

# Epson Robots

- SCARA Robots
- 6-axis Robots
- Controllers
- Software
- Vision System
- Part Feeding
- Force Sensing
- Options



\*Market share based on unit sales of industrial SCARA robots, 2011-2023. (Source: Fuji Keizai "2012 - 2024 Reality and Future Outlook of Worldwide Robot Market").



Here at Epson, our technology is driven by our commitment to society and the environment. We focus on the essential and eliminate the unnecessary to create greater value. With this philosophy at our core, Epson has always strived to meet sustainability needs and will continue to do so.

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  - The values of the products listed in this catalog are measured under various conditions of in-house evaluation. They may vary depending on the environment and conditions of use.
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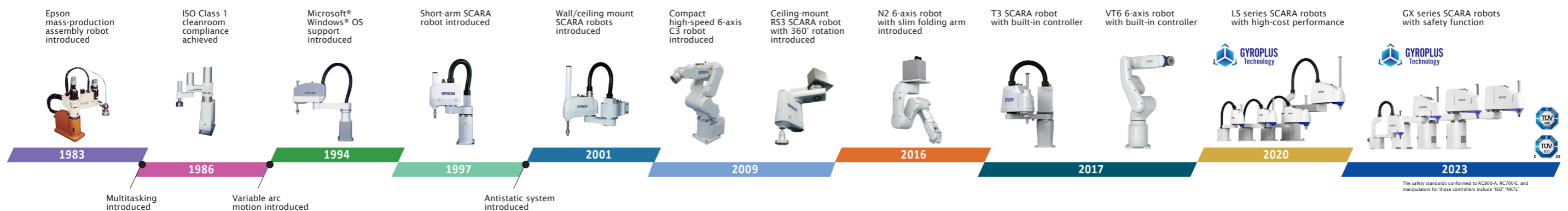
**Safety Precautions** Please read associated manuals carefully before installing or using our robot products. Always use products properly per guidelines in the manuals.

# Why Epson Robots?

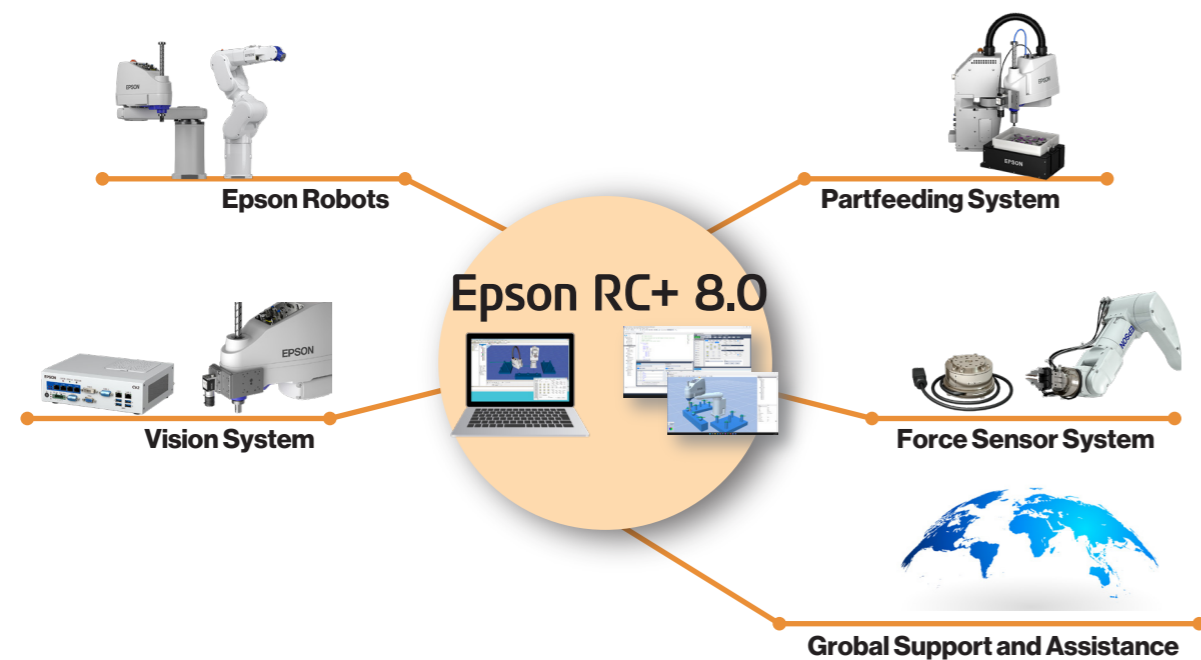
## A proven reputation for precision and reliability at the leading edge of industrial robot design

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.

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.



# Low total cost of ownership and high reliability for the ultimate in automated productivity

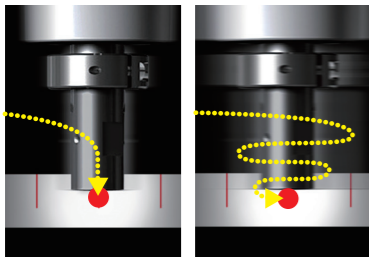


## Integrated Value

## Precision Automation Specialists

### 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.



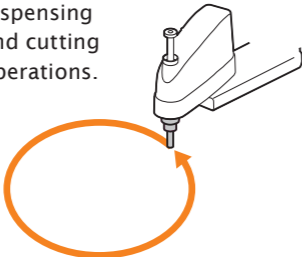
Epson robot

Conventional robot

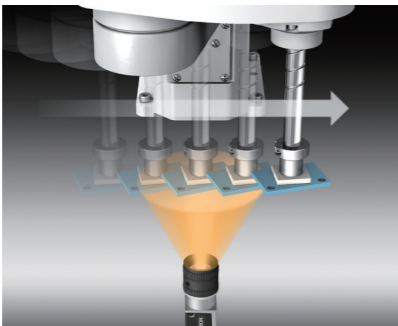
\*Image

### High Quality

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

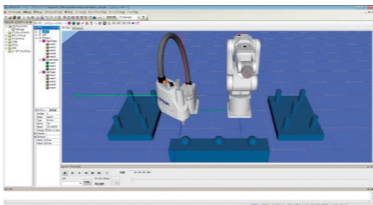


- Integrated machine vision systems boost setup ease and workpiece handling accuracy.



### 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 workcell layout and toolpath program testing

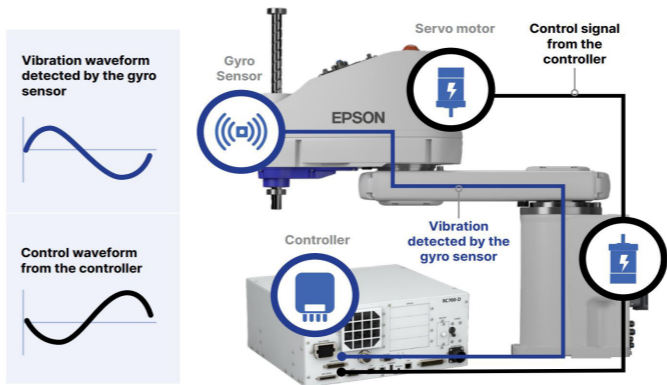
## GYROPLUS Technology Taking Robot Performance to the Next Level



**Innovations** in robotic automation have allowed manufacturers in countless industries to achieve higher throughput, improved quality, and safer working environments. But choosing a robot for an automation task often involves balancing tradeoffs between three key performance criteria: speed, payload, and precision.

The underlying cause of these performance tradeoffs is vibration of the robot arm. Manufacturing processes increasingly demand shorter cycle times for improved throughput, which in turn, requires higher speed and acceleration rates from the robot.

But as speed and acceleration increase, so does vibration in the robot arm.



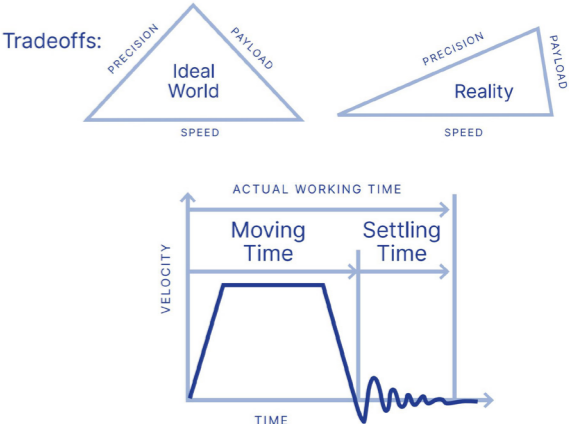
Competing Performance Criteria	Improving This Specification	Worsens This Specification	Impact On Performance
Speed vs. Precision	Speed	Vibration	Settling Time is Increased
Cycle Time vs. Vibration Damping	Cycle Time	Settling Time	Tact Time is Increased
Vibration Damping vs. Cost	Arm Rigidity	Robot Size and Weight	Robot Cost is Increased
Vibration Damping vs. Cost	Arm Rigidity	Robot Size and Weight	Energy Consumption is Increased
Vibration Damping vs. Ease of Install	Arm Rigidity	Robot Size and Weight	Robot Footprint is Increased

For decades, these performance tradeoffs have been accepted as an inevitable part of robot selection and operation — the laws of physics haven't changed. But thanks to GYROPLUS Technology from Epson, the compromises between a robot's speed, payload, and precision are finally being addressed.

**Epson's GYROPLUS Technology** was born out of the company's experience as a leading manufacturer of high-quality quartz crystal materials. We've applied this quartz crystal technology - along with proprietary MEMS (microelectromechanical systems) processing technology - to sensing devices, producing an extremely compact, high-performance, quartz-based gyro sensor.

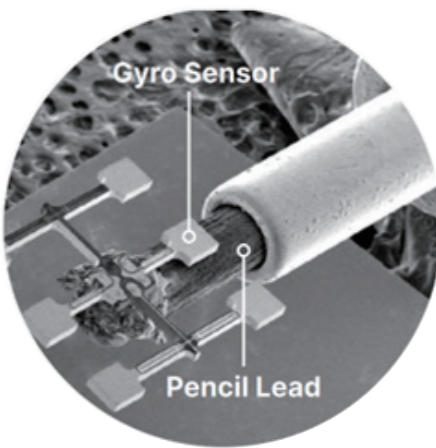
The gyro sensor is configured as a "double-T" type crystal oscillator, which provides a very high signal-to-noise ratio, excellent resistance to vibration and shock, and high-temperature stability.

Traditional robot controls use angular velocity feedback located on the robot's motor. But the true angular velocity at the end of the robot arm often differs from the motor's angular velocity, due to mechanical tolerances, friction, and the influence of the attached load and peripherals such as end effectors and wiring. Now, with Epson's GYROPLUS Technology mounted at the end of the robot arm, the robot controller receives information about the behavior directly at the end of the arm, so it can deliver motion commands to address the exact movement and position of the arm, rather than an estimate based on the motor's angle and velocity. This means more precise control of positioning, along with significant vibration reduction.



As a result, the ratio of settling time to the overall cycle time increases, reducing throughput and precision. And the common workarounds to these problems, such as increasing the rigidity of the robot arm, result in different performance tradeoffs. Innovations in robotic automation have allowed manufacturers in countless industries to achieve higher throughput, improved quality, and safer working environments. But choosing a robot for an automation task often involves balancing tradeoffs between three key performance criteria: speed, payload, and precision.

The underlying cause of these performance tradeoffs is vibration of the robot arm. Manufacturing processes increasingly demand shorter cycle times for improved throughput, which in turn, requires higher speed and acceleration rates from the robot. But as speed and acceleration increase, so does vibration in the robot arm. As a result, the ratio of settling time to the overall cycle time increases, reducing throughput and precision. And the common workarounds to these problems, such as increasing the rigidity of the robot arm, result in different performance tradeoffs.



## Mitigating Tradeoffs in Robot Performance – GYROPLUS Technology –

	SCARA Robots													6-axis Robots						
	G/GX Series					LS Series				T Series		RS Series		C Series			N Series			VT6
	Top-class speed, repeatability, and low residual vibration					Proven reliability and functionality				Built-in controller for cost-efficient automation		Original space-saving design for high productivity		Slim, lightweight body for greater installation flexibility			Original compact design for greater freedom of movement in tight quarters			Built-in controller, All-in-one 6-axis robot
Page	▶ P.7	▶ P.9	▶ P.13	▶ P.17		▶ P.21	▶ P.23	▶ P.25	▶ P.27	▶ P.29	▶ P.31	▶ P.33	▶ P.35	▶ P.37	▶ P.39	▶ P.43	▶ P.45	▶ P.47	▶ P.49	▶ P.51
Model Name	G1	GX4	GX8	GX10	GX20	LS3	LS6	LS10	LS20	T3	T6	RS3	RS4	C4	C8	C12	N2	N6-A850	N6-A1000	VT6L
Payload (kg)	4-axis 3-axis 1 1.5	Max 4	Max 8	Max 10	Max 20	Max 3	Max 6	Max 10	Max 20	Max 3	Max 6	Max 3	Max 4	Max 4	Max 8	Max 12	Max 2.5	Max 6	Max 6	Max 6
Arm Length (mm)	175 225	250 300 350	450 550 650	650 850	850 1000	400	500 600 700	600 700 800	800 1000	400	600	350	550	600 900	900 1400	1400	450	850	1000	900
Environmental Specifications	STD Class 3	STD Class 3	STD ESD FZ IP65 Class 3	STD <sup>*1</sup> Class 3 IP65	STD <sup>*1</sup> Class 3 IP65	STD Class 4	STD Class 4	STD FZ Class 4	STD Class 4	STD <sup>*1</sup> FZ <sup>*3</sup>	STD <sup>*1</sup>	STD Class 3	STD Class 3	STD Class 3	STD Class 3 C8-B901 Class 4 C8-B1401 IP67	STD Class 4 <sup>ESD</sup>	STD	STD Class 5	STD Class 5	STD Class 4 IP67
Installation Specifications		  	  	  	  									  	  			  	  	  <sup>*2</sup> <sup>*2</sup>
Compatible Controller	RC700-A	RC700-E RC800-A	RC700-E RC800-A	RC700-E RC800-A	RC700-E RC800-A	RC90-B	RC90-B	RC90-B	RC90-B	Built-In controller	Built-in controller	RC700-A	RC700-A	RC700-E	RC700-E	RC700-E	RC700-A	RC700-A	RC700-A	Built-in controller

Icon Description

- Environmental Specifications -

STDStandard

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

IP65Protection model IP65

ESDESD

Cleanroom model ISO 04 (Class 100 equiv.)

IP67Protection model IP67

FZFood grease for Z-axis

Cleanroom model ISO 05 (Class 100 equiv.)

- Installation Specifications -

Table Top

Wall

Ceiling

Wall/ceiling multi-layout

GYROPLUS Technology

Controllers

Epson RC+

Safety solution of Epson robot

▶ P. 4

▶ P.53

▶ P.57

▶ P.67

Epson RC+ Express Edition

Vision system

Part feeding

Force sensing

▶ P.69

▶ P.70

▶ P.73

▶ P.75

Software options

Robot controller options

Manipulator options

Option quick-reference table

Option setup example

▶ P.79

▶ P.81

▶ P.84

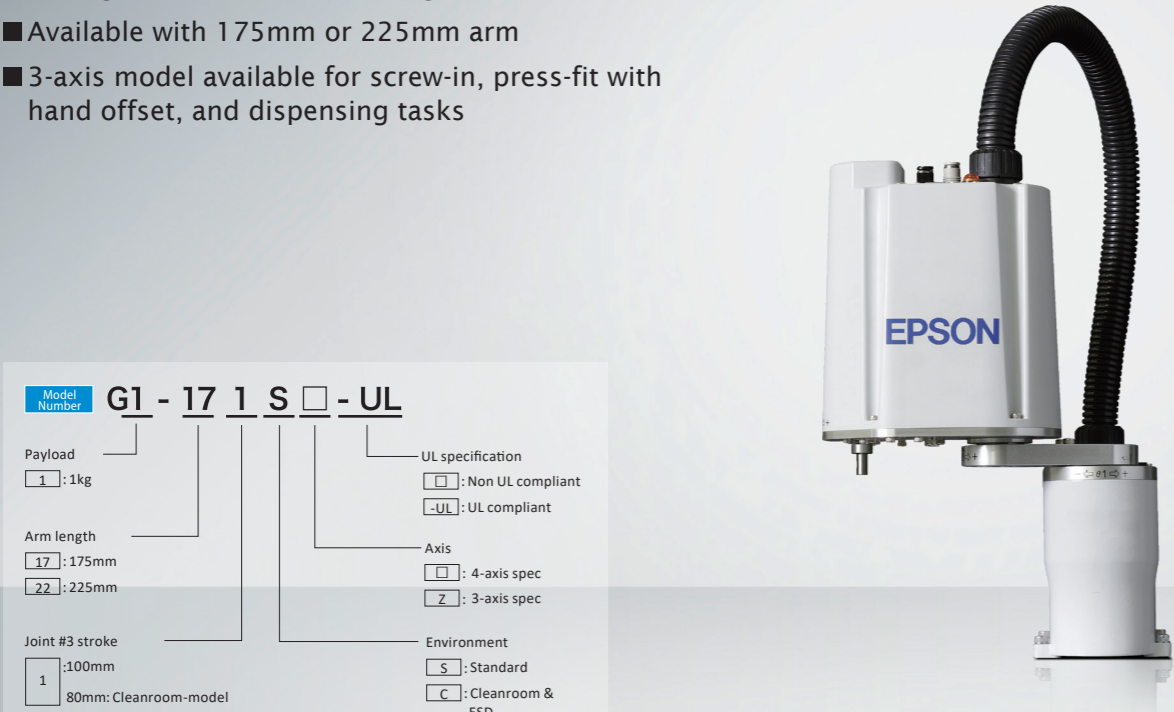
▶ P.85

▶ P.86

\*1: IP20 \*2: Standard model only \*3: Sales vary by region

Compact, high-rigidity body for precision assembly and press-fit applications

- Our lightest G series robot (8kg)
- Available with 175mm or 225mm arm
- 3-axis model available for screw-in, press-fit with hand offset, and dispensing tasks



Model Number

G1 - 17 1 S □ - UL

Payload

1 : 1kg

Arm length

17 : 175mm

22 : 225mm

Joint #3 stroke

1 : 100mm

80mm: Cleanroom-model

UL specification

□ : Non UL compliant

-UL : UL compliant

Axis

□ : 4-axis spec

Z : 3-axis spec

Environment

S : Standard

C : Cleanroom & ESD

## Specifications

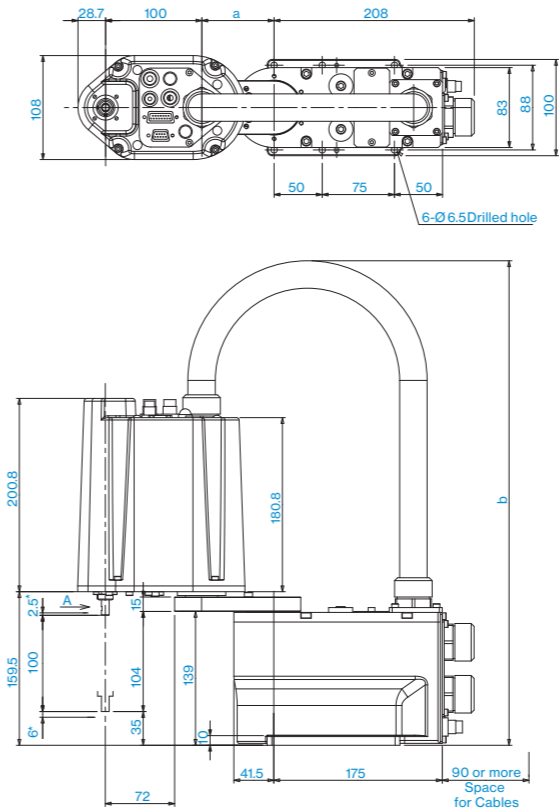
		4-axis		3-axis	
Model number		G1-171□	G1-221□	G1-171□Z	G1-221□Z
Arm length	Arm #1, #2	175 mm	225 mm	175 mm	225 mm
Payload	Rated	0.5 kg			
	Maximum	1 kg		1.5 kg	
Repeatability	Joints #1, #2	±0.005 mm	±0.008 mm	±0.005 mm	±0.008 mm
	Joint #3	±0.01 mm			
	Joint #4	±0.01 deg		—	
Standard cycle time*1		0.29 sec	0.30 sec	0.29 sec	0.30 sec
Max. operating speed	Joints #1, #2	2630 mm/sec	3000 mm/sec	2630 mm/sec	3000 mm/sec
	Joint #3	1200 mm/sec			
	Joint #4	3000 deg/sec		—	
Joint #4 allowable moment of inertia*2	Rated	0.0003 kg•m²		—	
	Maximum	0.004 kg•m²		—	
Joint #3 down force		50 N			
Installation environment		Standard/Cleanroom*3 &ESD			
Mounting type		Table top mounting			
Weight (cables not included)		8 kg			
Applicable controller		RC700-A			
Installed wire for customer use		15 Pin, 9 Pin (D-Sub)			
Installed pneumatic tube for customer use		Φ6 mm x 2, Φ4 mm x 1: 0.59 MPa (6 kgf/cm²) (86 psi)			
Power		AC200-240 V Single phase			
Power consumption*4		0.5 kVA			
Cable length		3 / 5 / 10 / 15 / 20 m			
Safety standard		CE, UKCA, KCs *5, UL			

\*1:Cycle time based on round-trip arch motion (100mm horizontal, 25mm vertical) with 0.5kg payload (path coordinates optimized for maximum speed).  
 \*2:When payload center of gravity is aligned with Joint #4; if not aligned with Joint #4, set parameters using INERTIA command.  
 \*3:Complies with ISO Class 3 (ISO14644-1) and older Class 1 cleanroom standards. \*4:Varies according to operating environment and program. \*5: Please contact us for the compatibility status of each model.

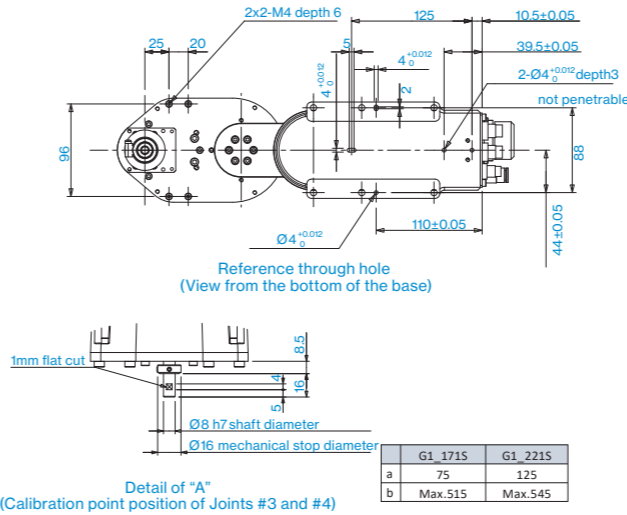
## Outer Dimensions (Table Top Mounting)

[Unit: mm]

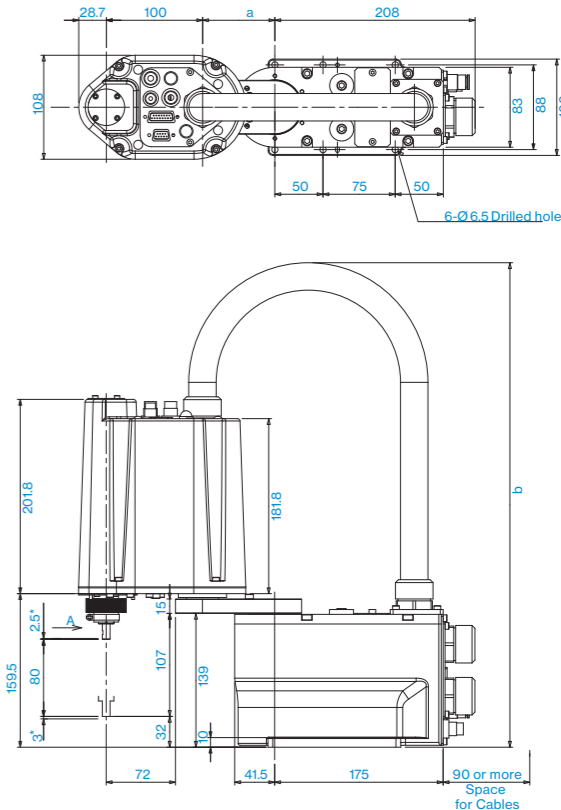
### Standard-model



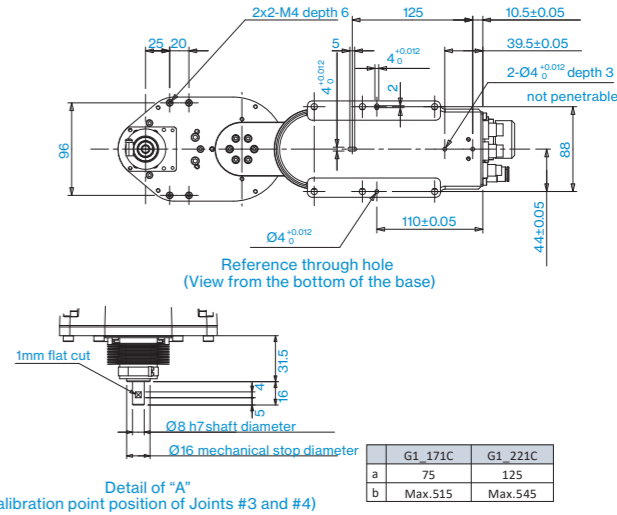
\* Indicates the stroke margin by mechanical stop.



