

One Machine Handles Multiple Roles, Automation without Taking up Space

Material Handling and Assembly Robot System

Challenges in Automation for Addressing Labor Shortages

When introducing dedicated robots for each process
High implementation and maintenance costs, along with large space requirements, make securing budget and location difficult

Welding



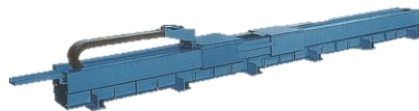
Transportation



Assembly



Positioning



Workpiece flipping

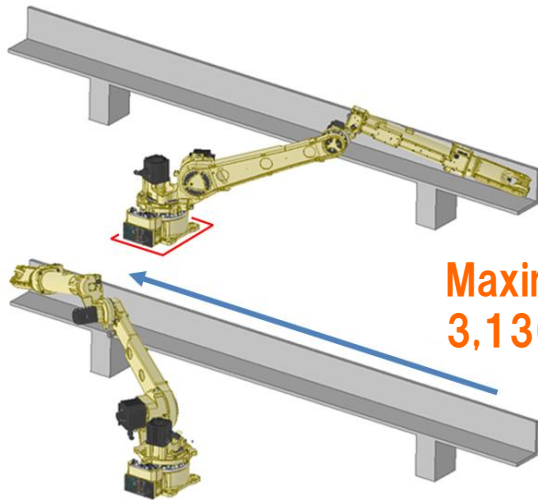


Robots capable of performing **multiple** tasks in place of humans are in demand.

Solutions for Automation Challenges: Specialized Robots **DAIHEN**

One robot **with unique features** can handle both narrow and wide areas

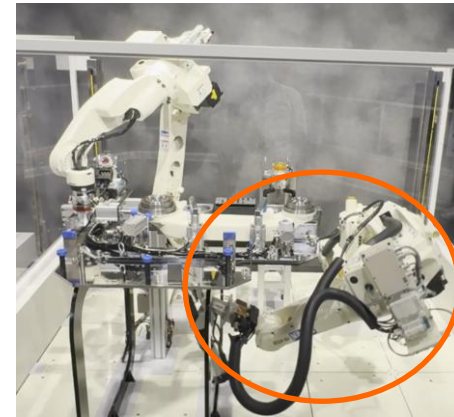
Long-Reach Robot (FD-V25L)



Maximum reach
3,136 mm

No need for robot movement via sliders

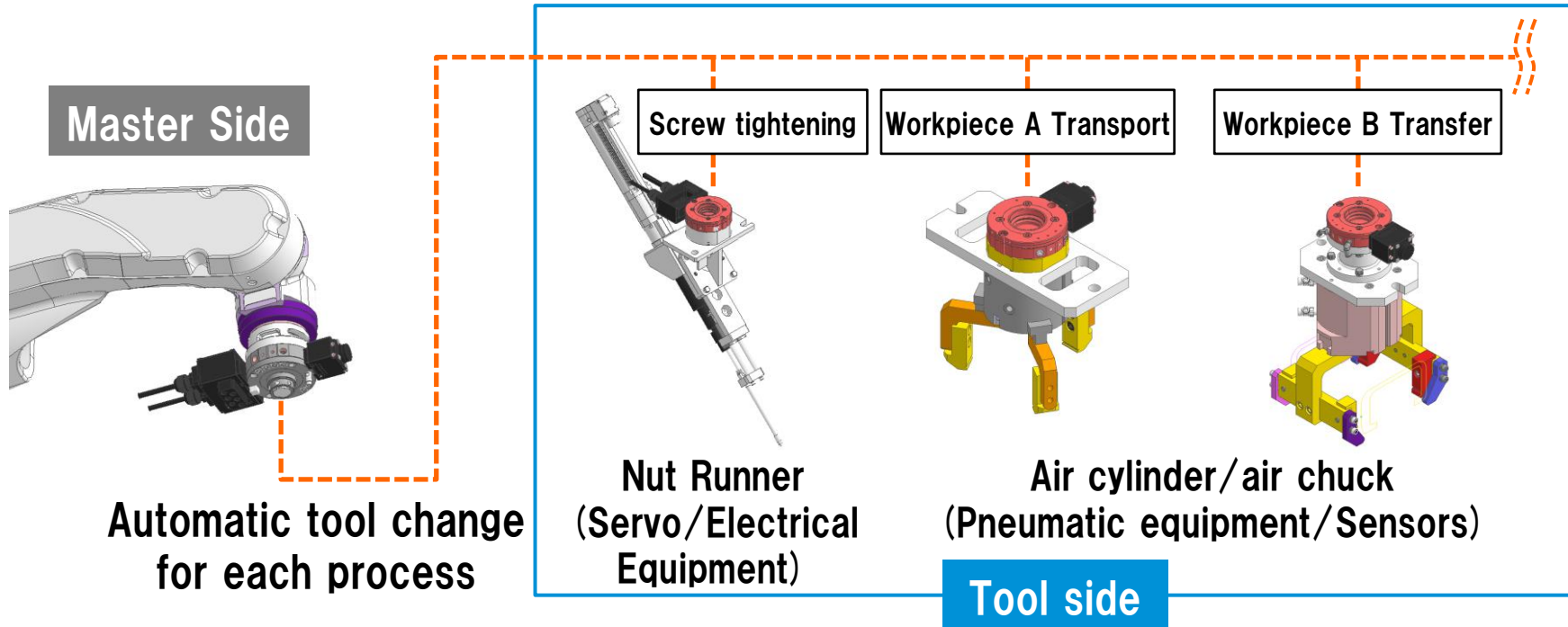
7-axis robot (FD-VT20, etc.)

