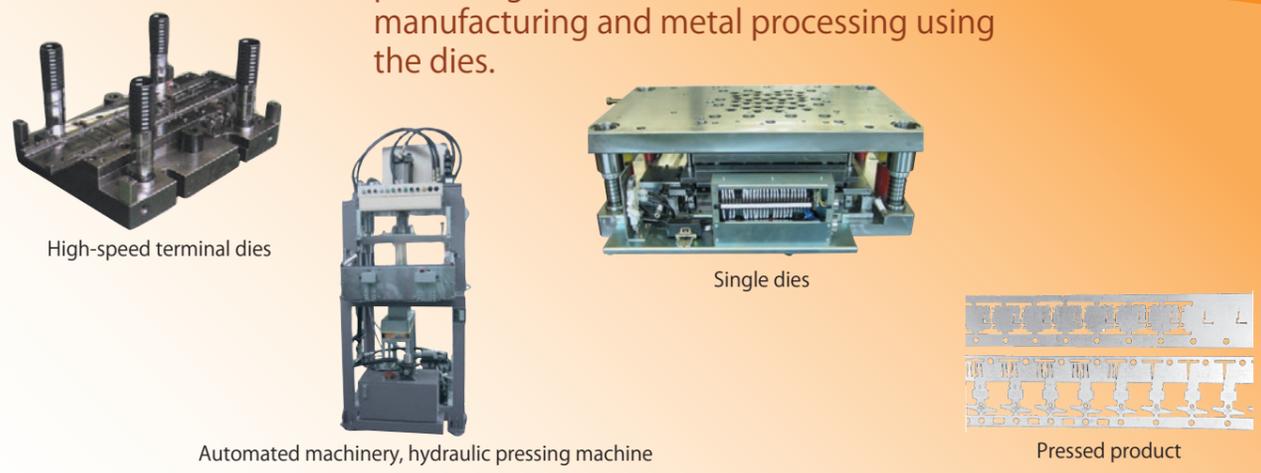
We produce new “Shihen Value” while effectively using technologies that the company now has.

Precision dies

Electric water heater

Shihen Technical Corporation is also producing dies which are essential tool of manufacturing and metal processing using the dies.

Delivers hot water to any places including at home, stores, and offices





66kV class oil-immersed transformer



66kV distribution substation (Installed at Shikoku Electric Power Company, Incorporated)



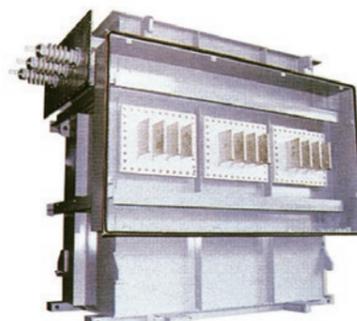
Digital control and protection panel

**[Standard customized design and technology for top-runner]**

- Large-capacity oil-immersed transformers, mold transformers, and type-H dry transformers have the same level of efficiency as top-runner transformers.
- We can design transformers with the highest efficiency for the expected equivalent load of transformers that our clients use.

**[Technologies to design transformers for thyristors and inverters]**

- We design and produce thyristor transformers such as bridge connection and double star connection as the power supply for rectifiers.
- We also have technologies to design and manufacturer output transformers for multiplex inverters for reducing high-frequency wave interference and transformers for IGBT converters of large variable-speed systems.



Forced-oil water-cooled transformer for thyristor.

**[33 kV insulation technology]**

We can design and produce substation equipment used for 33 kV extra-high tension circuit.

**[LAN-type monitoring and control system for distribution substation]**

- We realize smaller space using fewer wires by integrating the distribution substation monitoring and control system within LAN.
- We improve the efficiency of operation and maintenance using network communication and software technologies.

**[Reduced size of distribution substation]**

We enable the installation of a distribution substation (one bank) within the premise of a transmission tower (about 260 m2) connected to 66 kV distribution lines using compact transformers and cubicles as well as aluminum case type control panel.

**Support system**

**[Support system for transformers and switchgear]**

We quickly respond to problems to ensure a stable supply of electricity.



