

Epson RC+ software makes it easy to develop control programs for setup, operation, and regular maintenance. With an easy-to-understand graphical user interface, you can achieve maximum productivity with minimum programming overhead.

SPEL+ Language Support

Epson industrial robots use an easy-to-learn programming language that makes it simple to set up complex, multitasking workflows.

	Epson RC+5.0	Epson RC+6.0	Epson RC+7.0	command
Pallet	●	●	●	Pallet
Handling weight & inertia	●	●	●	Weight, Inertia
High-speed continuous path accuracy	●	●	●	CP
Multitasking	(16)	(32)	(32)	Xqt
Positioning Precision	●	●	●	Fine
Arch motion	●	●	●	Arch
Parallel processing	●	●	●	...
Remote control expansion I/O	●	—	●	AvoidSingularity
On-the-fly pickup	—	●	●	

Example Program

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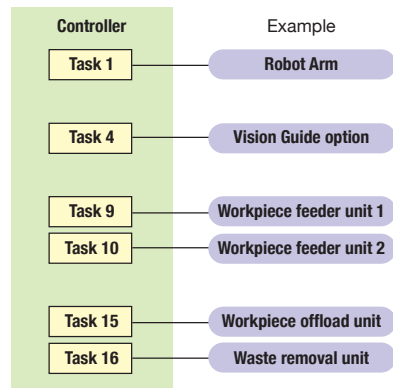
Function main
  Motor On           *turn motor power on
  Power High        *Power mode set high
  Speed 100         *Speed 100%
  Accel 100, 100    *Acceleration/Deceleration 100%

  If Sw(partok) = On Then *Checking if good part
    Jump goodparts      *move arm to goodpart pile
  Else
    Jump badparts       *move arm to bad part pile
  EndIf

