



SINGLE SOURCE ADVANTAGE

Our single source approach is simple: we provide all the equipment needed for robotic or manual arc welding. One call solves it all!

- Seamless digital integration for maximum control
- Reduced maintenance time for greater uptime and productivity
- Expert service from experienced support staff

ROBOT, WELDING POWER SOURCE,
WIRE FEEDER, TORCH—WE PROVIDE IT ALL.

SEAMLESS SOLUTIONS

Our cells can provide arc welding solutions for a range of parts from small to large size, with minimal operator movement required and little to no part positioning. The compact designs reduce required manufacturing floor space. All cells include an arc welding robot, a robot controller, a teach pendant and a positioner.



FD *Friendly series*

COMPLETE ROBOTIC ARC WELDING SYSTEMS

0800 37 55 66 | www.autoline.nz | sales@autoline.nz

FD-B6

FD-B6L

FD-V8

FD-V8L

FD-V25

FD-H5

North American Corporation Headquarters
1400 Blauser Dr, Tipp City, Ohio 45371 / Phone: (937) 667-0800

Technical Centers
Commerce Center, MI Branch
Atlanta, GA Branch Office



Member of DAIHEN Group



OTC-5 REV 1/19

FD Friendly series

CHANGING THE FUTURE OF MANUFACTURING

OPTIMUM TEACHING

Easy teaching, even for a two-electrode torch.



FD-B6



FD-B6L



FD-V8



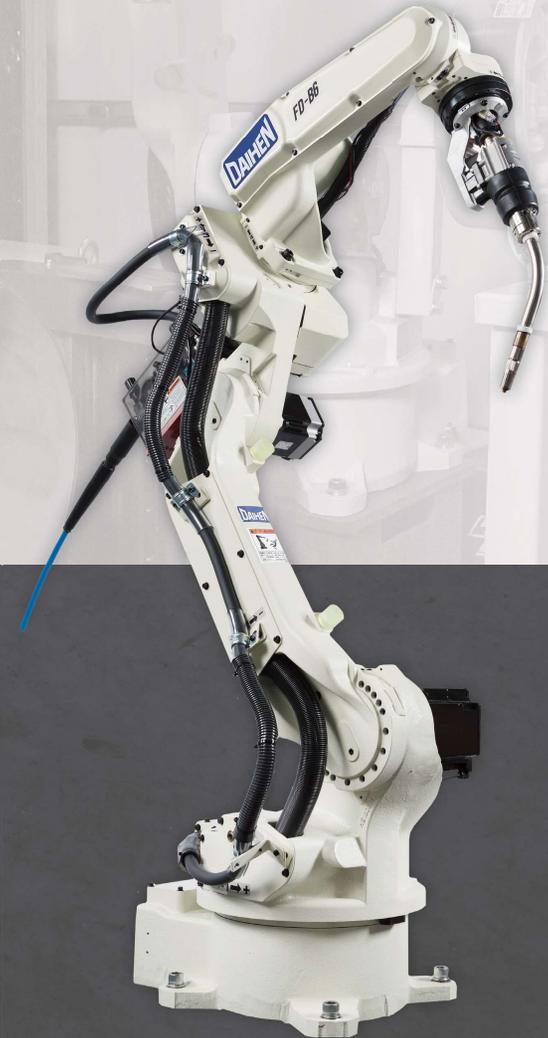
FD-V8L



FD-V25



FD-H5



Our arc welding robots are ideal for many welding and air plasma cutting applications. They can be used for mild steel, stainless steel, aluminum, titanium and other exotic metals. While some models feature a compact design, robots can handle a variety of jobs ranging from small to large in size. All arc welding robots include an FD11 robot controller and a teach pendant.

THE IDEAL SOLUTION FOR AUTOMATION OF WELDING



EASY

Intuitive Operation
Touch panel and jog dial ensure easy operation.



QUALITY

Quality Control Functions
Easy quantitative management of welding procedures.



ECOLOGY

Compact and Eco-Friendly
Space-saving design with reduced standby power consumption.

FD-B6

The FD-B6 arc welding robot represents our newest in robotic innovations. Sporting a unique design with a through-arm co-axial cable, this robot is highly versatile at welding in confined spaces and complicated fixtures. The coaxial cable of the FD-B6 also helps improve overall weld quality.

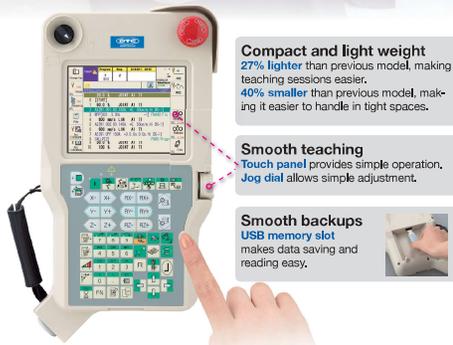


SMOOTH OPERATION

TEACH PENDANT

SMART CONTROLLER

FD11



Compact and light weight
27% lighter than previous model, making teaching sessions easier.
40% smaller than previous model, making it easier to handle in tight spaces.

