

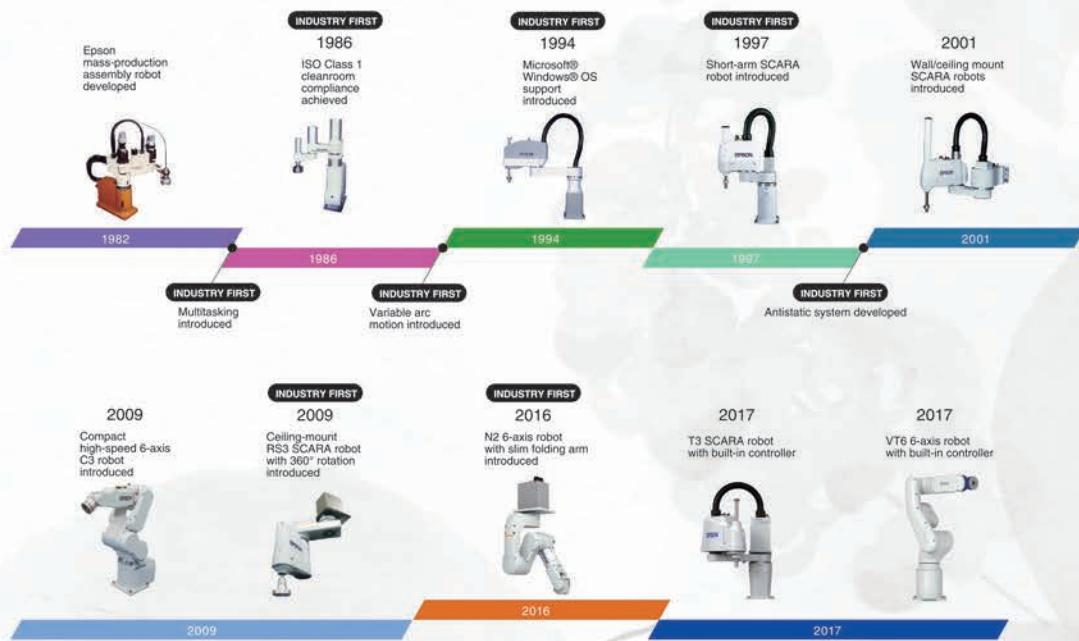
ROBOT SOLUTION



Epson Robot

A proven reputation for precision and reliability at the leading edge of industrial robot design

Ever since we developed our first SCARA robots for wristwatch assembly over 40 years ago, Epson has been a leader in advanced robotics technology. Today, our long experience in energy-efficient, compact, high-precision technologies enables us to offer a wide range of slim, compact, and lightweight robots. And with the addition of original Epson force sensing and image processing technologies, we are achieving even higher levels of reliability, speed, precision, and productivity in process automation. Whatever challenges you face, Epson industrial robots are continuously evolving to meet the diversifying needs of manufacturers worldwide.



Why Epson Robots?

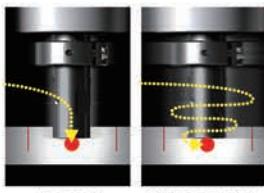
Epson, the global leader in robotics technology, offers you an impressive combination of high performance and operating ease. Backed by a worldwide reputation for reliability and outstanding customer support, Epson robots are bringing high-productivity automated manufacturing to an ever-expanding range of industries worldwide.



Low TCO and high reliability for the ultimate in automated productivity

High productivity

- Proprietary Epson technology reduces residual vibration to ensure high speed and precision for reduced takt time.
- Slim, lightweight body design reduces work cell space requirements while enabling higher productivity.

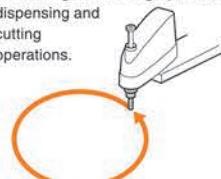


Epson robot

Conventional robot

High quality

- Extremely accurate toolhead positioning enables high-precision dispensing and cutting operations.

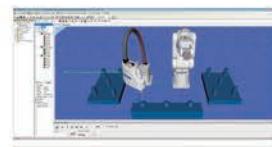


- Integrated machine vision systems boost setup ease and workpiece handling accuracy.



Easy operation

- Intuitive graphical interface makes programming easy even for first-time users.
- From program testing to full production, improved operating ease helps reduce cost and manpower requirements.



3D simulator for work cell layout and toolpath program testing

Software Integration

Vibration control technology

Epson Robot

Vision technology

Sensing technology

Global support

Epson supports robotics customers worldwide through an international network of sales and service offices, providing information about equipment configuration options and performing simulations of the tasks that customers want robots to perform. We are also partnered with systems integrators around the world, and can provide end-to-end turnkey solutions to meet virtually any process automation need.

ROBOT SOLUTION

Product lineup

		SCARA robots						
Epson Robot		G Series						
Top-class speed, repeatability, and low residual vibration								
Publication page		►P.9	►P.11	►P.15	►P.17	►P.21	►P.23	►P.23
Model name		G1	G3	GX4	G6	GX8	G10	G20
								
Payload (kg)	4-axis 3-axis  	Max 	Max 	Max 	Max 	Max 	Max 	Max 
Arm length (mm)	175 225	250 300 350	250 300 350	450 550 650	450 550 650	650 850	850	1000
Environmental specifications	 	 	 	   	   	   	   	   
Installation specifications								
Compatible controller	RC700-A	RC700-A	RC700-D	RC700-A	RC700-D	RC700-A	RC700-A	RC700-A

SCARA robots

LS Series				T Series		RS Series	
Proven reliability and functionality				Built-in controller for cost-efficient automation		Original space-saving design for high productivity	
► P.27	► P.29	► P.31	► P.33	► P.35	► P.37	► P.39	► P.41
LS3-B	LS6-B	LS10-B	LS20-B	T3-B	T6-B	RS3	RS4
							