Installation of transformer



Repair of switchgear



66kV transmission tower

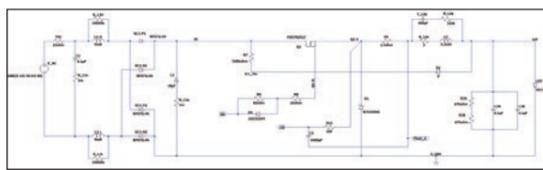


A substation within the premise of a transmission tower

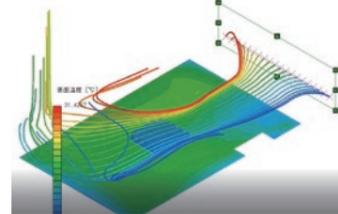
Electronic circuit design and verification techniques

We can make the best design using circuit simulation software, thermal simulation, radio wave shielded room, etc.

Circuit simulation software



Thermal simulation software



Radio wave shielded room



- Measurable test items
- Conducted Emission
  - Radiated noise electromagnetic field strength
  - Noise-power

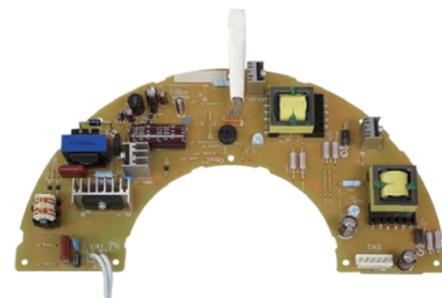
[DC stabilizing power supply]

- We can design and produce power supplies for various purposes. We provide optimal design and manufacturing for electric circuits and transformers.
- This product is designed with energy conservation design to reduce power consumption during stand-by.
- We have acquired safety certificates from countries around the world to respond to global needs.



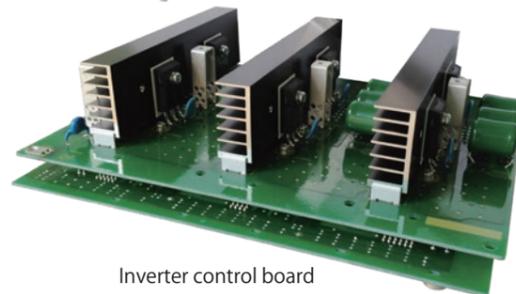
[Power supply for LED lighting]

- We enable reduced cost and smaller size with advanced designs created by fusing the DC stabilizing power supply technologies and electric ballast technologies.
- We have acquired safety certificates of many countries for highly reliable and safe designs (protection from overload, overcurrent, and overheating).



[Inverter application technology]

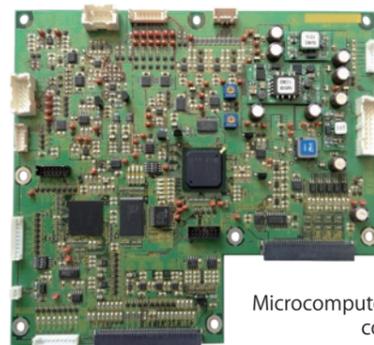
We realize high conversion efficiency using the latest circuit topology (method).



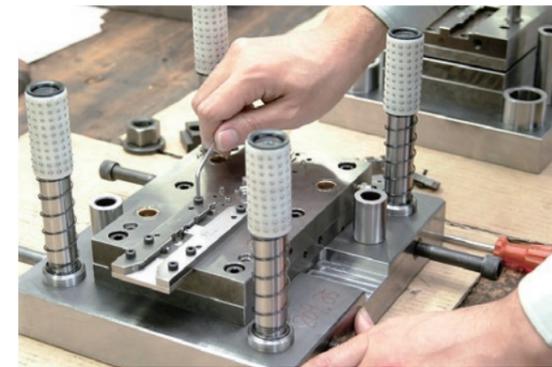
Inverter control board

[Technology of microcomputer application system]

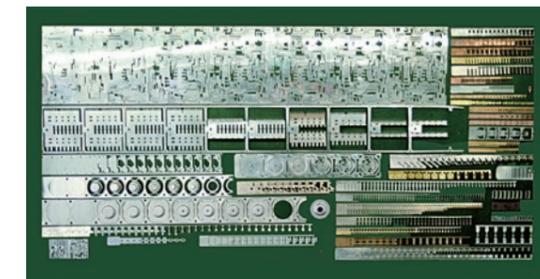
- We use advanced system design technologies to optimize circuit and software designs.
- Production can be selected for different purposes ranging from cost effective microcomputers to performance-oriented high-power devices.



