Robot controllers that can be selected according to equipment

**Compact controller**
- PLC-based equipment
- No need to set IP address when connecting via Ethernet or USB

**Work cell Controller**
- PC built-in controller
- Multi-manipulator
- Controls entire equipment
- High speed conveyor tracking

- PC Work cell Controller
  - RC620
  - Fully controls entire equipment without PLC
  - Windows is installed

- Multi-manipulator
- Open architecture
- Creation of operation windows

- Additional axis
- High speed conveyor tracking
- Image processing (color/monochrome)

**Common features**

- One push backup
- USB memory can be used to easily retrieve error history, setting information, etc.

**Useful common features**

- Windows is a registered trademark of US Microsoft Corporation in the US and other countries.

*Open architecture
- Creation of operation windows

**Inquiries and information**

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Our website provides various types of information such as product information and exhibition information. We also provide information through a mail magazine. (Please subscribe from our website.)
Epson robots: Reliable for every process

Faced with a need to assemble small precision parts with high accuracy and efficiency, Epson in 1981 began developing robots to manufacture Seiko wristwatches. Expertise gained from developing original and subsequent robots has been passed on to create Epson’s current lineup of robots, which are renowned for their high precision and high reliability at fast speeds. Epson has also refined its robots to include space-saving, power-saving and advanced controller technologies.

**Supply**
- Rapidly sorting, aligning and loading separately supplied components
- Use rapid motion in short strokes
- To operate without stopping the line
- Optimal performance in a practical region (short to intermediate distance) on the line
- Compact but has a motion range equivalent to higher class robots
- For image processing and conveyor tracking, operate without stopping the line (G series)
- Simple supply work (LS series)

**Assembly**
- Position and assemble supplied components
- If you need to...
  - Improve yield through highly accurate assembly
  - Freely lay out pallets and indexes
  - Support large pallets and multiple pallets
  - High-speed, highly accurate arm, and a wide variety of easy-to-use commands
  - You can select the mounting specifications (table top mounting, ceiling mounting, or wall mounting) to improve space efficiency
  - Circular motion range allows you to effectively use the space underneath the robot (RS series)
  - Motion in any direction enables a free layout (RS series)
  - Simple assembly (LS series)

**Inspection**
- Set and then sort products in the inspection unit
- If you need to...
  - Set the robot in a work position according to the specifications of the inspection unit
  - Integrate multiple inspection units and reduce footprint
  - Can be used with inspection software (LabVIEW) to automate inspections
  - A slim arm and highly-flexible joint can be combined to enable flexible positioning and operation in a narrow space

**Packing**
- Pack finished products in boxes
- If you need to...
  - Carry heavy or multiple packages at the same time
  - Use a (heavy) hand with multiple functions
  - Use a robot that is smaller than a palletizer
  - Maximum payload of 20kg, 1m arm to transport and pack in a box
  - Ceiling mounting model and wall mounting model can be used to effectively use floor space and make the process compact

**Use example**
- **Electricity**
  - Precision assembly of HDDs, wristwatch units, and other parts
  - Bonding and transport of liquid crystal panels
  - Assembly and inspection of smartphones
- **Electronics**
  - Assembly of consoles, monitors, power window motors, ignition/intelligent keys, AM/FM and TCs
- **Automobile**
  - Assembly of engines, rear lights and grills, oil coolers, etc.
- **Cosmetic**
  - Assembly of toothbrushes and electric toothbrushes
  - Place packed food (chocolates, confectionery gifts, retort pouches, etc.) in boxes
  - Assembly of electric shavers and electric ion brushes
  - Picking and removing of test tubes in and from centrifuge
  - Assembly of in vitro relief sprays
- **Medical equipment**
  - Alignment of syringes and transfer of blood packs
Lineup of Epson robot

Supports various layouts and large pallets

- Small footprint
- Provides same high level speed and accuracy as SCARA robots
-Slim arms and small joints contribute to downsizing of equipment

Epson robot with high trajectory accuracy

- Space-saving
- Compact but has a wide motion range
- Does not have a cable duct, allowing the motion range on the back side of the robot to be increased by 20% compared with earlier models
- Motion range around the center can be increased by appropriately setting the ratio of the arm lengths of J1 and J2 so that large pallets can be used

- High precision
- Technology for quickly stopping robots

Epson robots can stop with low vibration even after high-speed motion and quickly start the next operation so that operation time can be reduced.