Smooth teaching
Touch panel provides simple operation, Jog dial allows simple adjustment.

Smooth backups
USB memory slot makes data saving and reading easy.



Electric conservation
Up to 50% reduction in power consumption using the power conservation mode (energy conservation timer function and external servo OFF function).

Minimal maintenance
Addition of axes is simple and fast, 30% fewer parts.

Space conservation
20% less volume than previous model.
Additional clearance above the controller.

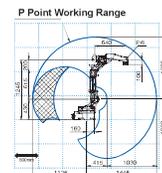
FD TEACHING PENDANT

- Welding condition guide function helps you find better welding conditions with one-touch operation.
- Jog dial can scroll through teaching programs, adjust wire aiming position, do wire inching and retract movement, and can provide intuitive operation for multiple items.
- One-touch access with the touch panel reduces the number of times keys are pressed.
- Improved display increases readability.
- Iconified operation buttons increases readability.

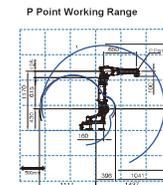
FD11 Robot Controller

- Windows XP based open architecture
- Large memory capacity and 40 Input / 40 Output control signals
- Advanced PLC functions allow for ladder diagram editing directly through the teaching pendant
- Network capabilities – connects to Ethernet, DeviceNet, and PROFIBUS connections (may require additional hardware)
- Improved operability with corrective teaching quickly improves welding quality.
- Improved movement performance by increasing the robot response speed to weld start signals. Arc start failures are reduced and high quality bead appearance is achieved. By greatly reducing residual vibrations, high-speed approaches are possible.
- Improved space utilization by reducing the height of the controller.
- Increased reliability with easy troubleshooting reduces downtime. Data is backed up when a welding error occurs to troubleshoot and find the problem. Traceability can be done by connecting a computer.

RANGE OF MOTION MANIPULATOR WORKING RANGE / SPECIFICATIONS



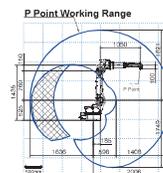
FD-B6 Standard	
Reach	1445mm
Payload	6 kg
Axes	6
Repeatability	± 0.08 mm



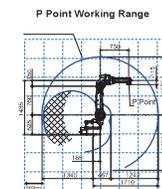
FD-V8 Standard	
Reach	1437mm
Payload	8kg
Axes	6
Repeatability	± 0.08 mm



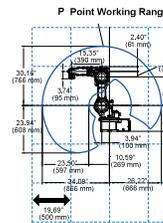
FD-B6L Long Reach	
Reach	2010mm
Payload	6 kg
Axes	6
Repeatability	± 0.08 mm