Microcomputer and FPGA control board



Dies assembly



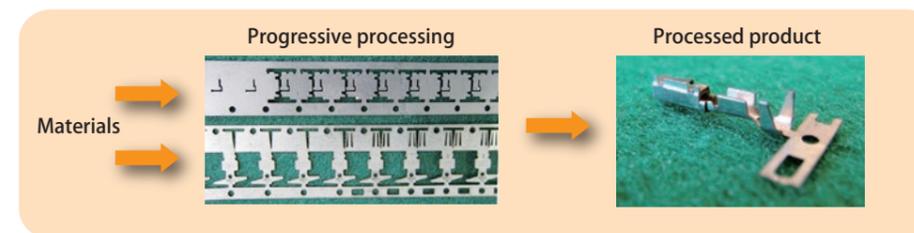
Example of processed product

Progressive press dies technology

The progressive dies has extra value that improves processing speed, reduces power consumption in post-processing, and improves yields.

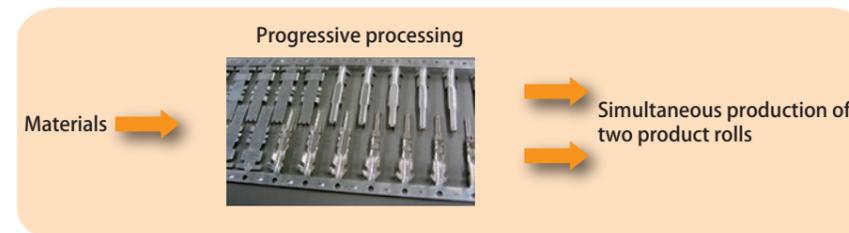
[Two-material parallel-feed composite dies]

This dies enables integrated processing of cutting, shifting, inserting, and punching by injecting two different types of materials at different feed speeds. Only mechanical structure is necessary for this processing, which enables the processing speed of 700 strokes/minute.



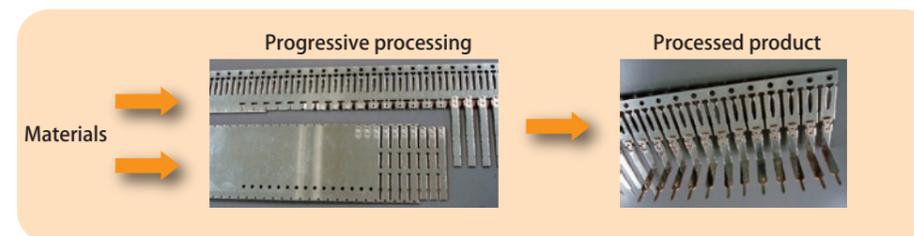
[Dies with simultaneous injection of one coil and forming of two-roll terminals]

This dies enables both improved yield and high productivity by simultaneously forming two lines of dies facing each other using one material.



[Multi-process integrated dies]

This is an dies is an integration of multiple processes such as parallel feed, progressive processing, bonding, and punching using two different types of materials (with a material feed system).



■ Clean and efficient integrated production line

We are conducting high efficient production using the knowhow based on long-years of experience to ensure stable production of low price and high quality products which satisfy our customers.



Exterior processing



Assembly line



Movement test

■ Design and production of customized products

**[Downstairs water heating system]**

This system provides hot water to downstairs by improving the strength of the tanks rather than improving air valves that have the risk of damage when a water heater supplies hot water to downstairs.

**[Warming system]**

"Warming system to circulate hot water inside pipes," which is an applied version of water warmer for facilities with long hot water pipes such as hotels.

**[Connected system combined with household heat pump water heaters]**

"Heat pump water heaters with two connected tanks" produced by connecting two household heat pump water heaters to supply large amount of hot water at low cost for facilities such as barbers which use more hot water than households.



