

**Robotic Automation**

**TSM**



Made in Japan



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**“FD”**

*Comes from the word “Friendly”,  
offers the most suitable solution  
for automation of welding*

## HIGH QUALITY Robotic Package for everyone!



**Intuitive Operation**  
Touch panel and jog dial ensure easier operation.



**Extensive Quality Control Functions**  
Easier quantitative management of welding procedures

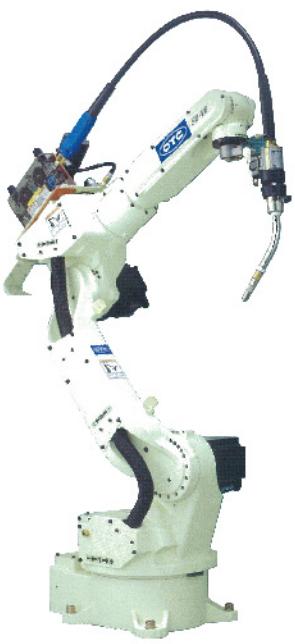


**Compact & Eco-friendly**  
A streamlined, space-saving design that contributes to energy efficiency by reducing standby power consumption

our product

# Welding Robot

**FD-V6  
STANDARD**



YouTube



Robot Welding For Cable  
Laddle with Slider

YouTube



Robot Welding For  
Frame Structure

**FD-V6L  
LONG ARM**



**FD-B4  
STANDARD**



**FD-B4L  
LONG ARM**

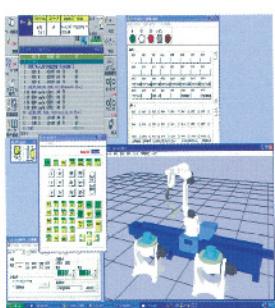
**Robot Cell**



**Clean Kit**



**Gas Saver**



**PC software**



**Sensors**

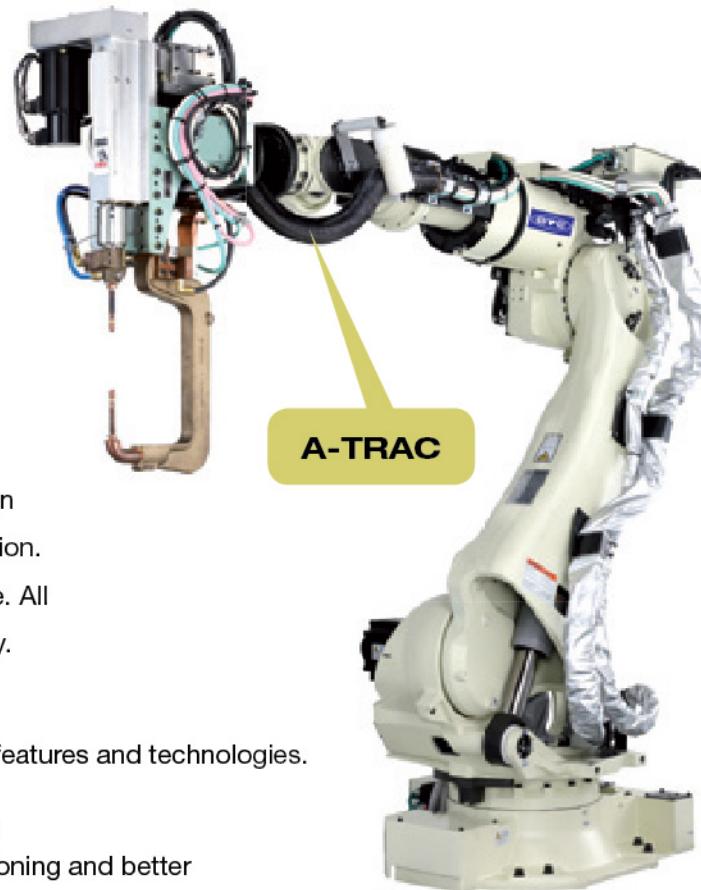


**External Axis**

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# Spot Welding & Handling Robot

SRA166/210



## World Class Speed Robot

Robot motion makes minimum cycle times unbeatable. Light weight and high rigidity design results in high acceleration and minimum vibration. Maximum speed on all axes reduces move time. All this provides dramatically improved productivity.

## Superior Spot Welding Capability

Industry leading advanced servo gun software features and technologies.

## SRA robot ease of use improves the bottom line

Improved drives and motors for accurate positioning and better repeatability. Compact design allows closer installation in less floor space.