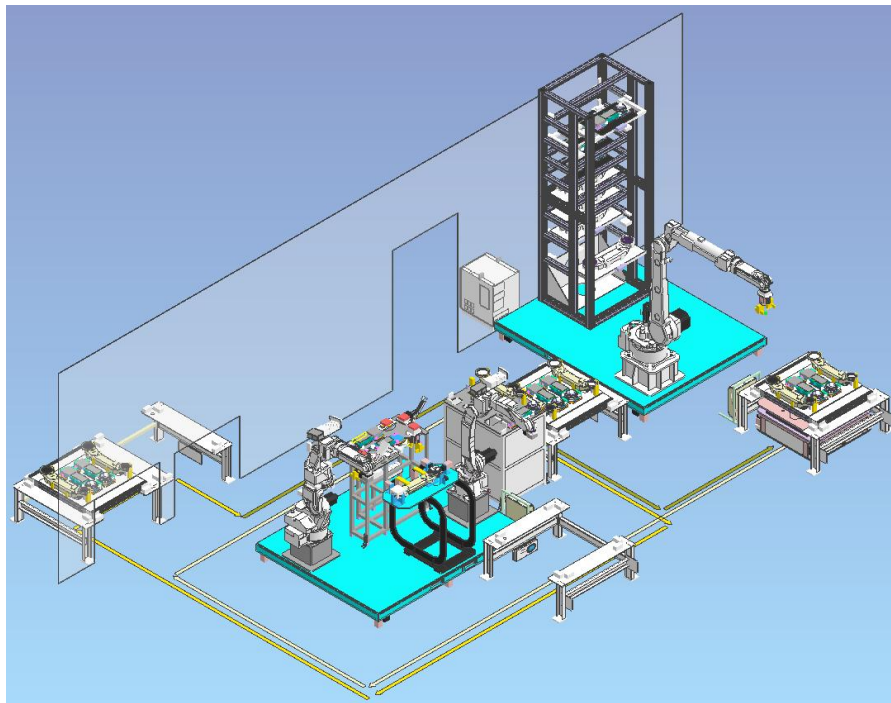


Access routes can be secured even in narrow spaces and behind objects

► No need for orientation changes on turntables, etc.

