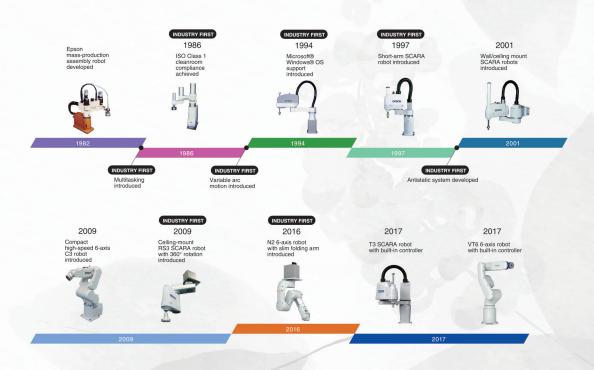


Epson Robot

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.





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.





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



toolpath program testing

Software Integration

Epson Robot

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.

Product lineup

		SCARA robots										
Epson	G Series											
Robot	Top-class speed, repeatability, and low residual vibration											
Publication page	▶P.9	▶P.11	▶P.15	▶P.17	▶P.21	▶P.23	▶P.23					
	G1	G3	NEW GX4	G6	GX8	G10	G20					
Model name		I DRON			E							
Payload (kg)	4-axis 3-axis	Max 3	Max 4	Max 6	Max 8	Max 10	Max 20					
Arm length (mm)	175 225	250 300 350	250 300 350	450 550 650	450 550 650	650 850	850 1000					
Environmental specifications	STD Class	STD Class	STD Class	STD Class IP54 IP65	STD Class IP65	STD Class IP54 IP65	STD Class IP54 IP65					
Installation specifications	5			-	-	-	-					
Compatible controller	RC700-A	RC700-A	RC700-D	RC700-A	RC700-D	RC700-A	RC700-A					

	LS	Series		T se	eries	RS Series			
	Proven reliability and functionality		contro cost-e	lt-in Iller for fficient nation	Original space-saving design for high productivity		STD Class	Standard Cleanroom model ISO 03 (Class 10 equiv.	
▶P.27	▶P.29	▶P.31	▶P.33	▶P.35	▶P.37	▶P.39	▶P.41	Class 4	ESD suppression Cleanroom model ISO 04 (Class 100 equiv.)
LS3-B	LS6-B	LS10-B	LS20-B	NEW T3-B	NEW T6-B	RS3	RS4	Class 5	Cleanroom model ISO 05 (Class 100 equiv.)
			5			. 4.		IP54	Protection model IP54
					93	Bean	8001	IP65	Protection model IP65 Protection model IP67
Max 3	Max 6	Max 10	Max 20	Max 3	Max 6	Max 3	Max 4		Table Top mount
	500	600	900						Wall mount
400	600 700	700 800	1000	400	600	350	550		Ceiling mount
								احا	Wall/ceiling multi-layout mount
STD Class	STD Class	STD Class	STD Class	STD T2	STD *2	STD Class	STD Class	*1: See product p *2: IP20 *3: Star	
								Controllers	▶P.59 Software
								Software Visi	▶P.62 on systems
									tems P.67 ensing systems using systems P.70
RC90-B	RC90-B	RC90-B	RC90-B	Built-in controller	Built-in controller	RC700-A	RC700-A	Software option Robot controlle Manipulator op Option quick-re	er options

Product lineup

	6	3-axis robots	6						
Epson	C Series								
Robot	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)	900	700 900 1400	1400						
Environmental specifications	STD Class	Class CBML	STD Class						
Installation specifications	<u>-</u>	# <u>_</u>	-						
Compatible controller	RC700-A	RC700-A	RC700-A						

6-axis robots								
	N Series	6	VT					
for	nal compact ogreater freedo nent in tight q	Compact, easy setup, low TCO						
▶P.51	▶P.53	▶P.55	▶P.57					
N2	N6-A850	N6- A1000	VT6L					
Ī								
Мах 2.5	Max 6	Max 6	Max 6					
450	850	1000	900					
STD	STD Class	STD	STD Class					
-	1		13					
RC700-A	RC700-A	RC700-A	Built-in controller					