## Improved energy efficiency

Power consumption reduced 15% from existing models by reducing the robot's weight by 20% and using cutting edge motor drive controls.

[YouTube](#)



Spot Welding Robot  
For Seat Frame

[YouTube](#)



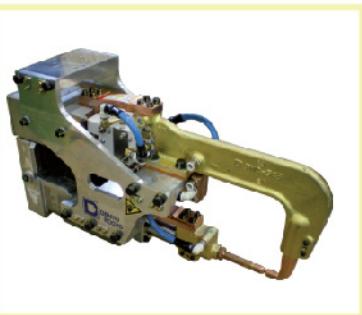
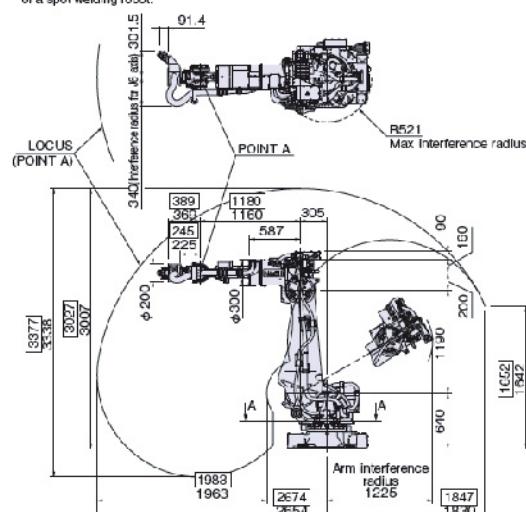
Robot Handling For  
Seat Frame Welding

[YouTube](#)



Robot Handling For  
Sheet Metal Bending

\* Data shown in [ ] for SRA210-01A.  
\* The diagram below shows specifications for cable support (A-Trac4) installed on the arm of a spot welding robot.



C - Gun



X - Gun

our product

# Handling Robot

MC series MC35/50/70

Adaptable to various production environments

The new MC (35/50/70kg) has a standard IP54 rating for the body, (optional IP65/IP67) and std. IP67 for the arm/wrist.

Large working envelope and powerful robot arm

Maximum reach of 2,050mm, (best in class).

Strong wrist torque can handle a large variety of applications



Palletizing Robot

LP130/180

High-speed palletizing

1,500 packages per hour for 130kg loads (LP130)

1,800 packages per hour for 60kg loads (LP130)

Handle a variety of loads

Compact Layout

Easy Operation



our product

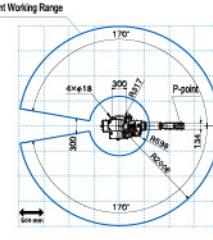
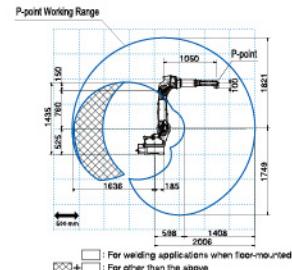
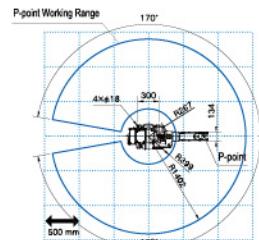
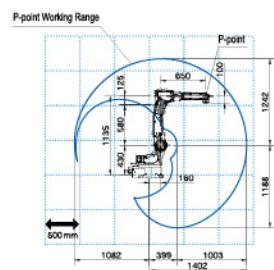
# Robot for Handling with low payloads

The robot's narrow body design and large working envelope allows it to operate in tight spaces without interference.

**FD-V6**



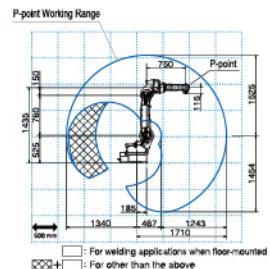
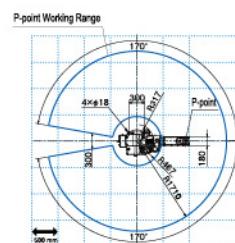
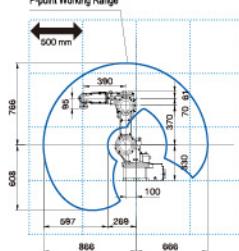
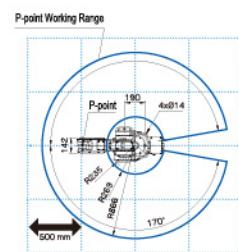
**FD-V6L**