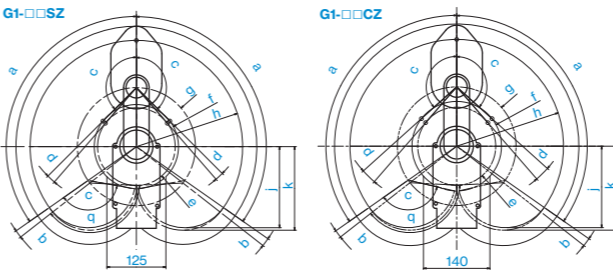
### Cleanroom-model



\* Indicates the stroke margin by mechanical stop.



## Motion Range (Table Top Mounting)



Model	4-axis				3-axis			
	G1-171S	G1-171C	G1-221S	G1-221C	G1-171SZ	G1-171CZ	G1-221SZ	G1-221CZ
g Length of Arm #1 (mm)	75	125	75	125	75	125	75	125
h-g Length of Arm #2 (mm)	100	100	100	100	100	100	100	100
f Motion range	64.3	59.6	64.8	70.9	86.4	89.2	94.4	94.4
a Motion range of Joint #1 (°)	125	125	125	125	125	125	125	125
c Motion range of Joint #2 (°)	140	152	149	135	123	135	132	132
e Mechanical stop area	60.4	62.6	52.8	56.2	69.2	82.5	82.2	82.2
b Joint #1 angle to hit mechanical stop (°)	3	3	3	3	3	3	3	3
d Joint #2 angle to hit mechanical stop (°)	3	4	5	1.3	3	4	7	7

# GX4



Compact body with rank-above technology for high speed and low vibration

- Handles small, heavy components and payloads up to 4kg
- Available with left- or right-curved arm for greater operating versatility
- A small robot with a long reach

Curved arm



Left curved arm



Right curved arm

Model Number **GX4-□251S** □ □ □ □

Controller  
□ B : RC700-E  
□ C : RC800-A

Arm length  
□ 25 : 250mm  
□ 30 : 300mm  
□ 35 : 350mm

Joint #3 stroke  
□ 1 : 150mm Standard, ESD  
□ : 120mm Cleanroom-model

Environment  
□ S : Standard  
□ E : ESD  
□ C : Cleanroom & ESD

UL specification  
□ : Non UL compliant  
□ -UL : UL compliant

Arm Type  
□ : Standard  
□ R : Right-curved  
□ L : Left-curved

Cable mounting direction  
□ : Standard  
□ B : Bottom side (table top only)

Mounting type  
□ : Table top mounting  
□ M : Multiple mounting



The safety standards conformed to RC800-A, RC700-E, and manipulators for those controllers include "ISO" "NRTL"

## Specifications

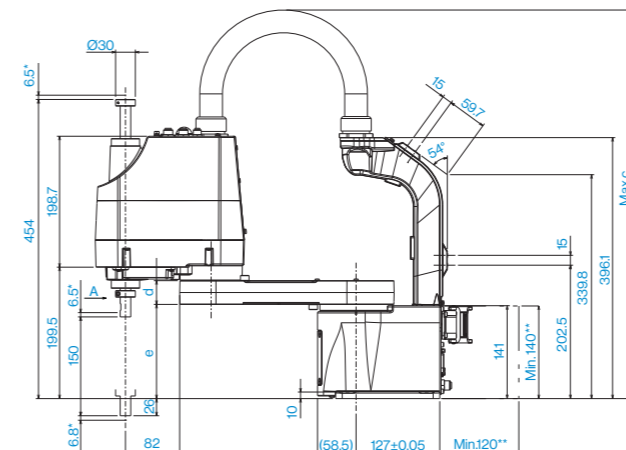
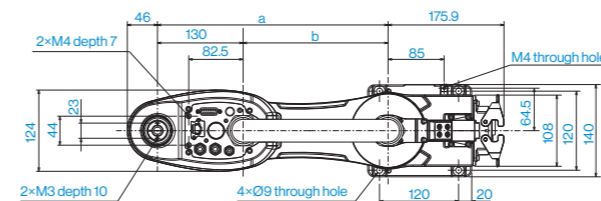
Model number		GX4-□251□□□	GX4-□301□□□	GX4-□351□□□
Arm length	Arm #1, #2	250 mm	300mm	350 mm
Arm shape	Rated	Standard		
	Maximum	Standard, Left-curved, Right-curved*1		
Payload*2	Rated	2kg		
	Maximum	4kg		
Repeatability	Joints #1, #2	±0.008 mm		
	Joint #3	±0.01 mm		
	Joint #4	±0.005 deg		
Standard cycle time*3		0.33 sec	0.34 sec	0.35 sec
Max. operating speed	Joints #1, #2	3550 mm/sec	3950 mm/sec	4350 mm/sec
	Joint #3	1100 mm/sec		
	Joint #4	3000 deg/sec		
Joint #4 allowable moment of inertia*4	Rated	0.005 kg·m <sup>2</sup>		
	Maximum	0.05 kg·m <sup>2</sup>		
Joint #3 down force		150 N		
Installation environment		Standard (equivalent to IP20), Cleanroom*5 & ESD*6, ESD*6		
Mounting type		□ : Table top mounting, M: Multiple mounting		
Weight (cables not included)		Table top :15 kg	Table top :15 kg Multiple 17 kg	Table top :16 kg Multiple 17 kg
Applicable controller		GX4-B: RC700-E GX4-C: RC800-A		
Installed wire for customer use		15 Pin (D-Sub), 8 pin (RJ45)		
Installed pneumatic tube for customer use		Φ4 mm x 1, Φ6 mm x 2: 0.59 MPa (6 kgf/cm <sup>2</sup> ) (86 psi)		
Power		AC200-240 Single phase		
Power consumption*7		1.2 kVA		
Cable length		Standard : 3 / 5 / 10 / 15 / 20 m Flexible : 5 / 10 / 15 / 20 m		
Safety standard		CE, UKCA, KCs, NRTL		

\*1: The curved arm is only supported in 350mm arm table top model.  
\*2: Do not apply the load exceeding the maximum payload.  
\*3: Cycle time based on round-trip arch motion (300 mm horizontal, 25 mm vertical) at rated payload setting of table top model boost mode (path coordinates optimized for maximum speed)  
\*4: Set the parameters by the Inertia command according to the load and end effector status (refer to the instruction manual for the parameter calculation method).  
\*5: Complies with ISO Class 3 (ISO14644-1) and Fed-std209D Class 1 (less than 100.1 m particles per 28.317cm<sup>3</sup>(1cf) cleanroom standards.  
\*6: Main resin parts of the ESD model use conductive materials or apply plate processing. For the tip of the Manipulator (tool mounting part), we have confirmed that it is +/- 5 V or less even immediately after operating the measurement under our standard.  
\*7: Varies according to operating environment and program.

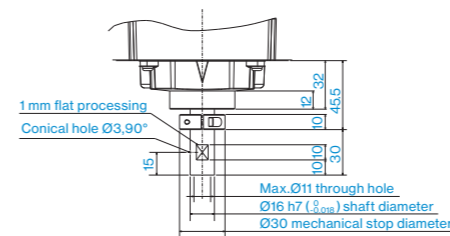
## Outer Dimensions (Table Top Mounting)

[Unit: mm]

### Standard-model



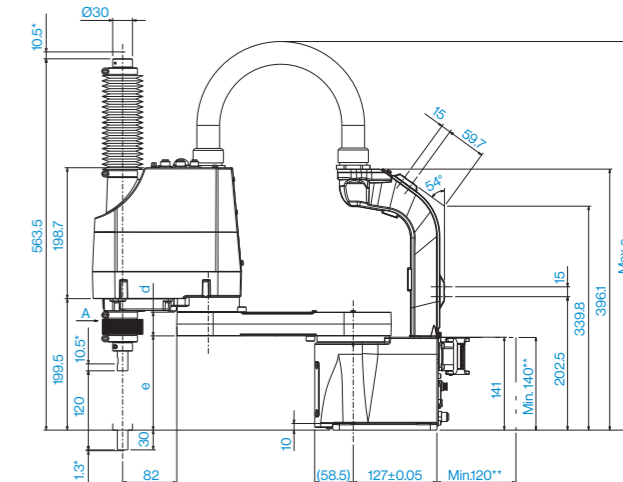
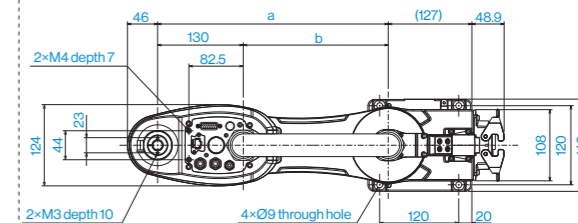
\* Indicates the stroke margin by mechanical stop.



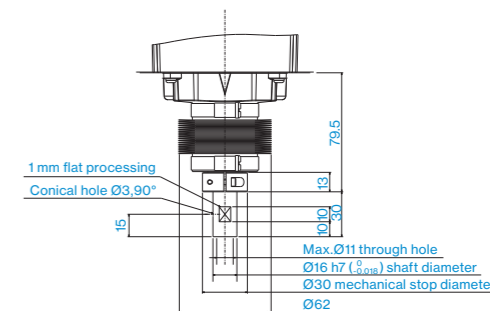
Detail of "A"  
(Calibration point position of Joints #3 and #4)

	GX4-□251S	GX4-□301S	GX4-□351S
a	250	300	350
b	120	170	220
c	560	585	610
d	30	36	36
e	146	143	143

### Cleanroom-model



\* Indicates the stroke margin by mechanical stop.



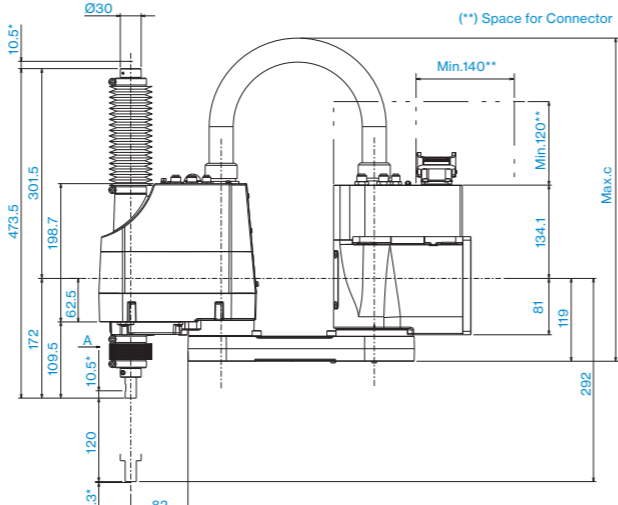
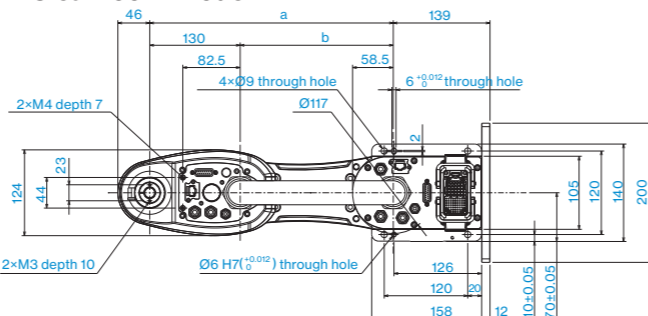
Detail of "A"  
(Calibration point position of Joints #3 and #4)

	GX4-□251C	GX4-□301C	GX4-□351C
a	250	300	350
b	120	170	220
c	560	585	610
d	30	36	36
e	146	143	143

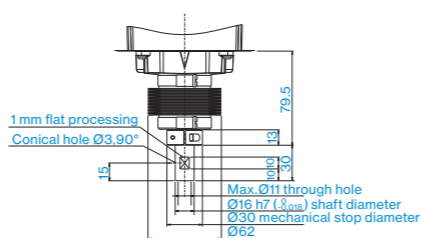
### ■ Motion Range (Table Top Mounting)

[Unit: mm]

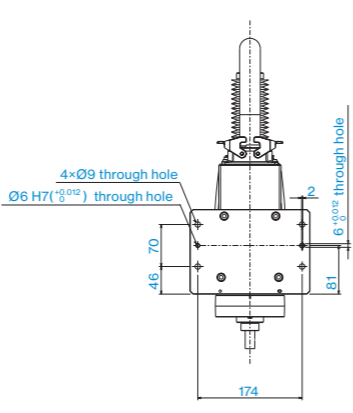
## Cleanroom-model



\* indicates the stroke margin by mechanical stop.



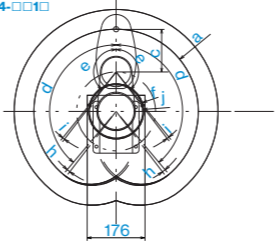
### Detail of "A" (Calibration point position of Joints #3 and #4)



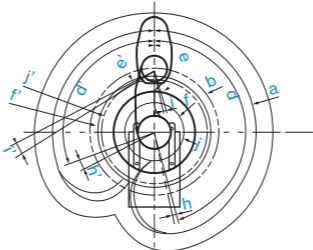
**Reference through hole  
(View from the bottom of the base)**

	GX4-□301CM	GX4-□351CM
a	300	350
b	170	220
c	475	500

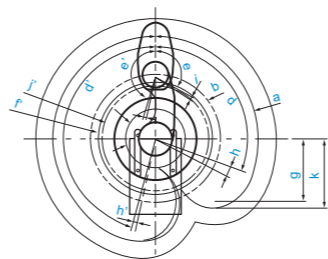
## GX4-□□1□



## GX4-□351□-L



## GX4-□351□-R



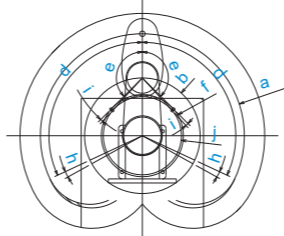
Model	Straight Arm					
	GX4-□25IS	GX4-□25IC	GX4-□30IS	GX4-□30IC	GX4-□35IS	GX4-□35IS
a Length of Arm #1+ Arm #2 (mm)	250		300		350	
c Length of Arm #2 (mm)			130			
d Motion range of Joint #1 (°)			140			
e Motion range of Joint #2 (°)	141	137	142	141	142	
f Motion range	87	95	105	107	142	
h Joint #1 angle to hit mechanical stop (°)				2.5		
i Joint #2 angle to hit mechanical stop (°)	1.5		2.4	1.6	2.5	
j Mechanical stop area	84	92	99	103	137	

Model	Left-Curved Arm	
	GX4-□351S-L	GX4-□351C-L
a Length of Arm #1+ Arm #2 (mm)	350	
c Length of Arm #2 (mm)	130	
d/d' Motion range of Joint #1(°)	165 / 110	
e/e' Motion range of Joint #2 (°)	165 / 120	160 / 120
f/f' Motion range	100 / 192	107 / 192
h/h' Joint #1 angle to hit mechanical stop (°)	3.0 / 7.0	
l/l' Joint #2 angle to hit mechanical stop (°)	2.8 / 3.8	3.5 / 3.8
j/j' Mechanical stop area	97 / 183	102 / 183

Model		Right-Curved Arm	
		GX4-□351S-R	GX4-□351C-R
a	Length of Arm #1+ Arm #2 (mm)	350	
c	Length of Arm #2 (mm)	130	
d/d'	Motion range of Joint #1 (°)	110 / 165	
e/e'	Motion range of Joint #2 (°)	120 / 165	120 / 160
f/f'	Motion range	192 / 100	192 / 107
h/h'	Joint #1 angle to hit mechanical stop (°)	7.0 / 3.0	
i/i'	Joint #2 angle to hit mechanical stop (°)	3.8 / 2.8	3.8 / 3.5
j/j'	Mechanical stop area	183 / 97	183 / 102

## [Unit: mm]

## GX4-□□1SM



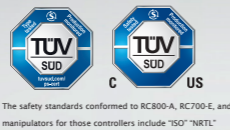
Model	Straight Arm	
	GX4-□301SM	GX4-□351SM
a Length of Arm #1+Arm #2 (mm)	300	350
c Length of Arm #2 (mm)	130	
d/d' Motion range of Joint #1 (°)	115	120
e/e' Motion range of Joint #2 (°)	135	142
f/f' Motion range	121	142
h/h' Joint #1 angle to hit mechanical stop (°)	4.0	
i/i' Joint #2 angle to hit mechanical stop (°)	2.5	
j/j' Mechanical stop area	115	137

# GX8



## High speed and precision for small component assembly

- Handles payloads up to 8kg
- Available with 450mm, 550mm, or 650mm arm
- Internal cabling and ducting minimizes interference worries
- IP65 dust and water-resistant cleanroom models available
- Tabletop, ceiling, and wall mounting models available



The safety standards conformed to RC800-A, RC700-E, and manipulators for those controllers include "ISO" "NRTL"

## Specifications

Model number		GX8-□45□□	GX8-□55□□	GX8-□65□□
Arm length	Arm #1, #2	450 mm	550 mm	650 mm
Payload	Rated	4kg		
	Maximum	8kg		
Repeatability	Joints #1, #2	±0.015 mm		
	Joint #3	±0.01 mm		
	Joint #4	±0.005 deg		
Standard cycle time <sup>*1</sup>		0.28 sec	0.30 sec	0.33 sec
Max. operating speed	Joints #1, #2	7450 mm/sec	8450 mm/sec	9460 mm/sec
	Joint #3		2350 mm/sec	
	Joint #4		2800 deg	
Joint #4 allowable moment of inertia <sup>*2</sup>	Rated	0.01 kg·m <sup>2</sup>		
	Maximum	0.16 kg·m <sup>2</sup>		
Joint #3 down force		150 N		
Installation environment		Standard (equivalent to IP20), Cleanroom <sup>*3</sup> & ESD <sup>*4</sup> , IP65, ESD <sup>*4</sup> , P-FZ		
Mounting type		Table top mounting, Wall mounting, Ceiling mounting (P-FZ: Table top mounting)		
Weight (cables not included)		Table top/Ceiling: 33, Wall: 35	Table top/Ceiling: 34, Wall: 36	Table top/Ceiling: 35, Wall: 37
Applicable controller		GX8-B: RC700-E GX8-C: RC800-A (P-FZ: GX8-B only)		
Installed wire for customer use		15 pin x1, 9 pin x1 (D-Sub), 8 pin x1 (RJ45)		
Installed pneumatic tube for customer use		Φ4 mm x 2, Φ6 mm x 2: 0.59 MPa (6 kgf/cm <sup>2</sup> ) (86 psi)		
Power		AC200-240 V Single phase		
Power consumption <sup>*5</sup>		2.2 kVA		
Cable length		Standard: 3 / 5 / 10 / 15 / 20 m, Flexible: 5 / 10 / 15 / 20 m		
Safety standard <sup>*6</sup>		CE, UKCA, KCs, NRTL		

<sup>\*1</sup>: Cycle time based on round-trip arch motion (300 mm horizontal, 25 mm vertical) at rated payload setting of table top model boost mode (path coordinates optimized for maximum speed).

<sup>\*2</sup>: Set the parameters by the Inertia command according to the load and end effector status (refer to the instruction manual for the parameter calculation method).

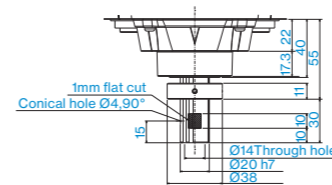
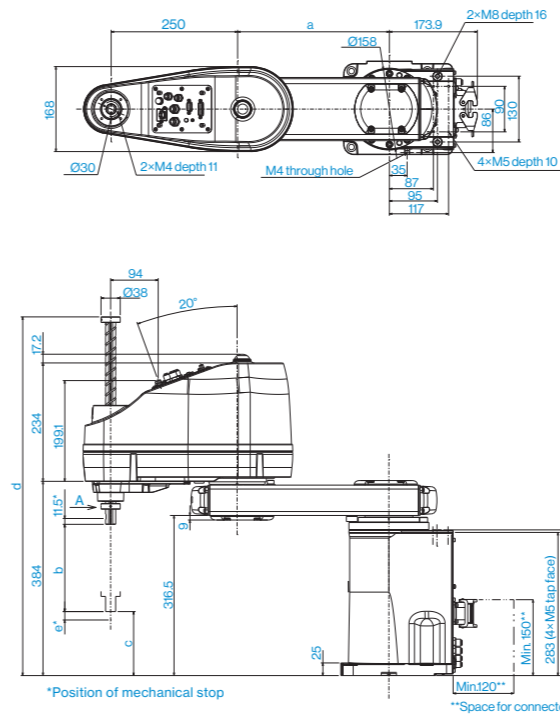
<sup>\*3</sup>: Complies with ISO Class 3 (ISO14644-1) and Fed-std209D Class 1 (less than 10 0.1 μ particles per 28.317cm<sup>3</sup>1cf) cleanroom standards.

<sup>\*4</sup>: Main resin parts of the ESD model use conductive materials or apply plate processing. For the tip of the Manipulator (tool mounting part), we have confirmed that it is +/- 5 V or less even immediately after operating the measurement under our standard. <sup>\*5</sup>: Varies according to operating environment and program. <sup>\*6</sup>: P-FZ model are No 3rd party certification and specific markings.