Heat pump water heaters with two connected tanks

**[Industrial large-capacity direct and parallel water heating system]**

Multiple electric water heaters are directly connected to enable water heating for many hours for large facilities such as hospitals. Parallel connection of water heaters enables instantaneous water heating for a large volume of water for facilities such as public baths.



Parallel-connection water heating system for industrial uses

■ Pursuit of high quality

We are developing products with high efficiency and long service lives using our knowhow and repeated testing using latest facilities to enable high efficiency and durability under various environmental conditions such as ambient temperature and water quality.



Environmental durability test using a constant temperature room

■ Cultivation of new businesses

We are constantly cultivating new businesses to achieve sustainable growth and development and to contribute to stakeholders and local communities.

■ Technological development

**[High power microwave generator]** \*The photograph is a 1.5 kW product.

This is a microwave generator produced by integrating inverter, high-speed digital control, and digital network technologies used on vacuum plasma processes in semiconductor factories.



Quality is the most important factor for gaining the trust of customers.

Quality management

Specific and proper quality management is required for transformers, switchgears, industrial power supplies, water heaters and dies. Experts in quality management are closely observing the production in each process to confidently.

■ Registration of ISO9001

We have acquired certification of ISO9001 in three businesses.



Electronic substrate movement test



Switchgear movement test

**Electric power equipment**

- Transformer
- Switchgear
- Electric water heater

**Electric devices**

- Industrial power supply
- Power supply for lighting

**Precision dies**

- Precision dies
- Pressed product

We are promoting ESG management (Environmental, Social, Governance) in order to protect the global environment and fulfill our social responsibilities to stakeholders.



Environmental activities / Environmental conservation activities

Since acquiring the environmental ISO14001 certification in 2005, we have evaluated the impact of manufacturing on the environment and have been working to reduce it. In the future, we will further promote this and promote the reduction of waste and the sophistication of sorting with the aim of zero mission (zero landfill)



Registration of ISO14001



Not only our company but also the entire factory including affiliated companies (Shikoku Kosho Co., Ltd. and Yoshino Denki kogyo Corporation) involved in our manufacturing process are working to reduce the environmental load.

Transformer using readily biodegradable insulating oils

A transformer that uses natural ester vegetable oil (rapeseed oil) and plant-derived ester (palm oil) as insulation. Even if it leaks into the soil, it will be quickly decomposed by microorganisms.



15.3 Striveto achieve a land degradation-neutral world

Power supply for deep UV LED

Compact power supply unit capable of lighting long-life, mercury-free deep ultraviolet LEDs with low power consumption to replace conventional ultraviolet lamps for water.



6.3 Improve water quality by reducing pollution

High efficiency type transformer

Transformers manufactured according to Japanese high efficiency standards.



7.3 Double the global rate of improvement in energy efficiency.

High efficiency type water heater

We are developing CO<sub>2</sub> heat pump water heater.



7.3 Double the global rate of improvement in energy efficiency.



Volunteering in tree-planting



Volunteering in beach cleanup

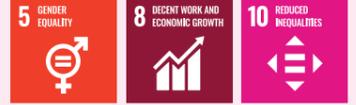


Participation in city park clean-up

Social support / Supporting the growth of a sustainable society

Since 1971, the 25th anniversary of our founding, we have changed our corporate motto from "Quality service" to "Serving through creation" and have taken on the challenge of "Serving society through creation" and are continuing to work on it.

In response to the increasing sophistication of international initiatives such as the SDGs, we are actively working to reduce our carbon footprint and address human rights.



Power equipment for offshore wind farming power plant



Image of Offshore wind farming power plant

With the realization of carbon neutrality in 2050, the need for renewable energy is becoming more and more active, and offshore wind farming power plants are especially expected.

We have been involved in a large number of transformers and control panels for solar power plants, but we are actively working on the development of electric power equipment for renewable energy such as offshore wind farming power plant.



7.3 Double the global rate of improvement in energy efficiency.

Interaction with local residents

We participate in various activities in the area and deepen exchanges with local residents.



Participation in Tadotsu Festival



Invite local elementary school students to a factory tour.



We will explain to them in detail how electricity works.

