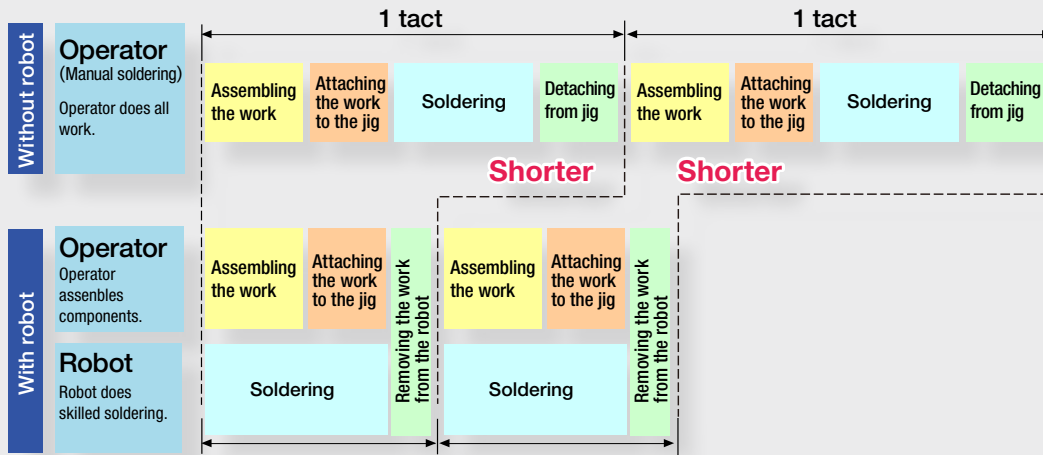


SOLDERING SYSTEM

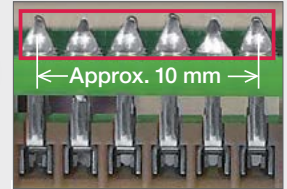
Operator and robot divide the work and operate simultaneously → High efficiency/Lower costs
Does not rely on the operator's soldering skills → High quality solderings

FA-1100/1300 series Configuration Guide

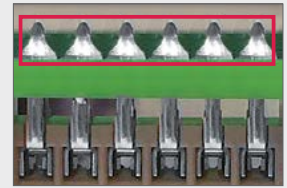
Better soldering operation time and quality



Manual Soldering



Robot Soldering



Nice and uniform!



® SOLDERING IRONS, EQUIPMENT & ACCESSORIES
TAIYO ELECTRIC IND.CO.,LTD.

Website: www.goot.co.jp/en/ E-mail: info.intl@goot.co.jp



vinapham
YOUR NEEDS, OUR SOLUTIONS

Soldering System FA-1100/1300 series

FEATURES 1

- Integrated heater gives both accurate tip temperatures and lower running costs.
- Compact sensor eliminates direct heat from heater.
- Tight heater coil and tip sensor slash rise and recovery times.
- We make our tips in-house. Japanese quality for your needs.

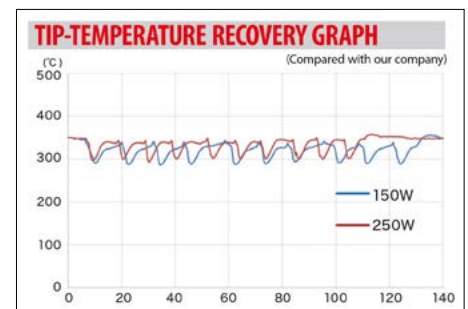


NEW

In addition to the 150W tips, 250W tips newly added to the lineup.

Improved working efficiency with high heat storage components such as automotive parts! Three new elements realize heating performance *34% higher than conventional.

*Comparison with FA-10HRT series

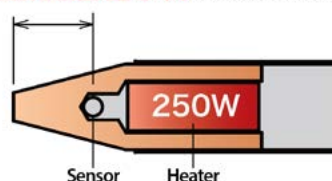


① Heater Output 250 W



② Sensor Positioned at Tip

Shorter distance between tip & sensor
more than 20% (compared to previous models)



③ Substantially More Volume!

FA-30HRT (New)



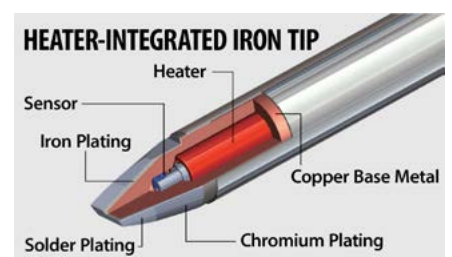
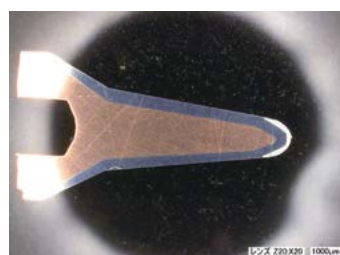
FA-10HRT (Previous)



Replacement Tips & Customized Tips Made here in our factory, all by us!

Shape and spec. in pursuit of soldering work.

- We make our tips in-house. Flexible manufacturing tailored to your needs.
- N2 soldering is available.



Soldering System FA-1100/1300 series

FEATURES 2 Controls each unit for soldering **Control Unit FA-1000**

Serial communication with our Robot FA-3 series. Can be controlled by Teaching Pendant.

*Some settings cannot be controlled by Teaching Pendant.



Color touch panel for improved visibility

Touch Panel



- Large color touch-panel for better visibility and operability.
- Available in Japanese, English, Chinese, and Spanish.

FEATURES 3 I/O installed to communicate with the external device (NPN type)

Sample Desktop Robot Configuration

Configure soldering systems by connecting FA-1000 to your Robots

**Mitsubishi Electric Collaborative Robot
MELFA ASSISTA**



[vimeo Video](#)



**Example with Collaborative Robot
DENSO WAVE COBOTTA**



[Youtube Video](#)



**Take a spare robot, and
Make a soldering robot!**



[vimeo Video](#)



UNIVERSAL ROBOTS

Collaborative 6-axis Robot TECHMAN

Sample Desktop Robot Configuration

Desktop Robot Configuration FA-3 Series

- Easy teaching by dedicated soldering program.
- Easy-to-operate Teaching Pendant
- 999 programs can be registered.
- Data can be output via LAN or MEMORY port. (Optional PC software is required.)