Fend
    
```

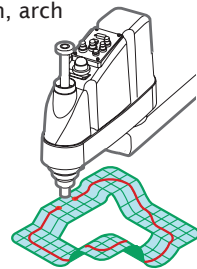
Multitasking Function

With Epson's programming language, even complex multitasking processes can be automated with ease. Up to 32 individual tasks can be seamlessly executed and controlled by a single program. Up to 512-channel input/output expandability, Vision Guide machine vision, and pulse generator control of peripheral equipment can all be utilized to achieve full process automation.



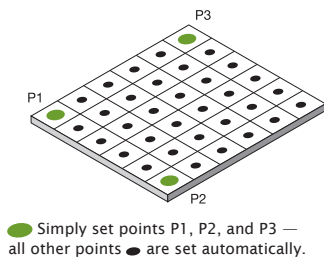
High-Speed, High-Precision, 3D Continuous Path Control

All Epson robot systems offer the fast, precise, three-dimensional continuous path (CP) control needed for high-productivity coating and sealant application processes. Advanced linear interpolation, arch interpolation, and free curve motion enable precise effector control, and simple PASS commands can be used to evade obstacles within the workcell space. Programmed paths can reference either a tool-centered control point or an external control point.



Easy Alignment with Palletized Parts

If parts are arranged in a rectangular layout, spaced at regular intervals, the PALLET command can be used to quickly and precisely position the end effector.



High Repeatability with Varying Payloads and End Effector Orientation

Once the operator has set workpiece and end effector weight, weight range, and end effector orientation, acceleration is automatically adjusted to reduce residual vibration and ensure high repeatability.

Positioning Completion Time Control for Maximum Efficiency

A time limit can be set for the completion of robot positioning to enable the next instruction to be executed even if the target point has not been reached. This allows you to maximize your yield by prioritizing takt (cycle) time over precision, or vice versa, according to the nature of the work to be done.

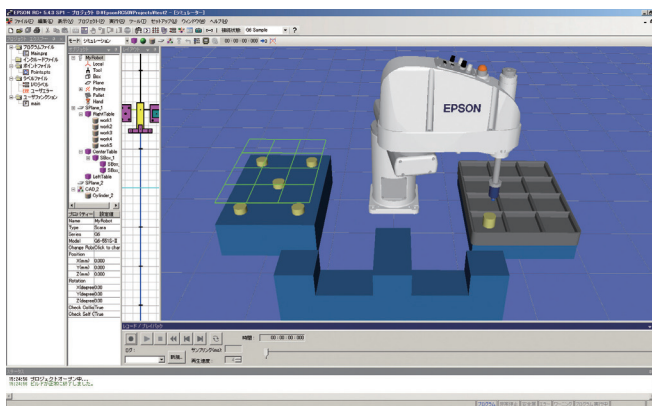
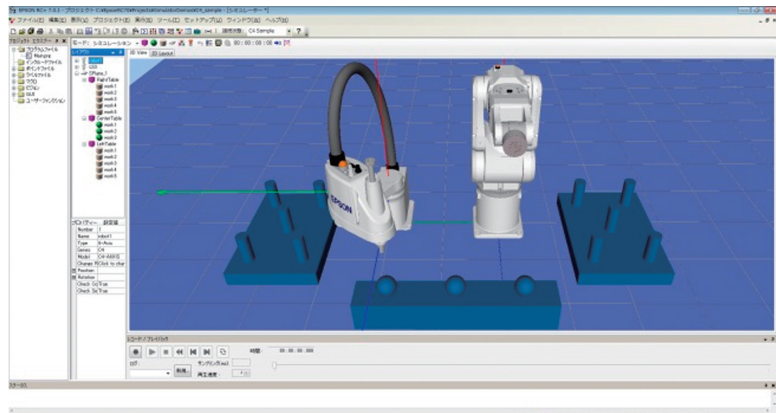
Simulator

The Epson RC+ software simulator displays a 3D view of the workcell, enabling you to thoroughly test programs and operating clearances to optimize the workcell layout.

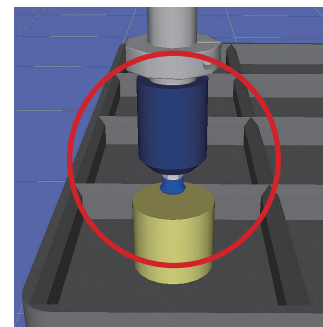
Layout Evaluation

- 3D simulation of actual operation enables you to optimize the workcell layout and determine necessary clearances before rollout.
- Multi-robot simulations are also possible.*
- Pallet, hand, and other CAD based objects can be included in simulations.

* Multi-robot simulations are only supported with Epson RC+ 7.0



Pallet/hand display from CAD data.



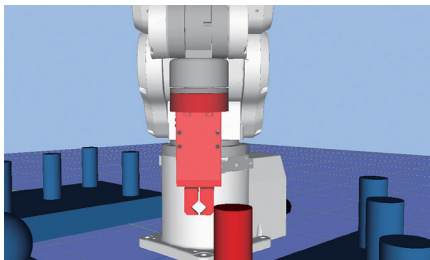
Enlarged view of hand.

Record & Playback Functions

- Recording & playback functions make it easy to include still images and movies in presentations.

Clearance Checking

- Choosing the right robot is easy because you can check all necessary workcell and peripheral equipment.



Productivity Forecasting