- One level higher precision

Epson robots use smart motion control technology to achieve highly accurate trajectories.

Epson robots are extremely useful for:
- Applying adhesives
- Cutting with cutter
- Moving straight into space between equipment

- Ease of use

Support implementation using easy-to-understand and easy-to-use software

- Programming environment

Use easy-to-understand GUIs and reduce teaching time/effort
Integrate and control the robot and image processing using the same screen
Create, debug, and execute a program using the same screen

- Simulator environment

Execute 3D robot operations using the same program as the actual equipment
Check interference between the robot and peripherals
Useful for deciding the optimal layout of the robot

- High speed and rapid motion

Achieve rapid motion with short strokes

- Rapidly and accurately transport and assemble small parts

High standard cycle time "SCARA robot"

<table>
<thead>
<tr>
<th>Robot</th>
<th>Standard cycle time (sec)</th>
<th>Arm length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>0.29</td>
<td>175</td>
</tr>
<tr>
<td>G3</td>
<td>0.43</td>
<td>300</td>
</tr>
<tr>
<td>G6</td>
<td>0.36</td>
<td>550</td>
</tr>
<tr>
<td>L3</td>
<td>0.45</td>
<td>450</td>
</tr>
<tr>
<td>L5</td>
<td>0.42</td>
<td>600</td>
</tr>
</tbody>
</table>

Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with 1kg payload (path coordinates optimized for maximum speed)

G1: Cycle time based on round-trip arch motion (100mm horizontal, 25mm vertical) with 1kg payload (path coordinates optimized for maximum speed)

- Support implementation using easy-to-understand and easy-to-use software

- Simulator environment

Execute 3D robot operations using the same program as the actual equipment
Check interference between the robot and peripherals
Useful for deciding the optimal layout of the robot
### Options that widen the possibilities of automation

#### Software options
- **GUI Builder**
  - GUI Builder is a tool for creating GUIs. GUIs and robot programs can be linked together to easily create an operational screen for various events such as the starting and stopping of an application simply by dragging and dropping. Significantly reduce the time for developing an operational screen.
  
- **VB guide**
  - By using VB guide, you can link software created using Visual Basic*, Visual C**, or LabVIEW*** to a robot.

#### Hardware options
- **Operation unit option**
  - **Teach Pendant (TP1 / TP2)**
    - You can perform teaching while moving the robot at a separate location from the controller.
    - You can confirm the I/O state, the operational status of the program, and error history.
    - (TP1:RC180 / RC620  TP2:RC90)

- **Communication options**
  - **RS-232 board**
    - 4 ports per board
  - **Extension I/O board**
    - 32 input and 32 output ports per board
  - **Fieldbus I/O**
    - DeviceNet*, PROFIBUS DP, PROFINET, CC-Link*, EtherNet/IP*

#### Controller options
- **Vision guide**
  - Easy-to-use image processing option that includes geometric correlation pattern matching that is tolerant to changes in brightness levels as a standard feature.
  - Easy to lay out equipment
  - Can easily set image processing settings using a GUI
  - Easy to match coordinates of the robot with coordinates of the camera
  - The robot program and the image processing program were developed using the same software.

- **Conveyor tracking**
  - Enables operations in which a camera or sensor is used to detect work on a conveyor and a robot is used to handle the work.
  - Supports linear and circular conveyors.
  - Can be used instead of manual operations.
  - Can operate without stopping.
  - Supports low-volume production of a wide variety of products.

- **PG motion system**
  - Various motors, such as motor for driving a conveyor, can be controlled using robot language.
  - 1 board can be used to control up to 4 axes.

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*Visual Basic and Visual C are registered trademarks of Microsoft.

**LabVIEW is a registered trademark of National Instruments.

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* Some minor differences may exist depending on the type of controller or peripheral you are using.