## Outer Dimensions (Table Top Mounting)

[Unit: mm]

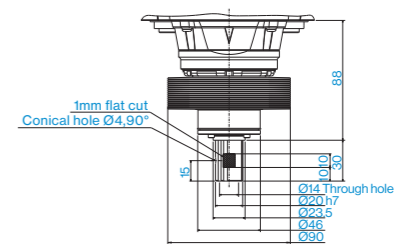
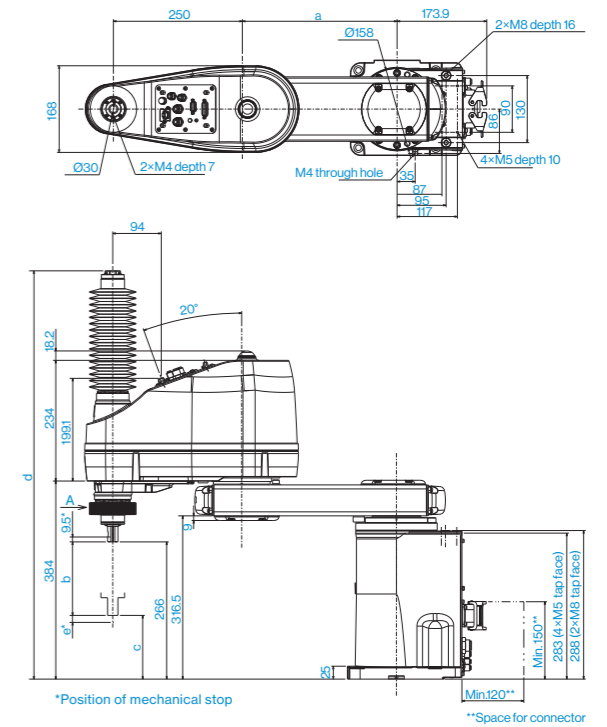
### Standard-model



Detail of "A"  
(Calibration point position of Joints #3 and #4)

	GX8-□452S,E	GX8-□453S,E	GX8-□552S,E	GX8-□553S,E	GX8-□652S,E	GX8-□653S,E
a	200	200	300	300	400	400
b	200	330	200	330	200	330
c	99	-31	99	-31	99	-31
d	709	834	709	834	709	834
e	15.6	10.6	15.6	10.6	15.6	10.6

### Cleanroom-model

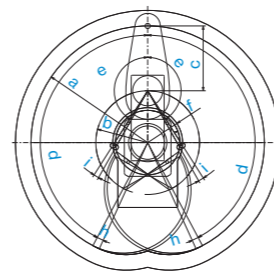


Detail of "A"  
(Calibration point position of Joints #3 and #4)

	GX8-□452C	GX8-□453C	GX8-□552C	GX8-□553S,E	GX8-□652C	GX8-□653C
a	200	200	300	300	400	400
b	170	300	170	330	170	300
c	96	-34	96	-34	96	-34
d	791.5	910.5	791.5	910.5	791.5	910.5
e	12.6	7.6	12.6	7.6	12.6	7.6

## Motion Range (Table Top Mounting)

GX8-□45□□□

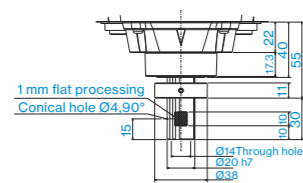
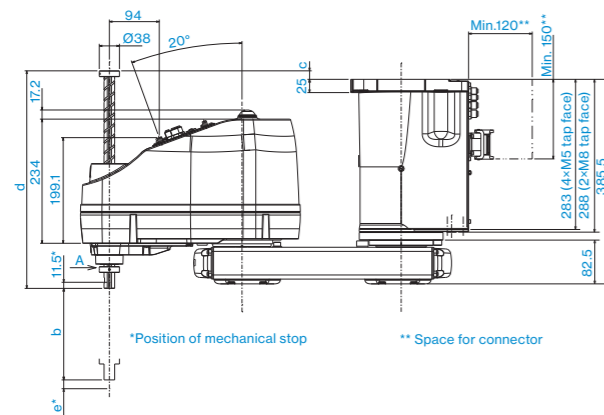
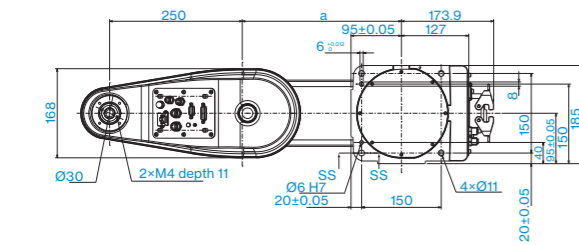


Model	GX8-□45□S□□ GX8-□45□E□□		GX8-□45□C□□ GX8-□45□P□□	
a Length of Arm #1+ Arm #2 (mm)	450			
b Length of Arm #1 (mm)	200			
c Length of Arm #2 (mm)	250			
d Motion range of Joint #1 (°)	152			
e Motion range of Joint #2 (°)	0 ≥ Z ≥ -270	147.5	0 ≥ Z ≥ -240	147.5
	-270 ≥ Z ≥ -330	145	-240 ≥ Z ≥ -300	137.5
f Motion range	0 ≥ Z ≥ -270	134.8	0 ≥ Z ≥ -240	134.8
	-270 ≥ Z ≥ -330	145	-240 ≥ Z ≥ -300	137.5
h Joint #1 angle to hit mechanical stop (°)	1.4			
i Joint #2 angle to hit mechanical stop (°)	0 ≥ Z ≥ -270	3.1	0 ≥ Z ≥ -240	3.1
	-270 ≥ Z ≥ -330	5.6	-240 ≥ Z ≥ -300	13.1
j Mechanical stop area	0 ≥ Z ≥ -270	124	0 ≥ Z ≥ -240	124
	-270 ≥ Z ≥ -330	124	-240 ≥ Z ≥ -300	121.6

### ■ Outer Dimensions (Ceiling Mounting)

[Unit: mm]

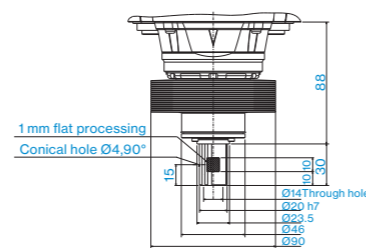
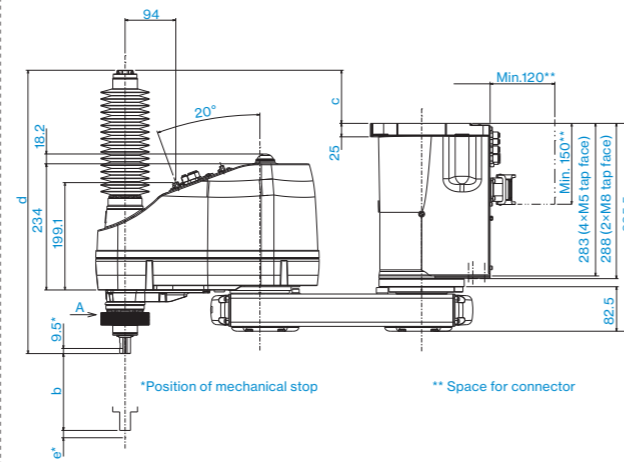
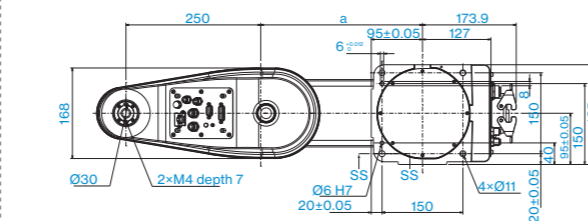
### Standard-model



### Detail of "A" (Calibration point position of Joints #3 and #4)

	GX8-□452SR,ER	GX8-□453SR,ER	GX8-□552SR,ER	GX8-□553SR,ER	GX8-□652SR,ER	GX8-□653SR,ER
a	200	200	300	300	400	400
b	200	330	200	330	200	330
c	16	141	16	141	16	141
d	410	535	410	535	410	535
e	15.6	10.6	15.6	10.6	15.6	10.6

## Cleanroom-model

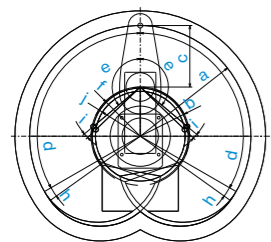


### Detail of "A" (Calibration point position of Joints #3 and #4)

	GX8-□452CR	GX8-□453CR	GX8-□552CR	GX8-□553CR	GX8-□652CR	GX8-□653CR
<b>a</b>	200	200	300	300	400	400
<b>b</b>	170	300	170	300	170	300
<b>c</b>	98.5	223.5	98.5	223.5	98.5	223.5
<b>d</b>	525.5	650.5	525.5	650.5	525.5	650.5
<b>e</b>	12.6	7.6	12.6	7.6	12.6	7.6

### ■ Motion Range (Ceiling Mounting)

GX8-□□□□R

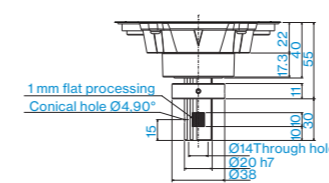
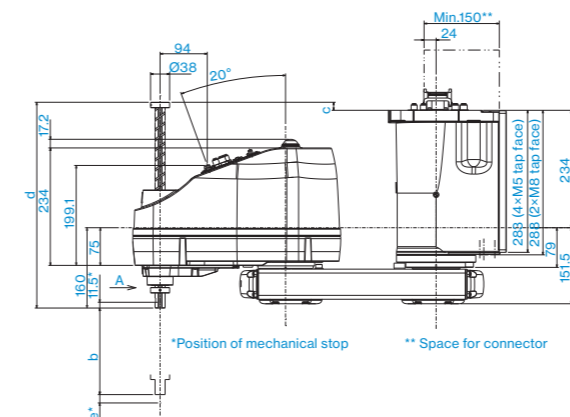
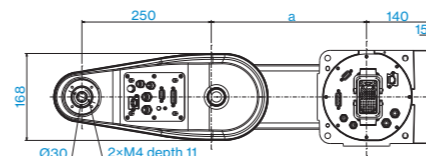


Model	GX8-□45□□R		GX8-□55□□R		GX8-□65□□R	
	S, E	C, P	S, E	C, P	S, E	C, P
a Length of Arm #1 + Arm #2 (mm)	450		550		650	
b Length of Arm #1 (mm)	200		300		400	
c Length of Arm #2 (mm)			250			
d Motion range of Joint #1 (°)	105		135		147.5	
e Motion range of Joint #2 (°)	125		147.5		145	
f Motion range	212.5		161.2		172.1	
h Joint #1 angle to hit mechanical stop (°)	0.9		11.2		5.4	
i Joint #2 angle to hit mechanical stop (°)	6.1		3.1		5.6	
j Mechanical stop area	191.7		147.7		219.7	

### ■ Outer Dimensions (Wall Mounting)

[Unit: mm]

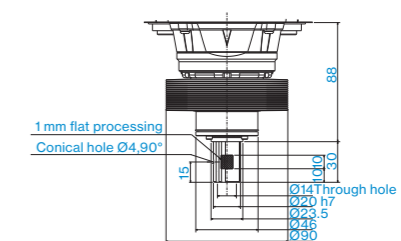
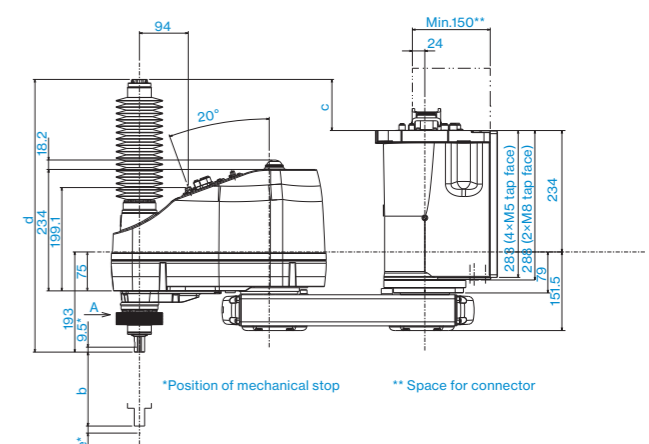
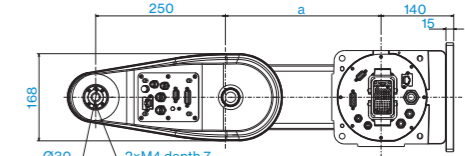
### Standard-model



### Detail of "A" (Calibration point position of Joints #3 and #4)

	GX8-0452SW,EW	GX8-0453SW,EW	GX8-0552SW,EW	GX8-0553SW,EW	GX8-0652SW,EW	GX8-0653SW,EW
a	200	200	300	300	400	400
b	200	330	200	330	200	330
c	16	141	16	141	16	141
d	410	535	410	535	410	535
e	15.6	10.6	15.6	10.6	15.6	10.6

## Cleanroom-model

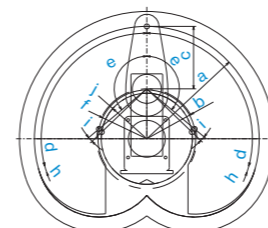


### Detail of "A" (Calibration point position of Joints #3 and #4)

	GX8-□452CW	GX8-□453CW	GX8-□552CW	GX8-□553CW	GX8-□652CW	GX8-□653CW
<b>a</b>	200	200	300	300	400	400
<b>b</b>	170	300	170	300	170	300
<b>c</b>	98.5	223.5	98.5	223.5	98.5	223.5
<b>d</b>	525.5	650.5	525.5	650.5	525.5	650.5
<b>e</b>	12.6	7.6	12.6	7.6	12.6	7.6

### ■ Motion Range (Wall Mounting)

GX8-□□□□W



Model	GX8-□45□□W		GX8-□55□□W		GX8-□65□□W	
	S,E	C,P	S,E	C,P	S,E	C,P
a Length of Arm #1+ Arm #2 (mm)	450		550		650	
b Length of Arm #1 (mm)	200		300		400	
c Length of Arm #2 (mm)			250			
d Motion range of Joint #1 (°)	105		135		147.5	
e Motion range of Joint #2 (°)	125		147.5	145	147.5	
f Motion range	212.5		161.2	172.1	232	
h Joint #1 angle to hit mechanical stop (°)	0.9		11.2		5.4	
i Joint #2 angle to hit mechanical stop (°)	6.1		3.1	5.6	3.1	
j Mechanical stool area	191.7		147.7		219.7	

# GX10 / GX20



For high-speed, high-precision, multi-hand batch handling and packing of heavier loads

- Handles payloads of up to 10/20kg
- Choice of 650mm, 850mm, and 1000mm arm
- Internal cabling and ducting minimizes interference worries
- IP65 dust and water-resistant cleanroom models available
- Tabletop, ceiling, and wall mounting models available



Model Number **GX** ☐ - **B 65** ☐ **1** ☐ **S** ☐

**Payload**  
☐ 10 : 10 kg  
☐ 20 : 20 kg

**Arm length**  
☐ 65 : 650mm (GX10 series only)  
☐ 85 : 850mm  
☐ A0 : 1000mm (GX20 series only)

**Joint #3 stroke**  
☐ 1 : 180mm: (Standard)  
                  : 150mm: (Cleanroom & ESD, Protection)  
                  : 420mm: (Standard)  
☐ 4 : 390mm: (Cleanroom & ESD, Protection)

**Mounting type**  
☐ : Table top mounting  
☐ W : Wall mounting  
☐ R : Ceiling mounting

**Environment**  
☐ S : Standard (equivalent to IP20)  
☐ C : Cleanroom & ESD (anti-static)  
☐ P : Protection class: IP 65



The safety standards conformed to RC800-A, RC700-E, and manipulators for those controllers include "ISO" "NRTL"

## Specifications

Model name		GX10-B65□□□	GX10-B85□□□	GX20-B85□□□	GX20-BA0□□□
Arm length	Arm #1, #2	650 mm	850 mm		1000 mm
Payload	Rated	5 kg		10 kg	
	Maximum	10 kg		20 kg	
Repeatability	Joints #1, #2	±0.025 mm			
	Joint #3	±0.01 mm			
	Joint #4	±0.005 deg			
Standard cycle time <sup>*1</sup>		0.338 sec	0.377 sec	0.365 sec	0.422 sec
Max. operating speed	Joints #1, #2	8800 mm/s	11000 mm/s	11000 mm/s	11500 mm/s
	Joint #3	2350 mm/s			
	Joint #4	2400 deg/s		1700 deg/s	
Joint #4 allowable moment of inertia <sup>*2</sup>	Rated	0.02 kg•m <sup>2</sup>		0.05 kg•m <sup>2</sup>	
	Maximum	0.25 kg•m <sup>2</sup>		0.45 kg•m <sup>2</sup>	
Joint #3 down force		250 N			
Installation environment		Standard (equivalent to IP20), Cleanroom <sup>*3</sup> & ESD <sup>*4</sup> , IP65			
Mounting type		Table top mounting, Wall mounting, Ceiling mounting			
Weight (cables not included)		Table top/Ceiling: 46, Wall: 51	Table top/Ceiling: 49, Wall: 53		Table top/Ceiling: 50, Wall: 55
Applicable controller		RC700-E			
Installed wire for customer use		15 pin x1, 9 pin x1 (D-sub)			
Installed pneumatic tube for customer use		Φ4 mm x 2, Φ6 mm x 2: 0.59 MPa (6 kgf/cm <sup>2</sup> ) (86 psi)			
Power		AC200-240 V Single phase			
Power consumption <sup>*5</sup>		2.4 kVA			
Cable length		Standard: 3 / 5 / 10 / 15 / 20 m, Flexible: 5 / 10 / 15 / 20 m			
Safety standard		CE, UKCA, KCs, NRTL			

\*1: Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with 2kg payload (path coordinates optimized for maximum speed).

\*2: Set the parameters by the Inertia command according to the load and end effector status (refer to the instruction manual for the parameter calculation method).

\*3: Complies with ISO Class 3 (ISO14644-1) and Fed-std209D Class 1 (less than 10 0.1 μ particles per 28.317cm<sup>3</sup> (1cf)) cleanroom standards.

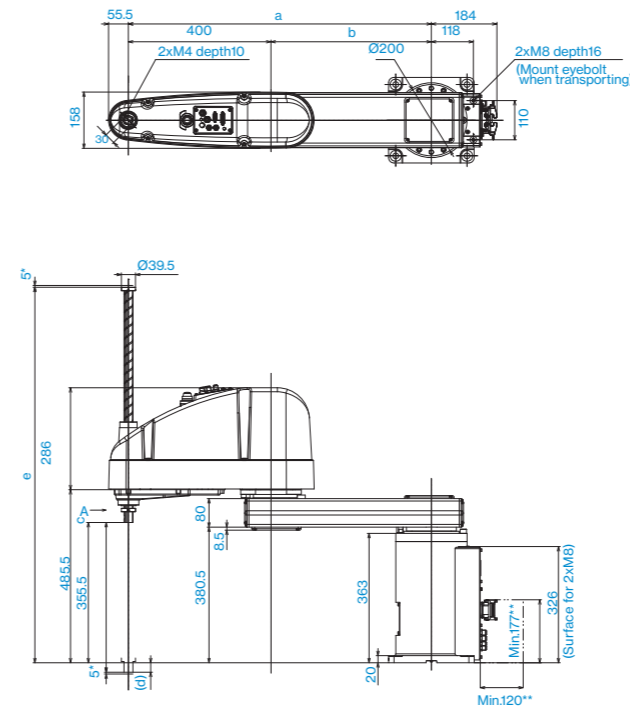
\*4: Main resin parts of the ESD model use conductive materials or apply plate processing. For the tip of the Manipulator (tool mounting part), we have confirmed that it is +/- 5 V or less even immediately after operating the measurement under our standard.

\*5: Varies according to operating environment and program.

## Outer Dimensions (Table Top Mounting)

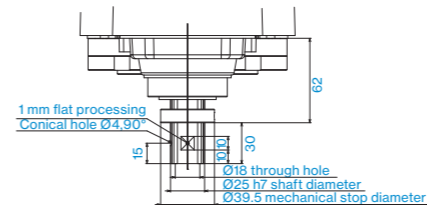
[Unit: mm]

### Standard-model



(\*)Indicates mechanical stop position

(\*\*)Space for Connector

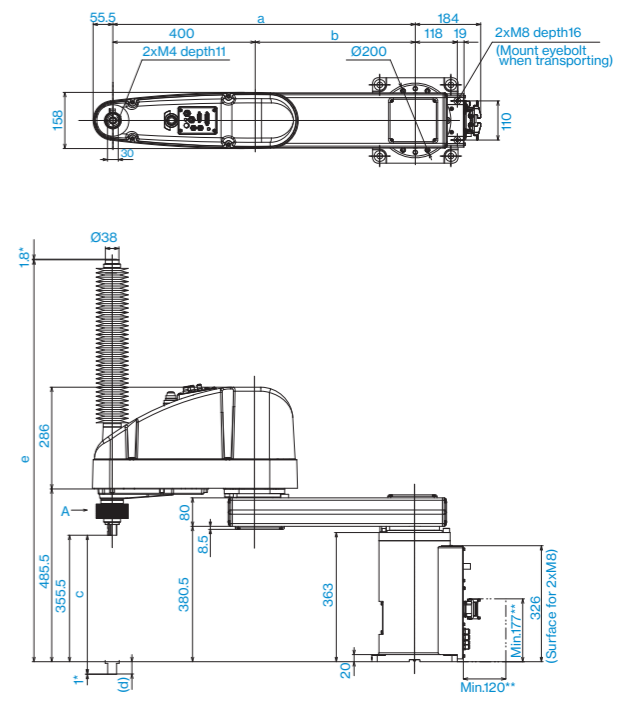


Detail of "A"  
(Calibration point position of Joints #3 and #4)

	GX10-B65□S	GX10-B85□S	GX20-B85□S	GX20-BA0□S
a	650	850	850	1000
b	250	450	450	600

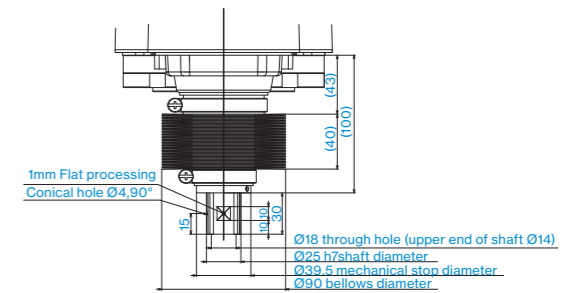
	GX10/20-B□□1S	GX10/20-B□□4S
c	180	420
d	-213.5	26.5
e	813.5	1053.5

### Cleanroom-model



(\*)Indicates mechanical stop position

(\*\*)Space for Connector



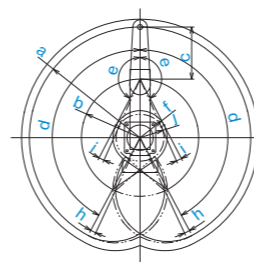
Detail of "A"  
(Calibration point position of Joints #3 and #4)

	GX10-B65□C	GX10-B85□C	GX20-B85□C	GX20-BA0□C
a	650	850	850	1000
b	250	450	450	600

	GX10/20-B□□1C	GX10/20-B□□4C
c	150	390
d	-205.5	34.5
e	870.5	1129.5

## Motion Range (Table Top Mounting)

GX10/20-B□□□□

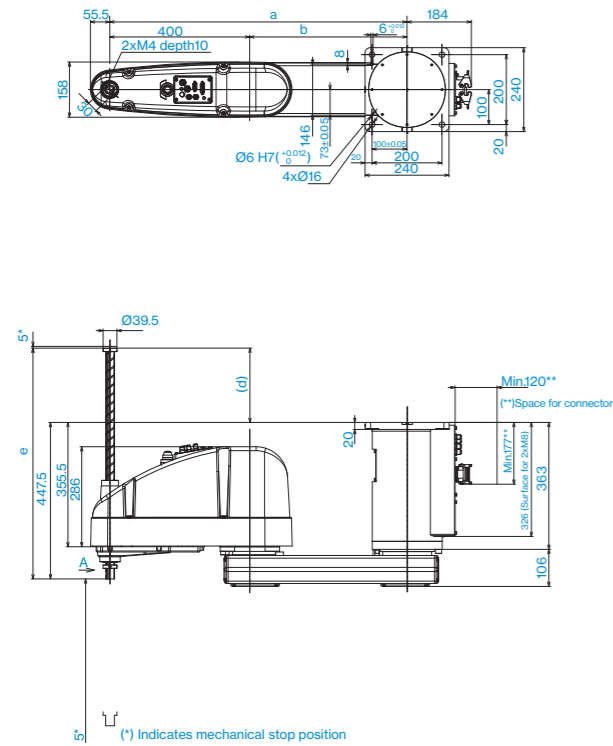


Model	GX10-B65□S GX10-B65□C GX10-B65□P	GX10-B85□S GX20-B85□S	GX10-B85□C GX20-B85□P	GX20-BA0□S GX20-BA0□C GX20-BA0□P
a Length of Arm #1 + Arm #2 (mm)	650	850		1000
b Length of Arm #1 (mm)	250	450		600
c Length of Arm #2 (mm)		400		
d Motion range of Joint #1 (°)		152		
e Motion range of Joint #2 (°)	152.5	152.5	0 ≥ Z ≥ -360 -360 ≥ Z ≥ -390	152.5 151
f Motion range	212.4	207.8	0 ≥ Z ≥ -360 -360 ≥ Z ≥ -390	307 218.3
h Joint #1 angle to hit mechanical stop (°)		3		
i Joint #2 angle to hit mechanical stop (°)	3.5	3.5	0 ≥ Z ≥ -360 -360 ≥ Z ≥ -390	3.5 5
j Mechanical stop area	199.4	183.3		285.4