- Cycle times can be measured in advance and used to generate throughput and productivity forecasts before actual setup.

Debugging Function

- I/O data exchange with virtual peripheral devices can be monitored to assist in debugging.
- Debugged programs can be rolled out directly to existing workcell setups.

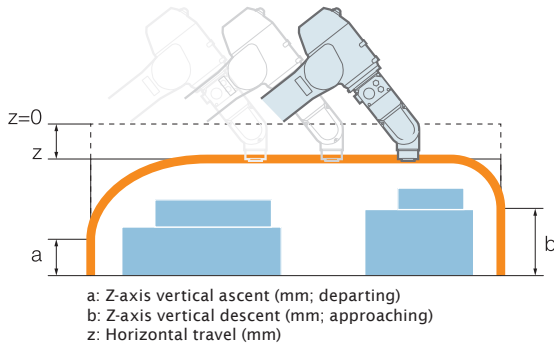
Machine Vision Simulation*

- Machine vision image processing input can also be used within simulations.

* Vision Guide simulation supported with Epson RC+ 7.0

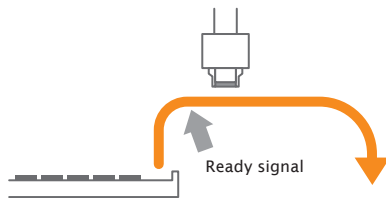
3D Jump with Variable Arch for Ultra-Precise Short-Distance Movement

Epson SCARA and 6-axis robots all support JUMP command movements in three-dimensional space, and the arch described by the approaching and departing effector can be set to suit the work environment. Deceleration/acceleration of the approaching or departing head can be adjusted ensuring smooth, precise, short-distance motion that helps improve cycle time and product quality stability.



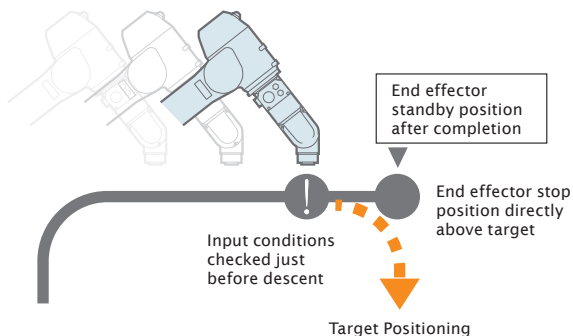
Parallel Processing for Higher Speed and Efficiency

Parallel processing enables you to control peripheral devices while the robot arm is in motion. Discrete I/O can be used to ensure synchronized control of multi-device processes for maximum throughput efficiency.



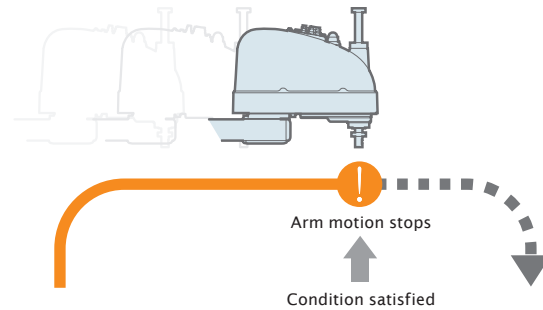
Conditional Stop (1)

Input conditions (set in advance via SENSE command) are checked just before the arm begins its descent. If the conditions are satisfied, the robot stops above the target, without descending.



Conditional Stop (2)

If input conditions (set in advance via TILL command) are satisfied during arm operation, the arm immediately decelerates and stops. Cycle time is reduced because arm movement can continue uninterrupted until conditions are met.



Operating Speed and Acceleration/Deceleration Settings

Operating speed and acceleration/deceleration of the arm can be set as a percentage of maximum from 1-100%.

PTP motion Maximum point-to-point speed is set as a percentage relative to the maximum speed. Acceleration and deceleration values can also be set.

CP motion For continuous path motion, maximum end effector speed ranges up to 2000mm/s, and maximum acceleration/deceleration speed ranges up to 2500mm/s.

Teaching Methods

● Remote Teaching

Points are taught using the jog keys on the teaching pendant to move the effector to the target. This method is especially useful for operations that require very high precision because the jog keys allow adjustment in units as small as the resolution of each axis.

● Direct Teaching

Points are taught by disengaging the motor of each axis and moving the effector to the target by hand. (Direct teaching is not supported for 6-axis robots.)

● MDI Teaching

Points are taught by inputting predetermined coordinate values without moving the arm.