Governance / Aiming for sound corporate management

- Recognizing the importance of gaining the trust of society, we strive to strengthen corporate governance based on the companies act (and enforcement regulations) in order to carry out legal, appropriate and efficient business activities. Regarding the work below the president supervision by the board of directors, audit by audit and supervisory board members and by setting up an internal audit department governance we maintain the soundness of management.
- Addition to establishing our code of conduct and compliance guide, we have established a compliance promotion committee and a consultation desk to promote compliance in management.
- Based on the CSR activity policies of the parent company Shikoku Electric Power Company, Incorporated and DAIHEN Corporation we are also engaged in CSR activities.



Domestic service offices and plants

Head office / Tadotsu plant

Produced product category: Transformer, Switchgear,  
Power supply for industrial purposes and lighting

Telephone service hour

Weekdays, 9:00 a.m. to 5:00 p.m.  
(not available on weekends and holidays)

1-97 Sakuragawa 2-chome, Tadotsu-cho,  
Nakatado-gun, Kagawa 764-8507  
TEL: +81-877-33-1212 (main line)

Produced product category:  
Transformer, Switchgear

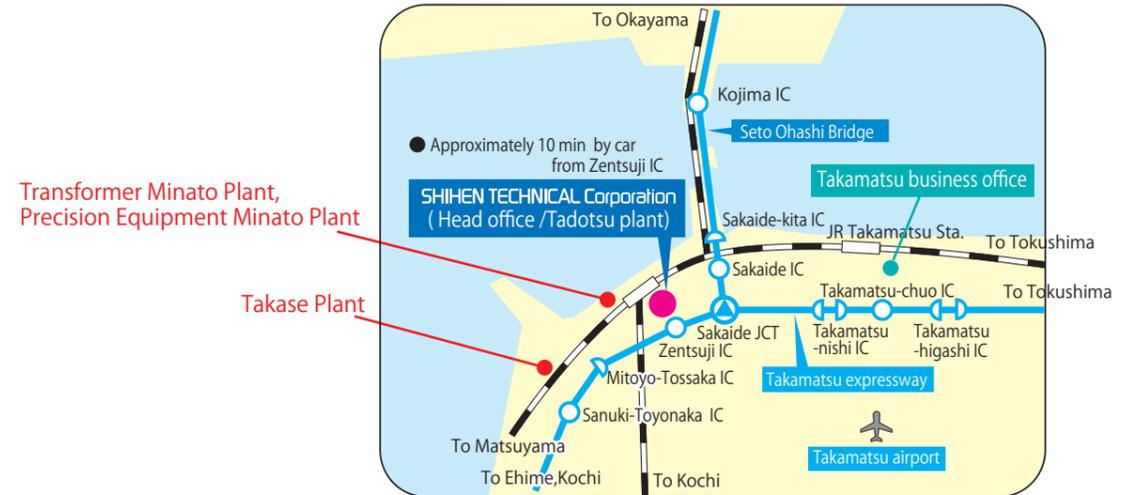
Electric power equipment business  
unit sales dept.  
enterprise sales section #1  
TEL: +81-877-33-2525  
FAX: +81-877-56-6067

Produced product category:  
Power supply for industrial purposes and  
lighting

Electronics products business unit  
sales dept. sales section  
TEL: +81-877-33-2323  
FAX: +81-877-33-0775



Head office area map



Transformer Minato Plant,  
Precision Equipment Minato Plant

Takase Plant

Takase Plant

Produced product category:  
Precision dies, Electric water heater

Telephone service hour Weekdays, 9:00 a.m. to 5:00 p.m.  
(not available on weekends and holidays)

200-1, hiji, Takase-cho, Mitoyo-shi, Kagawa 767-0004  
TEL: +81-875-72-4111 (main line)

Precision dies :  
Precision equipment division and sales division  
TEL: +81-875-72-4111 FAX: +81-875-72-4110

Electric water heater :  
Water heater department, sales department  
TEL: +81-875-72-4300 FAX: +81-875-72-4302



Transformer Minato Plant



30 Nishimatomachi, Tadotsu-cho, Nakatado-gun, Kagawa  
764-0017  
TEL: +81-877-33-1212 (Head office)

Nature of business :  
Repairing a pole-mounted transformers

Precision Equipment Minato Plant



16-13 Nishimatomachi, Tadotsu-cho, Nakatado-gun,  
Kagawa, 764-0017  
TEL: +81-875-72-4111 (Takase Plant)