## Outer Dimensions (Ceiling Mounting)

[Unit: mm]

### Standard-model

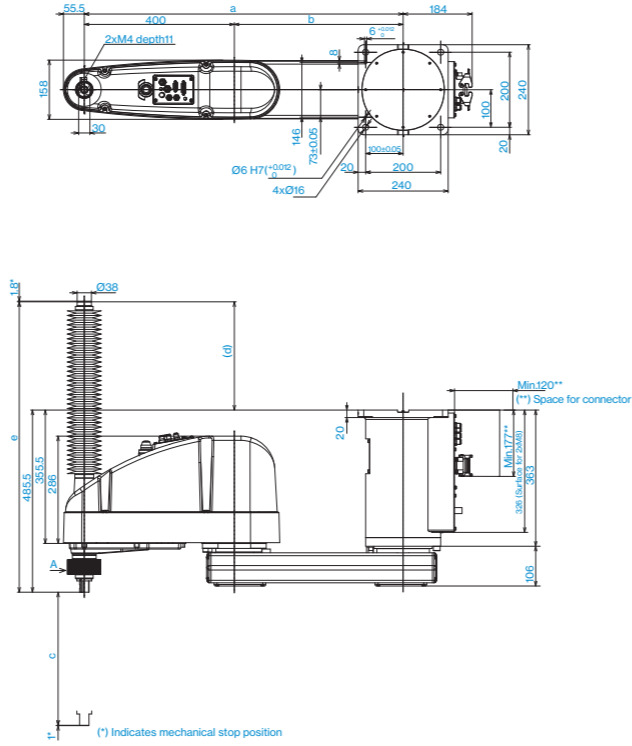


Detail of "A"  
(Calibration point position of Joints #3 and #4)

	GX10-B65□SR	GX10-B85□SR	GX20-B85□SR	GX20-BA0□SR
a	650	850	850	1000
b	250	450	450	600

	GX10/20-B□□1SR	GX10/20-B□□4SR
c	180	420
d	-27.5	212.5
e	420	660

### Cleanroom-model



Detail of "A"  
(Calibration point position of Joints #3 and #4)

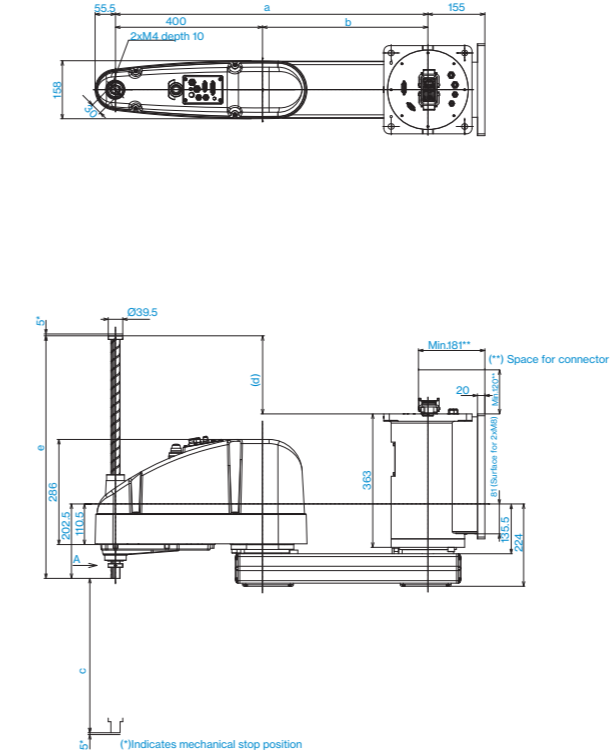
	GX10-B65□CR	GX10-B85□CR	GX20-B85□CR	GX20-BA0□CR
a	650	850	850	1000
b	250	450	450	600

	GX10/20-B□□1CR	GX10/20-B□□4CR
c	150	390
d	29.5	288.5
e	51.5	774

## Outer Dimensions (Wall Mounting)

[Unit: mm]

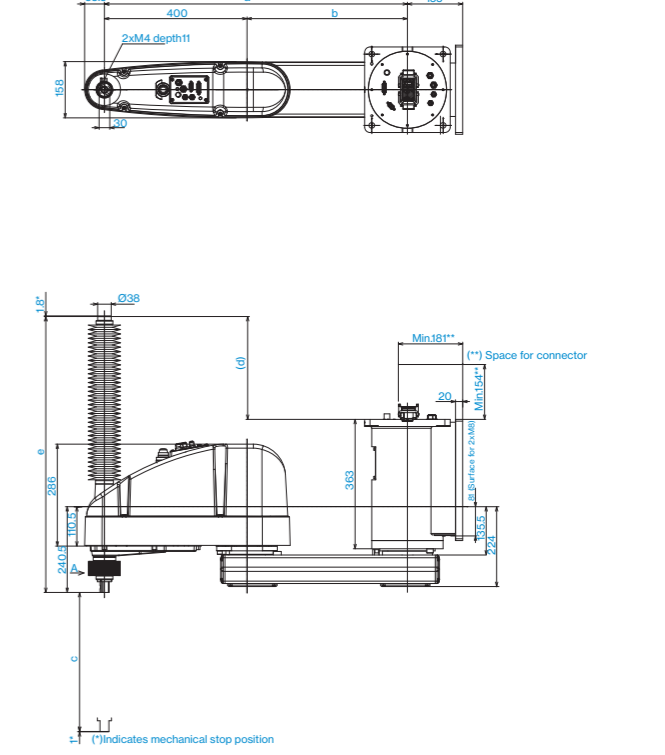
### Standard-model



Detail of "A"  
(Calibration point position of Joints #3 and #4)

Reference through hole  
(View from bottom of the base)

### Cleanroom-model

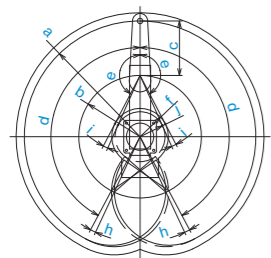


Detail of "A"  
(Calibration point position of Joints #3 and #4)

Reference through hole  
(View from bottom of the base)

## Motion Range (Ceiling Mounting)

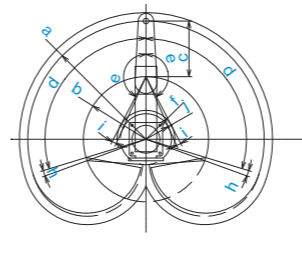
GX10/20-B□□□R



Model	GX10-B65□□R		GX10/20-B85□□R		GX20-BA05□□R	
	S	C, P	S	C, P	S	C, P
a Length of Arm #1 + Arm #2 (mm)	650		850		1000	
b Length of Arm #1 (mm)	250		450		600	
c Length of Arm #2 (mm)			400			
d Motion range of Joint #1 (°)	107			152		
e Motion range of Joint #2 (°)	130	152.5	151		152.5	
f Motion range	306.5	207.8	218.3		307	
h Joint #1 angle to hit mechanical stop (°)			3			
i Joint #2 angle to hit mechanical stop (°)	3.5	3.5	5		3.5	
j Mechanical stop area	291.2		183.3		285.4	

## Motion Range (Wall Mounting)

GX10/20-B□□□W



Model	GX10-B65□□W		GX10/20-B85□□W		GX20-BA05□□W	
	S	C, P	S	C, P	S	C, P
a Length of Arm #1 + Arm #2 (mm)	650		850		1000	
b Length of Arm #1 (mm)	250		450		600	
c Length of Arm #2 (mm)			400			
d Motion range of Joint #1 (°)			107			
e Motion range of Joint #2 (°)	130	152.5	151		152.5	
f Motion range	306.5	207.8	218.3		307	
h Joint #1 angle to hit mechanical stop (°)			3			
i Joint #2 angle to hit mechanical stop (°)	3.5	3.5	5		3.5	
j Mechanical stop area	291.2		183.3		285.4	

## LS series reliability and performance with improved operating ease

- Built-in Ethernet port on arm for easier camera connectivity
- Batteryless motor unit for reduced maintenance
- Diagonally oriented rear ducting for a lower profile that helps reduce installation space requirements



Model Number	LS3-B401S
Payload	3 kg
Arm length	400 mm
Joint #3 stroke	150 mm: Standard-model 120 mm: Cleanroom-model (with bellows)
Environment	S: Standard C: Cleanroom

## Specifications

Model number		LS3-B401□
Arm length	Arm #1, #2	400 mm
Payload <sup>*1</sup>	Rated	1 kg
	Maximum	3 kg
Repeatability	Joints #1, #2	±0.01 mm
	Joint #3	±0.01 mm
	Joint #4	±0.01 deg
Standard cycle time <sup>*2</sup>		0.42 sec
Max. operating speed	Joints #1, #2	7200 mm/sec
	Joint #3	1100 mm/sec
	Joint #4	2600 deg/sec
Joint #4 allowable moment of inertia <sup>*3</sup>	Rated	0.005 kg·m <sup>2</sup>
	Maximum	0.05 kg·m <sup>2</sup>
Joint #3 down force		100 N
Installation environment		Standard / Cleanroom <sup>*4</sup>
Mounting type		Table top mounting
Weight(cables not included)		14 kg
Applicable controller		RC90-B
Installed wire for customer use		15 pin (D-sub), 8 pin (RJ45), Cat. 5e
Installed pneumatic tube for customer use		Ø6 mm × 2, Ø4 mm × 1: 0.59 MPa (6 kgf / cm <sup>2</sup> ) (86 psi)
Power		AC200-240 V Single phase
Power consumption <sup>*5</sup>		1.0 kVA
Cable length		3 / 5 / 10 m
Safety standard		CE, UKCA, KCs

\*1: Do not apply the load exceeding the maximum payload.

\*2: Cycle time based on round-trip arch motion (300 mm horizontal, 25 mm vertical) with Accel 120% and 2 kg payload (path coordinates optimized for maximum speed).

\*3: If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command.

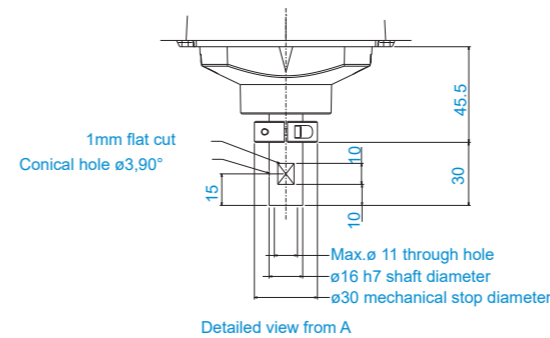
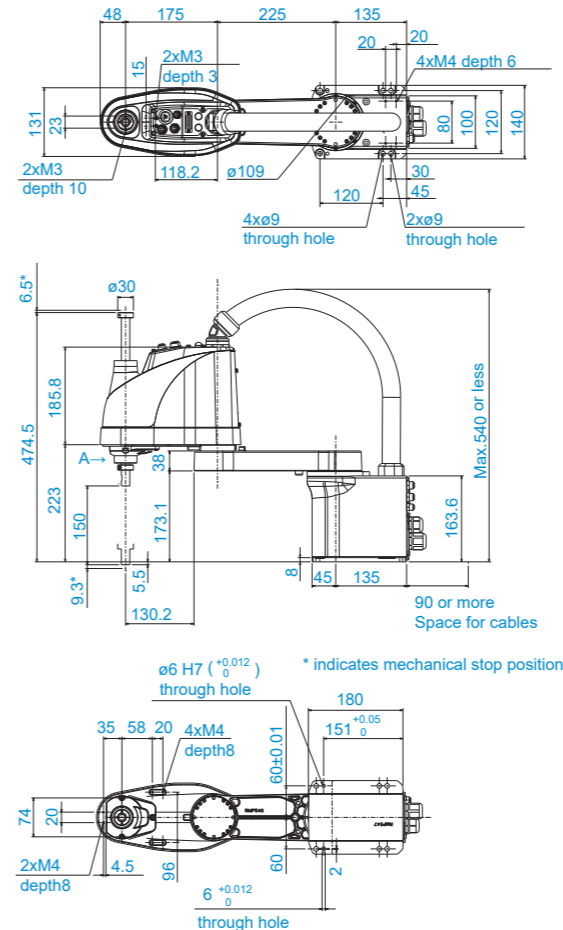
\*4: Complies with ISO Class 4 cleanroom standards.

\*5: It depends on environment and motion program.

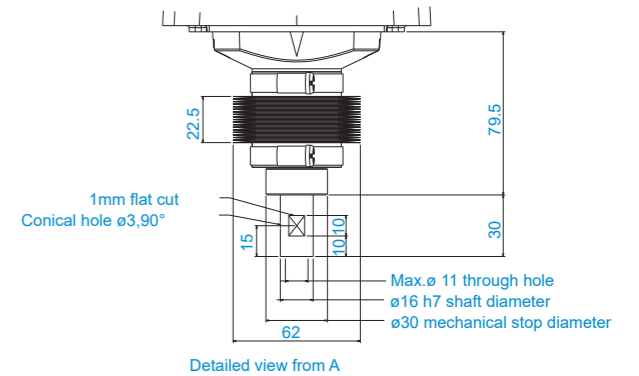
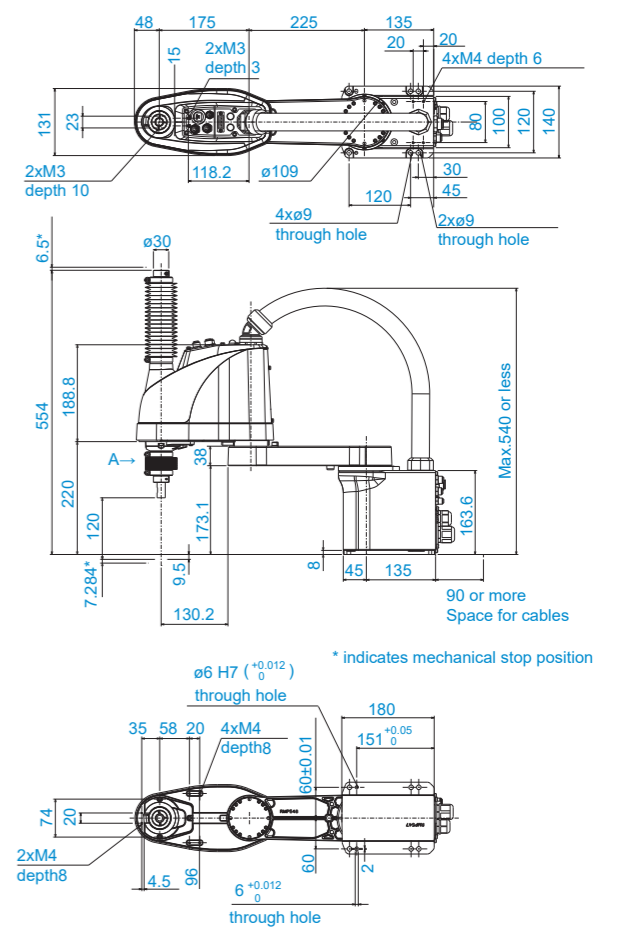
## Outer Dimensions (Table Top Mounting)

[Unit: mm]

### Standard-model



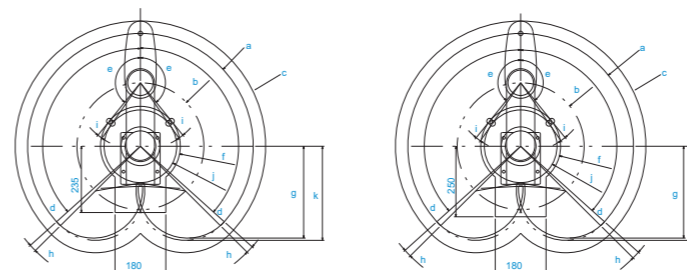
### Cleanroom-model



## Motion Range (Table Top Mounting)

LS3-B401S

LS3-B401C



Model	LS3-B401□□	
	Standard-model	Cleanroom-model
a Arm #1+ Arm #2 length (mm)	400	
b Arm #1 length (mm)	175	
c Arm #2 length (mm)	225	
d Joint #1 motion angle (°)	132	
e Joint #2 motion angle (°)	141	
f Motion range (mm)	141.6	
h Angle of the Joint #1 mechanical stop (°)	2.8	
i Angle of the Joint #2 mechanical stop (°)	4.2	
j Mechanical stop area (mm)	128.8	

## LS series reliability and performance with improved operating ease

- Built-in Ethernet port on arm for easier camera connectivity
- Batteryless motor unit for reduced maintenance
- Diagonally oriented rear ducting for a lower profile that helps reduce installation space requirements



### Model Number LS6-B602S

<b>Payload</b>	<b>Environment</b>
6 : 6kg	S : Standard
<b>Arm length</b>	C : Cleanroom
50 : 500mm	
60 : 600mm	
70 : 700mm	
<b>Joint #3 stroke</b>	
2 : 200mm: Standard-model	
	: 170mm: Cleanroom-model (with bellows)

## Specifications

Model number		LS6-B502□	LS6-B602□	LS6-B702□
Arm length	Arm #1, #2	500 mm	600 mm	700 mm
Payload*1	Rated	2 kg		
	Maximum	6 kg		
Repeatability	Joints #1, #2	±0.02 mm		
	Joint #3	±0.01 mm		
	Joint #4	±0.01 deg		
Standard cycle time*2		0.39 sec	0.40 sec	0.42 sec
Max. operating speed	Joints #1, #2	7120 mm/sec	7850 mm/sec	8590 mm/sec
	Joint #3		1100 mm/sec	
	Joint #4		2000 deg/sec	
Joint #4 allowable moment of inertia*3	Rated	0.01 kg·m²		
	Maximum	0.12 kg·m²		
Joint #3 down force		100 N		
Installation environment		Standard / Cleanroom *4		
Mounting type		Table top mounting		
Weight(cables not included)		17 kg		18 kg
Applicable controller		RC90-B		
Installed wire for customer use		15 pin (D-sub), 8 pin (RJ45), Cat. 5e		
Installed pneumatic tube for customer use		Φ4 mm × 1, Φ6 mm × 2		
Power		AC200-240 V Single phase		
Power consumption*5		1.1 kVA		
Cable length		3 / 5 / 10 m		
Safety standard		CE, UKCA, KCs		

\*1 : Do not apply the load exceeding the maximum payload.

\*2 : Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with Accel 120% and 2 kg payload (path coordinates optimized for maximum speed). Rounded down to the third decimal place.

\*3 : If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command.

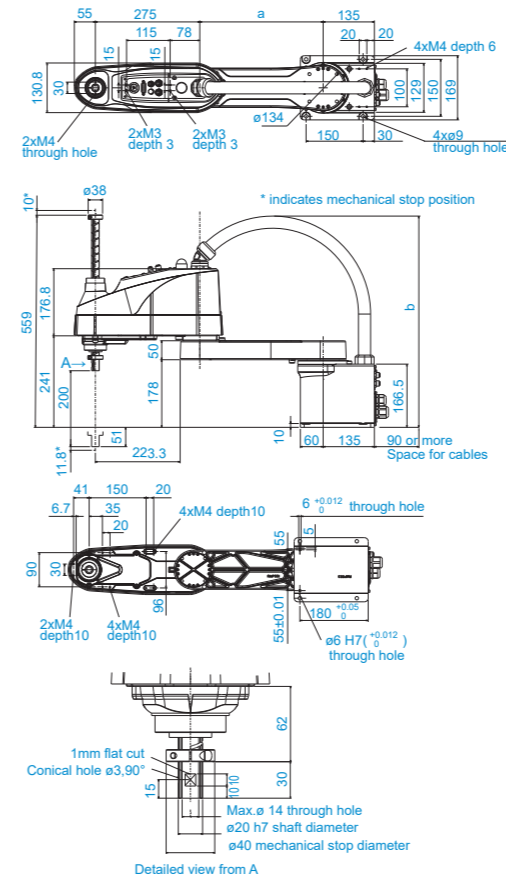
\*4 : Complies with ISO Class 4 cleanroom standards.

\*5 : It depends on environment and motion program.

## Outer Dimensions (Table Top Mounting)

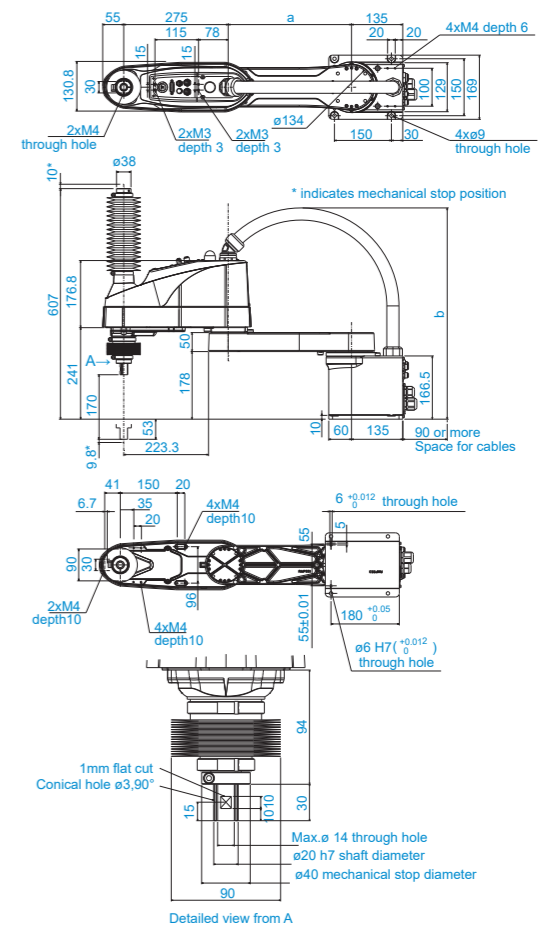
[Unit: mm]

### Standard-model



	LS6-B502S	LS6-B602S	LS6-B602S-V1	LS6-B702S
a	225	325	325	425
b	529	559	559	589

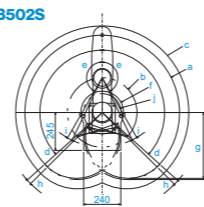
### Cleanroom-model



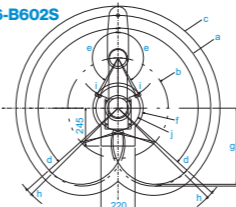
	LS6-B502S	LS6-B602S	LS6-B702C
a	225	325	425
b	529	559	589

## Motion Range (Table Top Mounting)

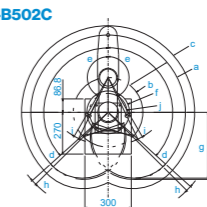
LS6-B502S



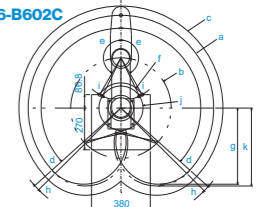
LS6-B602S



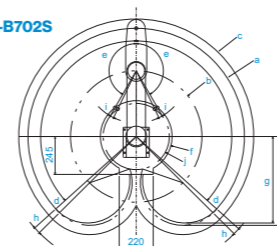
LS6-B502C



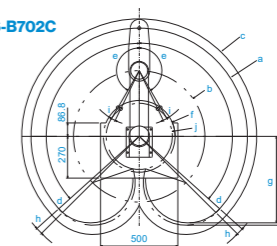
LS6-B602C



LS6-B702S



LS6-B702C



Model	LS6-B502□	LS6-B602□	LS6-B702□
a Arm #1 + Arm #2 length (mm)	500	600	700
b Arm #1 length (mm)	225	325	425
d Joint #1 motion angle (°)		132	
e Joint #2 motion angle (°)		150	
f Motion range (mm)	138.1	162.6	232
g Motion range at the rear (mm)	425.6	492.5	559.4
h Angle of the Joint #1 mechanical stop (°)		2.8	
i Angle of the Joint #2 mechanical stop (°)		4.2	
j Mechanical stop area (mm)	121.8	142.5	214

## A versatile new addition to the proven reliability and performance of the LS series

- 10kg payload for applications requiring high inertia or the use of complex effectors
- A choice of three arm lengths and two ball screw lengths for high configurability to suit a variety of application requirements
- Built-in Ethernet port for easy camera connectivity
- Batteryless motor unit for reduced maintenance



Model Number	LS10 - B			
Payload	10	Environment	S	C
	10kg		Standard	Cleanroom
			C-FZ	Food grease for Z-axis
Arm length	60	Joint #3 stroke	2	3
	600mm		200mm: Standard-model	270mm: Cleanroom-model (with bellows), C-FZ
	70		170mm: Cleanroom-model (with bellows)	
	80		300mm: Standard-model	
			270mm: Cleanroom-model (with bellows), C-FZ	

## Specifications

Model number		LS10-B60□□	LS10-B70□□	LS10-B80□□
Arm length	Arm #1, #2	600 mm	700 mm	800 mm
Payload*1	Rated	5 kg		
	Maximum	10 kg		
Repeatability	Joints #1, #2	±0.02 mm		±0.025 mm
	Joint #3	±0.01 mm		
	Joint #4	±0.01 deg		
Standard cycle time*2		0.39 sec	0.41 sec	0.44 sec
Max. operating speed	Joints #1, #2	9100 mm/sec	9800 mm/sec	10500 mm/sec
	Joint #3	1100 mm/sec		
	Joint #4	2700 deg/sec		
Joint #4 allowable moment of inertia*3	Rated	0.02 kg·m²		
	Maximum	0.3 kg·m²		
Joint #3 down force		200 N		
Installation environment		Standard / Cleanroom *4 / C-FZ (ISO4, Not ESD applied)		
Mounting type		Table top		
Weight(cables not included)		22 kg		23 kg
Applicable controller		RC90-B		
Installed wire for customer use		15 pin (D-sub), 8 pin (RJ45), Cat. 5e		
Installed pneumatic tube for customer use		Φ6 mm × 2, Φ4 mm × 1		
Power		AC200-240 V Single phase		
Power consumption*5		1.8 kVA		
Cable length		3 / 5 / 10 m		
Safety standard*6		CE, UKCA, KCs		

<sup>\*1</sup> : Do not apply the load exceeding the maximum payload.