FA-3204A (200 x 200 mm)



FA-3304A (300 x 300 mm)



FA-3404A (400 x 400 mm)



FA-3504A (500 x 500 mm)



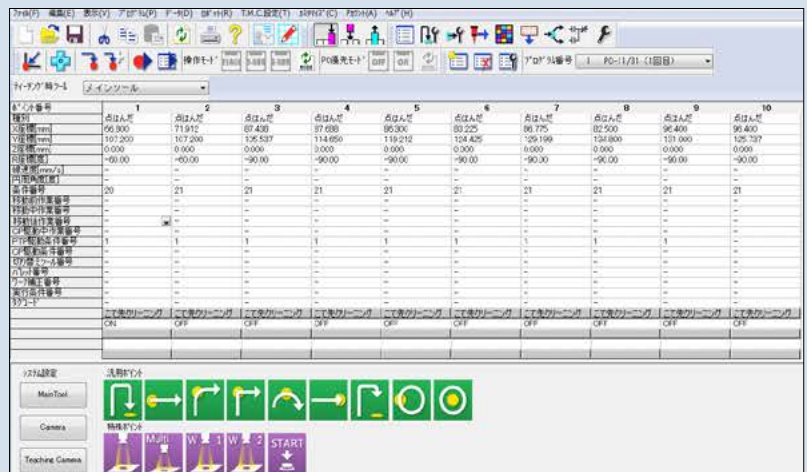
Teaching Pendant FA-JR3000-TP2

Teaching pendant for intuitive coordinate setting. Interactive format makes teaching easier.



PC Software FA-JR3000-PC2

Software for applications to create, edit, and save teaching or customized data on a PC. A limited version software is included as standard, which can only send/receive and save data.



FA-3 series Robot Standard Specifications

		FA-3204A	FA-3304A	FA-3404A	FA-3504A*	
Axis Type		Regular 4-Axis, Optional 2-Axis (Max. 6-Axis)				
Operating Range	X-Axis	200 mm	300 mm	400 mm	510 mm	
	Y-Axis	200 mm	320 mm	400 mm	510 mm	
	Z-Axis	50 mm	100 mm	100 mm	100 mm	
	R-Axis	±120° (Max. ±360°)				
Shape		Cantilever type	Gate type	Cantilever type	Cantilever type	
Maximum Portable Load (Workpiece)		7 kg	15 kg	15 kg	15 kg	
Maximum Speed <PTP Movement>	X, Y-Axis	700 mm/sec	900 mm/sec	900 mm/sec	900 mm/sec	
	Z-Axis	250 mm/sec	400 mm/sec	400 mm/sec	400 mm/sec	
	R-Axis	600°/sec	900°/sec	900°/sec	900°/sec	
Maximum Speed <CP Movement>		X, Y, Z Combined Speed	600 mm/sec	850 mm/sec	850 mm/sec	850 mm/sec
Repeatability	X, Y-Axis	±0.01 mm				
	Z-Axis	±0.01 mm				
	R-Axis	±0.008°				
Work Size (Maximum Size of Jig)		200 mm × 145 mm	300 mm × 275 mm	400 mm × 355 mm	510 mm × 470 mm	
Teaching Method		Remote teaching (JOG) / Manual Data Input (MDI)				
Teaching System		Direct teaching using the optional teaching pendant Off-line teaching with optional software from a PC				
Teaching Pendant Display	Measurement Units	mm, inch				
	Languages	Japanese, English, French, Spanish, Italian, German, Korean, Simplified Chinese, Traditional Chinese, Czech, Vietnamese.				
Program Capacity		999 programs				
Data Capacity		Up to 32,000 Points				
External Input/Output	I/O-SYS (Standard)	16 Inputs, 16 Outputs				
	I/O-1 (Standard)	8 Inputs, 8 Outputs (including 4 relay outputs) *For connecting with optional (FA-1000TCM)				
	I/O-MT/I/O-S	I/O-MT: External Motor Control (Option)				
	COM1 (Standard)	I/O-S: For connecting with interlock device such as area sensor (Option)				
	COM2 (Standard)	RS-232C for external device control, COM commands				
	COM3 (Standard)	RS-232C for external device control (for connecting with FA-1000)				
	MEMORY (Standard)	RS-232C for external device control				
	LAN (Standard)	For USB memory connection For PC connection via the Ethernet (10BASE-T/100BASE-TX)				
Simple PLC Function		Max. 100 programs, Up to 1,000 steps/1 program				
Drive Method		5 phase pulse motor drive				
Control Method		PTP (Point to Point) control, CP (Continuous Path) control				
Interpolation		3-dimensional linear and arc interpolation				
Power Source		AC100~120V (Single Phase) AC220~240V (Single Phase)				
Power Consumption		200W				
Operating Environment	Temperature	0~40°C				
	Relative Humidity	20-90% (Without condensation)				
	Elevation	Up to 1,000m				

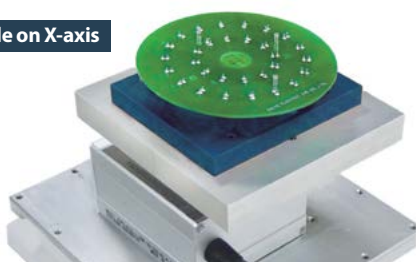
*FA-3504A is customized model.

Example of Customization Various customizations can be made to fit your work.

Added Control Axes (max. 4 axes + 2 external axes)

- Two motor controls are possible besides XYZR axis. (Control of up to 6 axes is possible)
- Add a turntable to change the direction of the work, or a conveyor belt under robot control.

E.g. mounting turntable on X-axis



Positioning Camera (Optional)



*Choice of camera and lens depends on size, position, etc. of the Recognition Marks on PCBs and the desired correction accuracy.

Easy detection and correction of tip position.

FA-1000 Standard System Configuration

Control Unit

FA-1000

High performance control unit

- 256 soldering conditions can be registered.
- Easy-to-operate multi-language touch panel
- Available in Japanese, English, Chinese, and Spanish.
- I/O port as standard equipment can be connected with various robots.
- Memory card function and tip temperature output to monitor can be added as options.

About Optional Functions

• Memory Card Reader / Writer

You can save soldering configurations on memory cards. Good to copy the data to other FA-1000 Control Units and also to backup.

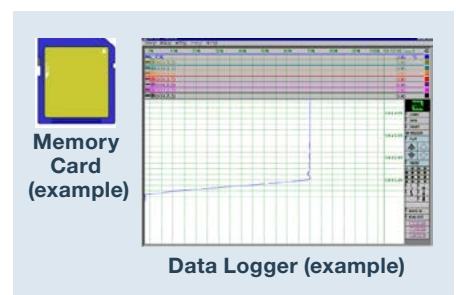
• 1-5 V Analog Voltage Output

Tip temperature is output by 1-5 V analog voltage. An off-the-shelf data logger would be helpful to monitor temperature control.



Control Unit FA-1000	Rated Voltage	AC 110-120 V, 220-240 V 50/60Hz
	Power Consumption	250-280 W
	Number of Soldering Programs	256 programs
	Tip Temperature Range	50-450°C
	Tip Temperature Preset	6 settings
	Input Air Pressure	Dry Air 0.4 -0.5 MPa
	Alarm Display	Heater break / Temperature sensor break / Solder clogging / Solder lacking etc.
	Dimensions	140 (W) x 280 (H) x 240 (D) mm
	Weight	8.6 kg
Solder Feeder Unit FA-1100FD	Solder Diameter	ø0.5 ø0.6 (ø0.65) ø0.8 ø1.0 ø1.2 mm
Soldering Unit FA-1100SD	Heater Voltage / Power	24 V / 150 W
	Length	135 mm (Soldering Unit only.)
	Weight	Approx. 370 g (Soldering Unit only.)
Soldering Unit FA-1300SD	Heater Voltage / Power	24 V / 250 W
	Length	135 mm (Soldering Unit only.)
	Weight	Approx. 370 g (Soldering Unit only.)

