JANOME

JR2000N Series

Desktop Robot

Desktop Robot JR2000N Series brought to you by JANOME, a name with extensive manufacturing experience behind it, since 1993.

In addition to the simple teaching system, JANOME has created a customizing function which allows the user to create their own original programs.
With a standard operation range of 510mm×510mm, it is at the top of its range.

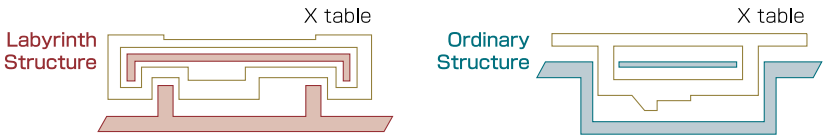
High precision

High Rigid Structure

A solid aluminum alloy die cast is employed on the base and an aluminum alloy extrusion with a high rigid section is employed on the column.

Labyrinth Mechanism

A special labyrinth mechanism underneath the work table prevents foreign objects (e.g. screws, liquid or dust).

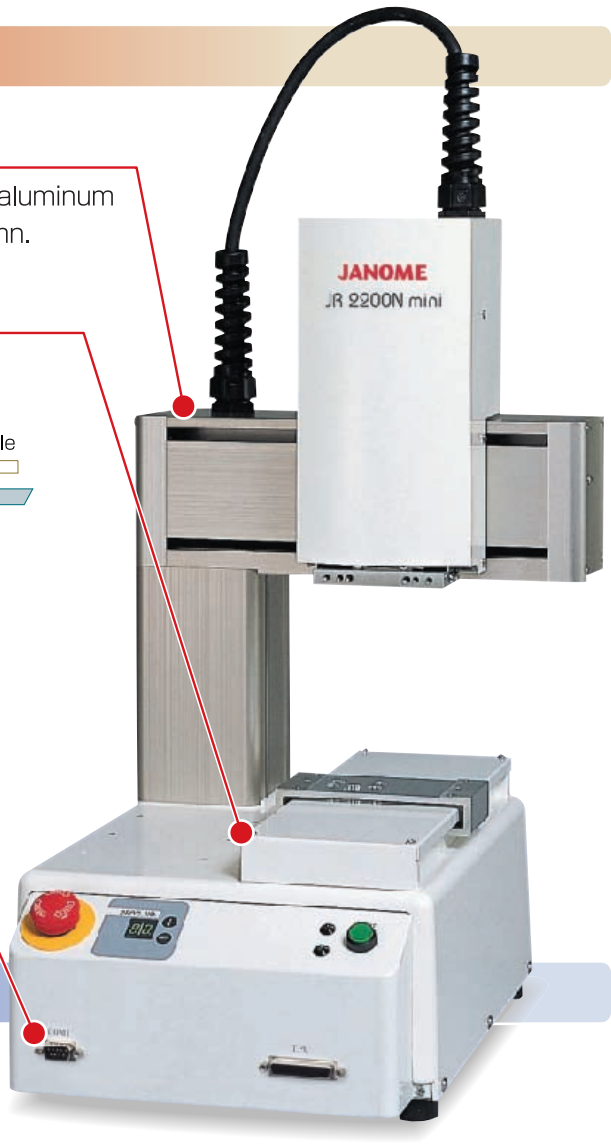


Smooth Movement

Smooth movement is attained with the micro-step control system.

Flexible Interface

- RS-232C port for PC connection
- RS-422 port for teaching pendant
- I/O (Output 16, Input 16)



User friendly

Clear Wide Screen

Wide and easily viewable teaching pendant screen.
Language : English/German/Japanese, etc
Measurement : mm/inch

Simple Teaching

Using the JR C-Points software, users can teach data easily. It also has commands to operate particular jobs. Users can create their own original software, as well too.

Enhanced Memory Capacity

Up to 255 programs (2.5 times that of the existing model) and 30,000 points (increased 5-fold) can be stored as teaching data.