<sup>\*2</sup> : Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with Accel 120% and 2 kg payload (path coordinates optimized for maximum speed).

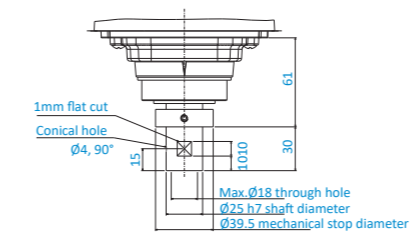
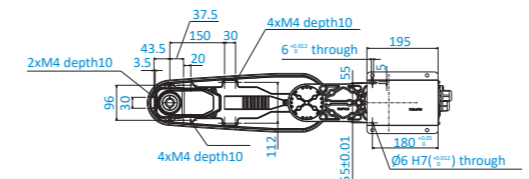
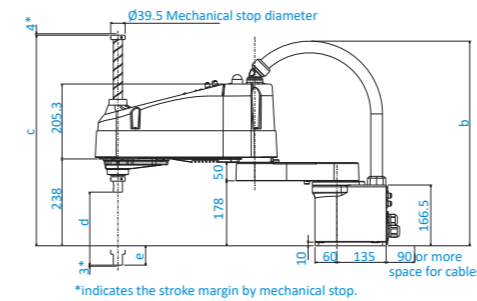
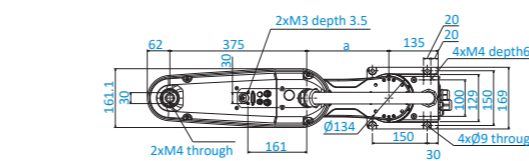
<sup>\*3</sup> : If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command.

<sup>\*4</sup> : Complies with ISO Class 4 cleanroom standards. <sup>\*5</sup> : It depends on operating environment and operation program. <sup>\*6</sup> : C-FZ model are No 3rd party certification and specific markings.

## Outer Dimensions (Table Top Mounting)

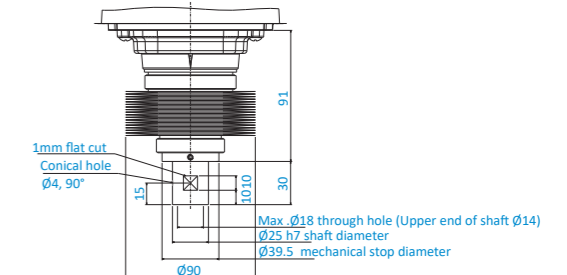
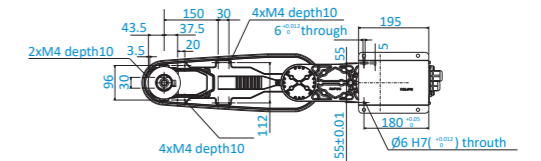
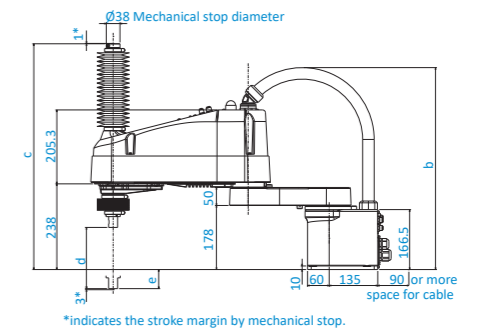
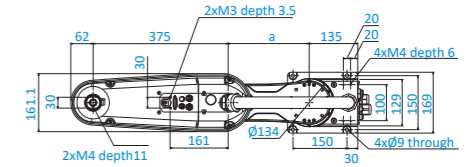
[Unit: mm]

### Standard-model



	LS10-B602S	LS10-B603S	LS10-B702S	LS10-B703S	LS10-B802S	LS10-B803S
a	225	225	325	325	425	425
b	Max.565	Max.565	Max.580	Max.580	Max.580	Max.580
c	577	677	577	677	577	677
d	200	300	200	300	200	300
e	53	153	53	153	53	153

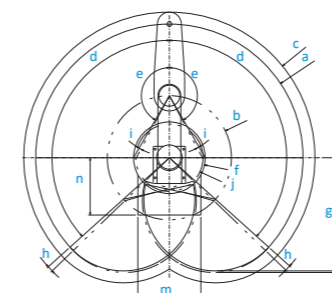
### Cleanroom-model



	LS10-B602C	LS10-B603C	LS10-B702C	LS10-B703C	LS10-B802C	LS10-B803C
a	225	225	325	325	425	425
b	Max.565	Max.565	Max.580	Max.580	Max.580	Max.580
c	627	727	627	727	627	727
d	170	270	170	270	170	270
e	53	153	53	153	53	153

## Motion Range (Table Top Mounting)

Standard-model / Cleanroom-model



Model	Standard			Cleanroom		
	LS10-B602S/B603S	LS10-B702S/B703S	LS10-B802S/B803S	LS10-B602C/B603C	LS10-B702C/B703C	LS10-B802C/B803C
a Length of Arm #1+Arm #2 (mm)	600	700	800	600	700	800
b Length of Arm #1 (mm)	225	325	425	225	325	425
c Max. motion range (mm)	663	763	863	663	763	863
d Motion range of Joint #1 (°)	132			132		
e Motion range of Joint #2 (°)	150			150		
f Motion range (mm)	212	188	213	212	188	213
g Motion range at the rear (mm)	526	592	659	526	592	659
h Joint #1 angle to hit mechanical stop (°)	2			2		
i Joint #2 angle to hit mechanical stop (°)	2			2		
j Mechanical stop area (mm)	206	176	200	206	176	200
k Mechanical stop area at the rear (mm)	531	601	670	531	601	670
m Motion range (mm)	420	330	320	420	400	480
n Motion range (mm)	300			320		

- Higher allowable moment of inertia for improved performance when using large end effectors to perform multi-item pick-and-place operations
- Built-in Ethernet port on arm for easy camera connectivity
- Batteryless motor unit for reduced maintenance
- Improved duct design for low vibration during operation and easy cable installation



**Model Number** **LS20 - B 80 4 S**

**Payload**  
 [ 20 ] : 20kg

**Environment**  
 [ S ] : Standard  
 [ C ] : Cleanroom

**Arm length**  
 [ 80 ] : 800mm  
 [ AN ] : 1000mm

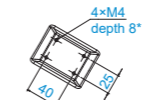
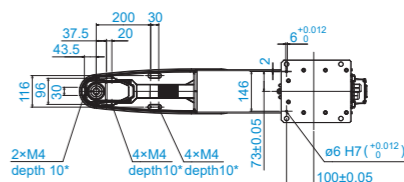
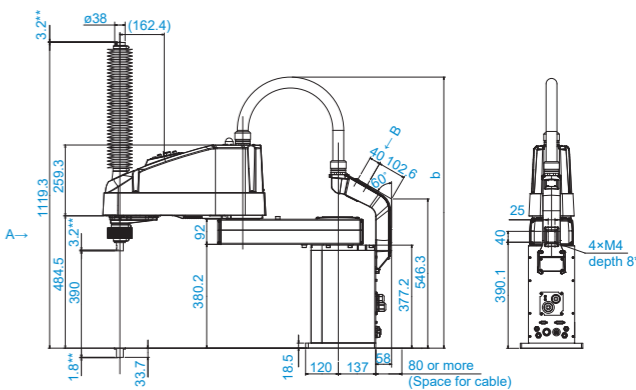
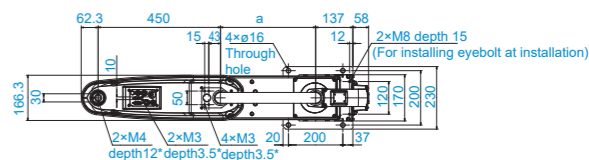
**Joint #3 stroke**  
 [ 4 ] : 420mm: Standard-model  
 : 390mm: Cleanroom-model (with bellows)

Model number		LS20-B804□	LS20-BA04□
Arm length	Arm #1, #2	800 mm	1000 mm
Payload*1	Rated	10 kg	
	Maximum	20 kg	
Repeatability	Joints #1, #2	±0.025 mm	
	Joint #3	±0.01mm	
	Joint #4	±0.01deg	
Standard cycle time*2		0.39 sec	0.43 sec
Max. operating speed	Joints #1, #2	9940 mm/sec	11250 mm/sec
	Joint #3	2300 mm/sec	
	Joint #4	1400 deg/sec	
Joint #4 allowable moment of inertia*3	Rated	0.05 kg•m²	
	Maximum	1.00 kg•m²	
Joint #3 down force		250 N	
Installation environment		Standerd / Cleanroom *4	
Mounting type		Table top mounting	
Weight(cables not included)		48 kg	51 kg
Applicable controller		RC90-B	
Installed wire for customer use		15 pin x 1, 9 pin x 1 (D-sub) , 8 pin (RJ45), Cat. 5e	
Installed pneumatic tube for customer use		⌀8 mm × 2, ⌀6 mm × 2: 0.59 MPa (6 kgf / cm²)	
Power		AC200-240 V Single phase	
Power consumption*5		2.4 kVA	
Cable length		3 / 5 / 10 m	
Safety standard		CE, UKCA, KCs	

\*1: Do not apply the load exceeding the maximum payload.  
 \*2: Cycle time based on round-trip arch motion (300 mm horizontal, 25 mm vertical) with Accel 120% and 2 kg payload (path coordinates optimized for maximum speed).  
 \*3: If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command.  
 \*4: Complies with ISO Class 4 cleanroom standards.  
 \*5: It depends on operating environment and operation program.

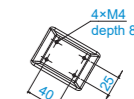
## [Unit: mm]

## Cleanroom-model



\*: User tap  
\*\*: Indicates mechanical stop position

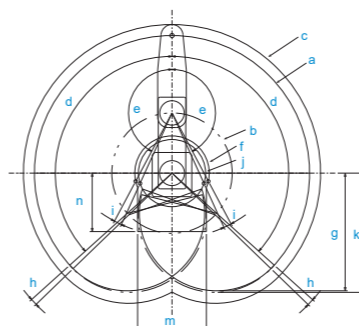
	LS20-B804S	LS20-BA04S
a	350	550
b	Max.1000	Max.1100



\*: User tap  
\*\*: Indicates mechanical stop position

	LS20-B804C	LS20-BA04C
a	350	550
b	Max.1000	Max.1100

### Standard-model / Cleanroom-model



Model	Standard		Cleanroom	
	LS20-B804S	LS20-A04S	LS20-B804C	LS20-A04C
a Length of Arm #1+Arm #2 (mm)	800	1000	800	1000
b Length of Arm #1 (mm)	350	550	350	550
c Length of Arm #2 (mm)	864	1064	864	1064
d Motion range of Joint #1 (°)	132			
e Motion range of Joint #2 (°)	152			
f Motion range (mm)	216.5	260.7	216.5	260.7
g Motion range at the rear (mm)	684.2	818	684.2	818
h Joint #1 angle to hit mechanical stop (°)	2			
i Joint #2 angle to hit mechanical stop (°)	3.6			
j Mechanical stop area (mm)	195.3	232.8	195.3	232.8
k Mechanical stop area at the rear (mm)	693.1	832.1	693.1	832.1
m Motion range (mm)	400	290	400	330
n Motion range (mm)	340	265	340	265

# T3

Outstanding cost-efficiency and ease of use for significantly lower total operating cost

- Built-in controller reduces installation space and cabling requirements
- Convenient I/O ports located close to effector (including 24V power supply)
- Batteryless motor unit for reduced maintenance
- Operates on AC100V~240V power
- Superior energy-saving performance



Model Number	T3 - B40 1 S
Payload	3 : 3kg
Environment	S : Standard S-FZ : Food grease for Z axis
Arm length	40 : 400mm
Joint #3 stroke	1 : 150mm

## Specifications

Model number		T3-B401S
Arm length	Arm #1, #2	400 mm
	Rated	1 kg
Payload (Load) *1	Max.	3 kg
	Max.	3 kg
Repeatability	Joints #1-2	± 0.02 mm
	Joint #3	± 0.02 mm
	Joint #4	± 0.02 deg
Standard cycle time*2		0.54 sec
Max. operating speed	Joints #1-2	3700 mm/sec
	Joint #3	1000 mm/sec
	Joint #4	2600 deg/sec
Joint #4 allowable moment of inertia*3	Rated	0.003 kg·m <sup>2</sup>
	Max.	0.01 kg·m <sup>2</sup>
Joint #3 down force		83 N
Installation environment		Standard (IP20), S-FZ
Mounting type		Table top
Weight (cables not included)		16 kg
Applicable controller		Built in controller
Installed wire for customer use		Hand I/O: IN6/OUT4 (D-sub 15 pin), 24 V User I/O: IN18/OUT12
Installed pneumatic tube for customer use		Φ6 mm x 2, Φ4 mm x 1: 0.59 MPa (6 kgf/cm <sup>2</sup> ) (86 psi)
Power		AC100~240 V
Power consumption*4		0.66 kVA
Cable length		5 m
Safety standard*5		CE, UKCA, KCs

\*1: Do not apply the load exceeding the maximum payload.

\*2: Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with 1 kg payload (path coordinates optimized for maximum speed).

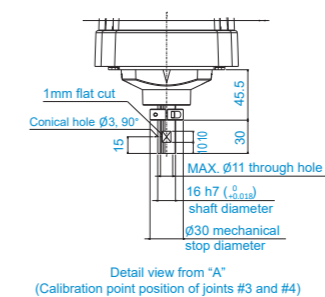
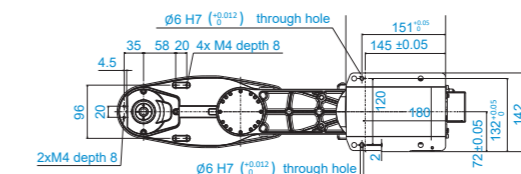
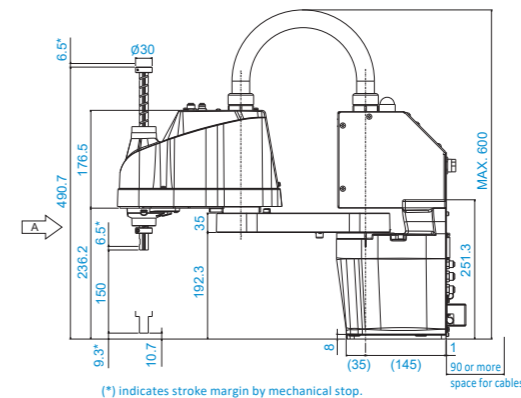
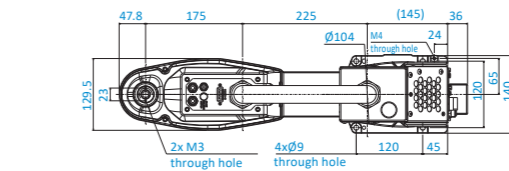
\*3: If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command.

\*4: Varies according to operating environment and program.

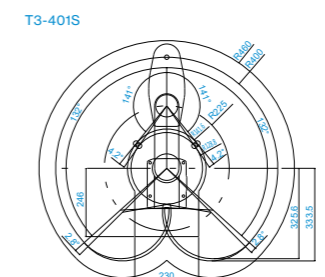
\*5: S-FZ model are No 3rd party certification and specific markings.

## Outer Dimensions (Table Top Mounting)

[Unit: mm]



## Motion Range (Table Top Mounting)



# T6

- Outstanding cost-efficiency and ease of use for significantly lower total operating cost
- Handles up to 6kg with 600mm arm length
  - Built-in controller reduces installation space and cabling requirements
  - Convenient I/O ports located close to effector (including 24V power supply)
  - Batteryless motor unit for reduced maintenance
  - Operates on AC100V-240V power



Model Number

**T6 - B60 1 S**

Payload

6 : 6kg

Environment

S : Standard

Arm length

60 : 600mm

Joint #3 stroke

2 : 200mm

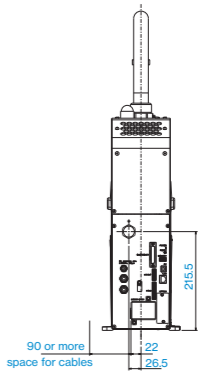
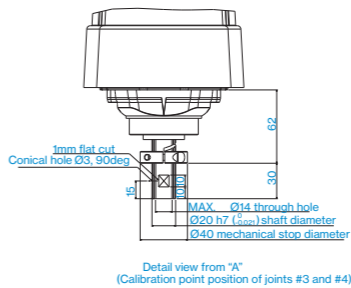
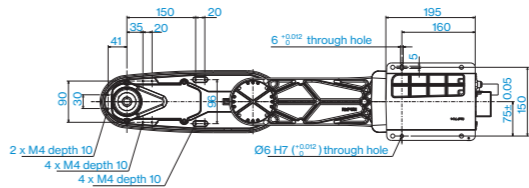
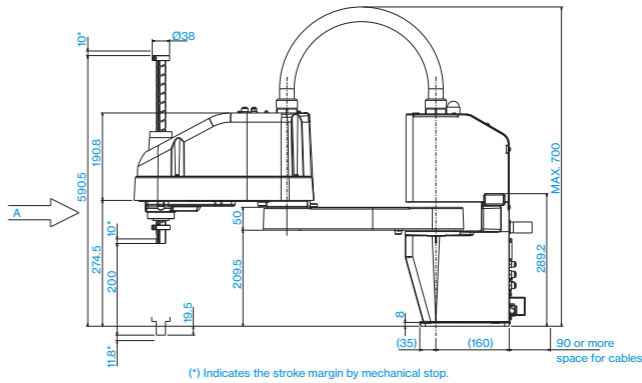
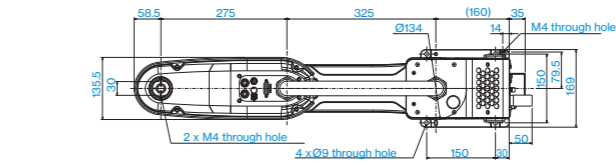
## Specifications

Model number		T6-B602S
Arm length	Arm #1, #2	600 mm
Payload (Load) *1	Rated	2 kg
	Max.	6 kg
Repeatability	Joints #1-2	± 0.04 mm
	Joint #3	± 0.02 mm
	Joint #4	± 0.02 deg
Standard cycle time*2		0.49 sec
Max. operating speed	Joints #1-2	4180 mm/sec
	Joint #3	1000 mm/sec
	Joint #4	1800 deg/sec
Joint #4 allowable moment of inertia*3	Rated	0.01 kg·m²
	Max.	0.08 kg·m²
Joint #3 down force		83 N
Installation environment		Standard (IP20)
Mounting type		Table top
Weight (cables not included)		22 kg
Applicable controller		Built in controller
Installed wire for customer use		Hand I/O: IN6/OUT4 (D-sub 15 pin) , 24 V User I/O: IN18/OUT12
Installed pneumatic tube for customer use		Φ6 mm x 2, Φ4 mm x 1: 0.59 MPa (6 kgf/cm²)
Power		AC100-240 V
Power consumption*4		1.2 kVA
Cable length		5 m
Safety standard		CE, UKCA, KCs

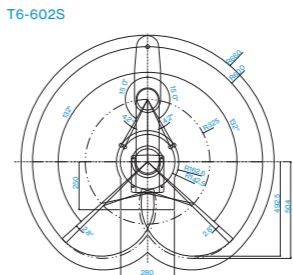
\*1: Do not apply the load exceeding the maximum payload.  
\*2: Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with 2 kg payload (path coordinates optimized for maximum speed) .  
\*3: If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command.  
\*4: Varies according to operating environment and program.

## Outer Dimensions (Table Top Mounting)

[Unit: mm]



## Motion Range (Table Top Mounting)



# RS3

## Folding rotating arm enables large working area in limited space

- 350mm arm has effective reach of 494mm in four directions
- All-direction access for greater freedom in workcell layout
- Enables use of large pallets without requiring large robot installation footprint



EPSON

### Model Number RS3 - 35 1 S - UL

<b>Payload</b>	<b>UL specification</b>
3 : 3kg	□ : Non UL compliant
	-UL : UL compliant
<b>Arm length</b>	<b>Environment</b>
35 : 350mm	S : Standard
	C : Cleanroom & ESD (Anti-static)
	<b>Joint #3 stroke</b>
	1 : 130mm
	1 : 100mm: Cleanroom-model

## Specifications

Model number		RS3-351□
Arm length	Arm #1, #2	350 mm
Payload	Rated	1 kg
	Maximum	3 kg
Repeatability	Joints #1, #2	±0.01 mm
	Joint #3	±0.01 mm
	Joint #4	±0.01 deg
Standard cycle time*1		0.34 sec
Max. operating speed	Joints #1, #2	6237 mm/sec
	Joint #3	1100 mm/sec
	Joint #4	2600 deg/sec
Joint #4 allowable moment of inertia*2	Rated	0.005 kg·m <sup>2</sup>
	Maximum	0.05 kg·m <sup>2</sup>
Joint #3 down force		150 N
Installation environment		Standard/Cleanroom*3 &ESD
Mounting type		Ceiling
Weight (cables not included)		17 kg
Applicable controller		RC700-A
Installed wire for customer use		15 Pin (D-Sub)
Installed pneumatic tube for customer use		Φ6 mm x 2, Φ4 mm x 1: 0.59 MPa (6 kgf/cm <sup>2</sup> ) (86 psi)
Power		AC200-240 V Single phase
Power consumption*4		1.2 kVA
Cable length		3 / 5 / 10 / 15 / 20 m
Safety standard*5		CE, UKCA, KCs, UL

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

\*2: When payload center of gravity is aligned with Joint #4; if not aligned with Joint #4, set parameters using INERTIA command.

\*3: Complies with ISO Class 3 (ISO14644-1) and older Class 1 (less than 10 0.1 μm particles per 28,317cm<sup>3</sup>:cft) cleanroom standards.