Model	Optional Functions	
	Memory Card Reader / Writer	1-5 V Analog Voltage Output
FA-1000	×	×
FA-1000-S2	○	○
FA-1000-S3	○	×
FA-1000-S4	×	○



Solder Feeder Unit FA-1100FD / FD-1100FD-V

- Compact, integrated Reel Holder / Feeder Unit.
- Stepping motor controls feed amount precisely.
- Solder-Clog / No-Solder sensors built-in.
- One action to replace solder.
- Original sensor for vertical / horizontal attachment.
- Good for automation with third party robot.

Robot	FA-3204A	FA-3304A FA-3404A FA-3504A
Model	FA-1100FD-V	FA-1100FD



FA-1100FD-V



FA-1100FD

FA-1000 Standard System Configuration

■ V-Groove Unit FA-1100VU

- Swappable gearbox can make V-groove.
- Vertical grooved rollers prevent solder slippage.
- V-groove processing on the solder lets flux gas escape, greatly reducing solder and flux scattering which causes defects.



Model	Solder Dia.
FA-1100VU-05	φ 0.5
FA-1100VU-06	φ 0.6 (φ 0.65)
FA-1100VU-08	φ 0.8

Model	Solder Dia.
FA-1100VU-10	φ 1.0
FA-1100VU-12	φ 1.2

■ Roller Unit FA-1100VU-S1

- Swappable gearbox without V-groove.
- No V-groove, easy to maintain inside the gearbox.

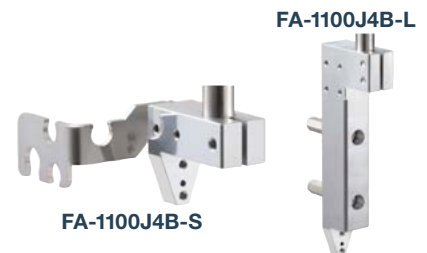
Model	Solder Dia.
FA-1100VU-05-S1	φ 0.5
FA-1100VU-06-S1	φ 0.6 (φ 0.65)
FA-1100VU-08-S1	φ 0.8

Model	Solder Dia.
FA-1100VU-10-S1	φ 1.0
FA-1100VU-12-S1	φ 1.2

■ Robot Mounting Block FA-1100J4B-S / FA-1100J4B-L

- Block to connect the robot and Soldering Unit (FA-1100SD/FA-1100SD-R).
- Can connect to the robot of shaft-dia. 10mm.
- Solder Feeder Unit (FD-1100FD) can be attached to FA-1100J4B-L.

Robot	FA-3204A	FA-3304A / FA-3404A
Model	FA-1100J4B-S	FA-1100J4B-L



■ Clog-Detection Unit FA-1100FDB

- Detects solder clogs immediately. Prevents solder buckling. (When using FA-1000)
- Easy to attach and maintain with one-touch joint nozzle.
- Longer, straight nozzle. Solder goes straighter.
- Easy to adjust the distance between tip and nozzle.

Robot	FA-3204A	FA-3304A FA-3404A FA-3504A	Solder Dia.
Model	FA-1100FDB-05A	FA-1100FDB-05B	φ0.5
	FA-1100FDB-06A	FA-1100FDB-06B	φ0.6 (φ0.65)
	FA-1100FDB-08A	FA-1100FDB-08B	φ0.8
	FA-1100FDB-10A	FA-1100FDB-10B	φ1.0
	FA-1100FDB-12A	FA-1100FDB-12B	φ1.2
Tube Length	450mm	300mm	

Choose the suitable Clog-Detection Unit for your solder diameter.



■ Air Blow Tip Cleaner FA-1100CL

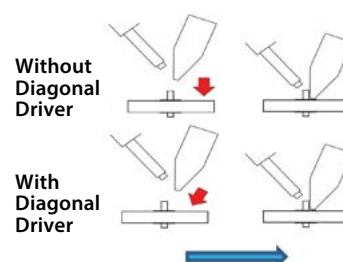
- Removes excess solder on tip.
- Bigger size (160% of previous model), and internal air-blow shield greatly reduce solder splash.
- Easy to clean and maintain. Attach/detach the dust catcher in one action.
- Angle scale on the Blow Nozzle for numerical control.



■ Diagonal Driver FA-1100SL

- Enables Soldering Unit to go up-down with air-power.
- Tip slides in neatly, avoiding components.
- Up/Down detection sensor. Stroke length: 8mm

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Soldering Units / Replacement Tips

Soldering Unit

- Compact and easily installed on robots and devices.
- Weight is 370g or less. Can be attached to weak robots with carriable power 500g.
- Can check the angle of Solder Nozzle with a scale on the Soldering Nozzle Holder (45-90°).
- Solder-feeding angle can be changed to $\pm 30^\circ$.
- Easier to replace tips with new improved mechanism. (PAT.)

- Angle-Setting Plate may be attached the other way, upon request. Please choose attachment when you order. Can be set to deliver the solder under the soldering iron tip.



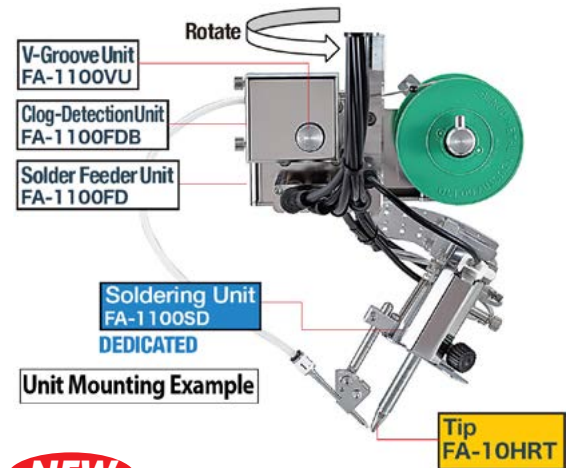
150W Soldering Unit FA-1100SD / FA1100SD-R



FA-1100SD



FA-1100SD-R



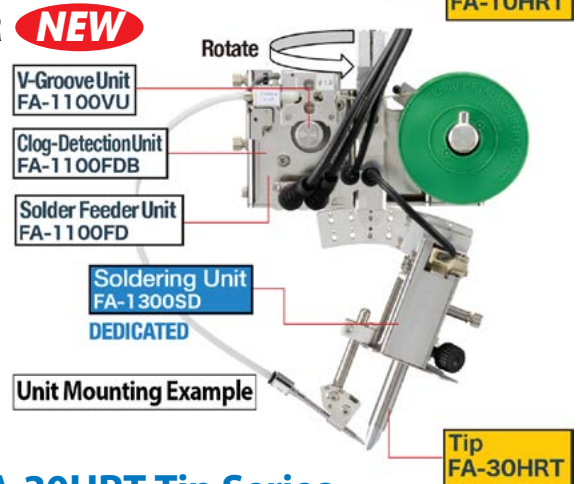
250W Soldering Unit FA-1300SD / FA1300SD-R **NEW**



FA-1300SD



FA-1300SD-R

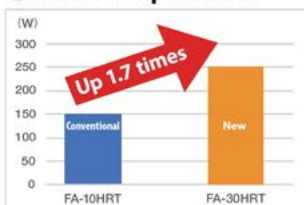


Ultra Power 250W High-powered Heater FA-30HRT Tip Series

Improved working efficiency with high heat storage components such as automotive parts! Three new elements realize heating performance *34% higher than conventional.

