DAIHEN SHIMIZU CORPORATION 清水建設

Welding automation system for easy on-site installation and setup

Construction Welding Robot System

2026 Japan International Welding Show

Challenges Facing the Construction Industry

Construction industry

- Aging workforce of skilled welders
- Decline in young entrants to the workforce
- Harsh working environments
- High demand for high-rise construction and large-scale projects

Need for labor savings and automation to improve on-site productivity

Welding Robot Suitable for Construction Sites

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Construction site environment

- Poor footing, difficulty in transporting heavy items
- Multiple tasks performed simultaneously at same location

Tens of columns being welded on a single floor

Welding robot suitable for construction sites

- **Lightweight and compact** for portability and easy setup
- **Operates safely** even in environments with human traffic.
- **Automates** complex welding (weaving, thick-plate welding) using **simple settings**.

Developed Jointly with Shimizu Corporation

Welding robot system suitable for construction sites

Developed jointly by Daihen and Shimizu Corporation

株式会社ダイヘン

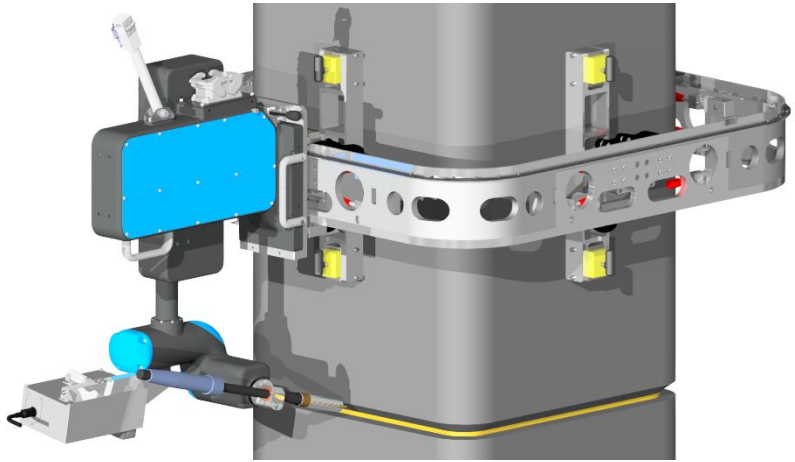
Developing a welding robot system
featuring easy setup and safe use
by unskilled workers

SHIMIZU CORPORATION 清水建設

Determining optimal welding conditions and performing on-site verification for steel frame welding based on expertise accumulated through R&D

Features of Construction Welding Robot

The construction welding robot combines **easy installation** with **automation of complex welding tasks**.



Easy installation

- Lightweight, compact design allows easy installation without tools.
- Can be installed by one person in under 30 minutes, greatly reducing labor.

Simple automation of complex welding

- Weld locations are identified by laser sensors, allowing fully automated multi-pass welding.
- Capable of achieving weaving quality comparable to skilled welders, allowing anyone to achieve high quality welding with ease.

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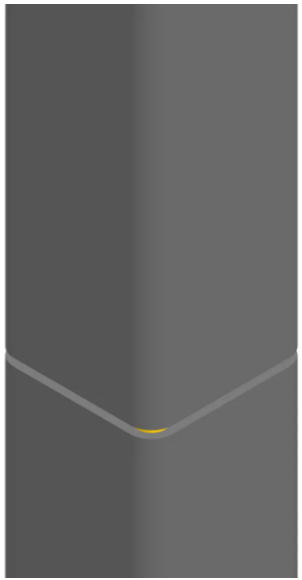

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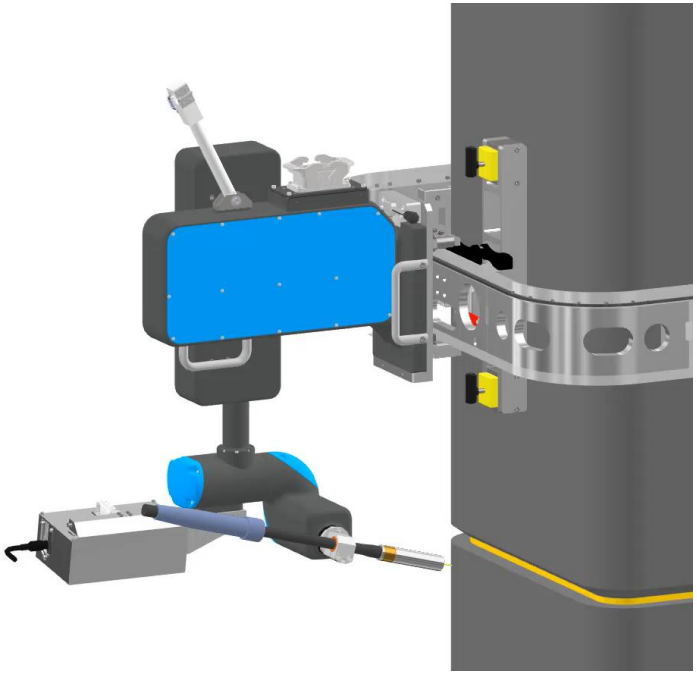

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Demonstration: Automated Welding Using the Construction Welding Robot

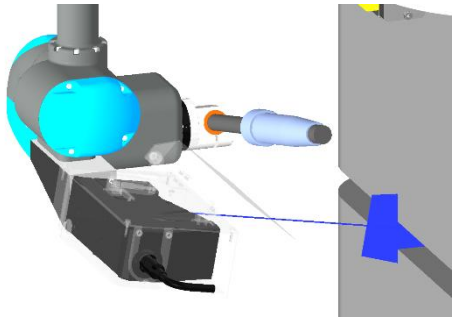
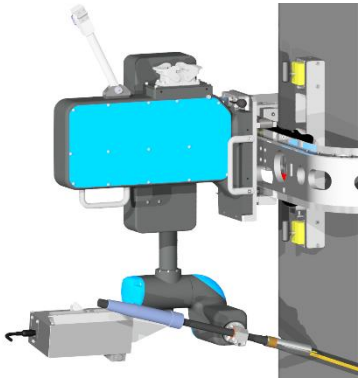
Demonstration simulating steel column welding in a **high-rise building**

Simple welding demo

Step 1
Groove detection using laser sensor

Step 2
Automatic generation of welding program

Step 3
Execution of welding program (no actual welding)

Groove detection	
Welding	

Helping to resolve labor shortage issues by automation of welding in high-rise buildings using the construction welding robot system.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