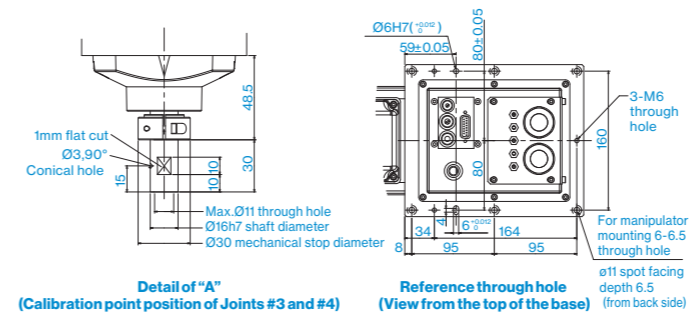
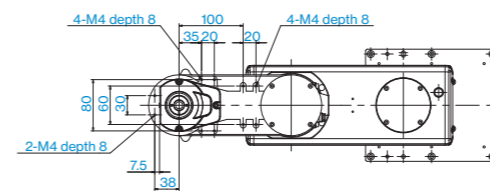
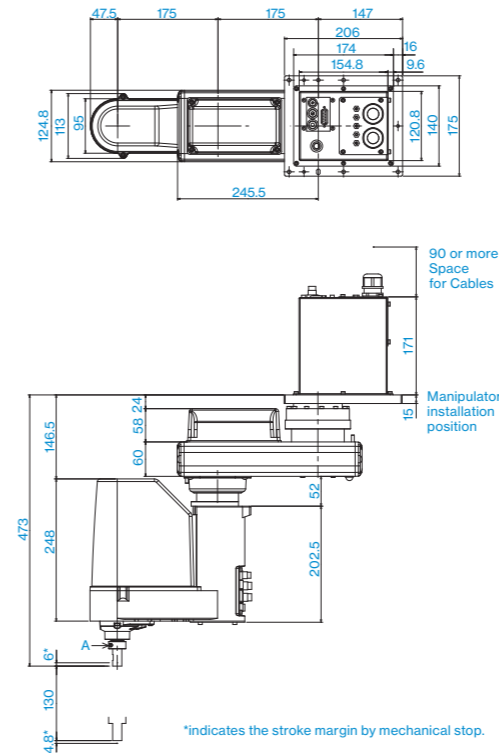
\*4: Varies according to operating environment and program.

\*5: Please contact us for the compatibility status of each model.

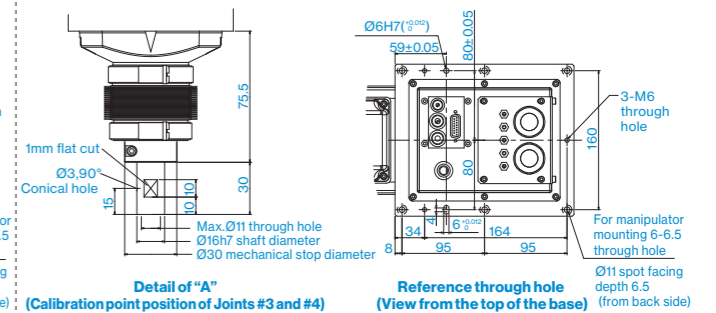
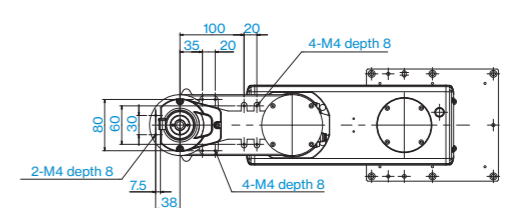
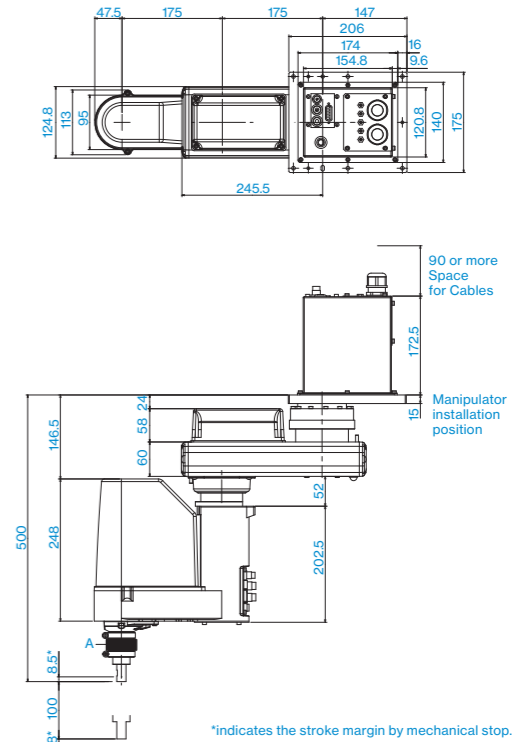
## Outer Dimensions (Ceiling Mounting)

[Unit: mm]

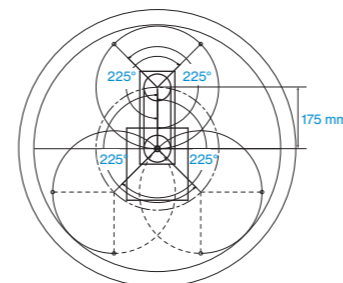
### Standard-model



### Cleanroom-model



## Motion Range (Ceiling Mounting)



Model	RS3-351□
Arm #1 Length (mm)	175
Arm #2 Length (mm)	175
Joint #1 Motion range (°)	±225
Joint #2 Motion range (°)	±225

# RS4

## Folding rotating arm enables large working area in limited space

- 550mm arm has effective reach of 777mm in four directions
- All-direction access for greater freedom in workcell layout
- Enables use of large pallets without requiring large robot installation footprint



### Model Number RS4 - 55 1 S - UL

Payload	4 : 4kg	UL specification	<input type="checkbox"/> : Non UL compliant <input checked="" type="checkbox"/> -UL : UL compliant
Arm length	55 : 550mm	Environment	<input checked="" type="checkbox"/> S : Standard <input type="checkbox"/> C : Cleanroom & ESD (Anti-static)
		Joint #3 stroke	<input checked="" type="checkbox"/> 1 : 130mm <input type="checkbox"/> : 100mm: Cleanroom-model

## Specifications

Model number		RS4-551□
Arm length	Arm #1, #2	550 mm
	Rated	1 kg
Payload	Maximum	4 kg
	Joints #1, #2	±0.015 mm
Repeatability	Joint #3	±0.01 mm
	Joint #4	±0.01 deg
Standard cycle time*1		0.39 sec
Max. operating speed	Joints #1, #2	7400 mm/sec
	Joint #3	1100 mm/sec
	Joint #4	2600 deg/sec
Joint #4 allowable moment of inertia*2	Rated	0.005 kg·m <sup>2</sup>
	Maximum	0.05 kg·m <sup>2</sup>
Joint #3 down force		150 N
Installation environment		Standard/Cleanroom*3 &ESD
Mounting type		Ceiling
Weight (cables not included)		19 kg
Applicable controller		RC700-A
Installed wire for customer use		15 Pin ( D-Sub )
Installed pneumatic tube for customer use		Φ6 mm x 2, Φ4 mm x 1: 0.59 MPa (6 kgf/cm <sup>2</sup> ) (86 psi)
Power		AC200-240 V Single phase
Power consumption*4		1.4 kVA
Cable length		3 / 5 / 10 / 15 / 20 m
Safety standard*5		CE, UKCA, KCs, UL

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

\*2: When payload center of gravity is aligned with Joint #4 ; if not aligned with Joint #4, set parameters using INERTIA command.

\*3: Complies with ISO Class 3 (ISO14644-1) and older Class 1 (less than 10 0.1 μm particles per 28,317cm<sup>3</sup>:1cft) cleanroom standards.

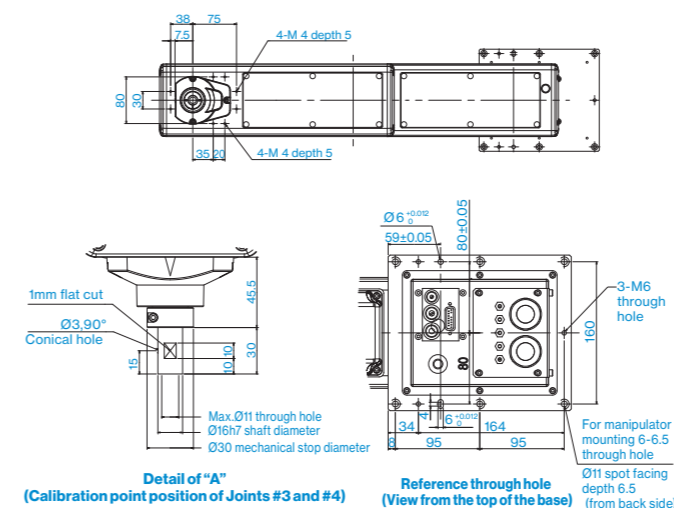
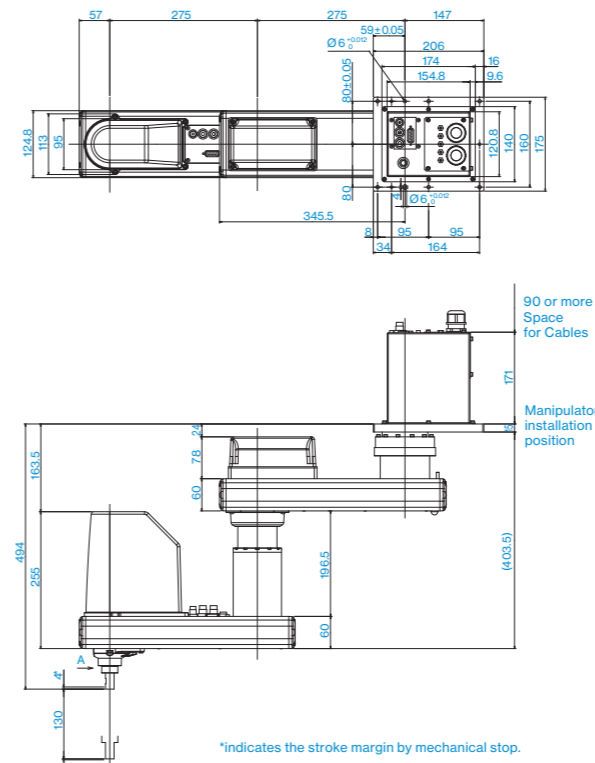
\*4: Varies according to operating environment and program.

\*5: Please contact us for the compatibility status of each model.

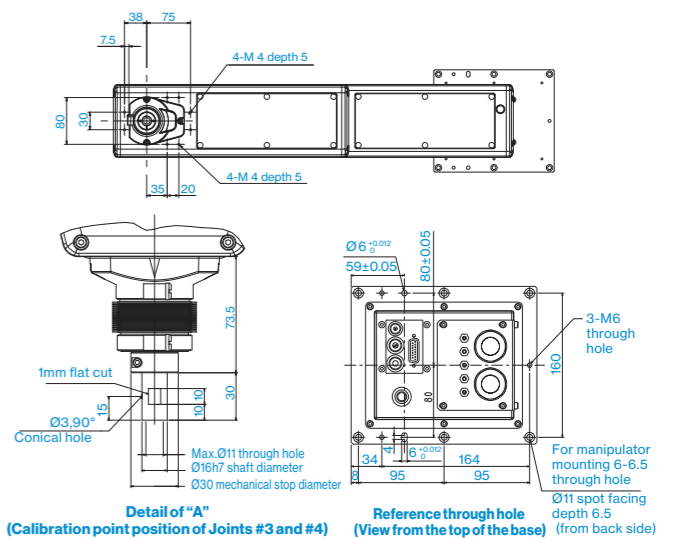
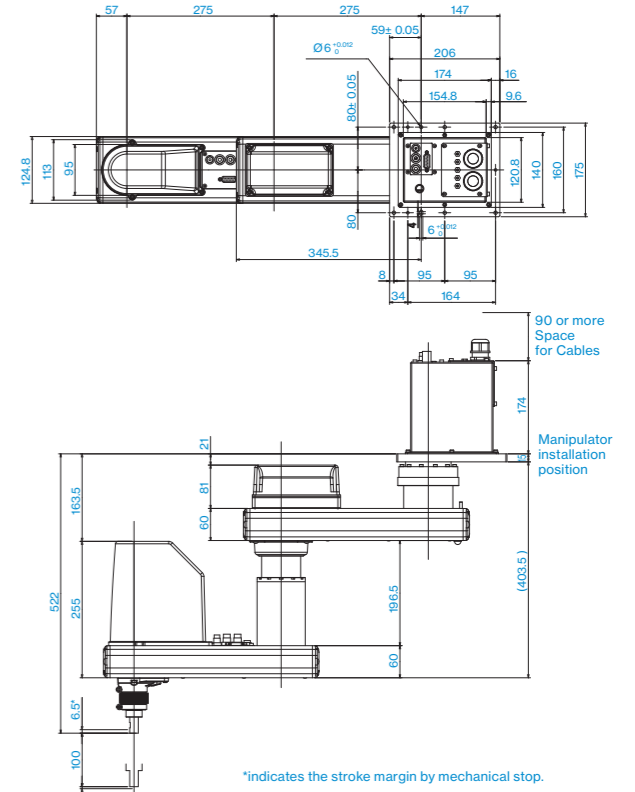
## Outer Dimensions (Ceiling Mounting)

[Unit: mm]

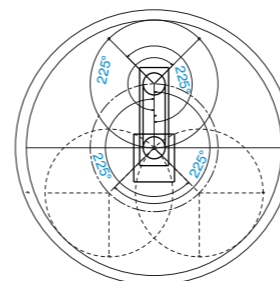
### Standard-model



### Cleanroom-model



## Motion Range (Ceiling Mounting)



Model	RS4-551□
Arm #1 Length (mm)	275
Arm #2 Length (mm)	275
Joint #1 Motion range (°)	±225
Joint #2 Motion range (°)	±225

## Speed and flexibility for machine tending operation in confined workspaces

- High speed and repeatability for maximum productivity
- Compact design for enhanced configuration flexibility
- C4-B901 long arm model also available

Model Number

C4 -  6 0 1 S

Payload

4

 : 4kg

Controller

A

 : RC700-A  

B

 : RC700-E

Arm length

6

 : 600mm  

9

 : 900mm

Mounting type

: Table Top Mounting

Environment

S

 : Standard  

C

 : Cleanroom & ESD (electrostatic discharge)

Brake equipment

1

 : Brakes on all joints



The safety standards conformed to RC800-A, RC700-E, and manipulators for those controllers include "ISO" "NRTL"

\*Product image is C-B series.

## Specifications

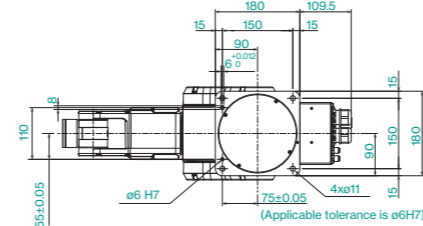
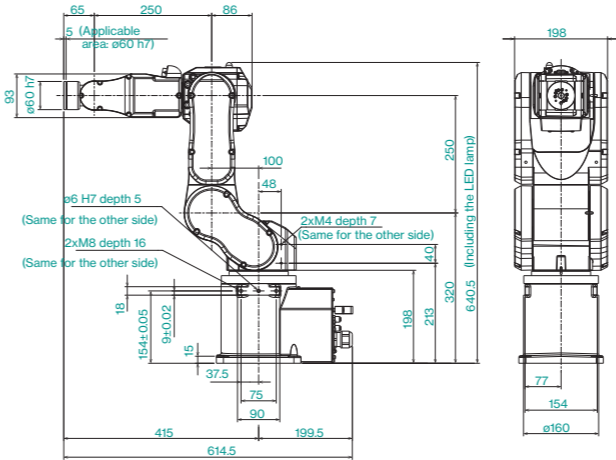
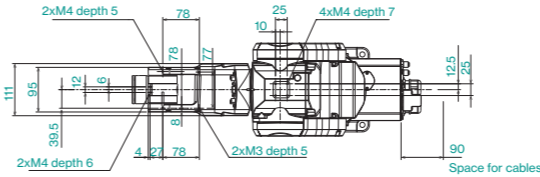
Model number		C4- <div></div> 601	C4- <div></div> 901
Arm length	Point P:J1-J5 center	600.0 mm	900.0 mm
	J1-J6 Flange surface	665.0 mm	965.0 mm
Payload <sup>*1</sup>	Rated	1kg	
	Maximum	4 kg (5 kg with arm downward positioning)	
Repeatability	Joints #1-#6	±0.02 mm	±0.03 mm
Standard cycletime <sup>*2</sup>		0.362 sec	0.455 sec
Max. operating speed	Joint#1	450 deg/sec	275 deg/sec
	Joint#2	450 deg/sec	275 deg/sec
	Joint#3	514 deg/sec	289 deg/sec
	Joint#4	555 deg/sec	
	Joint#5	555 deg/sec	
	Joint#6	720 deg/sec	
Allowable moment of inertia <sup>*3</sup>	Joint #4	0.15 kg·m <sup>2</sup>	
	Joint #5	0.15 kg·m <sup>2</sup>	
	Joint #6	0.1kg·m <sup>2</sup>	
Installation environment		Standard / Cleanroom <sup>*4</sup> & ESD <sup>*5</sup>	
Mounting type		Table top/Ceiling <sup>*6</sup>	
Weight (cable not included)		27 kg	30 kg
Applicable controller		C4-A: RC700-A C4-B: RC700-E	
Installed wire for customer use		9 Pin (D-Sub)	
Installed pneumatic tube for customer		Ø4mm x 4 : 0.59 MPa (6 kgf/cm <sup>2</sup> ) (86 psi)	
Power		AC200-240 V Single phase	
Power consumption <sup>*7</sup>		1.7 kVA	
Cable length		C4-A: Standard : 3 / 5 / 10 / 15 / 20 m C4-B: Standard / High-Flex: 3 / 5 / 10 / 15 / 20 m	
Safety standard		C4-A: CE, UKCA, KCs <sup>*8</sup> , UL C4-B: CE, UKCA, KCs, NRTL	

<sup>\*1</sup> : If the payload exceeds the maximum payload, refer to the following section. "C-B series Manual WEIGHT Setting - Restrictions on payload exceeding the maximum payload" <sup>\*2</sup> : Cycle time based on round-trip arch motion (300mm horizontal, 25 mm vertical) with 1kg payload (path coordinates optimized for maximum speed). <sup>\*3</sup> : Sif the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentricity using INERTIA command <sup>\*4</sup> : Cleanliness: Class ISO 3 (ISO 14644-1) <sup>\*5</sup> : ESD specification uses resin materials with anti-static treatment. This model controls adhesion of dust due to electrification. <sup>\*6</sup> : Manipulators are set to "Table Top mounting" at shipment. To use the Manipulators as "Ceiling mounting", you need to change the model settings. For details on how to change the model settings, refer to "C4 Manipulator 5.5 Changing the Robot", and "Epson RC+ User's Guide Robot Configuration". <sup>\*7</sup> : Varies according to operating environment and program. <sup>\*8</sup> : Please contact us for the compatibility status of each model. <sup>\*</sup>These information is based on the C-B series; for information on the C-A series, Please contact sales representative.\*These information is based on the C-B series; for information on the C-A series,

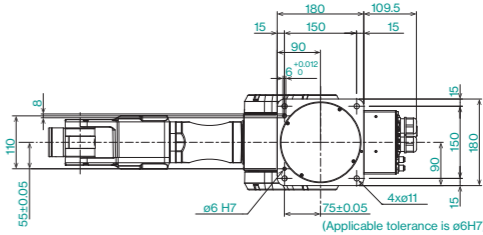
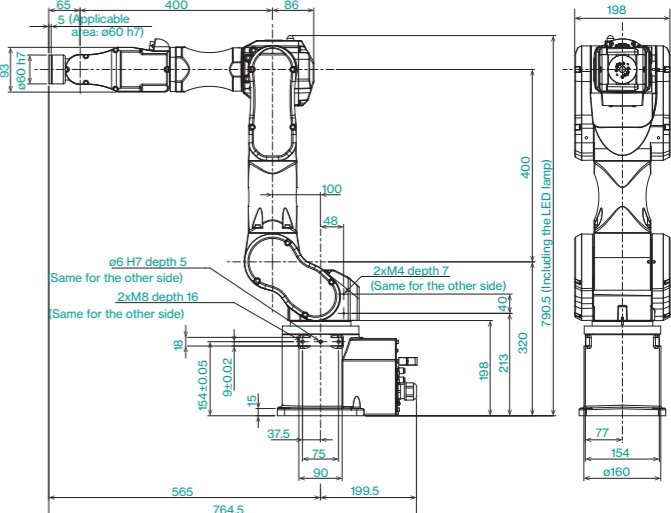
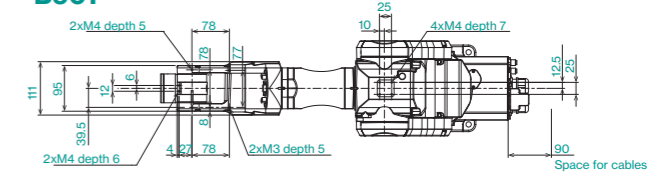
## Outer Dimensions

[Unit: mm]

### B601



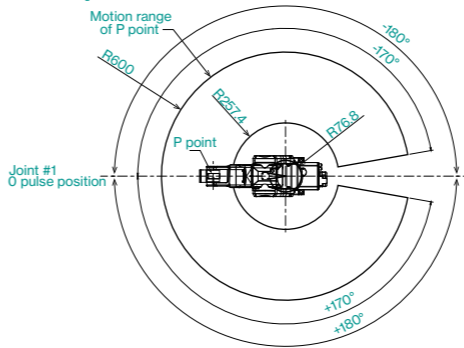
### B901



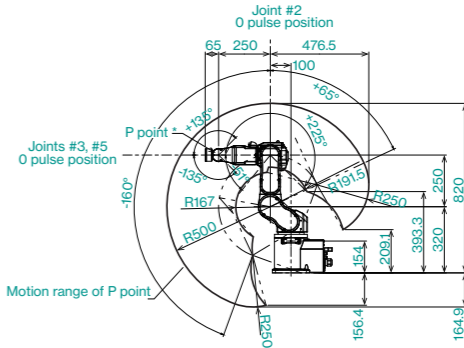
## Motion Range

### B601

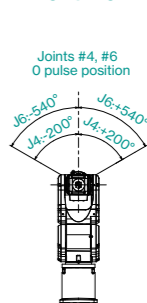
#### Top View



#### Lateral View

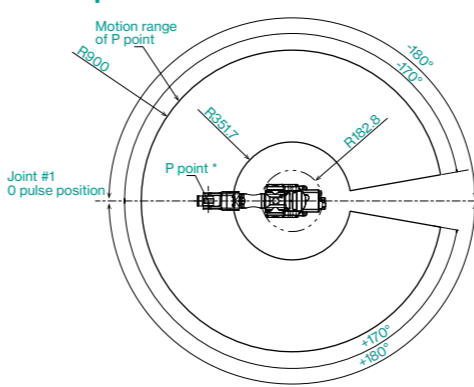


#### Front View

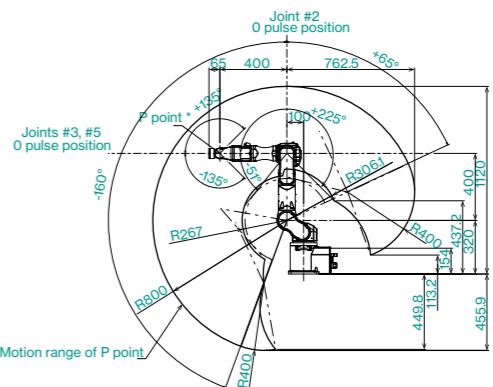


### B901

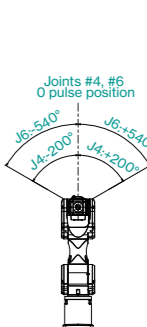
#### Top View



#### Lateral View



#### Front View



Exclusive Epson technology ensures high speed and low vibration with heavy payloads

- Ideal for multi-effector pick-and-place with multiple workpieces, and for handling and assembly tasks with heavy payloads

1400mm

Long, slim, 1400mm arm for machine tending operation

- Long, slim arm minimizes interference with nearby machinery and can reach into narrow spaces
- Low weight and compact design greatly increase configuration flexibility

Model Number

C8-

14

0

1

S

Payload

8

: 8kg

Controller

A

: RC700-A

B

: RC700-E

Arm length

7

: 700mm

9

: 900mm

14

: 1400mm

Brake equipment

1

: Brakes on all joints

Mounting type

: Table Top Mounting

R

: Ceiling Mounting

W

: Wall Mounting

M/C cable exit direction

: Rearward

B

: Downward

Environment

S

: Standard

C

: Cleanroom & ESD (electrostatic discharge)

P

: Protection(IP67)

TUV

SUD

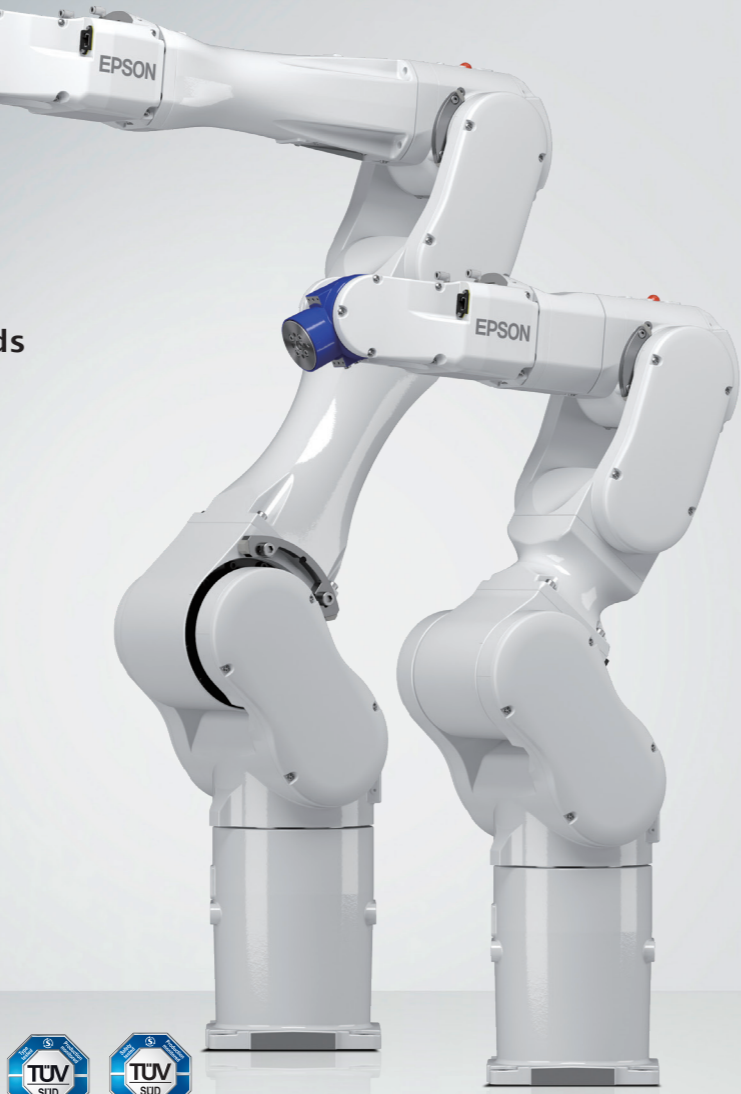
ISO 9001

TUV

SUD

ISO 14001

The safety standards conformed to RC800-A, RC700-E, and manipulators for those controllers include "ISO" "NRTL"



The safety standards conformed to RC800-A, RC700-E, and manipulators for those controllers include "ISO" "NRTL"

\*Product image is C-B series.