FD-V8L Long Reach	
Reach	2006mm
Payload	8kg
Axes	6
Repeatability	± 0.08 mm



FD-V25 Standard	
Reach	1710mm
Payload	25 kg
Axes	6
Repeatability	± 0.07 mm



FD-H5 Compact	
Reach	866mm
Payload	5 kg
Axes	6
Repeatability	± 0.05 mm

Specifications: Manipulator

		FD-B6	FD-B6L	FD-V8	FD-V8L	FD-H5	FD-V25	
Model		NB6	NB6L	NV8	NV8L	NH5	NV25	
Number of axes		6	6	6	6	6	6	
Maximum capacity		13.2 lbs (6kg)	13.2 lbs (6kg)	17.6 lbs (8kg)	17.6 lbs (8kg)	11 lbs (5kg)	55 lbs (25kg)	
Positional repeatability		±0.003" (±0.08mm) ⁽¹⁾	±0.003" (±0.08mm) ⁽¹⁾	±0.003" (±0.08mm) ⁽¹⁾	±0.003" (±0.08mm) ⁽¹⁾	±0.002" (±0.05mm) ⁽¹⁾	±0.003" (±0.08mm) ⁽¹⁾	
Horizontal Reach		56.88" (1445mm)	79.05" (2008mm)	56.57" (1437mm)	78.98" (2006mm)	34.09" (866mm)	67.32" (1710mm)	
Vertical Reach		84.80" (2154mm)	140.71" (3574mm)	98.27" (2496mm)	140.55" (3570mm)	54.1" (1374mm)	117.28" (2979mm)	
Driving capacity		3132 W	4832 W	3016 W	5000 W	1440 W	5600 W	
Working Range	Arm	J1 (Rotation)	±170° (±50°) ⁽²⁾					
		J2 (Lower arm)	-155° to +90°	-155° to +100° ⁽³⁾	-155° to +90°	-155° to +100° ⁽³⁾	-125° to +90°	-155° to +100°
		J3 (Upper arm)	-170° to +245°	-170° to +190°	-170° to +190°	-170° to +260° ⁽⁴⁾	-140° to +245°	-170° to +260° ⁽⁴⁾
	Wrist	J4 (Swing)	±155°	±155°	±180°	±180°	±190°	±180°
		J5 (Bending)	-45° to +225° ⁽⁵⁾	-45° to +225° ⁽⁵⁾	-50° to +230°	-50° to +230°	-30° to +210°	-50° to +230°
		J6 (Twist)	±205° ⁽⁵⁾	±205° ⁽⁵⁾	±360°	±360°	±360°	±360°
Motion speed	Arm	J1 (Rotation)	4.19 rad/s (240°/s) 3.32 rad/s (190°/s) ⁽²⁾	3.40 rad/s (195°/s) 3.05 rad/s (175°/s) ⁽²⁾	4.19 rad/s (240°/s) 3.32 rad/s (190°/s) ⁽²⁾	3.40 rad/s (195°/s) 3.05 rad/s (175°/s) ⁽²⁾	3.49 rad/s (200°/s) 2.79 rad/s (160°/s) ⁽²⁾	3.40 rad/s (195°/s) 3.05 rad/s (175°/s) ⁽²⁾
		J2 (Lower arm)	4.19 rad/s (240°/s)	3.49 rad/s (200°/s)	4.19 rad/s (240°/s)	3.49 rad/s (200°/s)	3.49 rad/s (200°/s)	3.32 rad/s (200°/s)
		J3 (Upper arm)	4.01 rad/s (230°/s)	3.49 rad/s (200°/s)	4.01 rad/s (230°/s)	3.49 rad/s (200°/s)	4.54 rad/s (260°/s)	3.14 rad/s (200°/s)
	Wrist	J4 (Swing)	7.50 rad/s (430°/s)	7.50 rad/s (430°/s)	7.50 rad/s (430°/s)	7.50 rad/s (420°/s)	6.63 rad/s (380°/s)	6.98 rad/s (430°/s)
		J5 (Bending)	7.50 rad/s (430°/s)	7.50 rad/s (430°/s)	7.50 rad/s (430°/s)	7.50 rad/s (420°/s)	6.63 rad/s (380°/s)	6.98 rad/s (430°/s)
		J6 (Twist)	11.00 rad/s (630°/s)	11.00 rad/s (630°/s)	11.00 rad/s (630°/s)	10.99 rad/s (630°/s)	8.95 rad/s (510°/s)	10.47 rad/s (630°/s)
Wrist allowable load	Allowable moment	J4 (Swing)	10.5 N•m	10.5 N•m	17.6 N•m	17.6 N•m	11.9 N•m	52.6 N•m
		J5 (Bending)	10.5 N•m	10.5 N•m	17.6 N•m	17.6 N•m	11.9 N•m	52.6 N•m
		J6 (Twist)	5.9 N•m	5.9 N•m	7.8 N•m	7.8 N•m	5.21 N•m	24.5 N•m
	Allowable moment of inertia	J4 (Swing)	0.28kg•m ²	0.28kg•m ²	0.43kg•m ²	0.43kg•m ²	0.303kg•m ²	1.24kg•m ²
		J5 (Bending)	0.28kg•m ²	0.28kg•m ²	0.43kg•m ²	0.43kg•m ²	0.303kg•m ²	1.24kg•m ²
		J6 (Twist)	0.06kg•m ²	0.06kg•m ²	0.09kg•m ²	0.09kg•m ²	0.061kg•m ²	0.33kg•m ²
Arm cross-sectional area		3.59 m ² x 340°	6.37 m ² x 340°	3.14 m ² x 340°	7.48 m ² x 340°	1.22 m ² x 340°	5.27 m ² x 340°	
Environmental conditions		32 to 113° F (0 to 45° C), 20 to 80% RH (no condensation)						
Mass / weight		319 lbs (145kg)	612 lbs (287kg)	308 lbs (140kg)	601 lbs (273kg)	128 lbs (58kg)	612 lbs (278kg)	
Maximum load of upper arm		22 lbs (10kg) ⁽⁶⁾	44 lbs (20kg) ⁽⁶⁾	22 lbs (10kg) ⁽⁶⁾	44 lbs (20kg) ⁽⁶⁾	2.2 lbs (1kg) ⁽⁶⁾	22 lbs (10kg) ⁽⁶⁾	
Installation method		Floor/Ceiling/Wall						
Paint color		White (Munsell notation 10GY 9/1)						

- Through-arm cable design improves torch reach & wire feeding
- Offers a wide working range with an independently articulated arm
- Seamless digital connection with all OTC DAIHEN brand welding power supplies
- Improved vibration restraining control provides smooth robot movement
- Built-in mechanical shock sensor
- Single source technology – all components are manufactured by OTC DAIHEN
- Highly versatile design supports most welding applications

NOTES:

- (1) The value of the positional repeatability is at the tool center point (TCP) in compliance with ISO 9283.
- (2) The value in parentheses indicates wall mounted.
- (3) Working range of J2 axis may be restricted when wall mounted.
- (4) The operation range of the J3 axis is restricted to -170° to +205° when floor based welding is applied.
- (5) Working range of the J6 axis may be restricted by the position of the J5 axis.
- (6) When loading, the maximum payload as the end effector.
- (7) This value changes according to placement and load conditions of the wrist.

These specifications are subject to change without prior notice.