Max 3	Max 6	Max 10	Max 20	Max 3	Max 6	Max 3	Max 4
400	500 600 700	600 700 800	800 1000	400	600	350	550
							
							
RC90-B	RC90-B	RC90-B	RC90-B	Built-in controller	Built-in controller	RC700-A	RC700-A

 **STD** Standard

 **Class 3** Cleanroom model ISO 03 (Class 10 equiv.) ESD suppression

 **Class 4** Cleanroom model ISO 04 (Class 100 equiv.)

 **Class 5** Cleanroom model ISO 05 (Class 100 equiv.)

 **IP54** Protection model IP54

 **IP65** Protection model IP65

 **IP67** Protection model IP67

 **Table Top mount**

 **Wall mount**

 **Ceiling mount**

 **Wall/ceiling multi-layout mount**

*1: See product page for details

*2: IP20 *3: Standard model only

Controllers

 **Controllers** ► P.59

Software

 **Software** ► P.62

Vision systems

 **Vision systems** ► P.67

Force-sensing systems

 **Force-sensing systems** ► P.70

Options

 **Software options** ► P.74

 **Robot controller options** ► P.76

 **Manipulator options** ► P.79

 **Option quick-reference table** ► P.80

 **Option setup example** ► P.81

ROBOT SOLUTION

Product lineup

Epson Robot	6-axis robots		
	C Series		
Slim, lightweight body for greater installation flexibility			
Publication page	► P.43	► P.45	► P.49
Model name	C4	C8	C12
Payload (kg)	Max 4	Max 8	Max 12
Arm length (mm)	600 900	700 900 1400	1400
Environmental specifications	STD Class 3	STD Class 3 C8, C12 Class 4	IP67 STD Class 5
Installation specifications			
Compatible controller	RC700-A	RC700-A	RC700-A

6-axis robots

N Series		VT	
Original compact design for greater freedom of movement in tight quarters		Compact, easy setup, low TCO	
► P.51	► P.53	► P.55	► P.57
N2	N6-A850	N6-A1000	VT6L
			
Max 2.5	Max 6	Max 6	Max 6
450	850	1000	900
			
			
RC700-A	RC700-A	RC700-A	Built-in controller

STD Standard

 Class 3 Cleanroom model ISO 03 (Class 10 equiv.) ESD suppression

 Class 4 Cleanroom model ISO 04 (Class 100 equiv.)

 Class 5 Cleanroom model ISO 05 (Class 100 equiv.)

 IP54 Protection model IP54

 IP65 Protection model IP65

 IP67 Protection model IP67

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ROBOT SOLUTION

Vision systems

02 Vision Guide

Get advanced machine vision and image processing systems up and running fast with easy-to-use Epson Vision Guide software

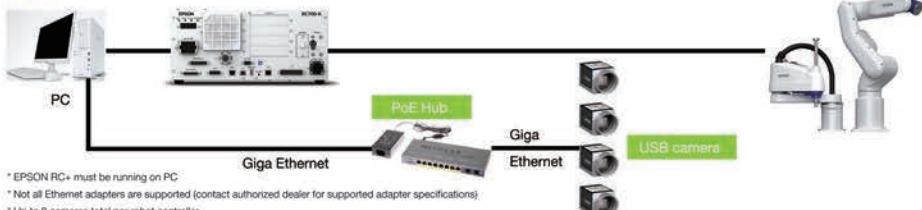
- Built-in image processing engine assists vision-to-robot calibration, making it easy to align the robot's coordinate system with the camera's field of view.
- Workpiece position can be determined relative to robot coordinates without complex calculations.
- Image processing sequences can be created simply by entering a few parameters and pointing and clicking with a mouse.
- Advanced pattern matching and geometric search tools enable easy solution program development without writing a single line of code.

System configuration examples

CV-2A(HA, SA), L



PV1



Features

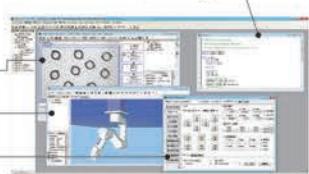
Convenience

EPSON RC+ software can be used for both robot and machine vision program development.

- Other machine vision systems are more complicated to set up because different software must be used for machine vision and robot program development.

Robot & Vision Programming

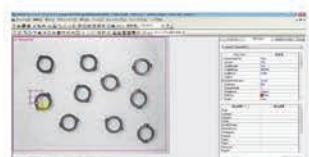
- Vision & Guide Window
- Simulator
- Jog & Teach Window



Ease of use

Easy registration of vision objects (positioning coordinates, etc.) enables rapid system setup and deployment.

- Vision objects can be registered via simple drag & drop operation.
- Intuitive interface makes operation easy even for first-time users.

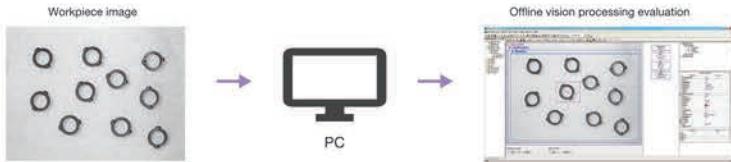


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Vision simulation

Epson Vision software includes a simulator that lets you visualize robot operation and workflow before equipment is actually installed. This makes it easy to plan and configure the system for maximum productivity, and allow program development to proceed while the system is being constructed.

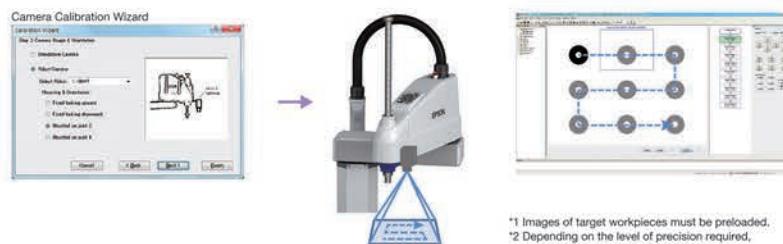
- Vision and process sequencing can be prepared in advance, before system is installed.
- Programs that include image processing sequences can be tested off line.
- If workpiece images are available, image processing can be tested off line.