4-axis simultaneous control model

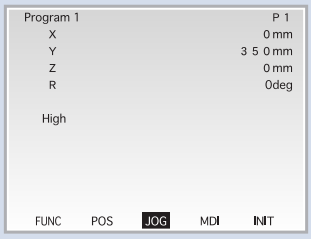
Simple Sequencer

The robot has a built-in simple sequencer which functions independently (it is not necessary to add more hardware in the case of simple PLC connection).

Create your own original programs with the customizing function.

Work Position Input

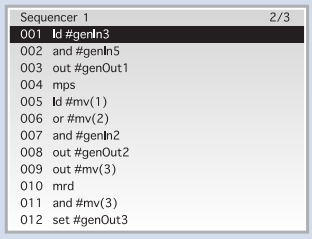
Before inputting a work position, select JOG or MDI mode simply by pressing the button on the teaching pendant. Clearly-displayed coordinate values allow you to correct positions easily.



Work Position Setting Screen

Sequencer Function

A sequencer function which can be run independently from the robot function.

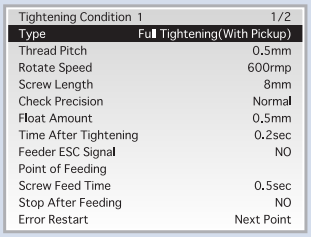


Sequencer Command Setting Screen

Application Software Examples

●Screw Tightening Software

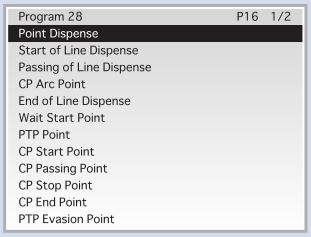
Register screw tightening conditions, such as Thread Pitch, Screw Length, and Rotate Speed, then enter the "screw tightening" position and the screw tightening condition number for the point. A screw tightening program is now complete. You can set different tightening condition numbers to each point so as to create different screw tightening conditions in a program.



Tightening Condition Setting Screen

●Dispensing Software

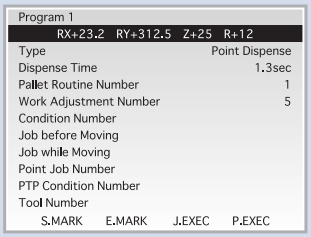
Complete a dispensing program simply by inputting work positions, such as "Point Dispense", "Start of Line Dispense", "Line Passing", and "End of Line Dispense." You can set "Dispense Time" to each "Point Dispense" point. You can change Dispense Conditions, such as "Device Mode", "Signal Operation" type (for dispenser), "Wait Time" (from Dispense ON to start shifting), "Up Amount" and "Up Speed" (at end dispensing), simply by setting and registering.



Point Type Setting Screen

●Palletizing or Work Position Adjustment by Camera

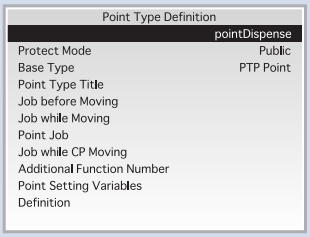
By setting a "Pallet Number", you can repeat the same operation at different points. By setting a "Work Adjustment Number", you can easily adjust a position error between the standard position captured by the camera.



Point Setting Screen

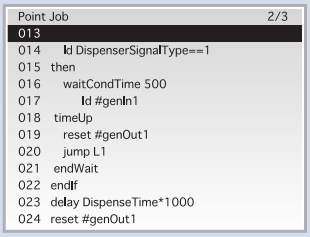
How to Create Application Software

You can create original application software for a variety of needs. For example, define a point type "Point Dispense" when creating the "Dispensing Application" software.