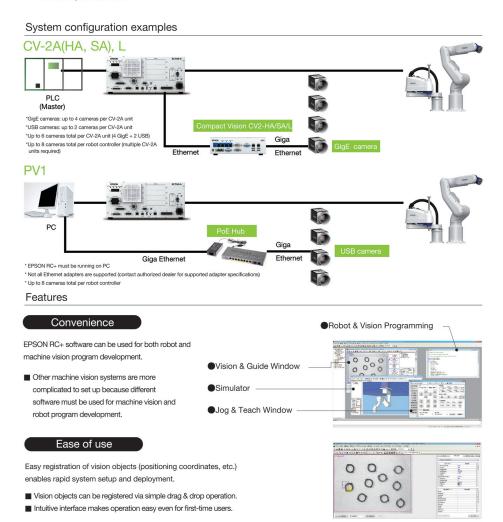
STD	Standard						
Class	Cleanroom mo ISO 03 (Class ESD suppressi	10 equiv.)					
Class 4	Cleanroom mo ISO 04 (Class equiv.)	del 100					
Class 5	Cleanroom mo ISO 05 (Class equiv.)	del 100					
IP54	Protection mod	del IP54					
IP65	Protection mod	del IP65					
№ IP67	Protection mod	del IP67					
	Table Top mou	unt					
	Wall mount						
	Ceiling mount						
	Wall/ceiling multi-layout m	ount					
*1: See product pa *2: IP20 *3: Stand							
С	ontrollers						
■ Controllers		▶ P.59					
	Software						
Software		▶P.62					
Visio	on systems						
■Vision syst		▶P.67					
Force-sensing systems							
■Force-sens	sing systems	▶ P.70					
	o ::						
	Options						
Software option		▶ P.74					
Robot controlle		▶ P.76					
Manipulator opt		▶ P.79					
Option quick-re		▶ P.80					
Option setup ex	апріе	▶ P.81					

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.



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.

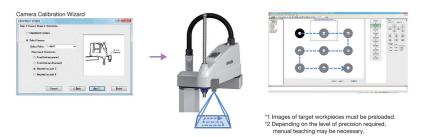
- Vision and process sequencing can be prepared in advance, before system is installed.
- Programs that include image processing sequences can be tested off line.
- If workpiece images are available. image processing can be tested off line.



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 calibra-tion.*2



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.

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

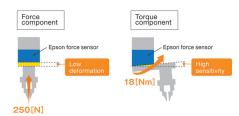
S250 Series force sensors incorporate exclusive Epson crystal piezoelectric technology that ensures a higher level of rigidity and sensitivity than conventional force sensors.

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.

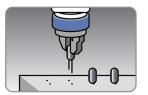
Advantage 2 high sensitivity

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

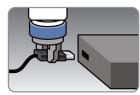
Robots equipped with an Epson S250 Series force sensing system can handle high-precision tasks that cannot be safely automated with teaching or machine vision systems alone. As a result, even production processes that previously required experienced workers to handle delicate and easily damaged workpieces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



Delicate component assembly 2



Precision mating



Connector insertion



Precision screw assembly



Fine polishing

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.

Epson Support

STED 1

•Planning & procurement consulting

STEP 2

Robot installation & setup
 Force sensor adjustment training

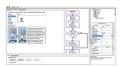
STEP 3

•Maintenance & repair

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.

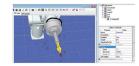
Easy force sensing program development

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.



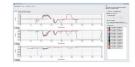
Force Guide GUI

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

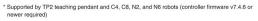
The force waveform display allows realtime waveforms to be compared with previously recorded waveforms, enabling users to identify operating anomalies and understand how various conditions affect performance.

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.

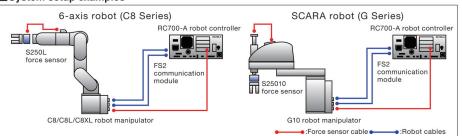




■Product photos



■System setup examples



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)



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



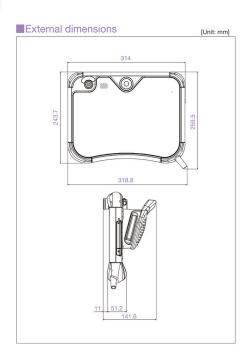
- ■Simple screen layout, fast response
- ■Standard RC+ program interface

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



04 Teaching Pend

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.