Easy calibration

A built-in image processing engine makes it easy to align the camera's field of view with the robot's coordinate system, eliminating the need for complex programming when performing vision-to-robot calibration.

The robot automatically*1 follows the steps in the Calibration Wizard to complete the calibration.*2



*1 Images of target workpieces must be preloaded.
 *2 Depending on the level of precision required, manual teaching may be necessary.

One-stop service

Whether you need help with initial setup or active production lines, Epson gives you one-stop service convenience for both robot and machine vision systems. With only one service call instead of two to coordinate, your production line will be back up and running in no time.

ROBOT SOLUTION

Force-sensing systems

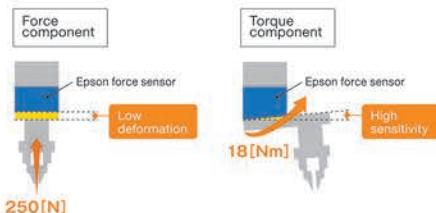
High-rigidity, high-sensitivity S250 Series force sensors are specifically designed for use with Epson robots, enabling extremely precise force control for high-precision assembly tasks.

03 | Force sensors

S250 Series force sensors incorporate exclusive Epson crystal piezoelectric technology that ensures a higher level of rigidity and sensitivity than conventional force sensors.

Advantage 1 high rigidity

S250 Series sensors are extremely rigid and resistant to deformation under heavy loads. They have a rated load of 250[N] on the X, Y, and Z axes, and a moment of force of 18[Nm] that makes them particularly sensitive to axial stress.

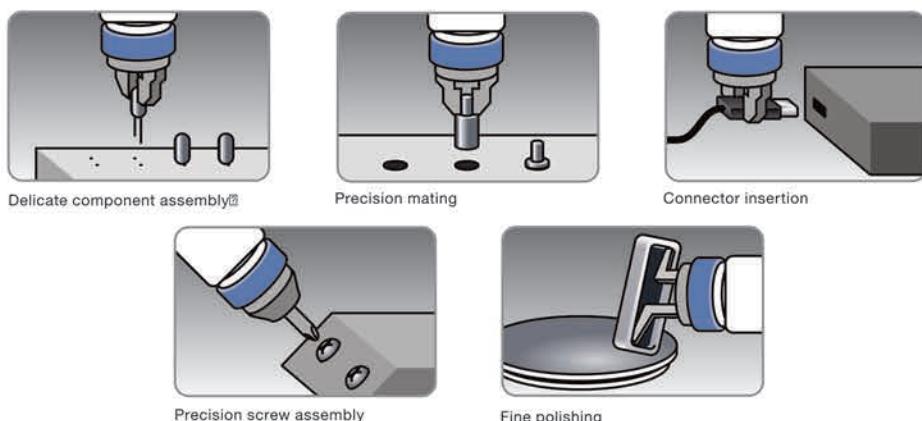


Advantage 2 high sensitivity

S250 Series sensors also ensure excellent sensitivity and quick response with high resolution of 0.1[N] and a low noise level of 0.035[N] on the X, Y, and Z axes.

Force-sensing system applications

Robots equipped with an Epson S250 Series force sensing system can handle high-precision tasks that cannot be safely automated with teaching or machine vision systems alone. As a result, even production processes that previously required experienced workers to handle delicate and easily damaged workpieces can be fully automated.



One-stop Epson support

From initial planning and procurement, to setup, adjustment, ongoing maintenance and re-pair, Epson provides one-stop support for all your force-sensing system and automation needs.

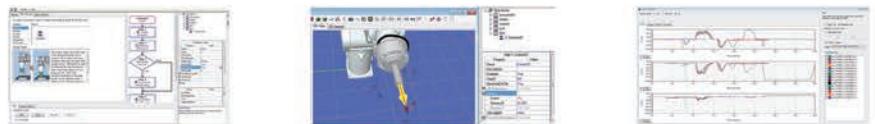


ROBOT SOLUTION

High-rigidity, high-sensitivity S250 Series force sensors are specifically designed for use with Epson robots, enabling extremely precise force control for high-precision assembly tasks.

Easy force sensing program development

The new Force Guide interface makes it easy to develop force sensor operating programs simply by dragging Force Guide object icons into a flow chart. In addition, simulator motion display and force waveform monitoring make debugging easier than ever before.



Force Guide GUI

The Force Guide interface provides a clear explanation of what each programming object does, as well as a flow chart view for easy confirmation of program sequence ordering.

Simulator

The simulator enables quick confirmation of the direction of robot arm movement and axis coordinates.

Force waveform display & recording

The force waveform display allows realtime waveforms to be compared with previously recorded waveforms, enabling users to identify operating anomalies and understand how various conditions affect performance.

Direct teaching function

6-axis robots equipped with force sensors can be taught using the Epson TP2/TP3 teaching pendant. Operators can manually move the robot arm and manipulator to the desired position and use the teaching pendant to confirm hardness/softness of the workpiece and the force to be applied.*

Touch-jog function*

In addition to the standard button-operated jog and teaching modes, the TP2 teaching pendant now has a direct teaching mode with a touch-jog function that makes 6-axis robot teaching much easier. During direct teaching operations, you can simply tap the effector to make small, incremental adjustments to the effector's position. There's no need to manually switch input modes because the system can automatically recognize the amount of force being applied to the effector.