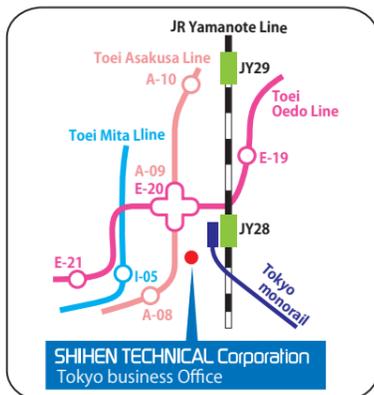
Nature of business :  
Pressing and assembly of parts

Sales offices

Tokyo business office

Produced product category:  
Transformer, Switchgear

7F, Eagle Hamamatsu-cho Building, 2-7-17  
Hamamatsucho, Minato-ku, Tokyo 105-0013  
TEL: +81-3-3578-1641 FAX: +81-3-3578-1645



JY-28 (Hamamatsucho Station) of the JR Yamanote Line  
3 minute walk from the South Exit (Kanasugibashi Exit)  
E-20 of Toei Oedo Line / A-19 Asakusa Line (Daimon Station)  
4 minute walk from A1 Exit  
I-05 (Shiba Koen Station) of Toei Mita Line  
5 minute walk from A3 Exit  
Along the Daiichi Keihan Road

SHIHEN TECHNICAL Corporation  
(Head office / Tadotsu plant)

Takamatsu  
business office

Produced product category:  
Transformer, Switchgear

Chugoku  
service office

Kansai  
service office

Kanto  
service office

Produced product category:  
Heat pump water heaters and electric water heater

Subsidies

■ Shikoku Kosho Co., Ltd.



1-82 Sakuragawa 2-chome, Tadotsu-cho, Nakatado-gun, Kagawa 764-0012  
TEL: +81-877-32-2653 FAX: +81-877-32-2681

Nature of business/

- Switchgear(design and assembly)
- Mechanical assembly
- Design and assembly of FA devices

■ TADOTSU UNSO Corporation



1-97 Sakuragawa 2-chome, Tadotsu-cho, Nakatado-gun, Kagawa 764-0012  
TEL: +81-877-33-4001 FAX:+81-877-33-3629

Nature of business/

- Transportation of vehicles in general cargos
- Collection and transportation of industrial wastes
- Delivery, installation, and dismantling of transformers and switchgear

■ Sone Kougyo Corporation



769 Hijidai, Toyonaka-cho, Mitoyo-shi, Kagawa 769-1501  
TEL: +81-875-62-2327 FAX:+81-875-62-2214

Nature of business/

- Pressing and Assembly

Affiliated companies

■ YOSHINO DENKI KOGYO Co., Ltd.



1-74 Sakuragawa 2-chome, Tadotsu-cho, Nakatado-gun, Kagawa 764-0012  
TEL: +81-877-32-3049 FAX: +81-877-32-3040

Nature of business/

- Winding and assembly of mid-to-small-size transformers
- Maintenance of electric equipment including installation and adjustments

■ Minami Electric Co., Ltd.



15 Nishiminatomachi, Tadotsu-cho, Nakatado-gun, Kagawa 764-0017  
TEL: +81-877-33-4224 FAX: +81-877-32-7286

Nature of business/

- Production of transformer cases and sheet metal processing
- Product painting

■ Shikoku Tosou Corporation



1-40 Sakuragawa 2-chome, Tadotsu-cho, Nakatado-gun, Kagawa 764-0012  
TEL: /FAX: +81-877-32-3746

Nature of business/

- Painting of transformers and switchgear

■ Tadotsu Chuzo tekkosho Corporation



5-79 Kitagamo 3-chome, Tadotsu-cho, Nakatado-gun, Kagawa 764-0022  
TEL: +81-877-33-2244 FAX: +81-877-33-4282

Nature of business/

- Sheet metal processing and assembly
- Pressing and assembly

● SHIHEN (THAILAND) CO., LTD.