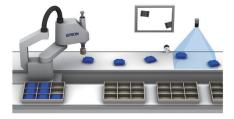
05 Conveyor tracking



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.



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
- 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.

^{*}Vision Guide software required.

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.

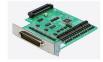


08 I/O expansion cards



Expanded input/output flexibility

24-input/16-output expansion cards.



09 Fieldbus I/O (slave)

Compatible controllers

RC700-A RC90-B T series VT series

High-speed peripheral connectivity

■ 2048-point I/O support for DeviceNetTM, Ethernet/IPTM, PROFIBUS®, and PROFINET® networked peripherals, and 384-point I/O support for CC-Link® networked peripherals.

10 Fieldbus I/O (master)



Bidirectional high-speed peripheral connectivity

■ Support for DeviceNetTM, PROFIBUS®, and Ethernet/IPTM networked peripherals (1024-point I/O).

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



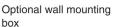
Easy Teach Pendant connection/ disconnection

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

*Conversion cable required for use with TP1 or TP2.



15 Wall mount option



■ Allows controller to be mounted on a wall.



Manipulator options

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

16 External wiring units

G1 G3 G6 G10 G20 LS3 LS6 LS10 LS20 T3 T6 VT6

Simplifies wiring when mounting manipulator options

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





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





Enhances handling/processing versatility and simplifies effector changes



 Compatible manipulators

 G1
 G3
 G6
 G10
 G20
 LS3
 LS6
 LS10
 LS20
 T3
 T6
 VT6
 RS3
 RS4
 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

Power and signal cables of as 66 to 620 LS3 LS6 LS10 LS20

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

22 Power cable connectors

G1 G3 G6 G10 G20 LS3 LS6 LS10 LS20 T3 T6 VT6

RS3 RS4 C4 C8 N2 N6

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



23 Camera mounting bracket

G1 G3 G6 G10 G20 LS3 LS6 LS10 LS20 T3 T6 VT6 RS3 RS4 C4 C8 N2 N6

Securely mount machine vision system camera to robot arm



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



Option quick-reference table

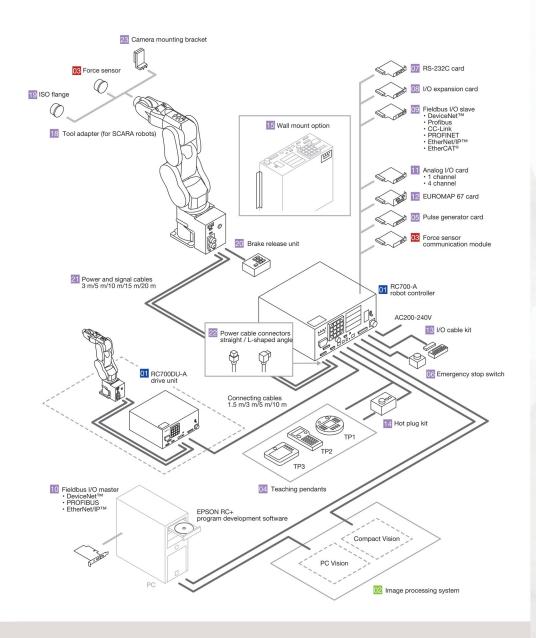
Software options								
	RC700-A	RC700-D	RC90-B	T series	VT			
02 Vision Guide 7.0	•	•	•	•	•			
03 Force Guide 7.0	•	•	_	_	_			
RC+ API 7.0	•	•	•	•	•			
ECP	•	•	•	•	•			
GUI Builder 7.0	•	•	•	•	•			
OCR	•	•	•	•	•			
VRT	•	•	•	•	•			