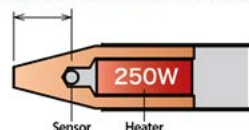
*Comparison with FA-10HRT series

① Heater Output 250 W

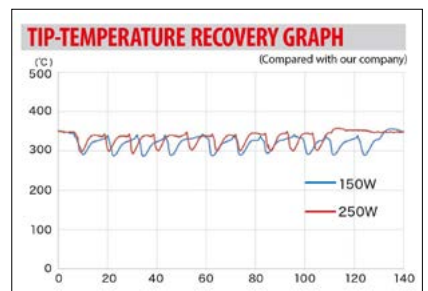


② Sensor Positioned at Tip

Shorter distance between tip & sensor more than **20%** (compared to previous models)



③ Substantially More Volume!

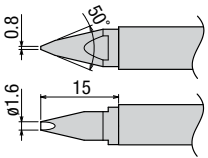
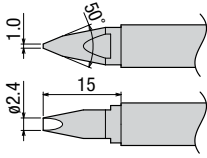
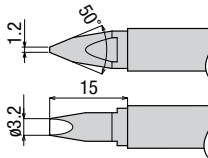
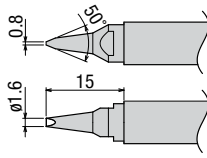
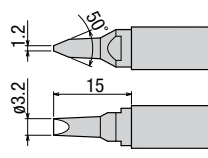
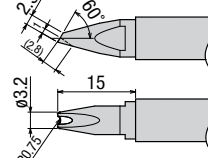
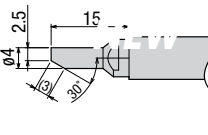
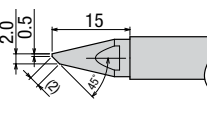
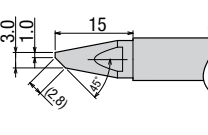
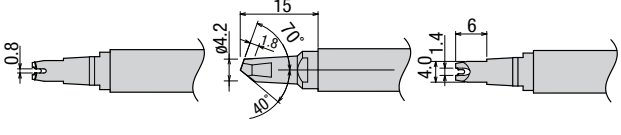
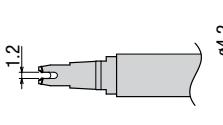
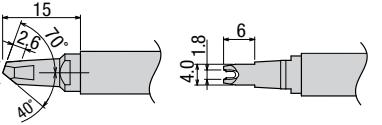



Soldering Units / Replacement Tips

Replacement Tips

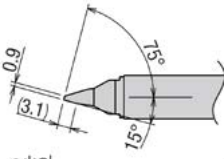
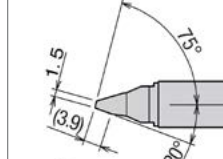
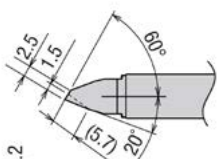
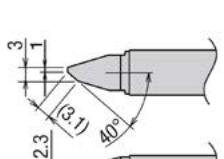
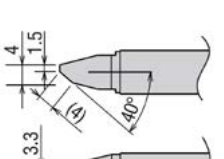
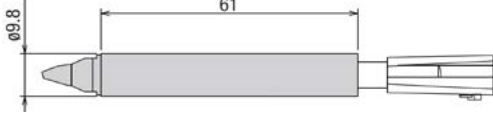
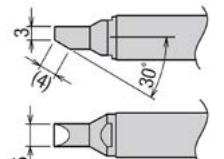
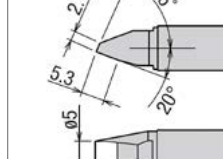
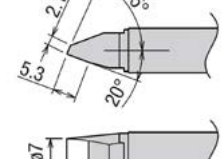
Dedicated FD-1100SD / FD-1100SD-R

*These are our standard tips. Custom tips available in small to large quantities.

FA-10HRT-1.6D	FA-10HRT-2.4D	FA-10HRT-3.2D	FA-10HRT-1.6SD	FA-10HRT-3.2SD	FA-10HRT-3.2DV
					
FA-10HRT-4C	FA-10HRT-2PC	FA-10HRT-3PC	FA-10HRT-0.8W		
					
FA-10HRT-1.2W					
					
					