Push/pull → Direct teaching

Beat → Touch-jog

Product photos

03 S250 Series force sensor



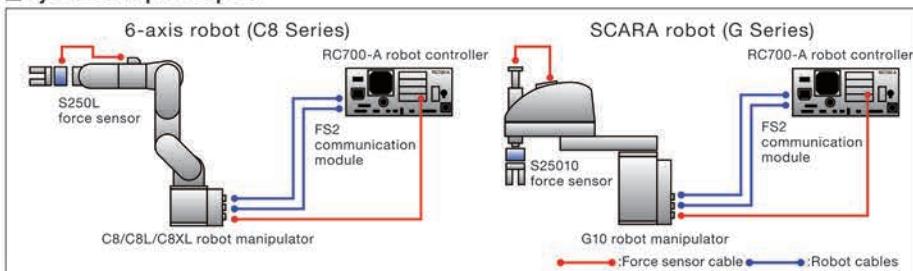
03 FS2 communication module



FS2 system requirements

Supported controller	RC700-A One FS2 module per controller (inserted in option slot)
No. of supported force sensors	One sensor per module
Power supply	Via option slot

System setup examples



ROBOT SOLUTION

Robot controller options

A wide range of controller options are offered to expand the range of tasks and processes that can be automated.

04 Teaching Pendant (TP3)

Compatible controllers
BC200-A T series VT series

Tablet-type teaching pendant with 10.1-inch color touchscreen for intuitive operation and fast, easy 6-axis robot teaching

Easy-to-view screen

- 10.1-inch TFT LCD (w/ LED backlight)
- 1280 x 800 resolution
- Color display



Easy operation

- Simple screen layout, fast response
- Standard RC+ program interface

Advanced features

- 3D robot graphics, programming functions and parameter settings
- High-speed test mode
- Programs can be started/stopped from operating panel

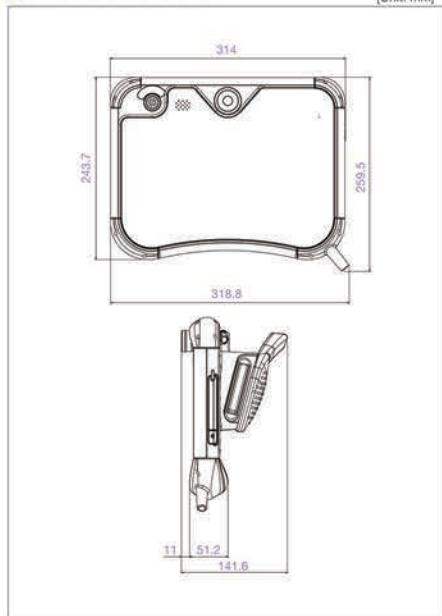
Main specifications

Dimensions (mm)	314(W) x 244(H) x 142(D)
Weight	1.5kg (excluding cable)
Body color	Black
Connectivity	Wired
Display	10.1-inch TFT LCD (w/ LED backlight) Resolution: 1280 x 800
Controls	Touchscreen controls Emergency stop button Enable switch Mode switch Control keys (JOG, EXE buttons) USB port
Cable length	5m (10m, 15m extension cables available)
Interface languages	English, Japanese, German, French, Chinese (simplified, traditional)
Ingress protection	IP65
Operating temperature range	0–40°C (stable temperature)
Operating humidity range	5–95% (relative humidity)
Operating environment	Low levels of dust, oil mist, salt, iron particles and other contaminants No flammable or caustic liquids or gases nearby



External dimensions

[Unit: mm]



ROBOT SOLUTION

04 Teaching Pendant (TP2)

Compatible controllers
RC700-A RC90-B T series VT series

Easy-to-use pendant for teaching

- Universal design ensures ease of use for both right-handed and left-handed operators.
- Connects directly to operator unit or controller interface card.



05 Conveyor tracking

Compatible controllers
RC700-A RC90-B T series VT series

Precision tracking for high-productivity pick-and-place operation

- Enables pick-and-place handling of items on a high-speed conveyor.
- Uses machine vision/sensors to detect workpiece and effect robot handling.
- Can automate manual kitting/packaging tasks and help maintain productivity regardless of continuous/intermittent conveyor operation. Can also be used for workpiece assembly.
- Simple start/stop program execution.



*Vision Guide software required.

05 PG motion system

Compatible controllers
RC700-A RC90-B T series VT series

Control peripheral robots for fully integrated process automation

- EPSON RC+ software and pulse generator (PG) cards enable control of multiple third-party drives and motors.
- PG robots and standard EPSON RC+ system robots can be operated simultaneously, and controlled using the same commands.
- PG cards can be used to control X/Y tables, sliders, turrets,

and a wide range of other production/inspection line peripherals.
■ Each PG card has 4 channels, and can support from 1 to 4 robots. Up to 4 cards can be mounted.

*PG motion system requires optional EPSON RC+ software and at least one optional output board. Drivers and motors for third-party devices are not included.

PG

ROBOT SOLUTION

Robot controller options

06 Emergency stop switch

Helps prevent injuries and damage

- Immediately stops robot operation in emergency situations.



07 RS-232C cards

Expanded serial port connectivity

- 2-port RS-232C cards to connect serial interface devices.



08 I/O expansion cards

Expanded input/output flexibility

- 24-input/16-output expansion cards.



09 Fieldbus I/O (slave)

High-speed peripheral connectivity

- 2048-point I/O support for DeviceNet™, Ethernet/IP™, PROFIBUS®, and PROFINET® networked peripherals, and 384-point I/O support for CC-Link® networked peripherals.

Compatible controllers
RC700-A RC90-B T series VT series

10 Fieldbus I/O (master)

Bidirectional high-speed peripheral connectivity

- Support for DeviceNet™, PROFIBUS®, and Ethernet/IP™ networked peripherals (1024-point I/O).