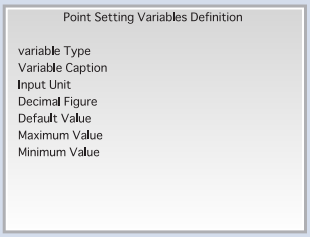
Point Type Definition Setting Screen

Register the contents of the "point dispense" operation in the point type definition. {e.g. Start the dispenser (set #genOut1), wait for a dispense time (delay Dispense Time* 100), and then stop the dispenser (reset #genOut1).}



Point Job Setting Screen

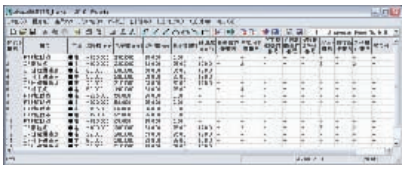
Register "Common Setting Variables Definition" in the point type definition so as to set the "Dispense Time" to each point. The process is complete simply by entering necessary items, such as "Variable Type", "Variable Caption", and "Input Unit."
Set "Enumeration Type" or "Numeric Type" as the "Variable Type." If you select the "Enumeration Type", you can select a value from the "Selection Item" list and set it.
Furthermore, you can set "Variable Caption", as well as variable names (identifiers), as a title display.



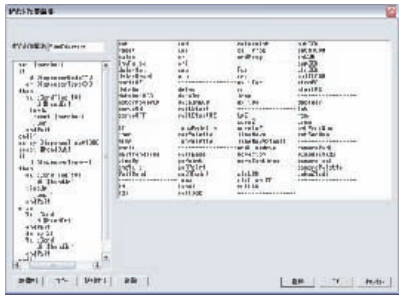
Point Setting Variables Definition Setting Screen

PC Software "JR C-Points" (Option)

The JR C-Points is an enhanced version of the PC software for desktop robots, JR Points. Tried and tested simple programming methods for various applications remain. Furthermore, additional and enhanced compile function (robot language) and customizing functions are available.
The main screen is the plural point data setting screen. You can create a program simply by entering necessary items, such as the point type, work position, line speed, pallet number, and work adjustment numbers.



You can select the horizontal display or vertical display for point alignments.
Coordinates data edited by spreadsheets such as Microsoft Excel can be downloaded easily by using the Copy & Paste function. You can also convert drawings into coordinate values and download them onto a PC using CAD data (DXF file).



You can enter and edit point job easily by selecting a desired command from the job command list.
Using the compile function, you can also read the point job data from text files. As well as local variables, global variables, and keep variables, you can use setting variables to set values as teaching parameters. As one of the robotic features, various special commands, such as "waitCondTime" command to wait for an input signal (timeouts are available until receiving the input signal), are available.

A broad interface makes it easy to use many applications.

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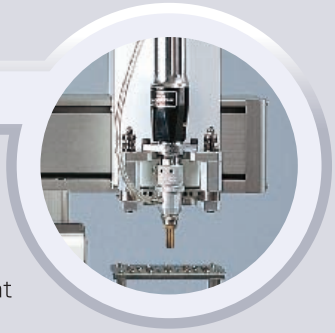
Robot Applications

Dispensing

- Simultaneous control of X, Y, Z and R axes
- Adhesion, potting, sealing; use with various materials
- Instantaneous adhesive, silicon, epoxy resin, flux for soldering



Screw Fastening

KX Servo Driver (High precision torque control)

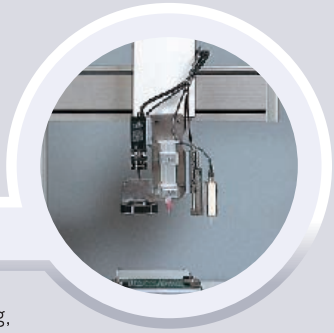
- Used for applications requiring precise tightening Input exact conditions for torque, speed, degree, rotational direction and time.

Electric Driver

- Used for standard applications requiring mechanical torque adjustment It performs loose-tightening tolerance checking and failure alert.

Soldering

- Simultaneous control of X, Y, Z and R axes
- Point, line or arc soldering
- Quick change soldering tip
- Ideal for circuit boards, lead wires, QFP, piezoelectric parts



CCD Camera & Height Sensor

- The CCD camera and height sensor integrate to supply high-speed precise inspection and accurate detection for pick & place, dispensing, and soldering applications.
- Provides easy teaching and automatic transfer function for off-positioned work pieces on the fixture.