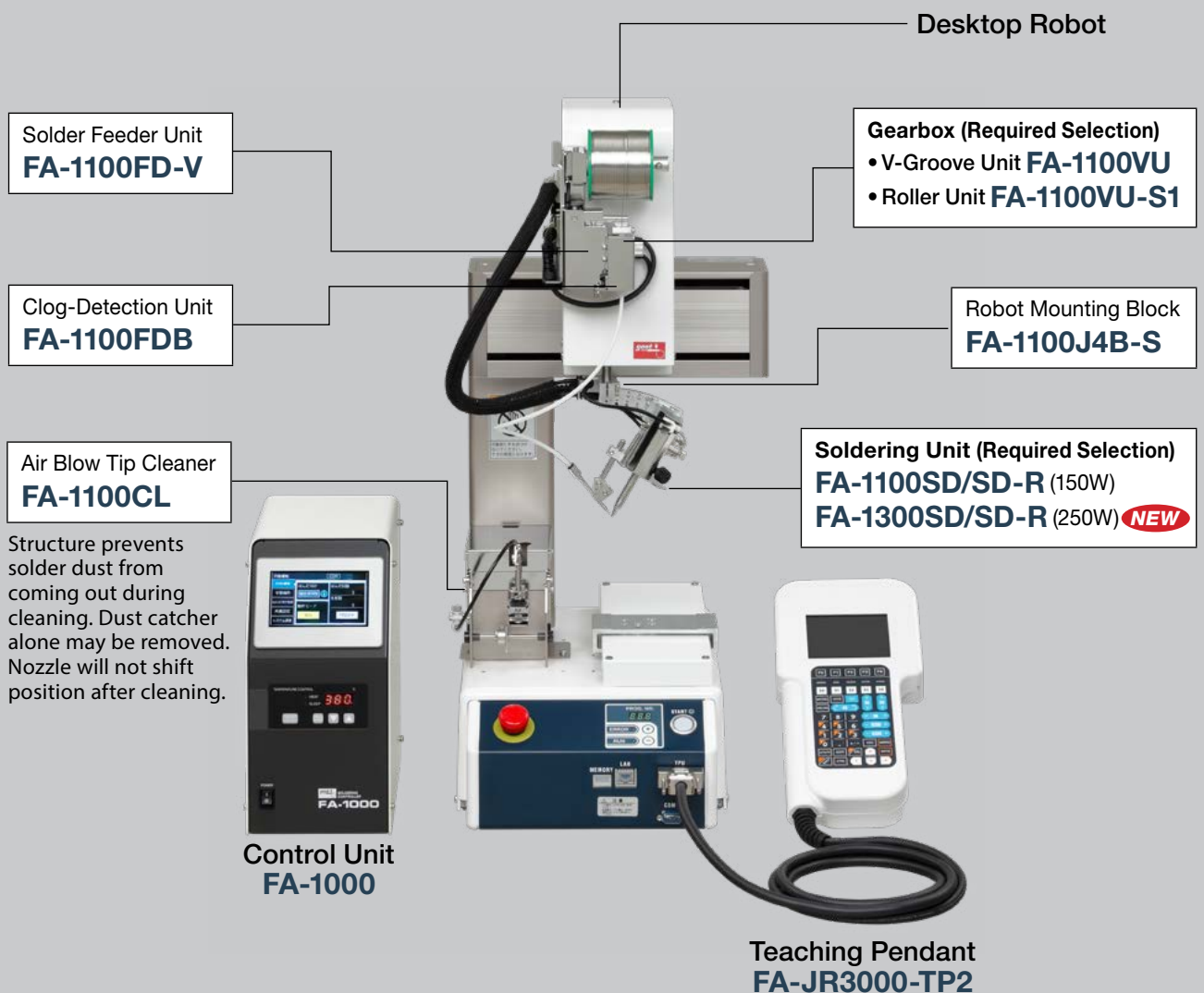
Dedicated FD-1300SD / FD-1300SD-R

*These are our standard tips. Custom tips available in small to large quantities.

FA-30HRT-2DC	FA-30HRT-3DC	FA-30HRT-3.2DV	FA-30HRT-3PC	FA-30HRT-4PC
				
FA-30HRT-5C	FA-30HRT-5DC	FA-30HRT-7DC		
				

Setup Examples

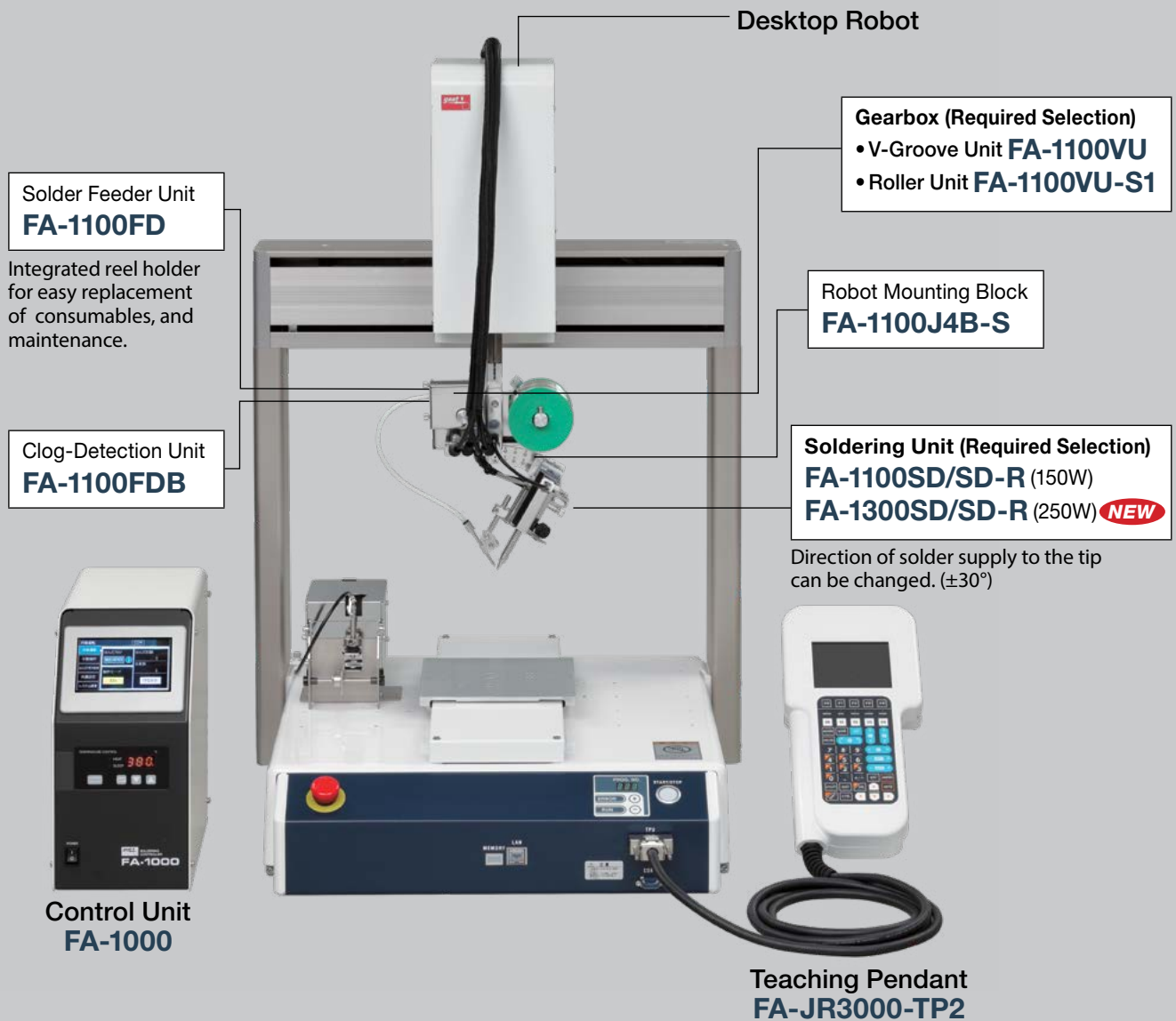
200 x 200 mm



Setup Example

Setup Examples

300 x 300 mm / 400 x 400 mm / 500 x 500 mm



Setup Example

Optionals / Consumables

■ Brush Tip Cleaner FA-1000BC

Removes burnt flux residue which cannot be removed by Air-blow cleaner.



■ Mechanical Tip Correcting Unit FA-1000TCM



Calibration Pin Detects and Corrects Position of Grooved Tip.

Our original detection pin method can also be used to detect /correct for the coordinates inside the groove of a grooved tip. Ideal for position correction when the tip groove is used to cover the terminal.