Compatible controllers
RC700-A RC90-B T series VT series

Compatible controllers
RC700-A RC90-B T series VT series

11 Analog I/O card

For analog control of voltage and current I/O

- Analog control of input and output current and voltage allows regulation of secondary equipment such as paint sprayers to match the speed of robot arm motion. Available in 1 channel and 4 channel models.



12 EUROMAP 67 card

For use with thermoplastic injection molding machines

- EUROMAP 67 compliant electrical interface with 15-point input and 16-point output.



13 I/O cable kit

Cables and connectors for easy connectivity with no soldering required

- A wide range of I/O cables and connectors are available.



14 Hot plug kit

Easy Teach Pendant connection/disconnection

- Allows Teach Pendant to be connected or disconnected without an emergency stop.



15 Wall mount option

Optional wall mounting box

- Allows controller to be mounted on a wall.



ROBOT SOLUTION

Manipulator options

Epson robot manipulator options provide the enhanced functionality and configuration flexibility you need for full-process automation.

16	External wiring units	Compatible manipulators
		Q6 Q10 Q20 L53 L56 L58 L59 L60 T3 T6 VTE R53 R54 C4 C8 N2 N6

Simplifies wiring when mounting manipulator options

- Enables easy, on-site connection of external wiring by users.
- Ideal for connecting Vision Guide system camera cables or other wiring.



17	Internal wiring unit
----	----------------------

Compatible manipulators

Q6	Q10	Q20	R53	R54
----	-----	-----	-----	-----

Enables wiring and conduits for the hand to be enclosed within the robot arm assembly.



18	SCARA tool adapters
----	---------------------

Compatible manipulators

G3	G6	G10	G20	L53	L56
L510	L520	T3	T6	R53	R54



Enhances handling/processing versatility and simplifies effector changes

19	ISO flanges
----	-------------

Compatible manipulators

W1	W2	W3	W4	W5	W6
Q6	N2	N6	VTE		

For easy attachment of effectors to 6-axis robot arms

20	Brake release units
----	---------------------

Compatible manipulators

Q6	Q10	Q20	L53	L56	L58	L59	L60	T3	T6	VTE	R53	R54	C4	C8	N2	N6
----	-----	-----	-----	-----	-----	-----	-----	----	----	-----	-----	-----	----	----	----	----

Enables brake release so robot arm can be moved by hand when power is switched off at the leading edge of industrial robot design

21	Power and signal cables
----	-------------------------

Compatible manipulators

G1	G3	Q6	Q10	Q20	L53	L56	L58	L59	L60	T3	T6	VTE	R53	R54	C4	C8	N2	N6
----	----	----	-----	-----	-----	-----	-----	-----	-----	----	----	-----	-----	-----	----	----	----	----

Standard 3m cables, or optional 5m and 10m cables for greater freedom in controller and robot placement

22	Power cable connectors
----	------------------------

Compatible manipulators

G1	G3	Q6	Q10	Q20	L53	L56	L58	L59	L60	T3	T6	VTE	R53	R54	C4	C8	N2	N6
----	----	----	-----	-----	-----	-----	-----	-----	-----	----	----	-----	-----	-----	----	----	----	----

Power cables are available with straight or L-shaped angle connectors*



23	Camera mounting bracket
----	-------------------------

Compatible manipulators

G3	Q6	Q10	Q20	L53	L56	L58	L59	L60	T3	T6	VTE	R53	R54	C4	C8	N2	N6
----	----	-----	-----	-----	-----	-----	-----	-----	----	----	-----	-----	-----	----	----	----	----

Securely mount machine vision system camera to robot arm



Bracket design varies according to robot; please specify model when ordering.

ROBOT SOLUTION

Option quick-reference table

Software options		RC700-A	RC700-D	RC90-B	T series	VT
02	Vision Guide 7.0	●	●	●	●	●
03	Force Guide 7.0	●	●	—	—	—
	RC+ API 7.0	●	●	●	●	●
	ECP	●	●	●	●	●
	GUI Builder 7.0	●	●	●	●	●
	OCR	●	●	●	●	●
	VRT	●	●	●	●	●