Board Cutting

- PC board cutting without stress and cracks is achieved.
- A twin-head router is also available.

Option

Operation Box···With the start switch, program change switch, and emergency stop switch
I/O Cable

Enhanced lineup with an operation range between 200mm×200mm and 510mm×510mm.

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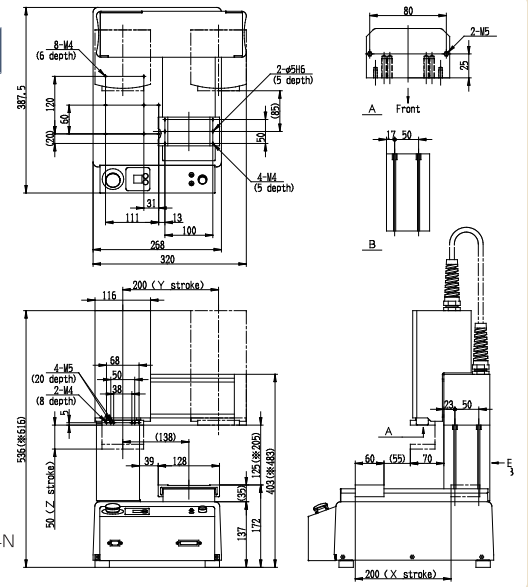
JR2200N mini Series

Low-cost cell production

External Dimensions for the JR2203N

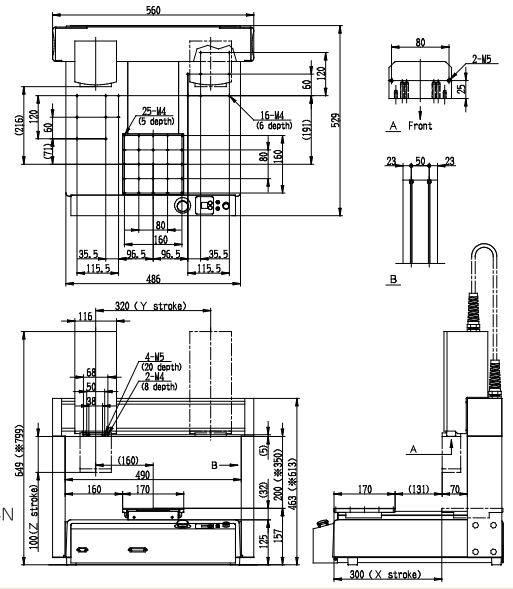


※The standard open height for the JR2204N is 205 mm.

JR2300N Series

With an operation range of 300×320mm, 2 screw feeders can now be installed.

External Dimensions for the JR2303N



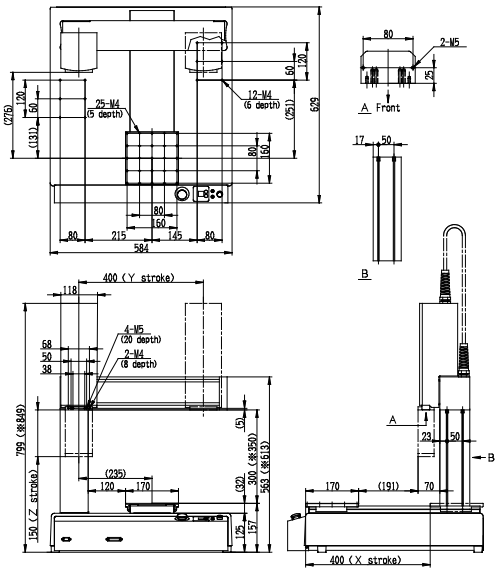
※The standard open height for the JR2304N (4 axes application) is 350 mm.

JR2400N Series / JR2500N Series★

The wide operation range 400×400 mm allows large workpieces to be easily moved.

This photograph is of the JR2400N series.

External Dimensions for the JR2403N



★Please contact us for the external dimensions of the JR2500N.