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	GX4	G6	GX8	G10/G20	LS3/LS6/LS10/LS20	T3-B/T6-B	RS3/RS4	C4	C8	N2	N6	VT6
16 External wiring units	-		-	•	•	•	-	_		_	-	_		•
17 Internal wiring unit	-		-	_	-			_	•	_	-	_	-	1—
18 19 Tool adapters/ISO flanges	-	•	•	•	•	•	•	•	•	_	•	•	•	•
20 Brake release units	-	_	_	-	-		_	_		•	•	•	•	-
21 Power and signal cables	•	•	•	•	•	•	•		•	•	•	•	•	
Cable length (m)			3,5	,10,15,2	0		3,5,10	(built-in			3,5,10,15,20			(built-in
Cable type (Standard/High-flex)				Sta	andard			controller)	Star	ndard	Standard/ High-flex	Standard	Standard/ High-flex	controller)
Power cable connectors (Straight/L-type)	Straight/L-type				Standard		Straight/L-type							
23 Camera mounting bracket	-	•	•	•	•	•	•	•	•	•	•	•	•	•
RC700DU-A (Drive unit)	•	•	_	•	-	•		-	•	•	•	-	•	-

Option setup example

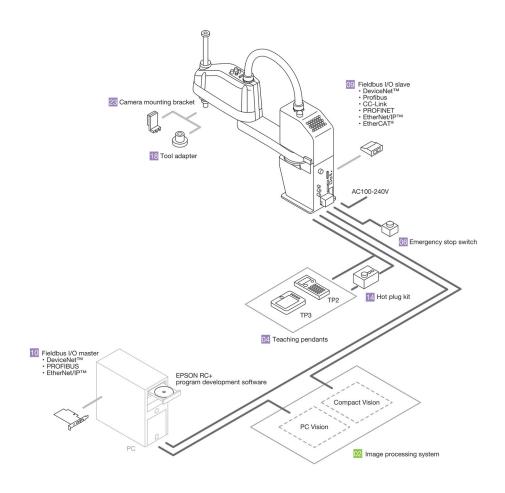
RC700-A controller with C series robots



Option setup example

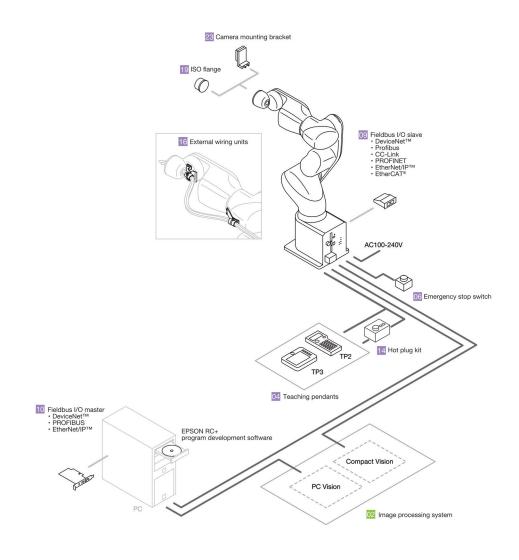
RC90-B controller 07 RS-232C card 08 I/O expansion card 23 Camera mounting bracket 11 Analog I/O card • 1 channel • 4 channel 18 Tool adapter 12 EUROMAP 67 card 05 Pulse generator card Power and signal cables 3 m/5 m/10 m 01 RC90-B robot controller AC200-240V 13 I/O cable kit 06 Emergency stop switch 04 Teaching pendants 10 Fieldbus I/O master • DeviceNet™ • PROFIBUS • EtherNet/IP™ EPSON RC+ program development software Compact Vision PC Vision 02 Image processing system

T series robot



Option setup example

VT series robot





Epson Robots are built for greater efficiency and precision while fusing form and function. Equipped with an optional complementary force sensor that is both sensitive and versatile, the robots are capable of executing a wide range of high precision tasks. Details make all the difference in the world of automation. Experience lower production costs, enhanced quality and increased productivity with Epson's highly reliable robots, while increasing businesses' bottom line.





IT'S IN THE DETAILS.

A global leader in precision robotics, Epson robots redefine reliability, accuracy and speed



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





20 PRODUCT 23 CATALOGUE

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