**FD-H5**



**FD-V20**



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# Smooth Operation Teach Pendant

## Compact and lightweight

- 27% lighter (960 g) compared to previous model, making teaching for a long time possible
- 40% smaller in size compared to previous model, making simple handling even in tight spaces possible



## Smooth teaching

- Simple operation with the touch panel
- Simple adjustment with the jog dial

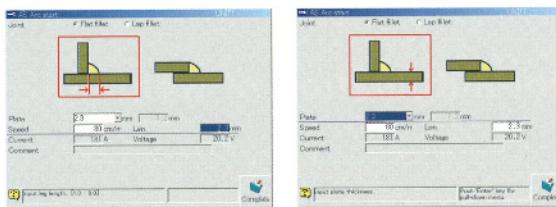
## Smooth backups

- Inclusion of a USB memory slot simply makes data saving and reading possible



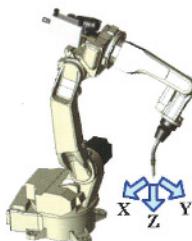
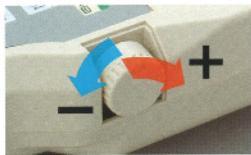
## Welding condition guide function Smart welding

Anyone can easily welding conditions.



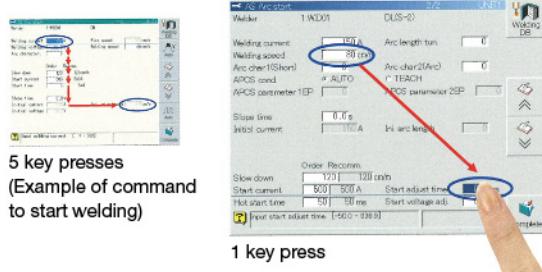
## Jog dial Smooth operation

It is possible to do high and low scroll of teaching program, to make an adjustment of wire aiming position and to do wire inching and retract movement with jog dial. Jog dial can provide intuitive operation for multiple items.



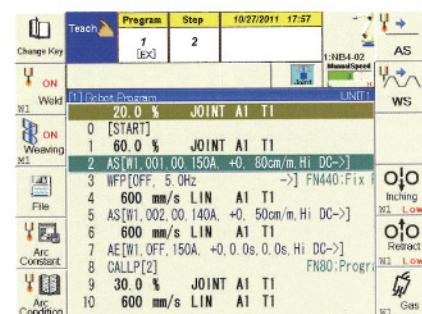
## One-touch access Smooth operation

The touch Panel offers one-touch access to the input section, minimizing the number of times keys must be pressed.



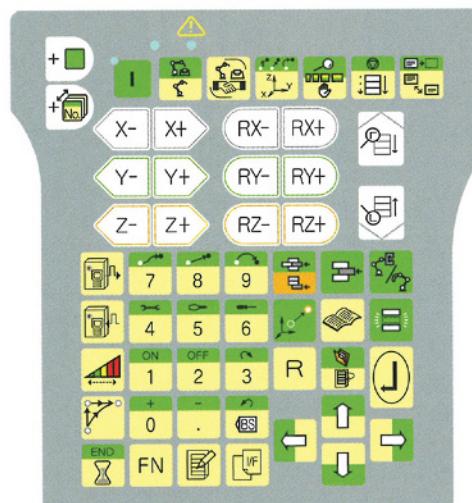
## Improved display Smooth operation

By improving the display of characters, the display has become easy to see.



## Iconified operation button Smooth operation

Quick operation is possible by guidance function and iconified operation button.



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# Smart Controller FD11

## Electric power conservation

- Use of power conservation modes  
reduces electric power consumption 50%  
(Energy conservation timer function)  
(External servo off signal function)
- \*Comparison of apparent power

## Minimal maintenance

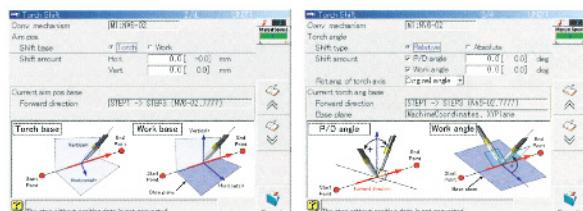
- Addition of axes is simply made possible
- Reduced number of parts by 30%

## Space conservation

- Volume reduced by 20% (Compared to a conventional model)
- Increased space freed above

## Improved Operability Smart welding

Correcting teaching to improve welding quality is made possible in a short time.