Simple, Compact Unit Configuration

When replacing the tip, simply set Mechanical Tip Correcting Unit and execute the dedicated program to automatically correct the tip position.

N₂ SOLDERING

■ N₂ Nozzle

- Reduced oxidation of soldered part and soldering tip.
- Improved spreading of solder wettability and cutting of solder.



FA-1100PH



FA-1300PH

N₂ soldering is available by just attaching the applicable tip.

*N₂ generator is required. Sold separately.

FA-1100PH (Dedicated FA-10HRT Tips)

Model	Inside Dia.	Compatible Tips				
FA-1100PH-A	ø 4.4	1.6SD	3.2SD	-	-	-
FA-1100PH-B	ø 5.8	2PC	4C	1.6D	0.8W	1.2W
FA-1100PH-C	ø 6.4	3PC	2.4D	3.2D	3.2DV	-

FA-1300PH (Dedicated FA-13HRT Tips) **NEW**

Model	Inside Dia.	Compatible Tips				
FA-1300PH-7.0	ø 7.0	2DC	3DC	5C	-	-
FA-1300PH-9.0	ø 9.0	5DC	7DC	3.2DV	3PC	4PC



■ N₂ Station NC-100R

A compact N₂ station combining N₂ generator and controller. The special separation membrane separates nitrogen from the air.

RELATED PRODUCTS

■ Tip Thermometer TM-100

The sensor's structure makes for easy tip placing. It achieves stable & accurate measurement within seconds, regardless of shape, or angle of tip.



■ Sensor Unit TM-100SU

It is possible to measure in a narrow place by connecting to sensor part of Tip Thermometer TM-100/200. Good for automatic soldering machine. (Requires separately sold TM-100 or TM-200. Sensor part TM-100S is also sold separately.)

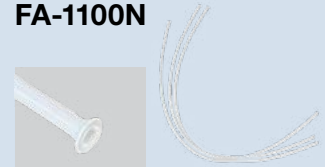


CONSUMABLES

Brush for Brush Tip Cleaner (1 set) FA-1000BU



Solder Nozzle Tube (3 pcs) FA-1100N



Robot	FA-3204A	FA-3304A FA-3404A FA-3504A	Solder Dia.
Model	FA-1100N-05A	FA-1100N-05B	ø 0.5
	FA-1100N-06A	FA-1100N-06B	ø 0.6 (ø 0.65)
	FA-1100N-08A	FA-1100N-08B	ø 0.8
	FA-1100N-10A	FA-1100N-10B	ø 1.0
	FA-1100N-12A	FA-1100N-12B	ø 1.2
Length	450 mm	300 mm	

Optionals

Fume Vacuum SS-80AS

Smoke (fumes) generated during soldering comes from the evaporation of flux-cored solder. It may be harmful to the lungs and other parts of the body. Furthermore, the accumulation of fumes in the soldering system may cause malfunctions, so we recommend using our Fume Vacuum.

- Absorbs smoke generated during soldering work.
- Air volume has 10 levels. Fine adjustment and quiet operation.
- HEPA filter (Collection efficiency: 99.97%) or long-life filter (Collection efficiency: 95%) can be chosen.

Model	SS-80AS
Voltage	110-120 V, 220-240 V AC 50/60 Hz
Power Consumption	170W
Noise Level	53dBA (at 1m from the unit)
Smoke Exhaust	2 ducts (ø75 mm)
Collection Efficiency	95% 0.3µm (Middle-class filter)
Duct Hose Length	1.4m
Suction Capacity	2) x 150 m³/h
Power Cord Length	1.5 m inlet type
Dimensions/ Weight	250 (W) x 490 (H) x 425 (D) mm / 14.5 kg
Accessories	Duct Hose SS-80D x1, Nozzle SS-80N x1, Nozzle Filter SS-80NF x5 Main Filter (95%) SS-80MF x1, Middle Filter (95%) SS-80MD x1, Pre-Filter SS-80PF x1 Duct Cap SS-80C , Dedicated Remote Controller



**ANTI
STATIC**



DEMO
VIDEO

One self-standing duct nozzle is included as standard.

Optional second duct and nozzle allow work with two hoses.



Duct hose is a removable block structure. Lengthening / shortening is possible.



Caster wheels for easy relocation.

Spot Fume Vacuum Unit FA-1100DSET **NEW**

Allows localized fume vacuum near the soldering iron tip.

Used with SS-80AS



Tube Length: 2m

Applicable Robot FA-3304A, FA-3404A, FA-3504A

*Please ask us when you use this unit with FA-3204A.



Installation Example: FA-3304A

CUSTOM TIPS from Inquiry to Delivery

From design to manufacturing, the entire process is done in-house. Please contact us or our distributors for more information.

