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.

- **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.

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

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**Application Software Examples**

1. **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.

2. **Dispensing Software**
   - Complete a dispensing program simply by inputting work positions, such as "P1 Dispense", "Start of Line Dispense", "Line Pasting", and "End of Line Dispense." You can set "Dispense Time" to each "Point Dispense" point. You can change Dispense Conditions, such as "Dispense Mode," "Dispense Operation type" (for dispensers), "Wait Time" (from Dispense "ON" to start shutting), "Up Amount" and "Up Speed" (at end dispensing), simply by setting and registering.

3. **Painting 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.

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**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 "Dispense Application" software.

- Register the contents of the "point dispense" operation in the point type definition. (e.g. Start the dispenser (set #genOut(1)), wait for a dispense time (delay Dispense Time * 100), and then stop the dispenser (reset #genOut(1))).

- 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" list. You can select the "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.

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**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.

- 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 kernel 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 (timeout are available until receiving the input signal), are available.
A broad interface makes it easy to use many applications.

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.

**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.

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 sets for attaching devices. **The height dimension is optional.**
# Main Specifications for JR2000N Series

<table>
<thead>
<tr>
<th>Axis Type</th>
<th>Model Number</th>
<th>JR2203N</th>
<th>JR2203N</th>
<th>JR2304N</th>
<th>JR2304N</th>
<th>JR2403N</th>
<th>JR2404N</th>
<th>JR2503N</th>
<th>JR2504N</th>
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<tbody>
<tr>
<td>X, Y axis</td>
<td>200mm x 200mm</td>
<td>300mm x 320mm</td>
<td>400mm x 400mm</td>
<td>510mm x 510mm</td>
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<tr>
<td>Z axis</td>
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<td>R axis</td>
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<td>Tool</td>
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<tr>
<td>Speed</td>
<td>PTP (X, Y) 500mm/ sec (5 - 500mm/ sec)</td>
<td>800mm/ sec (9 - 800mm/ sec)</td>
<td>800mm/ sec (9 - 800mm/ sec)</td>
<td>800mm/ sec (9 - 800mm/ sec)</td>
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<td>PTP (Z) 250mm/ sec (2.5 - 250mm/ sec)</td>
<td>320mm/ sec (3.2 - 320mm/ sec)</td>
<td>320mm/ sec (3.2 - 320mm/ sec)</td>
<td>320mm/ sec (3.2 - 320mm/ sec)</td>
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<td></td>
<td>PTP (R) 900°/ sec (9 - 900°/ sec)</td>
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<td>900°/ sec (9 - 900°/ sec)</td>
<td>900°/ sec (9 - 900°/ sec)</td>
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<td>CP (X, Y, Z) 65mm/ sec (0.1 - 65mm/ sec)</td>
<td>800mm/ sec (0.1 - 800mm/ sec)</td>
<td>800mm/ sec (0.1 - 800mm/ sec)</td>
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<td>Acceptable Moment of Inertia</td>
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<td>90Kg.cm²</td>
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<td>Repeatability Accuracy</td>
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<td>Z ±0.01mm</td>
<td>±0.01mm</td>
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<td>R ±0.02°</td>
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<tr>
<td>Dimensions</td>
<td>Width x Depth x Height</td>
<td>320mm x 380mm x 540mm</td>
<td>560mm x 530mm x 850mm</td>
<td>590mm x 830mm x 800mm</td>
<td>680mm x 730mm x 900mm</td>
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</table>

- **Power Source**: AC80~182V/AC180~250V (single phase)
- **Consumption Current**: 200VA
- **Working Ambient Temperature**: 0~40°C
- **Relative Humidity**: 20~95% (no condensation)
- **Teaching Method**: Remote Teaching (JOG), Manual Data Input (MD)
- **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**: 255 programs
- **Data Memory Capacity**: Maximum 30,000 points
- **Drive Method**: 5-phase stepping motor
- **Control Method**: PTP and CP
- **Interpolate Function**: 3-dimensional 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**: 100 programs, 1,000 steps/1 program

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**JANOME**

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