Capable of automating **multiple** tasks with **a single unit**





■ Material Handling

- Space-saving storage utilizing vertical height
- Storage and retrieval handled by a single robot

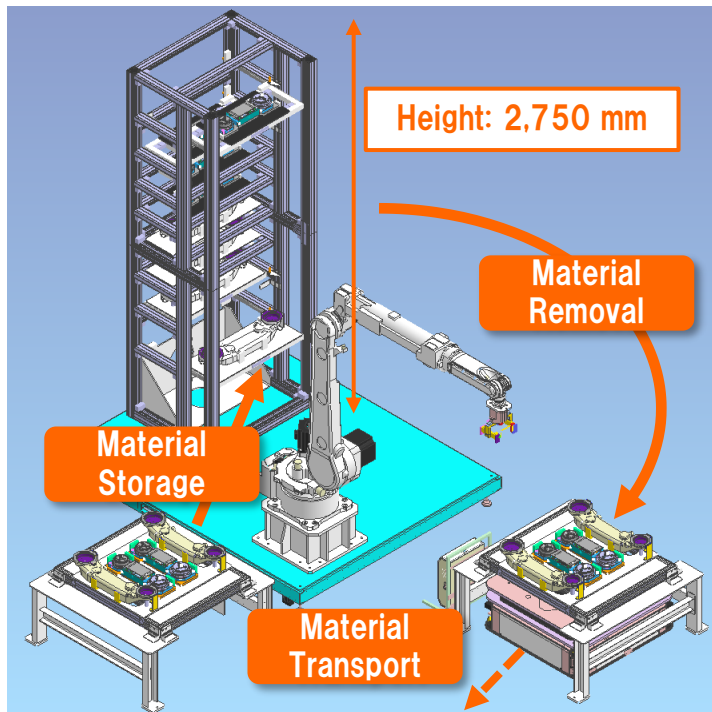
■ Inter-process Transfer

- Coordination with each process's operational status
- Unrestricted transport even in confined spaces

■ Assembly Process

- Access to confined and rear areas via 7-axis robots
- Multiple roles per unit reduces robot count

■ Material Inbound/Outbound



Inter-process transport (delivery) & material storage

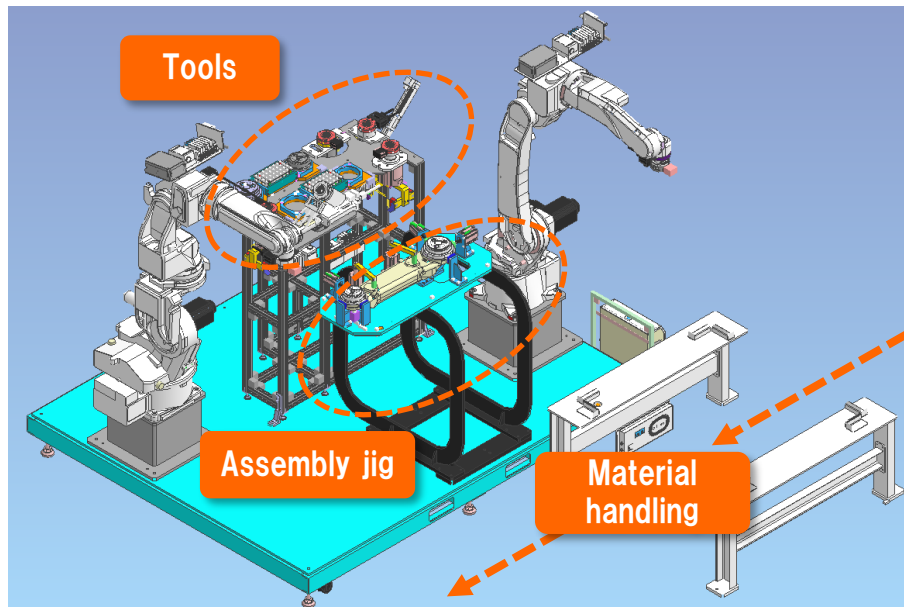
- Aitran enables delivery into **narrow aisles**
- Storage on **2,750 mm high** shelves
 - ▶ Space-saving storage utilizing vertical height
- Robot with an operating range exceeding 3,000 mm
 - ▶ Same robot capable of handling increased storage capacity

Material setting & inter-process transport (outbound)

- Handling assembly parts from material shelves and material setup
- Material transfer to the next assembly process via Aitran

Contributes to automated material handling through space-saving design

■ Assembly Process



Work list

- **Handling**
Set the delivered robot arm and reducer
- **Picking**
Pick fixing bolts from the pallet
- **Fitting**
Fit the reduction gear onto the robot arm
- **Screw tightening**
Secure the gear reducer with bolts

Two robots enable multiple processes and reduce work time

**Based on customer requirements
maximum automation at minimum cost
with Daiken's robot systems.**

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