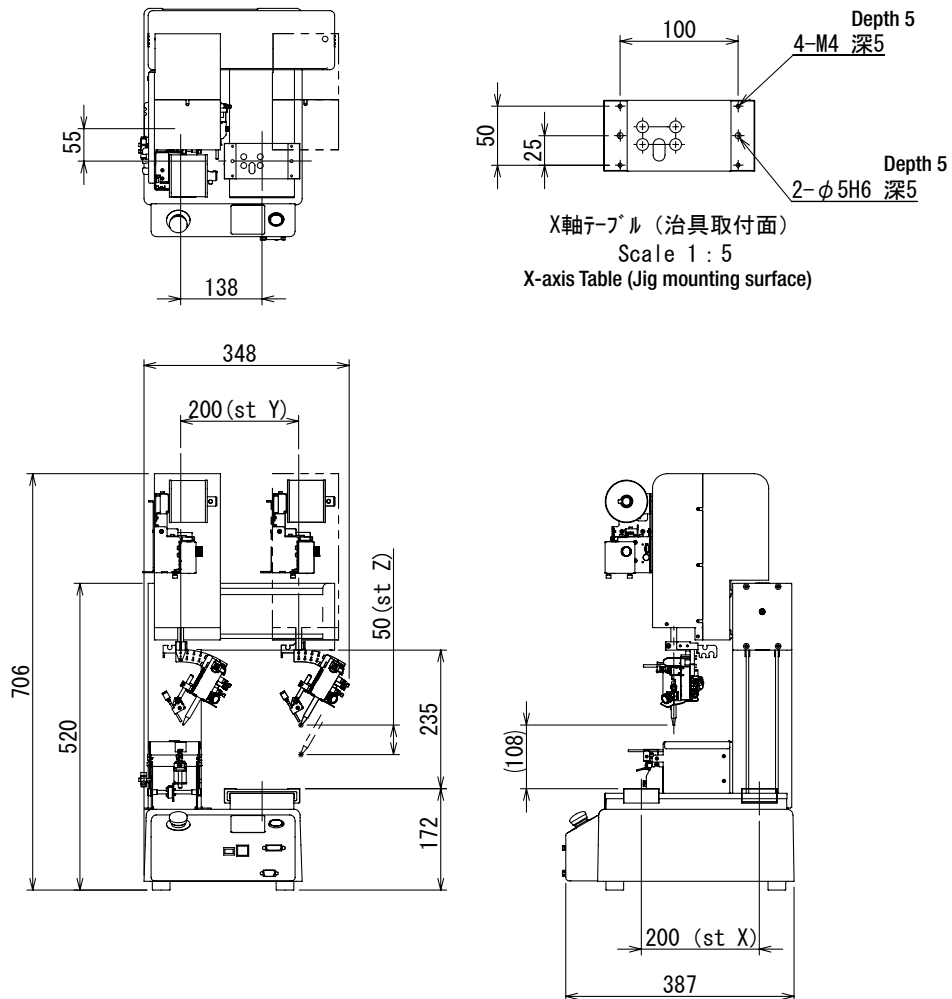


Soldering System

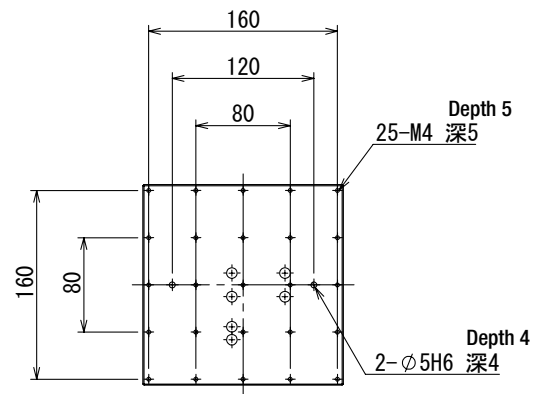
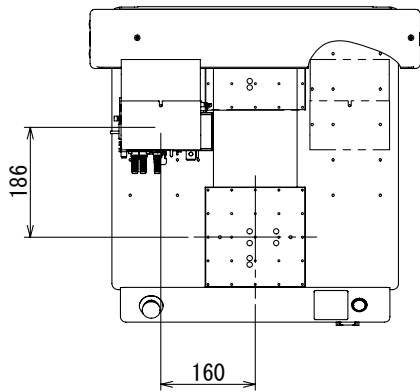
FA-1100 Series

JANOME 4-axis Robot External specifications

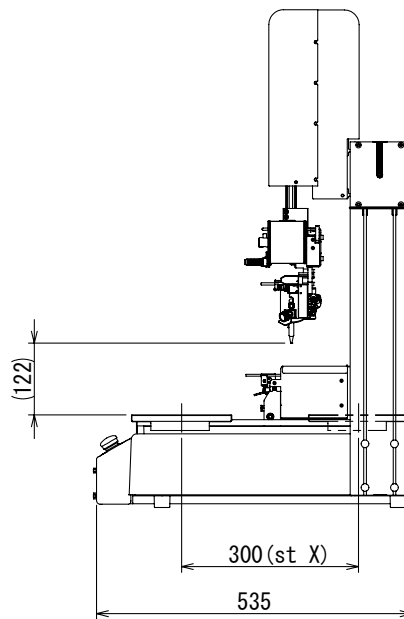
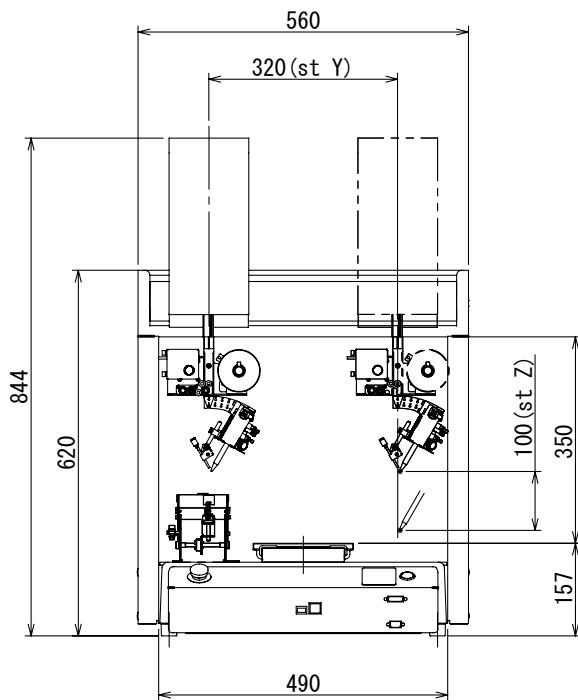
FA-3204A