※The standard open height for the JR2404N (4 axes application) is 350 mm.

○Dimensions for the post part of the side body and B part are pitch size for attaching devices. ○The height dimension (※) is optional.

Main Specifications for JR2000N Series

Model number / Axis-type※1		JR2203N	JR2204N	JR2303N	JR2304N	JR2403N	JR2404N	JR2503N	JR2504N
		3	4	3	4	3	4	3	4
Range of operation	X,Y axis	200mm×200mm		300mm×320mm		400mm×400mm		510mm×510mm	
	Z axis	50mm		100mm		150mm		150mm	
	R axis		±360°		±360°		±360°		±360°
Portable weight※2	Work	7kg		11kg		11kg		11kg	
	Tool	3.5kg		6kg		6kg		6kg	
Speed	PTP (X,Y)	500mm/sec (5~500mm/sec)※4		800mm/sec (8~800mm/sec)※4		800mm/sec (8~800mm/sec)※4		800mm/sec (8~800mm/sec)※4	
	PTP (Z)	250mm/sec (2.5~250mm/sec)※4		320mm/sec (3.2~320mm/sec)※4		320mm/sec (3.2~320mm/sec)※4		320mm/sec (3.2~320mm/sec)※4	
	PTP (R)		600°/sec (6~600°/sec)※4		800°/sec (8~800°/sec)※4		800°/sec (8~800°/sec)※4		800°/sec (8~800°/sec)※4
	CP (X,Y,Z)※3	500mm/sec (0.1~500mm/sec)※4		800mm/sec (0.1~800mm/sec)※4		800mm/sec (0.1~800mm/sec)※4		800mm/sec (0.1~800mm/sec)※4	
Acceptable Moment of Inertia			65Kg·cm^2		90Kg·cm^2		90Kg·cm^2		90Kg·cm^2
Repeatability accuracy	X,Y axis	±0.01mm		±0.01mm		±0.01mm		±0.01mm	
	Z axis	±0.01mm		±0.01mm		±0.01mm		±0.01mm	
	R axis		±0.02°		±0.02°		±0.02°		±0.02°
Dimensions	Width×Depth×Height	320mm×380mm×540mm		560mm×530mm×650mm		590mm×630mm×800mm		680mm×730mm×800mm	
Weight		18kg		35kg		42kg		43kg	
Power source		AC90~132V/AC180~250V (single phase)							
Consumption current		200VA							
Working ambient temperature		0~40℃							
Relative humidity		20~95% (no condensation)							
Teaching Method		Remote Teaching (JOG), Manual Data Input (MID)							
Teaching System		JR C-Points:Simple or broad-use teaching systems · Simple: Easy teaching just by registering position and parameter · Broad-use: User-oriented programming such as I/O control, teaching by point job.							
Teaching Pattern		· Programming by teaching pendant (Optional) · Off line teaching using a PC (Optional)							
Program capacity		255programs							
Data memory capacity		Maximum 30,000 points※5							
Drive method		5-phase stepping motor							
Control method		PTP and CP							
Interpolate Function		3dimension line and Arc interpolation							
External interface		RS232C 1ch (For PC)、2ch (For External Device-optional) / RS422 1ch (For Teaching Pendant only)							
External input/output		IN : 16,OUT : 16 (IN : 24,OUT : 24 Optional)							
PLC function		100programs,1000steps/1program							

※1 Also available with 2 axes.
※2 Maximum Portable Weight for 2 axes models is 6.5 kg for the Tool and 7 kg for the Workpiece for the JR2202N, 10 kg for the Tool and 11 kg for the Workpiece for the JR2302N, JR2402N and JR2502N.
※3 Restricted by drive condition.
※4 Speed Range
※5 Point data shares memory with additional point data, point job data and sequence data. If this data is increased, the maximum data memory available is reduced.
☆ We can supply the robot for CE certified (optional)

●Specifications may change due to product upgrade without prior notice.

Desktop SCARA robot
JSR/JS series is also available.

2004.09 (S) 5000

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