Specifications

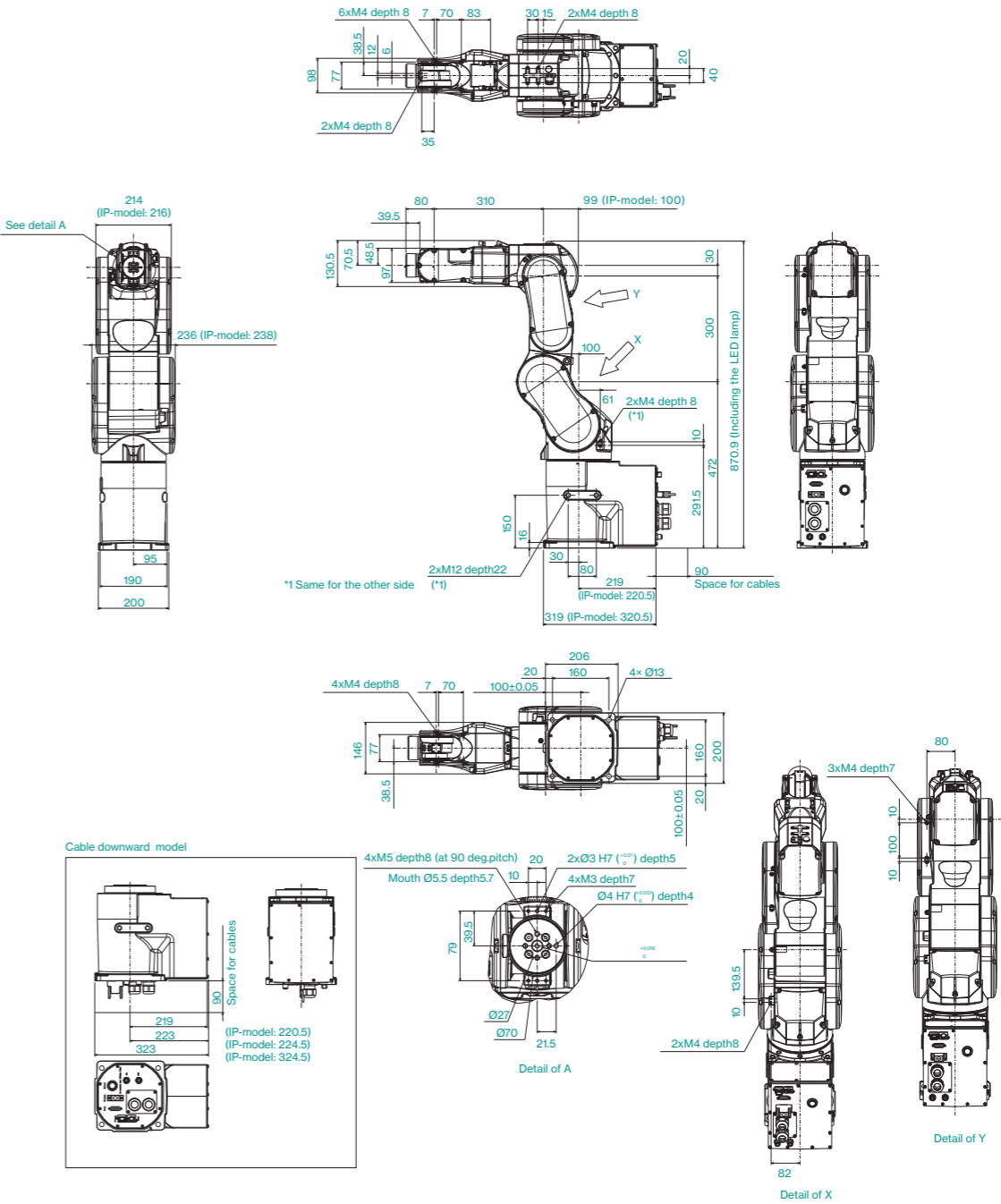
Model number		C8-A701 □□□	C8-901□□□	C8-1401□□□
Arm length	Point P:J1-J5 center	711 mm	901.1 mm	1400.0 mm
	J1-J6 Flange surface	791 mm	981.1 mm	1480.6 mm
Payload <sup>*1</sup>	Rated	3 kg		
	Maximum	8 kg		
Repeatability	Joints #1-#6	±0.02 mm	±0.03 mm	±0.05 mm
Standard cycletime <sup>*2</sup>		0.31 sec	0.346 sec	0.523 sec
Max. operating speed	Joint#1	331 deg/sec	294 deg/sec	200 deg/sec
	Joint#2	332 deg/sec	300 deg/sec	167 deg/sec
	Joint#3	450 deg/sec	360 deg/sec	200 deg/sec
	Joint#4	450 deg / sec	480 deg / sec	
	Joint#5	450 deg/sec		
	Joint#6	720 deg/sec		
Allowable moment of inertia <sup>*3</sup>	Joint #4	0.47 kg·m <sup>2</sup>		
	Joint #5	0.47 kg·m <sup>2</sup>		
	Joint #6	0.15 kg·m <sup>2</sup>		
Installation environment		Standard / Cleanroom <sup>*4</sup> & ESD <sup>*5</sup> / Protection (IP67)		
Mounting type		Table top / Ceiling / Wall		
Weight (cable not included)		49 kg (IP:53 kg)	C8-A: 52 kg (IP:56 kg) C8-B: 53 kg (IP:57 kg)	C8-A: 62 kg (IP:65 kg) C8-B: 63 kg (IP:66 kg)
Applicable controller		C8-A: RC700-A C8-B: RC700-E		
Installed wire for customer use		15 pin (D-sub), 8 pin (RJ45), 6pin (for force sensor)		
Installed pneumatic tube for customer		Φ6 mm x 2/Allowable pressure: 0.59 Mpa (6 kgf/cm <sup>2</sup> )( 86 psi)		
Power		AC200-240 V Single phase		
Power consumption <sup>*6</sup>		2.5 kVA		
Cable length		C8-A: Standard : 3 / 5 / 10 / 15 / 20 m C8-B: Standard / High-flex : 3 / 5 / 10 / 15 / 20 m		
Safety standard		C8-A: CE, UKCA, KCs <sup>*7</sup> , UL C8-B: CE, UKCA, KCs, NRTL		

\*1: Do not apply the load exceeding the maximum payload. \*2: Cycle time based on round-trip arch motion (300 mm horizontal, 25 mm vertical) at rated payload setting of table top model boost mode (path coordinates optimized for maximum speed)  
\*3: If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentricity using INERTIA command. \*4: Cleanliness level C8-B901□□: ISO Class 3 (ISO14644-1), C8-B1401□□: ISO Class 4 (ISO14644-1)  
\*5: ESD specification uses resin materials with anti-static treatment. This model controls adhesion of dust due to electrification. \*6: Varies according to operating environment and program. \*7: Please contact us for the compatibility status of each model.  
\*These information is based on the C-B series; for information on the C-A series, Please contact sales representative.

Outer Dimensions

[Unit: mm]

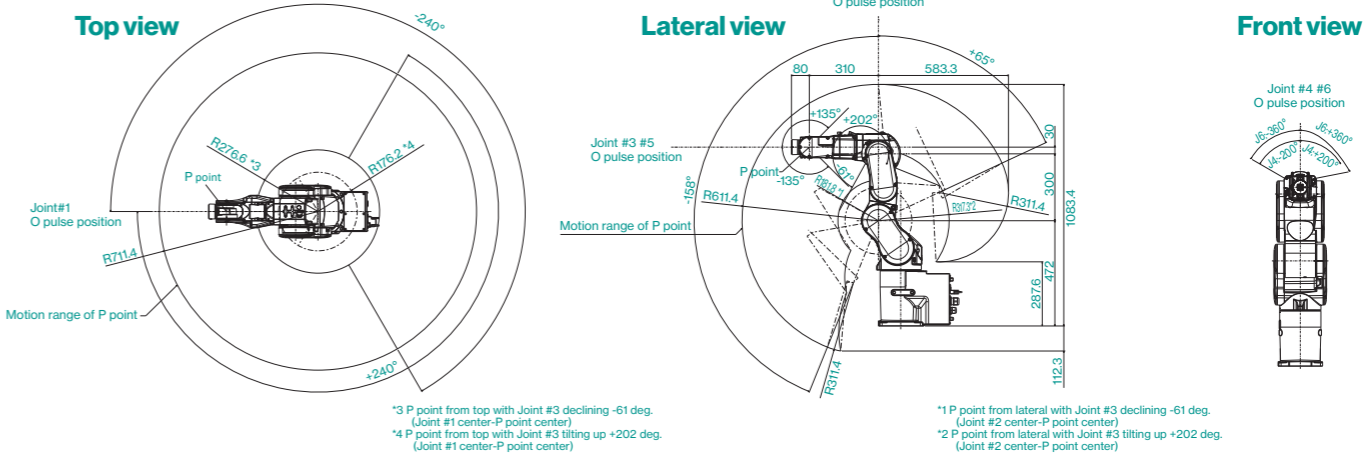
A701



Motion Range

[Unit: mm]

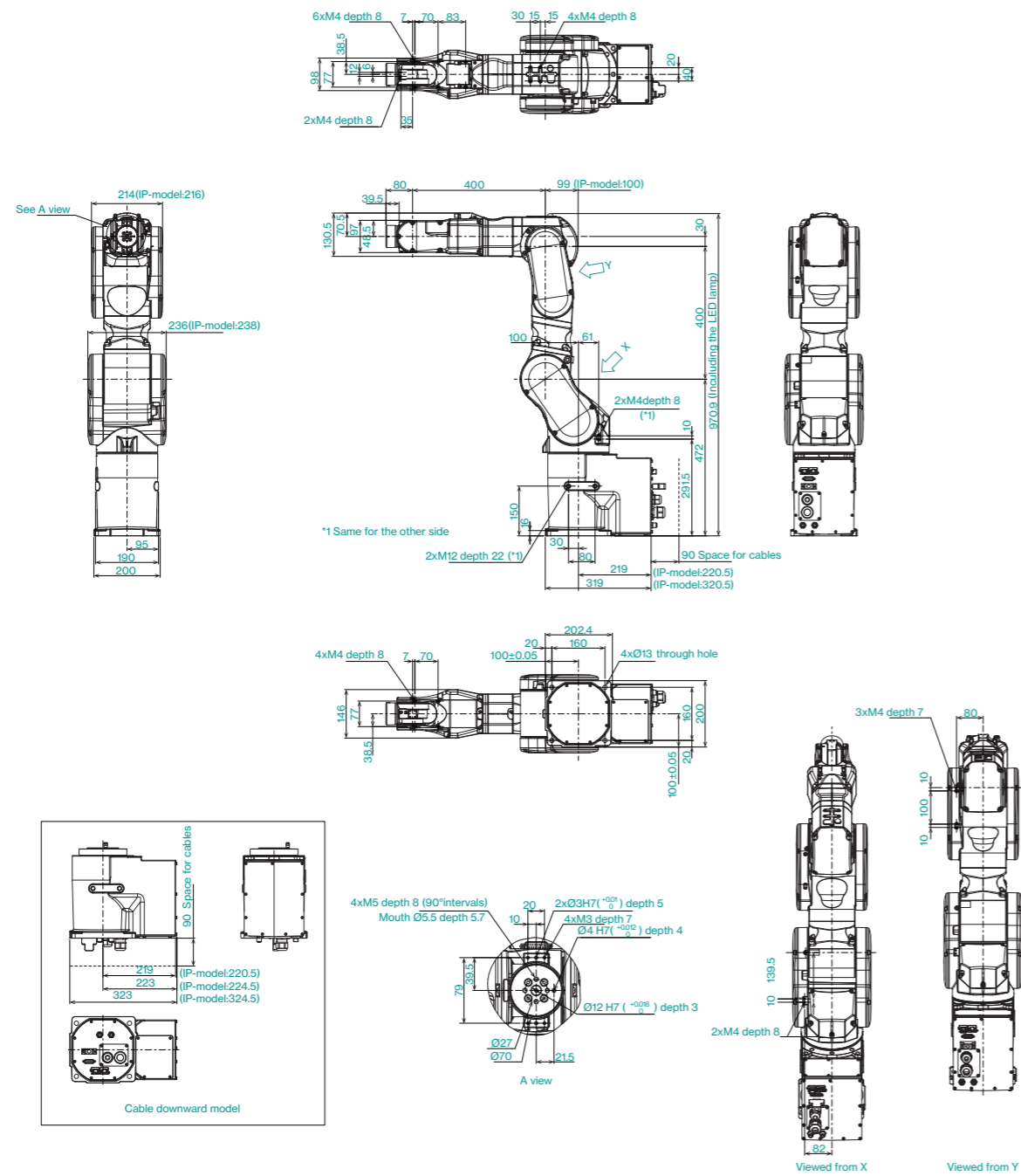
A701



## Outer Dimensions

[Unit: mm]

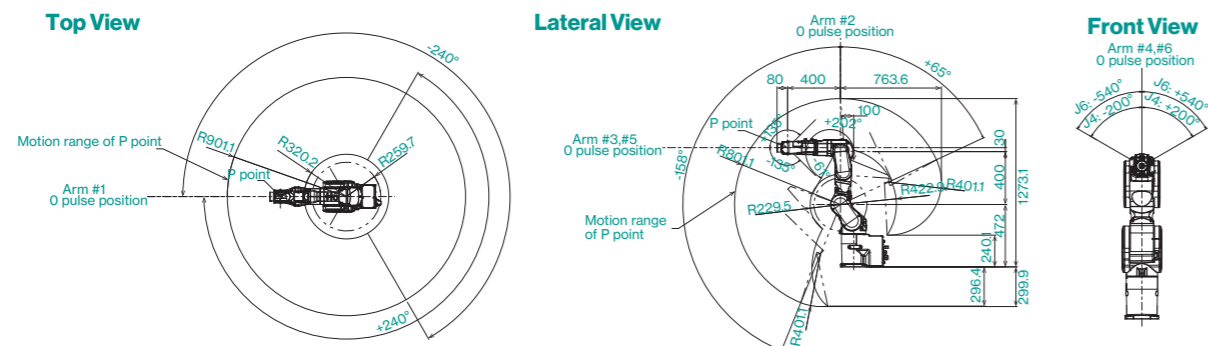
**B901**



## ■ Motion Range

[Unit: mm]

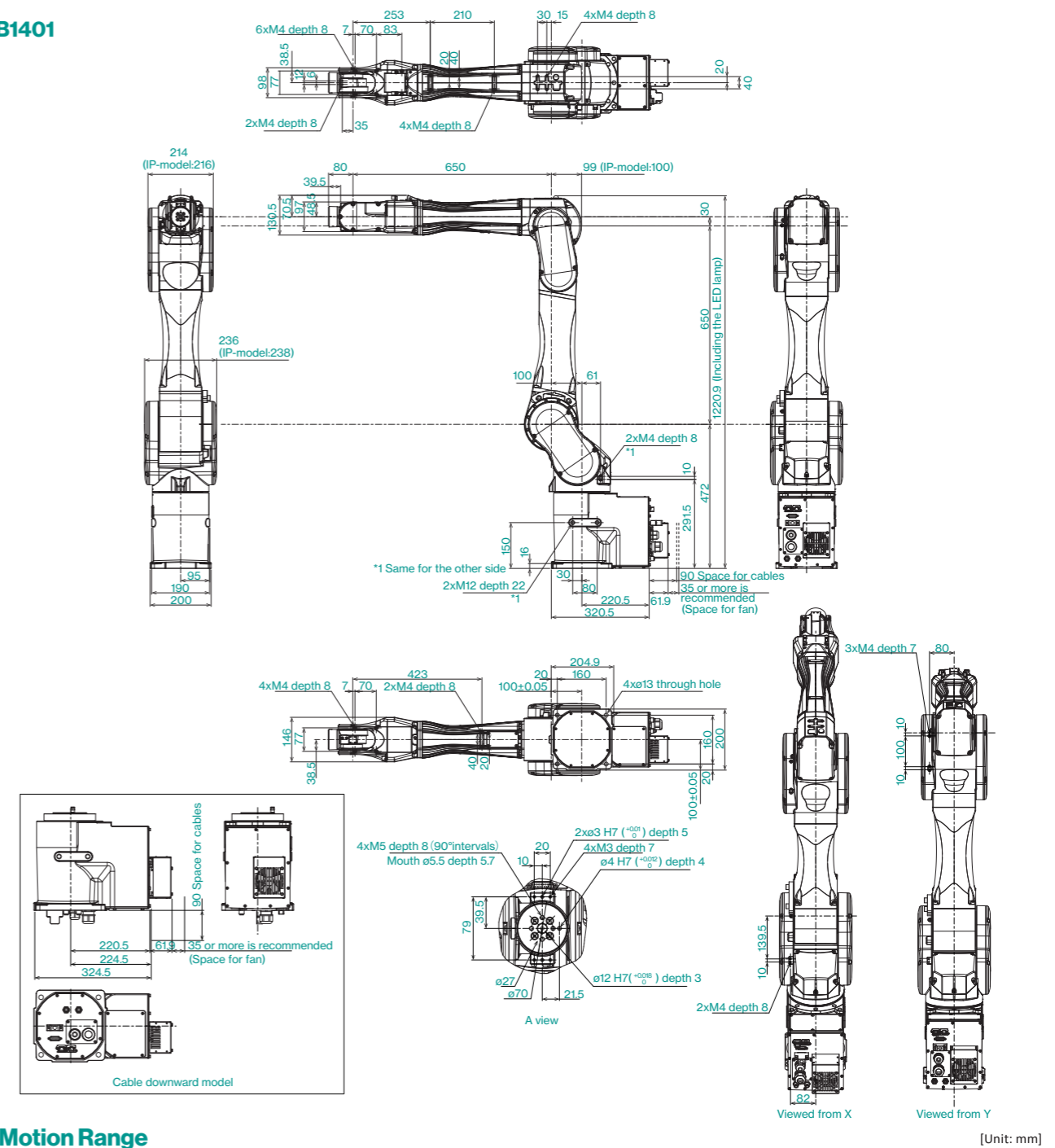
**B901**



## Outer Dimensions

[Unit: mm]

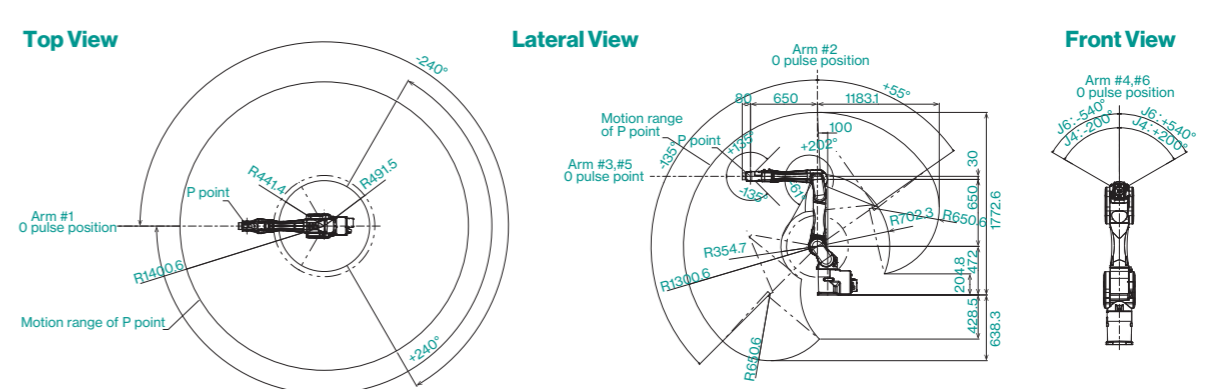
**B1401**



## ■ Motion Range

[Unit: mm]

**B1401**



## Space saving, slim but highly payload

- Lightweight slim arm of 1400mm suitable for machine tending and transfer between processes
- The payload capacity has been increased to 12kg and can be used for a wide range of applications



The safety standards conformed to RC800-A, RC700-E, and  
manipulators for those controllers include "ISO" "NRTL"

\*Product image is C-B series.