Adjustment of the torch angle is simply possible  
The torch position and torch angles (push angle, drag angle, work angle) of the welding section can be changed all at once.

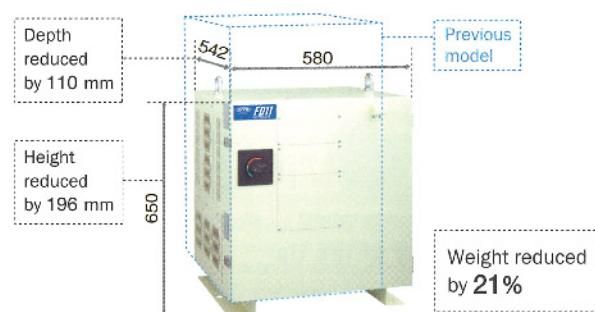
## Improved movement performance Smart welding

- By increasing the robot response speed to welding start signals, arc start failures are reduced and high-quality bead appearance is achieved.
- By greatly reducing residual vibrations, high-speed approaches are made possible.



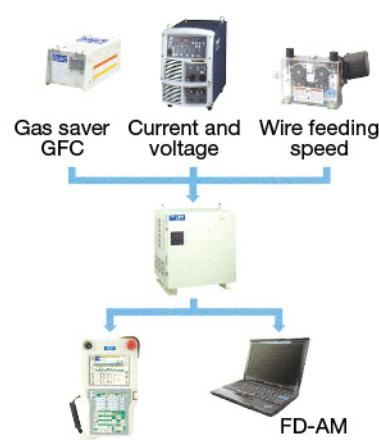
## Improved space utilization Down-sized

Without increasing the installation footprint, the height has been reduced.



## Increased reliability Smart welding

When a welding error occurs troubleshooting can be done easily, leading to reducing downtime.



### Welding recorder (optional)

When a welding errors occurs, data is backed up automatically. This helps finding the cause of the trouble, leading to reducing downtime.

**Traceability is easily added (optional)**  
Simply by connecting an FD-AM computer, traceability can be included.

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# PC software

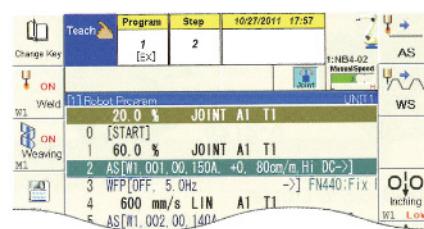
Offers offline teaching beyond simulator

## Offline teaching system FD-ST

High-accuracy / high-performance teaching & simulation achieved by the same operation as that of robot!

**Fully compatible with the controller FD11**

This teaching system can be operated by the same operation of the robot controller FD 11. If OTC standard robot system is provided, the setup can be completed only by reading the backup data.



### New Function realizing simplified operation!

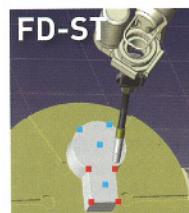
#### Snap function at any point

The snapping operation can be done anywhere on the surface of 3D model.

- Snapping is possible only at the end points.
- Direct designation is impossible at the points other than end points.

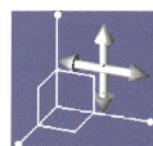


- Designation is possible at the end points, edge lines, and any points on the plain surface.

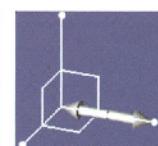


### Equipped with easily understandable operate handle

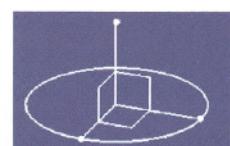
Intuitive operation of 3D model is possible.



Planar movement



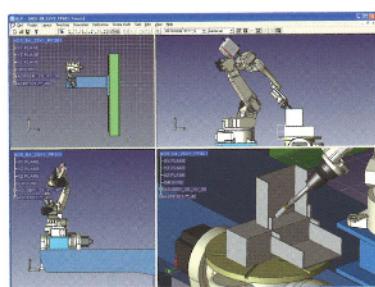
Parallel movement



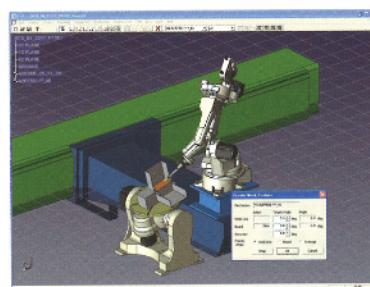
Rotating movement

### Automatically creates the welding pass on any edge line on the 3D work model.

\*in preparing the 3D work piece model, 3D CAD is required separately



Multiviewer



Automatic generation of work position (optional)

