



High-Quality Arc Welding by a High-Path Accuracy Collaborative Robot

Arc-Weld Collaborative Robotic FD-VC4

Problems at the welding site

- Welding by a person results in quality variation

Issues when introducing industrial robots

- Wide installation space required
- Difficult to relocate

Features of Collaborative Robots

- No safety fence
- Compact and lightweight



FD-VC4



FD-VC4L

With collaborative robots ideal for welding DAIHEN will propose.

Features of Daihen's collaborative robot

① High trajectory accuracy

② Spatter resistance
Noise immunity

③ Variety of welding
Related functions

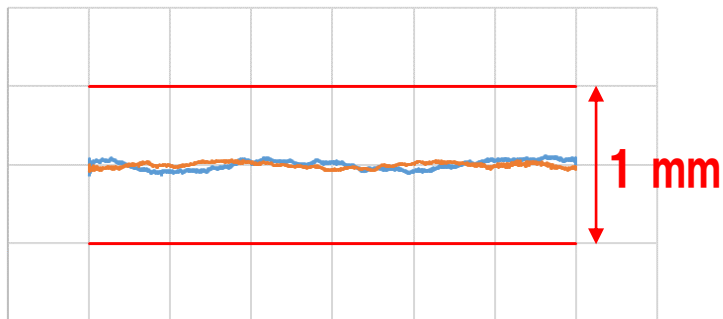
FD-VC4

FD-VC4L

① High trajectory accuracy

- High-rigidity arm × Vibration suppression control technology
- **High-quality welding from the highest class of collaborative robots**

Trajectory accuracy for straight line operation



— Robo — FD-VC4
— Welding accuracy standard

※Vertical error during linear operation in the lateral direction

② Resistance to spatter and noise

- Whole body metal, resistant to spatter
- Supports TIG welds that generate high-frequency noises

③ Abundant Welding Related Functions

Welding method

- CO₂/MAG Welding
- MAG pulsed weld
- Low sputter welding
- Synchro feed welding
- TIG weld

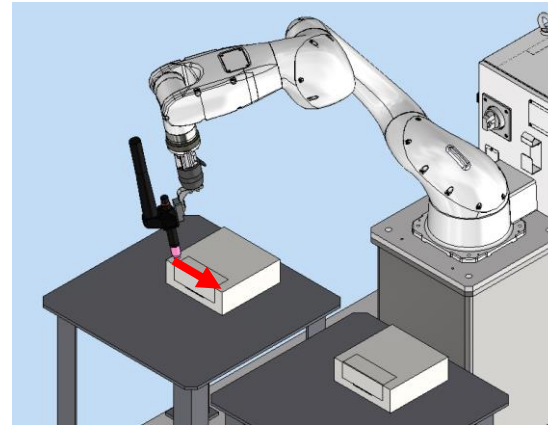
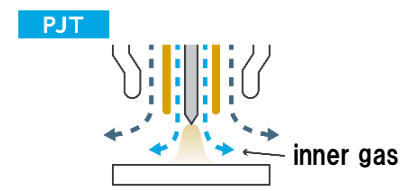
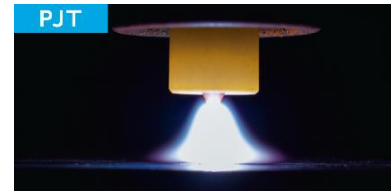
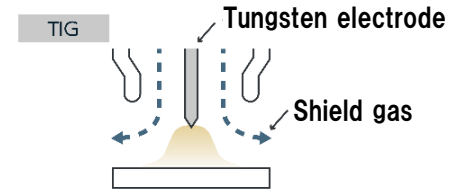
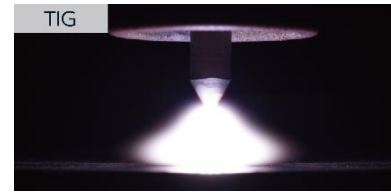
Welding Related Functions

- Touch sensor function
- Arc sensor function
- Weaving function
- Weld management-system
FD-AM
- Various welding torches, etc.

Demonstration : Welding demonstration in collaboration with people

- By Daihen's proprietary Plasma Jet TIG (PJT)
High efficiency welding
- VC4×PJT → Higher precision and faster weldability
- Workpiece can be replaced next to the robot and welded continuously.

Plasma JET TIG	
Welding current	Left (no pulse) : 200 A Right (DC pulse) : 60-180 A (peak)
Pulse frequency	6 Hz
Pulse ratio	50%
Welding speed	60 cm/ portion
Base metal	SPCC plate thickness 2 mmt
Shield gas	100% Ar
Inner gas	100% Ar



DAIHEN's arc welding collaborative robot can be easily installed at welding sites and achieves stable, high-quality welding.

DAIHEN