### DAIHEN Global Network

#### Global scale synergy that interweaves humans, technology, and the market







### Access to Rokko Plant





#### http://www.daihen.co.jp/



Osaka Transformer Co., Ltd. "OTC" is DAIHEN's brand name outside of Japan.

#### Access via train

Take the JR Kobe line to "Sumiyoshi Station" or the Hanshin Electric Railway to "Uozaki Station" and transfer Hanshin Electric Hailway to 'Uozaki Station' and transfer to the Rokko Liner. Antwe at 'Island Kitaguchi Station'. Walk down the stairs along the promenade and go west for about 950 meters. Turn right at Koyonaka 5 Nishi intersection, then left at Rokko-Ohashi Nishi intersection and go straight from there. Access via car

Take Route 43 until the Higashi Mikage intersection or the Tomyo intersection and head towards Rokko Island. Cross the Rokko Bridge and head west for about 900 meters. At the "Rokko Island north exit (Hanshin Expresswa Bayshore Line)", head west for about 1.6 kilometer

DAIHEN Corporation Rokko Plant • ISO14001 Certit 41, Koyo-cho Nishi, Higashinada-ku, Kobe, Hyogo, 658-003 Phone: +81-78-275-2000 ISO14001 Certification acquired

DAIHEN Welding and Mechatronics System Corporation Phone: +81-78-275-2005 www.dwms.co.jp DAIHEN Technos Co., Ltd. Phone: +81-78-275-2043 www.daihen-technos.co.jp DAIHEN Stud Co., Ltd. Phone: +81-78-275-2043 •The content of this handout is current as of October 2015. There may be unforeseen changes to content such as the specifications. •This pamphlet was printed with eco-friendly vegetable oil ink. CAT.NO.F-T121501A 10.2015. PRINTED IN JAPAN



**DAIHEN** Corporation

## **Rokko Plant Guide**

# **Creating Metal Artists**

DAIHEN contributes significantly to the manufacturing technology of customers all over the world by world-leading welding & robot technologies.

Welding is the main metal-joining force used at production sites for automobiles, trains, ships and large structures such as bridges and skyscrapers. DAIHEN makes use of unique welding control technologies and presents welding machines to the market that satisfy even the minute details of production site demands. In addition, DAIHEN combines welding and robot technologies to provide high value added welding robots using the top class technologies in the world. Our products meet the automation manufacturing demands that become more complex and sophisticated year after year. Furthermore, DAIHEN applies these technologies to developing and manufacturing clean transfer robots for semiconductor production lines. DAIHEN provides total support for the customers around the world through our global network by providing welding training classes, robot training classes and service.







OPS-2341

SPR-8546

# The challenge to $\Gamma H$

## Most Advanced Automated Factory where Robots Make Robots — This is what DAIHEN is Pursuing



## challenge

#### In order to instantaneously understand "where", "what", "how", and "in what manner"



inventory quantity and warehouse entry or dispatch, but also information pertaining to processing records, quality inspections, and the status of the managed objects. Data from normally time-consuming measurements can now be sequentially recorded automatically. The device combines and extracts the necessary information and then uses it organically, so the information has great value.

This screen not only manages

#### Automatic challenge `ransportation

Automatic transportation via AGF based on usage Creating an environment where humans and machines work together



Humans and machines coexisting harmoniously

To improve the efficiency of raw material service operations by using a system connecting the automated warehouse and the subsystem To fully automate transportation operations that are performed with hand trucks at the robot inspection areas and loading areas using AGFs

To improve the efficiency of operations by using tablets to browse automated warehouse information and send transport instructions to the AGFs

To reduce the manpower

#### Production challenge Method

#### Made possible because we are robot manufacturers Cell production system that condenses the latest technology



needed for assembly and to promote deskilling by automating manually performed assembly operations dependent on the proficiency of workers To eliminate variation in performance due to worker differences and maintain a constant level of quality with high accuracy To automate production by combining element technology such as robot sensors, and handling with our robots



Manufacturing Process at Rokko Plant



Clean robot plant

3

We have automated our Rokko Plant with IT-driven production management, a flexible cellular manufacturing system and AGF transport between cells.

Automatic Guided Forklift System to inspection area



between them, increasing efficiency.

#### Assembly of Robot Arm

base unit is transported to the automated warehouse for the manipulators, transferred to the inter-process AGV, and then<sup>'</sup> the robot ar are assembled.

#### Inspection / Shipment



After the robot undergoes an alignment test and a run-in period, the accessories are sorted, packaged, and then hipped

### The latest products for supporting society on display

At DAIHEN's showroom, customers see the latest welding products the company has to offer. The more you know, the more interesting they are.

DAIHEN's technologies have time and time again proven useful to society, as they have been used to build ships, trains, bridges, buildings, etc. The showroom puts on display and explains DAIHEN's newest welding machines and torches, industrial robots and other products.





Welding sample showcase



## Large-scale equipment demonstrations at any time

Customers can try out the latest welding and robot technologies at any time without losing time with setup work.

Equipment is permanently on display in order to quickly impart exhibition-like demonstrations of welding and robot technologies at any time. Customers can see for themselves the high quality rendered by DAIHEN's welding machines and robots, and the robot-driven automation solutions that DAIHEN has to offer





## ROKKO TECHNICAL CENTER Where State-of-the-Art Tech nologies Meet Customer Needs



iscover

### Industry's top level of demo laboratories

DAIHEN has demo laboratories where customers can try the latest welding technologies. It includes private pilot production labs that ensure complete security.

State-of-the-art equipment such as high-speed cameras that can capture welding droplet transfer and macro profiles of welding penetration are available to assist customers in their welding trials.

Example images used in analyses



▲macro profiles of weld





▲Laser shielded room

▲High-speed camera image



▲Trial production in progress

Open demo lab





## Welding/robot school for learning the latest technologies

#### Get your welder's license! Training in both beginner and advanced welding.

DAIHEN's Technical Center has welding/robot school that provides training in the latest welding/robot technologies. Participants practice on actual equipment and learn from engineers of the highest level in the industry. Various courses are offered from the basics to applications that participants can choose according to skill level and objective. DAIHEN's training program will help participants obtain the license they seek.

#### Welding school

#### Standard robots used in training



General Training in Welding — Teaches the full gamut of welding from the basics to applications. Designed to assist participants in getting licensed. This "General Training" course covers a broad range of

content and is designed to train new employees at welding companies and improve personal welding skill and technique

#### General Training in Robotics Training in robot technologies for robot operators.

DAIHEN offers both "Basic Engineer Training" and "Maintenance Training" courses aimed at imparting skills and knowledge in basic robot operation teaching and safety.



IIS Welder Test Preparation — Prepares participants for the JIS Welder Test.

This "JIS Welder Test Preparation" course is a short and to-the-point training course that prepares participants for the ISO-equivalent welder test that JIS offers for obtaining licensing in welding.



curriculums as per customer request.



DAIHEN can provide training at the customer's site and convenience, and even design training





*learr* 

Certificate of completion issued at the end of training



At the end of training, DAIHEN issues participants a certificate of completion. Special training in welding safety and health protection is also available, and financial aid can be obtained to cover tuition costs in some cases.