### Tact time can be predicted with accuracy.

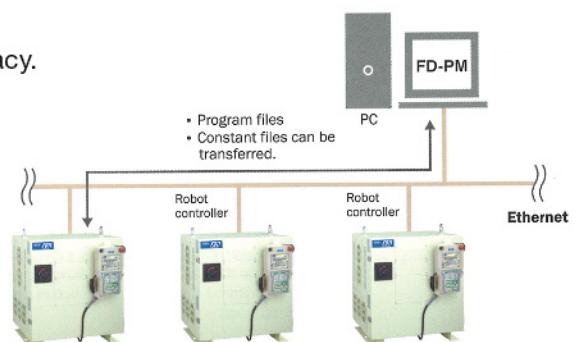
Robot control software ensures high tact simulation accuracy.

#### PC software

#### Backup tool for task program

## PC external storage software FD-PM

- Various files such as task program and PLC program can be saved or loaded between PC and robot controller.
- Centralized control using only one PC is possible by connecting plural robots to LAN



\* LAN equipment connecting robot and PC is not included in this product.

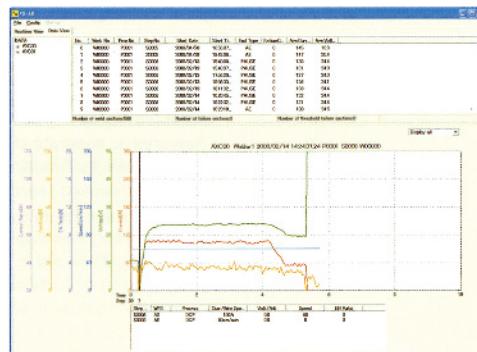
## PC software

## Welding quality control by PC

## PC arc monitor FD-AM

## Visual display of welding condition

This monitor display the welding current, welding voltage, and wire feeding load graphically. It can also display detailed welding start condition and state of robot controller.



## Monitoring accuracy improved

The sampling frequency is increased 10 times compared with the conventional method, allowing detection of instantaneous arc outage or arc outage in short tack welding.

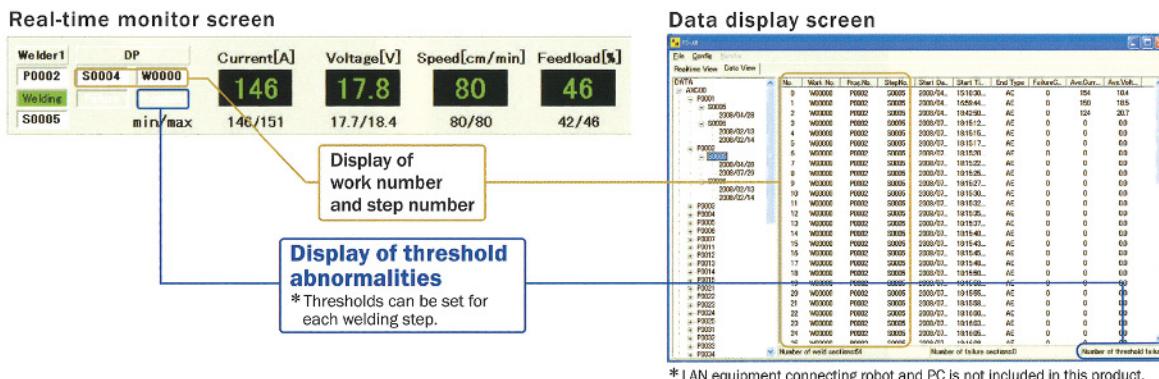
## Welding condition can be saved

The number of times of welding, number of occurrence of failures, task program number, welding time, and average current can be saved.

\*The storable capacity depends on the capacity of hard disk of your PC.

## Quality control for every workpiece

An alarm output or abnormal threshold can be identified for each workpiece by inputting the workpiece number in the robot controller. This monitor supports detection of failure of workpieces.