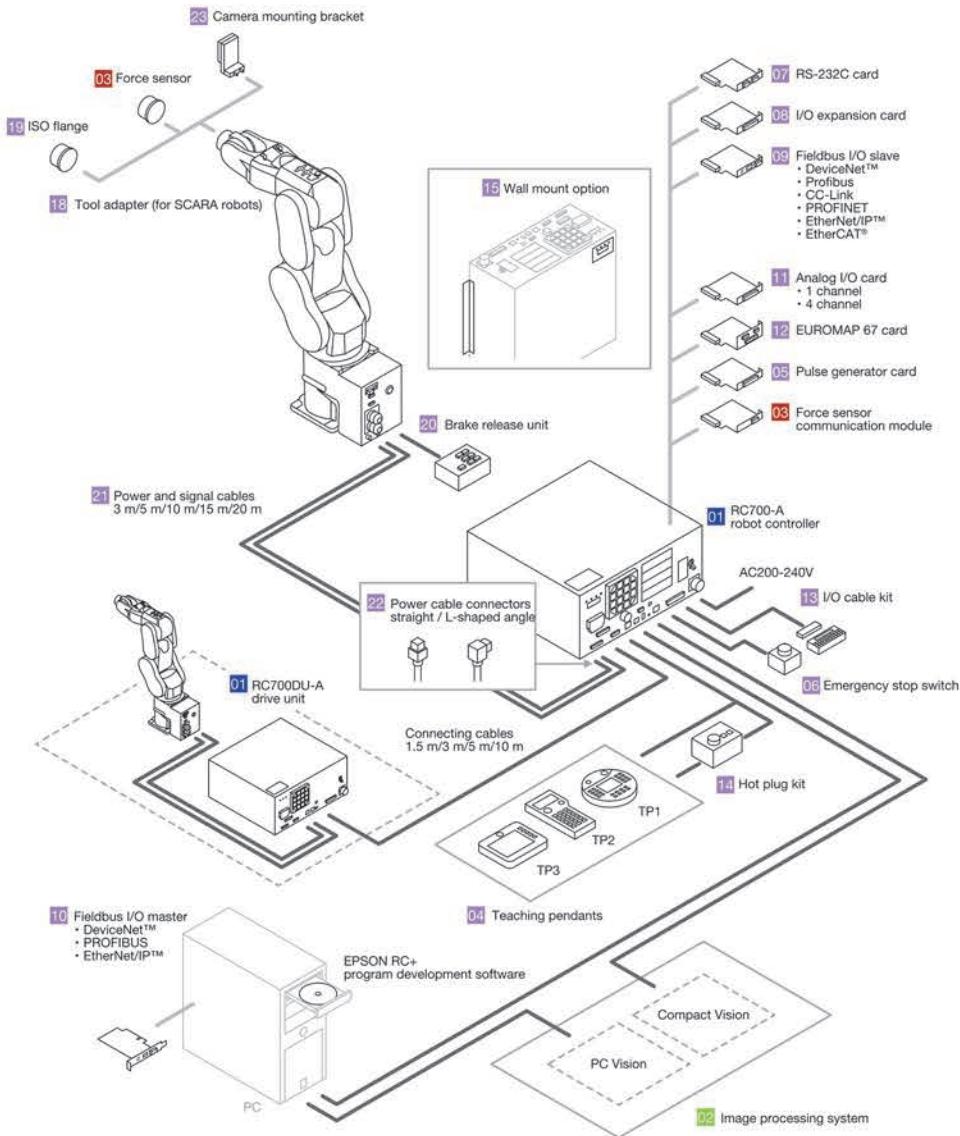
Controller options		RC700-A	RC700-D	RC90-B	T series	VT
04	Teaching Pendant (TP2)	●	●	●	●	●
04	Teaching Pendant (TP3)	●	●	—	●	●
05	Conveyor tracking	●	●	●	—	—
05	PG motion system	●	●	●	—	—
06	Emergency stop switch	●	●	●	●	●
07	RS-232C cards	●	●	●	—	—
08	I/O expansion cards	●	●	●	—	—
09	Fieldbus I/O (Slave)	●	●	●	●	●
10	Fieldbus I/O (Master)	●	●	●	●	●
11	Analog I/O card	●	●	●	—	—
12	EUROMAP 67 card	●	●	●	—	—
13	I/O cable kit	●	●	●	—	—
14	Hot plug kit	●	●	—	●	●
15	Wall mount option	●	●	—	—	—

Manipulator options		G1	G3	G4	G6	G93	G10/G20	L53/L56/L59/L520	T3-B/T6-B	RS3/RS4	C4	C8	N2	N6	VT5					
16	External wiring units	—	—	—	●	●	●	—	—	—	—	—	—	—	●					
17	Internal wiring unit	—	—	—	—	—	—	—	—	●	—	—	—	—	—					
18	19 Tool adapters/ISO flanges		—	●	●	●	●	●	●	●	—	●	●	●	●					
20	Brake release units	—	—	—	—	—	—	—	—	—	●	●	●	●	—					
21	Power and signal cables	●	●	●	●	●	●	●	(built-in controller)	●	●	●	●	●	(built-in controller)					
Cable length (m)		3,5,10,15,20				3,5,10		Standard		3,5,10,15,20				Standard		Standard/High-flex				
Cable type (Standard/High-flex)		Standard				Standard				Standard						Standard/High-flex				
22	Power cable connectors (Straight/L-type)	Straight/L-type								Straight/L-type						Standard/High-flex				
23	Camera mounting bracket	—	●	●	●	●	●	●		●	●	●	●	●	●	Standard/High-flex				
RC700DU-A (Drive unit)		●	●	—	●	—	●	—		●	●	●	●	—	●	Standard/High-flex				