527 Moo2,Klongjig,Bang Pa-in,Ayutthaya,13160,Thailand  
TEL +66-35-352591 FAX +66-35-352594  
URL: <http://www.shihen.co.th/>

Production category:

- Power supply for LED lighting
- Switching power supply
- Inverter transformer

Introduction of the company:

Since the company opened in 1996 as the first overseas plant of Shihen Technical Corporation, this company has accumulated production technologies for the long term and supplying high quality products in a stable supply.

● SHIHEN VIETNAM Co., Ltd.



Lot 2-TS7,Tien Son IZ.,Tu Son City, Bac Ninh Province, Vietnam  
TEL +84-222-3734-246 FAX +84-222-3734-249

Production category:

- Power supply for LED lighting
- Switching power supply

Introduction of the company:

Since the establishment in 2007, Shihen Vietnam has been implementing production activities as the second overseas plant of Shihen Technical Corporation. And they are producing low cost and high quality products in a stable supply.

● SHIHEN Precision Mold Trade (Dongguan) Co.,Ltd.



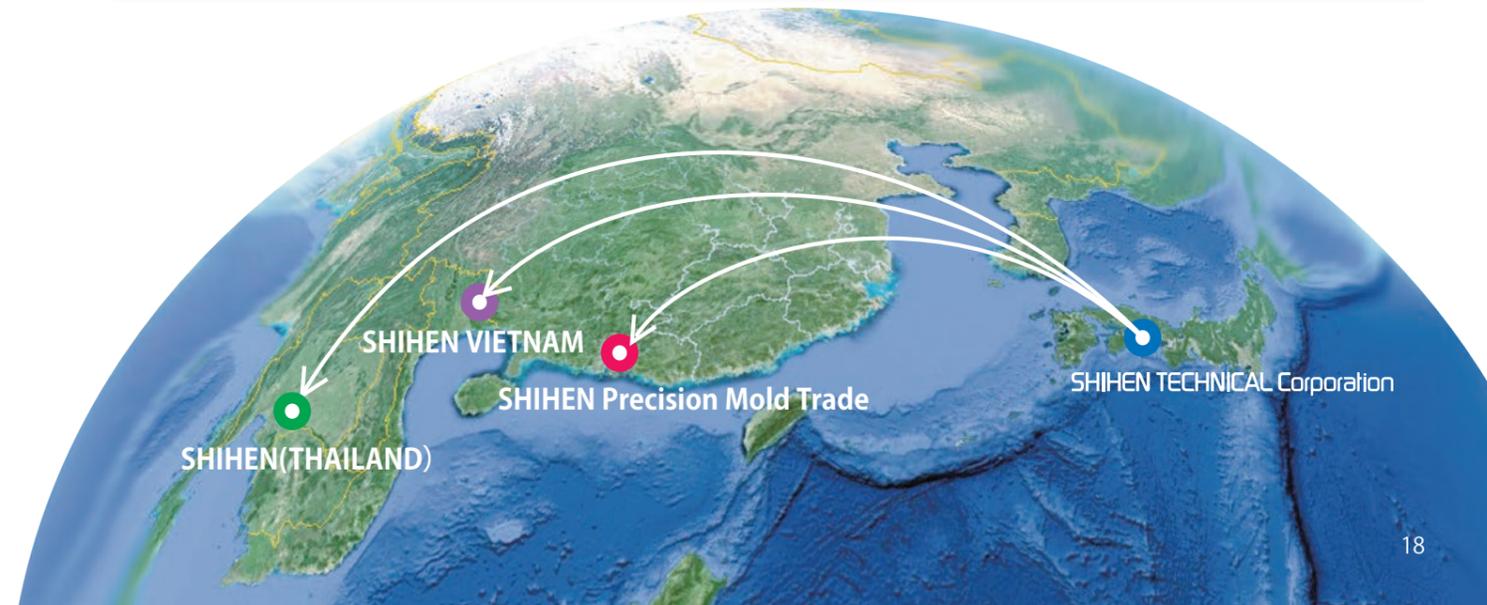
Room 610, Mingdian Building, No. 118 Changzhong Road, Chang'an Town, Dongguan City, Guangdong Province, China  
TEL +86-769-8702-9980 FAX +86-769-8258-5935

Nature of business:

- Purchasing and sales of pressed dies and resin mold
- Purchasing and sales of dies of parts

Introduction of the company:

Founded in 2013. The company is based in guangdong province, where there are many automobile manufacturers and a large market for molds.