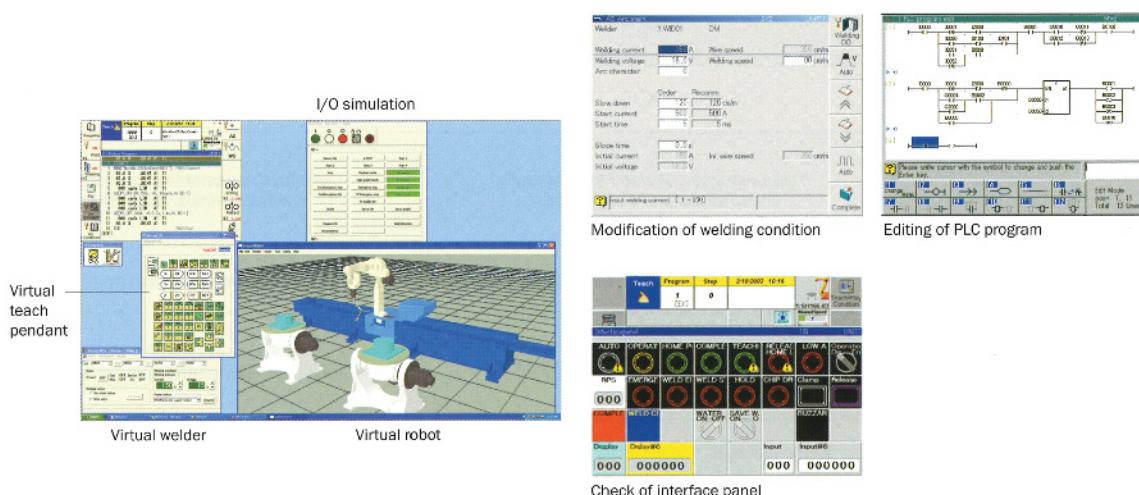


\* LAN equipment connecting robot and PC is not included in this product.

## Best suited as a support tool after installation of robot

## Robot simplified simulation tool FD on desk

Enables editing of the welding condition and PLC program as well as the task program by the same operation procedure of robot



\*In transferring of the data from/to FD11 controller, either optional USB memory or PM is required separately

our product

# Laser Welding Machine

Fiber Series: 1000W

- 30% Electro-optical Conversion Efficiency (Typical)
- Water-cooled
- Maintenance-free operation
- Single-mode/multi-mode fiber delivery



1000W Fiber Laser



Laser Welding Sample Show 01-22 | Laser Cutting Sample Show 23-27



01 Battery Pack



02 NI-MH Battery



03 Lithium-ion Battery



04 Battery Cap



05 Battery Cap



06 USB Hasp



07 Cellphone Shelf



▲ Battery  
◀ Consumer Electronics



08 Fiber Connector



09 Photo-communication Part



10 Sensor



11 Sparking Plug



12 Car Components



13 Cluth



▲ Photo-communication  
◀ Car



14 Coffeepot



15 Air conditioning four-way valve pilot valve



16 Sanitary Valve



17 Heating Tube



18 Solar Collector



19 Motor 1



20 Motor 2



21 Hard Ware



22 Relay



▲ Household appliances  
◀ Motor



23 Stainless Steel



24 Aluminium



25 Iron Plate



26 Galvanized Sheet



27 Copper

# Robot Application in Industries

## Brazing



## Welding



## Handling



## Laser Cutting



## Plasma Cutting



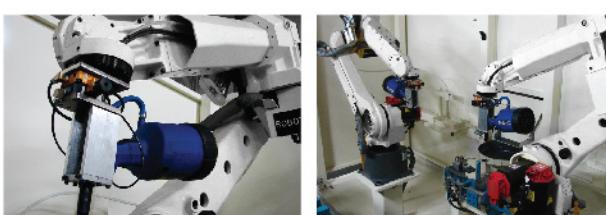
## TIG



## Polishing and Griding



## Rivet



## Sealing



## Spot robot



## Stud Welding



## OTC-Daihen Dual Station Robotic Weld Cell

The **OTC-Daihen ECO-ARC** robotic weld cells are the simplest solution for welding small parts. Period.

The ECO-ARC are dual-station positioning cells designed for welding small and medium parts with the simplest operator intervention. Each station on the **ECO-ARC 200** model features large 24" x 32" tables with a 2,000 lbs payload capacity. The **ECO-ARC 200L** model allows welding of larger parts, made possible from 36" x 48" table with 2,000 lbs payload capacity. While the operator prepares the next workpiece, the robot welds on the opposite side. Plus, the ECO-ARC's has a new compact design, which makes it ideal for busy shops with small-to-medium-volume production schedules.