FA-3304A

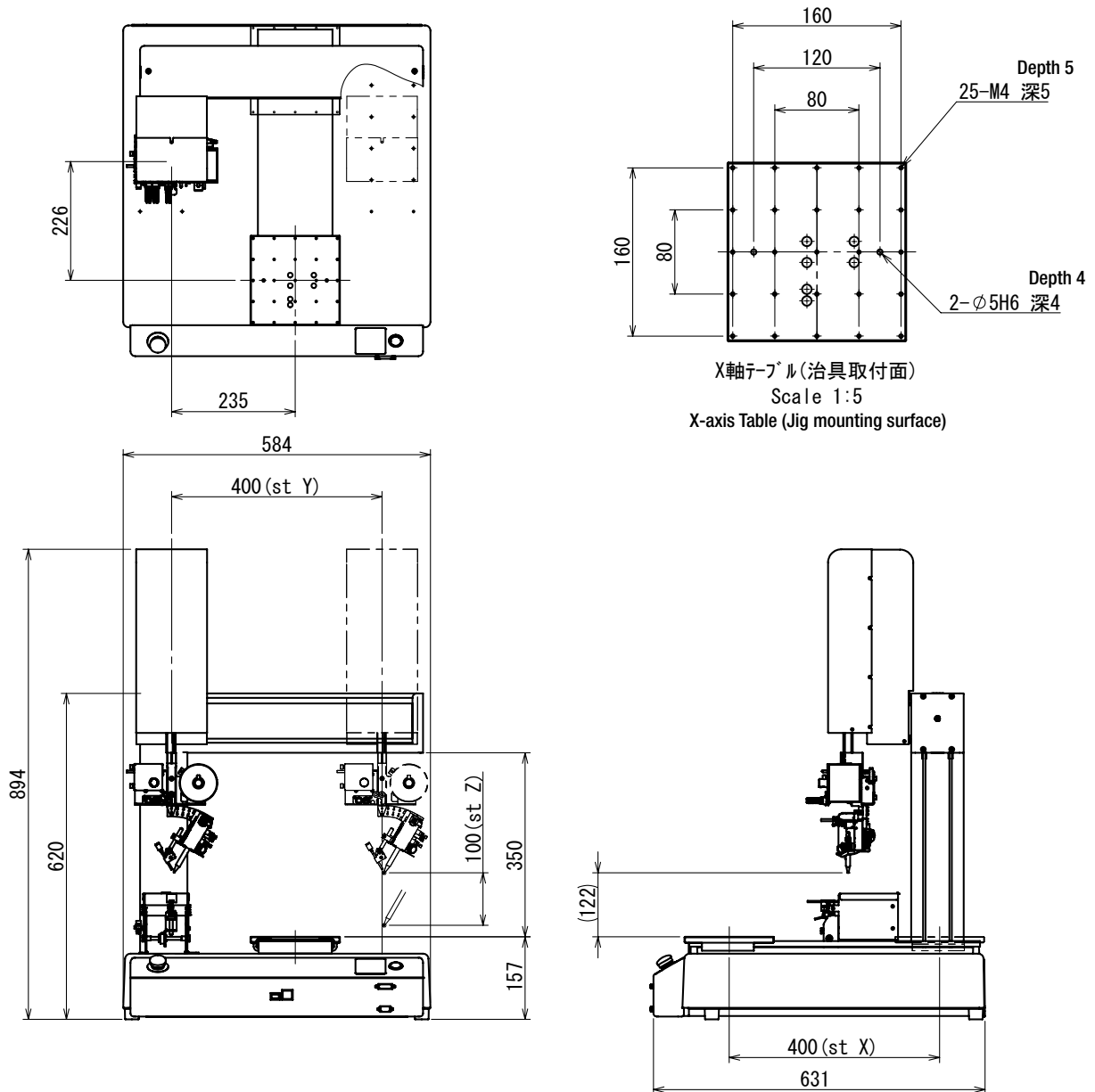


X軸テーブル(治具取付面)
 Scale 1:5
 X-axis Table (Jig mounting surface)

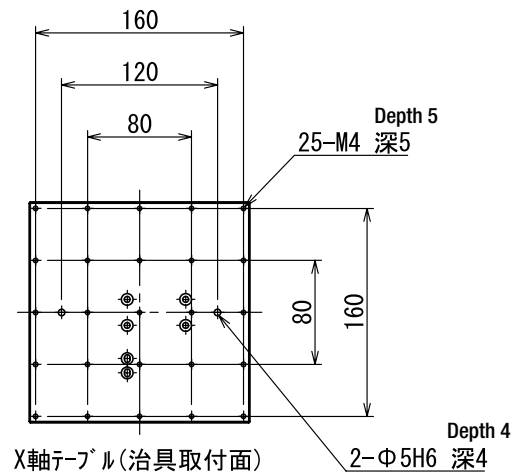
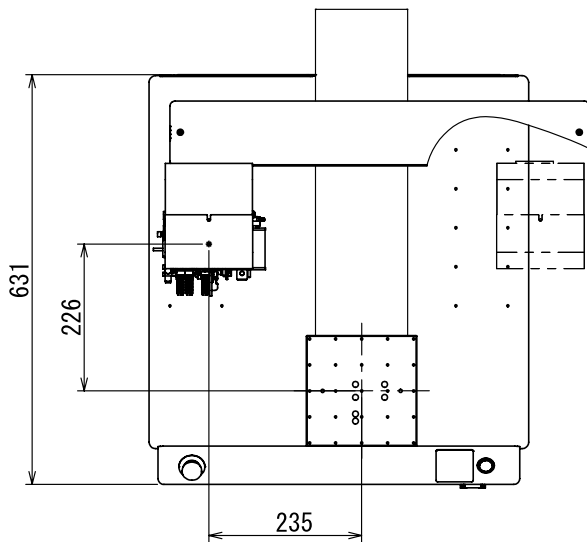


Soldering System FA-1100 Series JANOME 4-axis Robot External Specifications

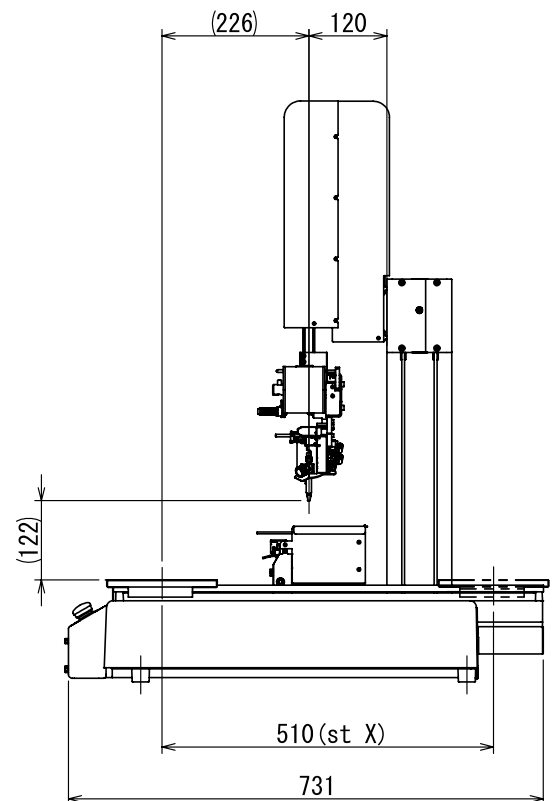
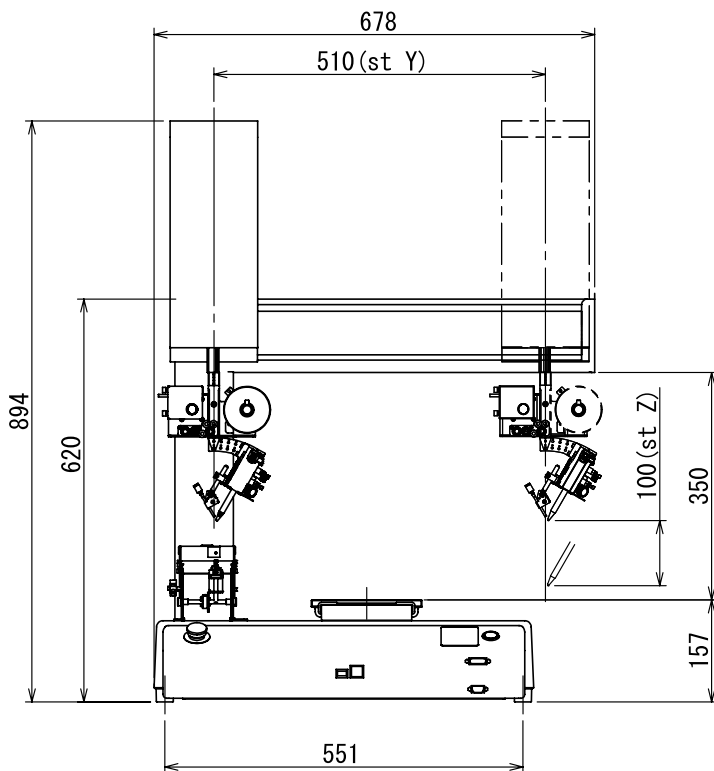
FA-3404A



FA-3504A



X軸テーブル(治具取付面)
Scale 1:5
X-axis Table (Jig mounting surface)





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