## Overview of the company

Company name	Shihen Technical Corporation
Address of the head office	1-97 Sakuragawa 2-chome, Tadotsu-cho, Nakatado-gun, Kagawa
Establishment	August 31, 1946
Nature of business	Main operations include the production, repair, sales/purchase, and import/export of transformers, other electric machinery and equipment, mechanical equipment in general as well as design and contracting of electrical constructions. Freight forwarding business. Generation and sale of electricity from renewable energy sources.
Capital fund	318.5 million yen
End of fiscal year	End of March (once a year)
Banks	Chugoku Bank, The Hyakujushi Bank, MUFG Bank, Mizuho Bank and The Iyo Bank
Number of employees	471
Lot space	121,223m <sup>2</sup>
Building	48,236m <sup>2</sup>

## Permission for specified construction business

Permission number	#3641, permitted by the governor of Kagawa (Special-3)
Date of the permission	November 28, 2021 (valid until November 27, 2026)
Type of construction business	Electric work

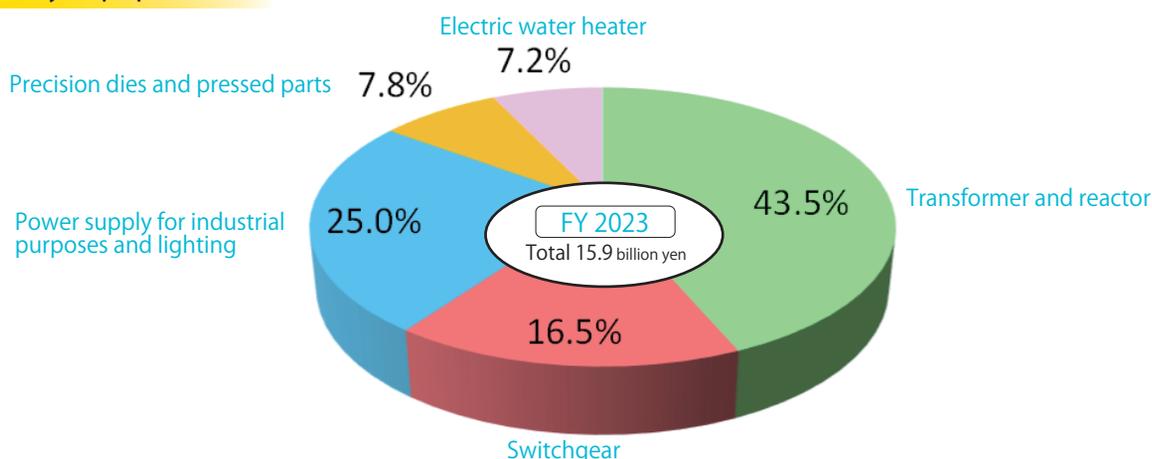
## Registration, etc.

Electric construction work (general purpose, electric construction for in-house uses)	Governor of Kagawa registration #13010
Type I cargo transportation work	Shikoku Transportation Bureau Shikoku Transportation Cargo #343
Electric heating device manufacturing work	Director of Shikoku Economy and Industry Bureau
AC electric machinery and equipment production work	Director of Shikoku Economy and Industry Bureau

## Board members

Tadashi Kojima, President and Chief executive officer	Yuji Katayama, Director
Shingo Wada, Senior Managing director and Representative executive officer	Yasutaka Okada, Director
Hikomasa Matsumoto, Senior Managing director	Kazuo Kamo, Director
Katsuhiko Fujiwara, Senior Managing director	Seiji Miyazaki, Director
Katsuyuki Matsubo, Managing director	Kazuki Kondo, Director
Takeshi Yamamoto, Managing director	Ryoji Yukimoto, Auditor
Hiroshi Takai, Director	Ichiro Tokai, Auditor
Satoshi Hayashi, Director	

## Ratio of sales by equipment





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