All ECO-ARC weld cells are shipped pre-assembled, so you don't have to worry about the hassle of a prolonged and involved installation. It's quick and simple. You can have your new weld cell out of the box and ready for used in just a few hours.

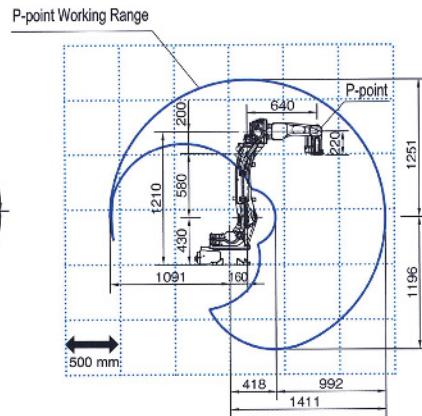
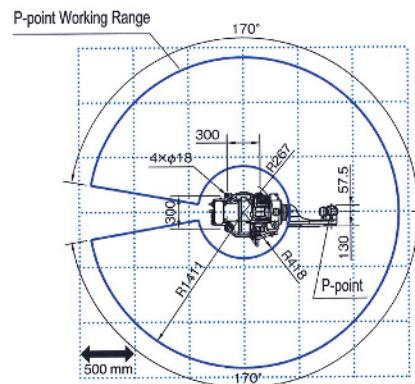
## Welding Station



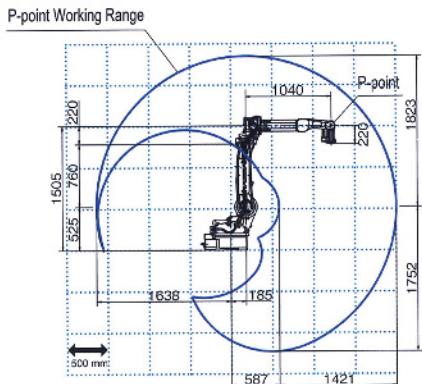
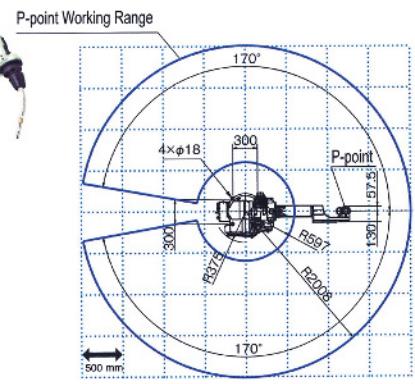
our product

# Manipulator working range / Specifications

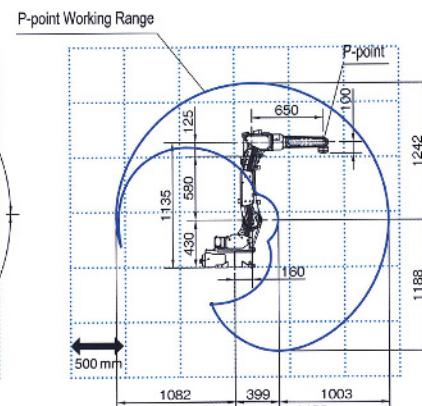
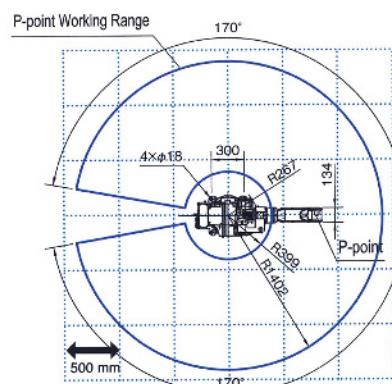
Standrad

**FD-B4**

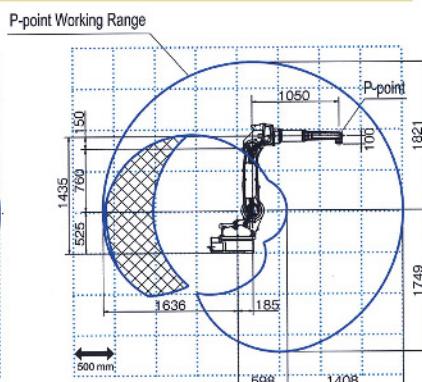
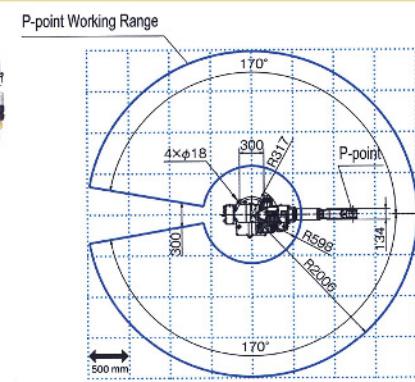
Long Reach