ROBOT SOLUTION

Option setup example

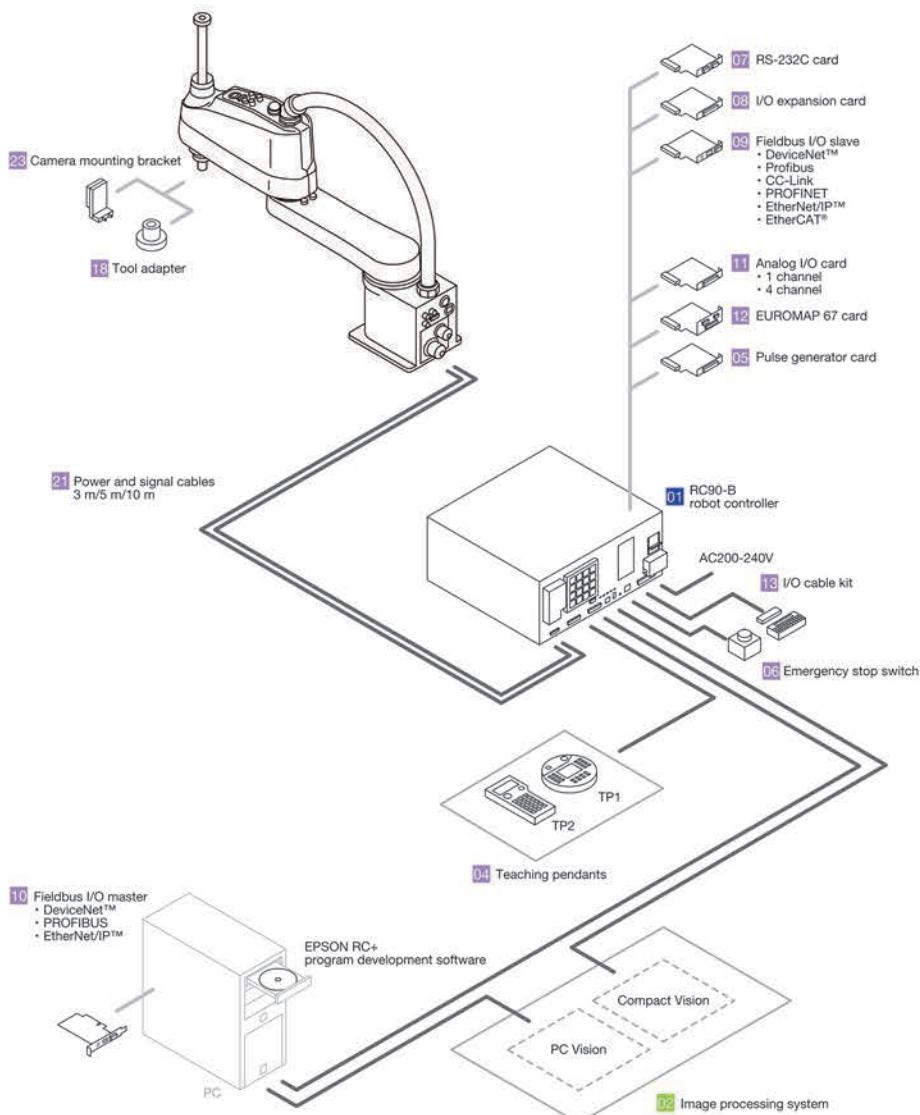
RC700-A controller with C series robots



ROBOT SOLUTION

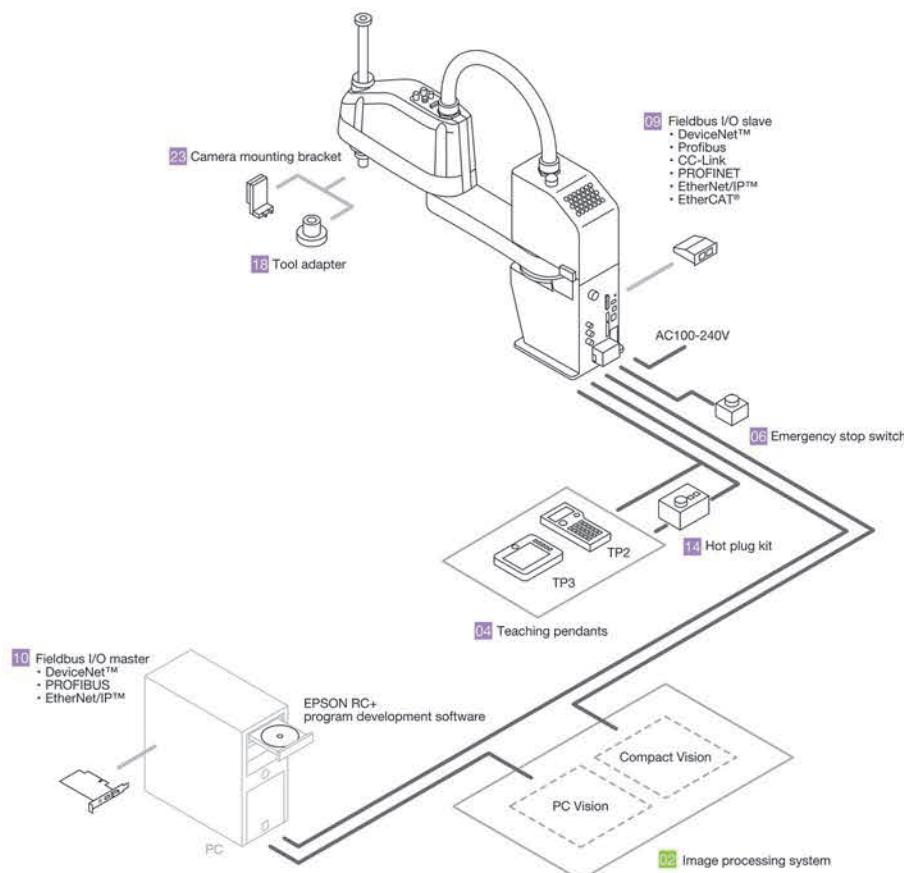
Option setup example

RC90-B controller



ROBOT SOLUTION

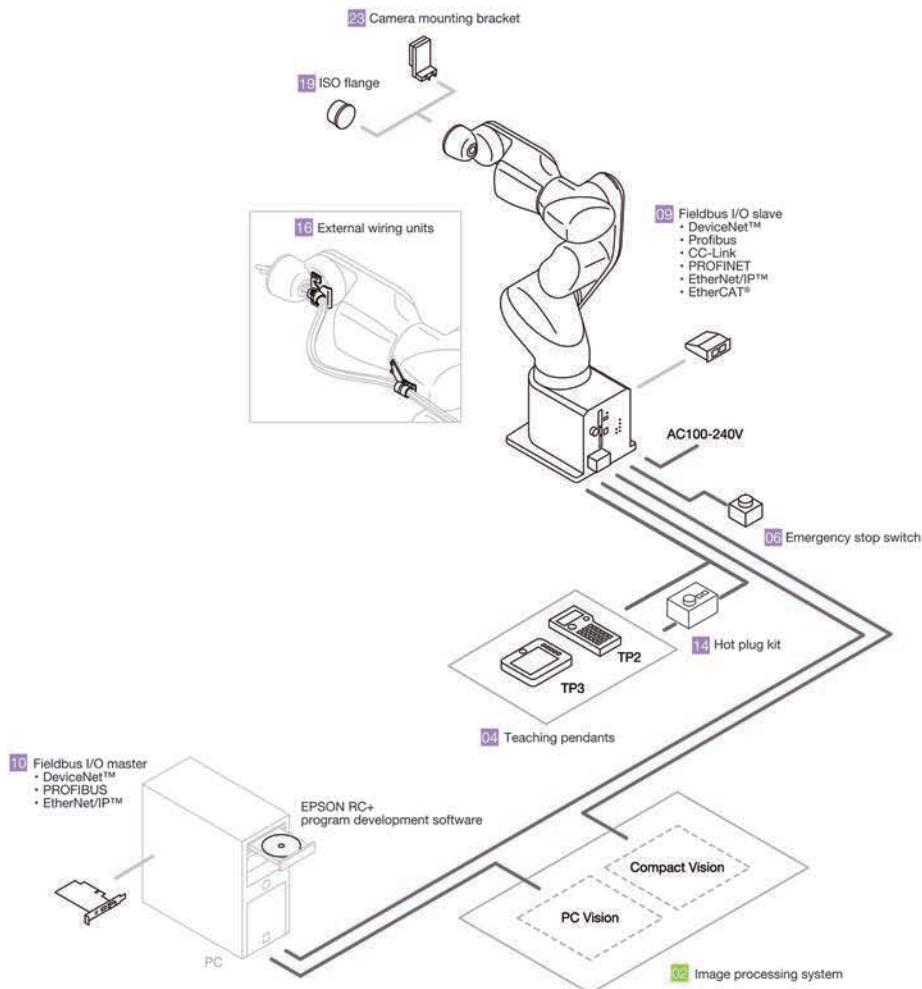
T series robot



ROBOT SOLUTION

Option setup example

VT series robot



ENGINEERED FOR good

EPSON

GET PRECISE

STAY AHEAD WITH COMPACT EFFICIENT ROBOTICS



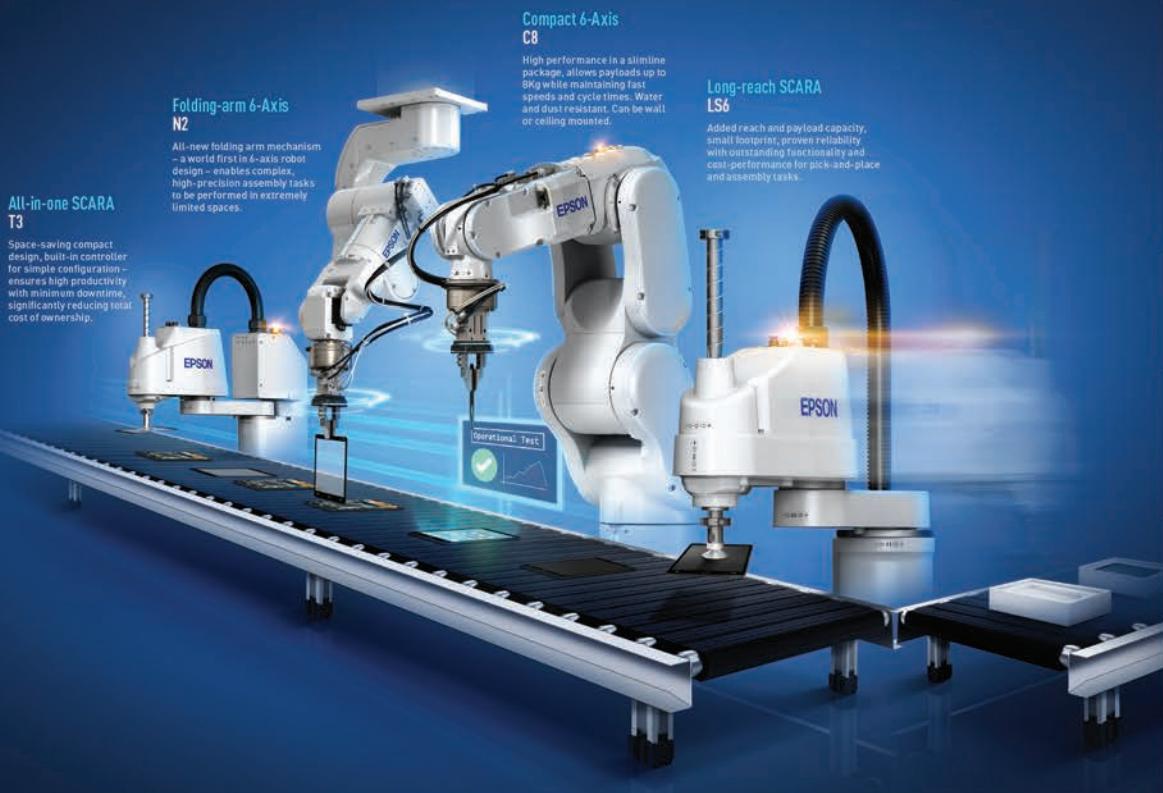
High-speed precision
with GyroPlus

Compact design
for tight spaces

Versatile for
multiple applications



TRANSFORMATION. DETAILS MAKE THE DIFFERENCE.



Enjoy the advantages of automation with Epson Robots.

Some manufacturing industries seek automation, but require the tools to upgrade from manual production. Others want to learn more about the possibilities and benefits of automation before progressing.

Whatever stage you're at right now, take a look at the advantages of the industry-changing technology built into Epson robots. With incredible sensitivity, our amazingly-precise, outstandingly-reliable robots complete tasks that previously defied automation. Enabling solutions that increase your productivity and enhance your reputation, while reducing your costs.

Transform your production line and your bottom line, with Epson. Remember, it's in the details. epson.co.id/industrial-robots

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EPSON



20 25 PRODUCT CATALOGUE



EPSON

PT EPSON INDONESIA

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