**FD-B4L**

Standrad

**FD-V6**

Long Reach

**FD-V6L**

For welding applications when floor-mounted

For other than the above

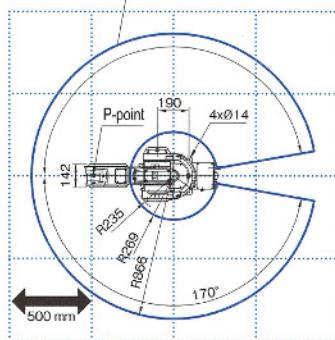
## our product

Compact

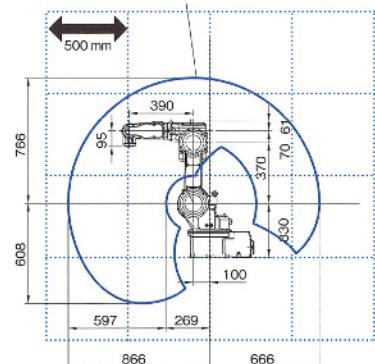
## FD-H5



P-point Working Range



P-point Working Range

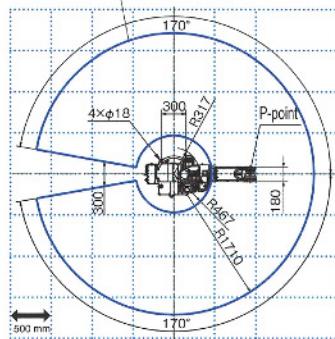


Standard

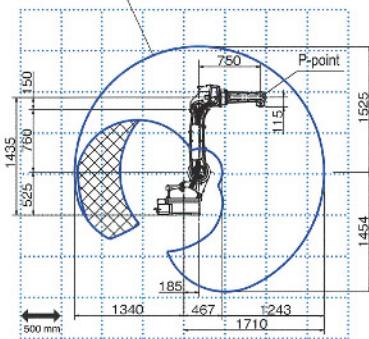
## FD-V20



P-point Working Range



P-point Working Range



□: For welding applications when floor-mounted  
 ☒: For other than the above

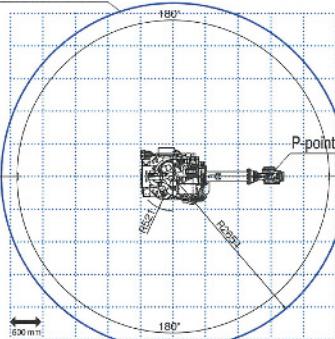


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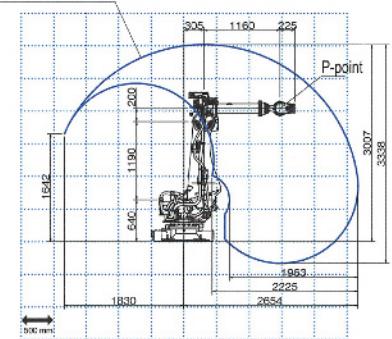
## FD-V166



P-point Working Range



P-point Working Range

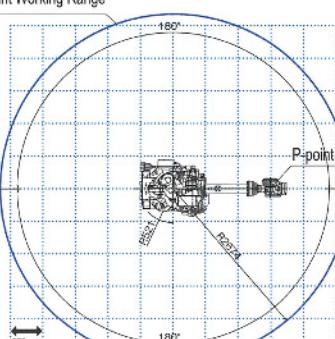


Standard

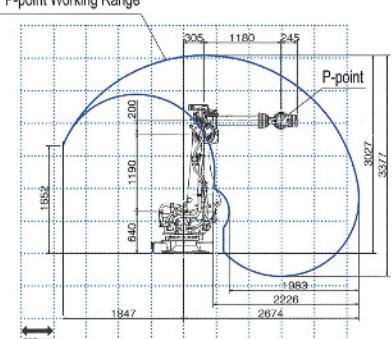
## FD-V210



P-point Working Range



P-point Working Range



# TSM

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