## ■ Specifications

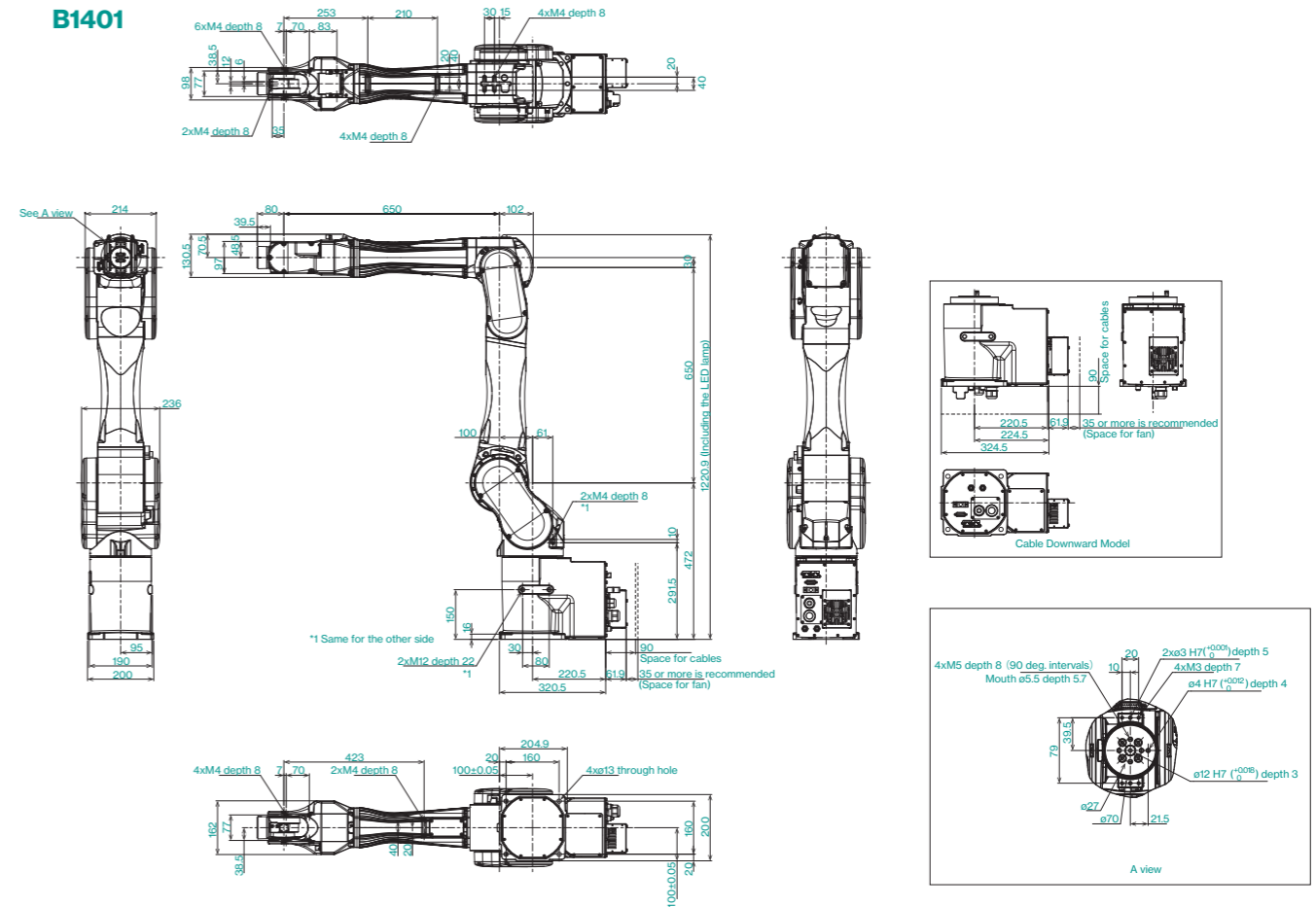
Model number		C12-□1401□□□
Arm length	Point P:J1-J5 center	1400.6 mm
	J1-J6 Flange surface	1480.6 mm
Payload <sup>*1</sup>	Rated	3 kg
	Maximum	12 kg
Repeatability	Joints #1-#6	± 0.05 mm
Standard cycletime <sup>*2</sup>		0.501 sec
Max. operating speed	Joint#1	200 deg/sec
	Joint#2	167 deg/sec
	Joint#3	200 deg/sec
	Joint#4	300 deg/sec
	Joint#5	360 deg/sec
	Joint#6	720 deg/sec
Allowable moment of inertia <sup>*3</sup>	Joint #4	0.70 kg-m2
	Joint #5	0.70 kg-m2
	Joint #6	0.20 kg-m2
Installation environment		Standard / Cleanroom <sup>*4</sup> & ESD <sup>*5</sup>
Mounting type		Table top
Weight (cable not included)		63 kg
Applicable controller		C12-A:RC700-A C12-B:RC700-E
Installed wire for customer use		15 pin (D-Sub) , 8 pin (RJ45) CAT 5e , 6pin (for force sensor)
Installed pneumatic tube for customer		ø6 mm x 2 Pressure resistance : 0.59 MPa ( 6 kgf / cm² ) ( 86 psi )
Power		AC200-240 V
Power consumption <sup>*6</sup>		2.5 kVA
Cable length		C12-A:Standard 3 / 5 / 10 / 15 / 20 m C12-B:Standard / High-Flex 3 / 5 / 10 / 15 / 20 m
Safety standard		C12-A: CE, UKCA, KCs, UL C12-B: CE, UKCA, KCs, NRTL

\*1: Do not apply the load exceeding the maximum payload. \*2: Cycle time based on round-trip arch motion (300 mm horizontal, 25 mm vertical) at rated payload setting of table top model boost mode (path coordinates optimized for maximum speed)  
\*3: If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentricity using INERTIA command. \*4: Cleanliness: ISO Class 4 (ISO 14644-1) \*5: ESD specification uses resin materials with anti-static treatment. This model controls adhesion of dust due to electrification. \*6: Varies according to operating environment and program. \*This information is based on the C-B series; for information on the A-C series, please contact sales representative.

## Outer Dimensions

[Unit: mm]

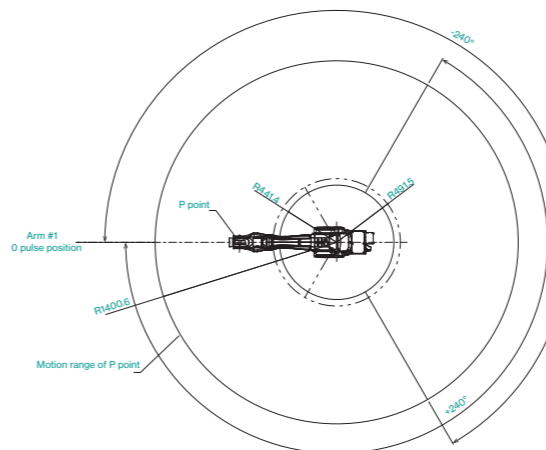
**B1401**



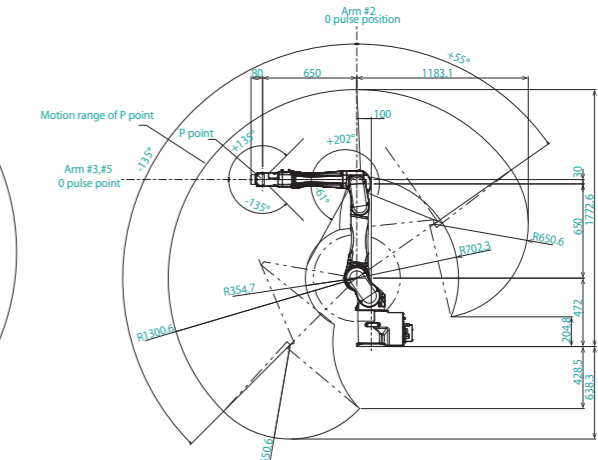
### ■ Motion Range

## B1401

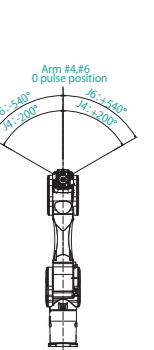
### Top View



### Lateral View



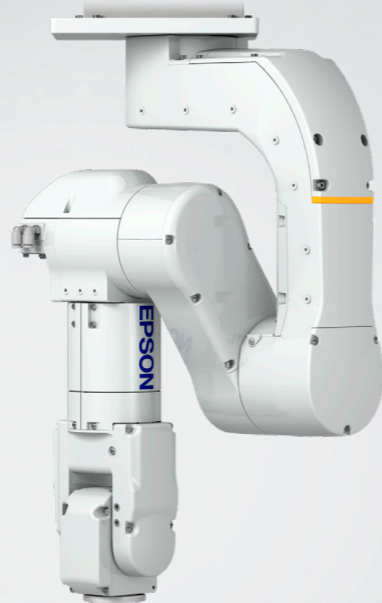
### Front View



Unique folding arm design provides the motion flexibility of a 6-axis robot in the space-saving compact size

- Slim folding arm design
- Requires only 600mm x 600mm installation space — 40% less than a C4 robot\*
- Arm rotation enables shortcut access to workpiece from any direction

\*C4: ø660 mm → N2: ø460 mm (Epson data as of October 2018)



Model Number	N2 - A 45 O S R
Payload	2 : 2.5kg
Arm length	45 : 450mm
Brake equipment	0 : Brakes on the Joints #2 to #6
Mounting type	□ : Table Top Mounting R : Ceiling Mounting
Environment	S : Standard model

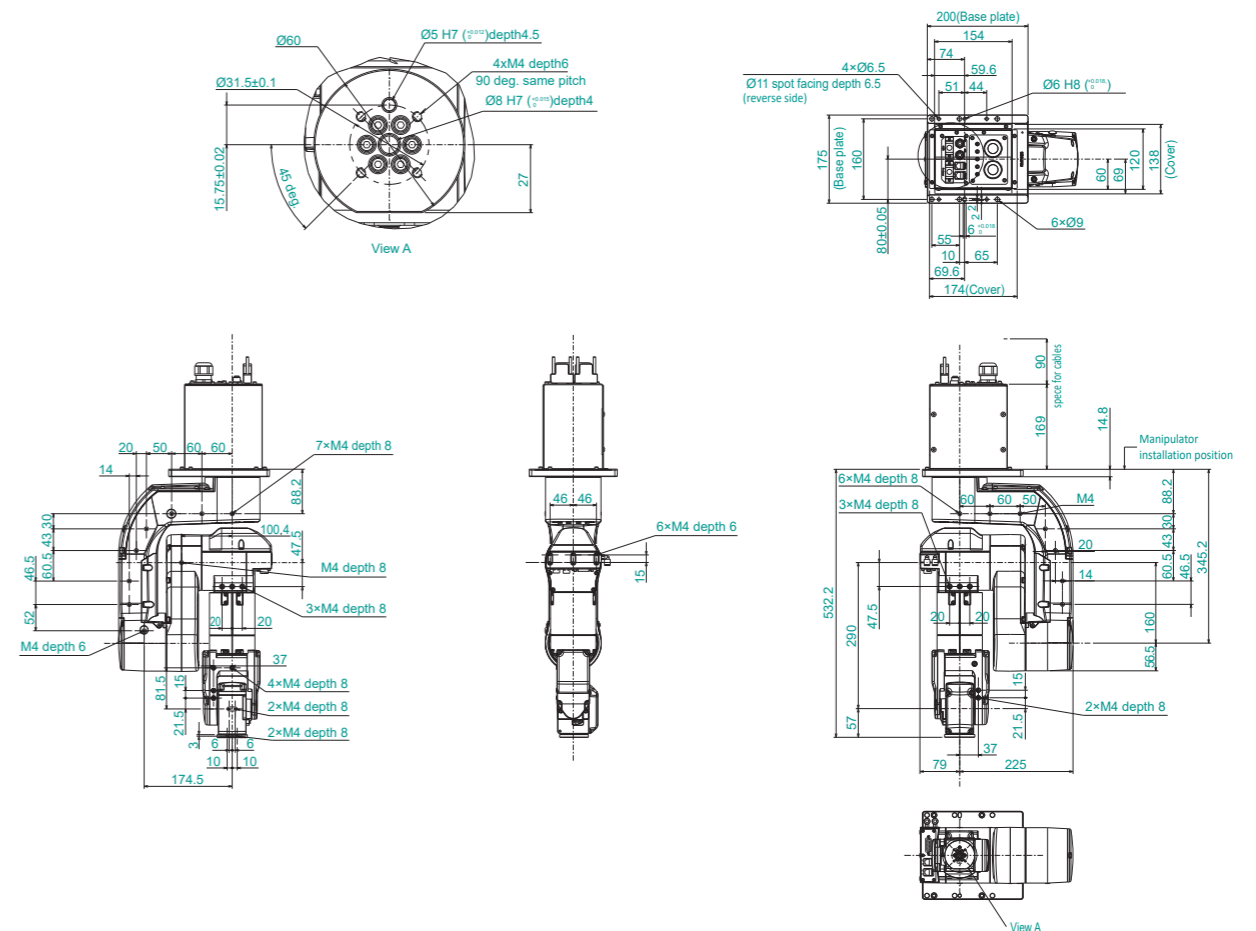
## Specifications

Model number		N2-A450SR / N2-A450S
Arm length	P point:through the center of J4/J5/J6	450mm
	Wrist flange surface	532.2mm
Payload <sup>*1</sup>	Rated	1.0kg
	Maximum	2.5kg
Repeatability	Joints #1-#6	±0.02mm
Max. operating speed	Joint#1	297 deg/sec
	Joint#2	297 deg/sec
	Joint#3	356 deg/sec
	Joint#4	356 deg/sec
	Joint#5	360 deg/sec
	Joint#6	360 deg/sec
Allowablemomentof inertia <sup>**</sup>	Joint #1-#6	0.2kg·m <sup>2</sup>
	Joint #4	0.2kg·m <sup>2</sup>
	Joint #5	0.08kg·m <sup>2</sup>
Installation environment	Joint #6	Standard
Mounting type		Ceiling / Table top <sup>**</sup>
Weight (cable not included)		19kg
Applicable controller		RC-700A
Installed wire for customer use		15 pin (D-sub) 8 pin (RJ45) Cat 5e or equivalent (2 cables) (also used for Force Sensor)
Installed pneumatic tube for customer		Ø6 mm x 2 : 0.59 MPa (6 kgf/cm <sup>2</sup> ) (86 psi)
Power		AC200-240 V Single phase
Power consumption <sup>**</sup>		0.6 kVA
Cable length		3 / 5 / 10 / 15 / 20 m
Safety standard		CE, UKCA, KCs

\*1: Do not apply the load exceeding the maximum payload. \*2: If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command.  
\*3: Robots are set up for ceiling-mount use at shipment. For tabletop use, robots should be programmed using the Epson RC+ software tabletop-mount settings. \*4: Varies according to operating environment and program.

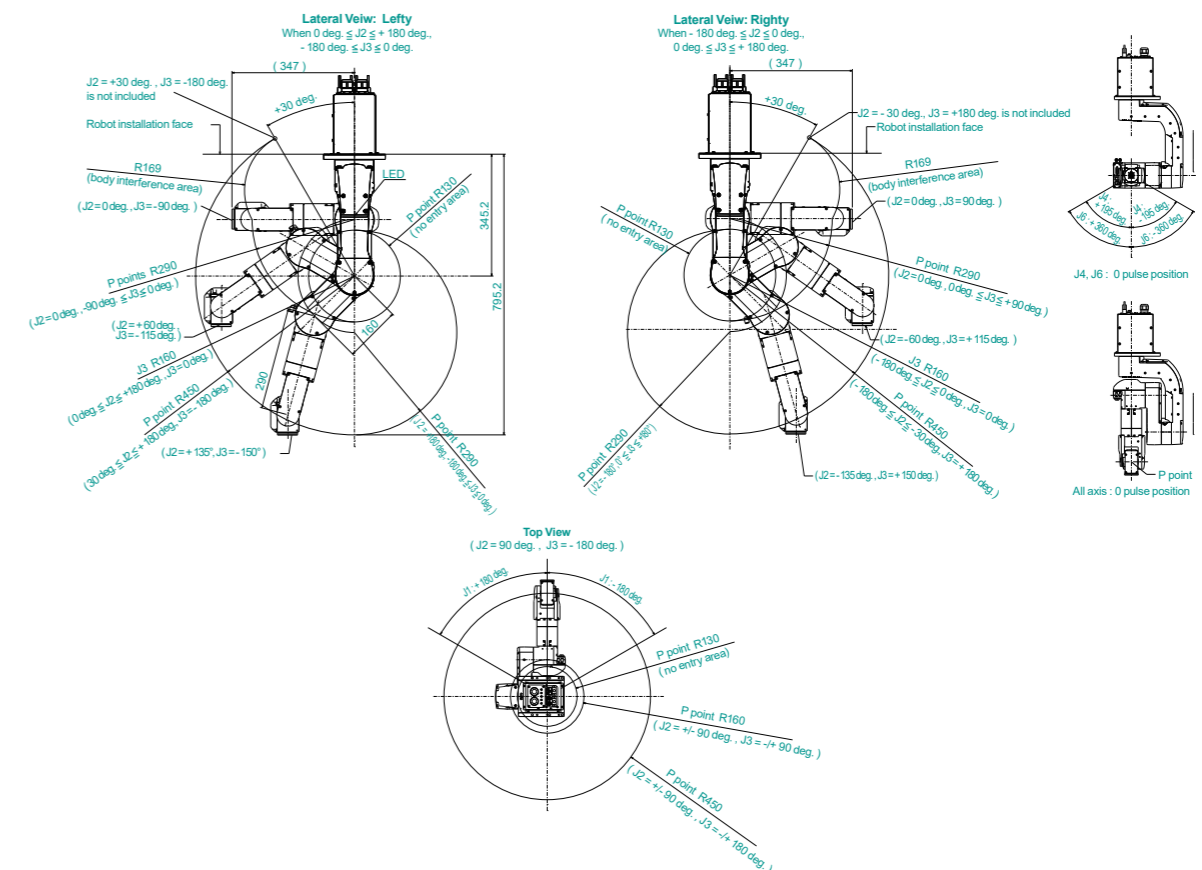
## Outer Dimensions

[Unit: mm]



## Motion Range

[Unit: mm]



# N6-A850



## Ceiling mounted 6-axis robot with unique folding arm design

- 6-axis flexibility and SCARA-like arch motion enables shortcut access to work-piece from any direction in limited space
- 6kg payload ideal for automotive component handling
- Hollow arm construction for easy cabling setup and teaching

Model Number

N6 - A 85 O S B R

Payload

6 : 6kg

Arm length

85 : 860mm

Brake equipment

0 : Brakes on the Joints #2 to #6

Mounting type

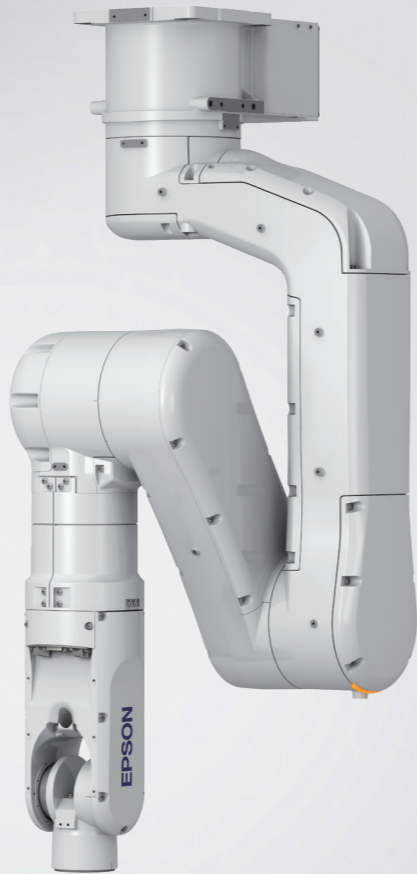
□ : Table Top Mounting

Cable exit direction

□ : Standard (side)  
B : Upward

Environment

S : Standard  
C : Cleanroom & ESD (Anti-static)



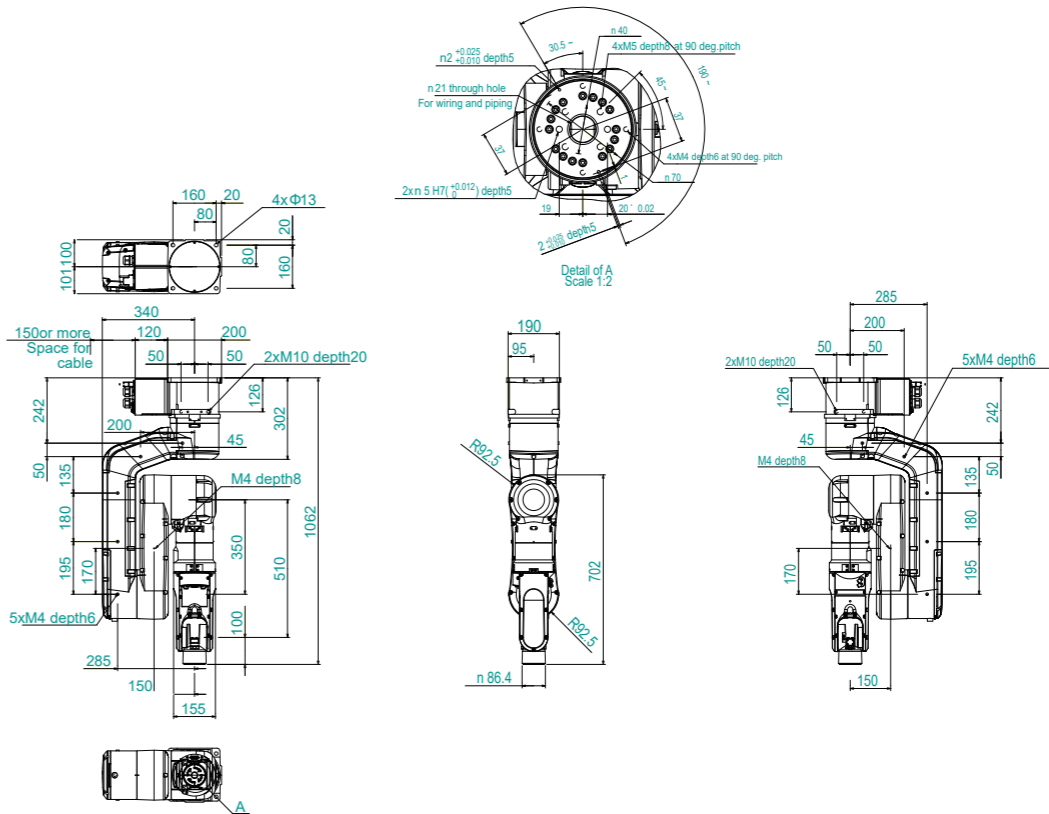
## Specifications

Model number		N6-A850□□R
Arm length	P point:through the center of J4/J5/J6	860 mm
	Wrist flange surface	960 mm
Payload <sup>*1</sup>	Rated	3.0 kg
	Maximum	6.0 kg
Repeatability	Joints #1-#6	±0.03 mm
Max. operations speed	Joint#1	326 deg/sec
	Joint#2	326 deg/sec
	Joint#3	444 deg/sec
	Joint#4	444 deg/sec
	Joint#5	450 deg/sec
	Joint#6	537 deg/sec
Allowablemomentof inertia <sup>*2</sup>	Joint #4	0.42 kg·m <sup>2</sup>
	Joint #5	0.42 kg·m <sup>2</sup>
	Joint #6	0.14 kg·m <sup>2</sup>
Installation environment		Standard, Cleanroom & ESD <sup>*3</sup>
Mounting type		Ceiling
Weight (cable not included)		64 kg
Applicable controller		RC700-A
Installed wire for customer use		15 pin (D-sub) 8 pin (RJ45) Cat 5e or equivalent (2 cables) (also used for Force Sensor)
Installed pneumatic tube for customer		Φ6 mm x 2 : 0.59 MPa (6 kgf/cm <sup>2</sup> )
Power		AC200-240 V Single phase
Power consumption <sup>*4</sup>		2.2 kVA
Cable length		3 / 5 / 10 / 15 / 20 m
Safety standard		CE, UKCA, KCs <sup>*5</sup>

<sup>\*1</sup> : Do not apply the load exceeding the maximum payload. <sup>\*2</sup> : If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command.  
<sup>\*3</sup> : Complies with ISO Class 5 (ISO14644-1) and older Class 1 cleanroom standards. <sup>\*4</sup> : Varies according to operating environment and program. <sup>\*5</sup> : Please contact us for the compatibility status of each model.

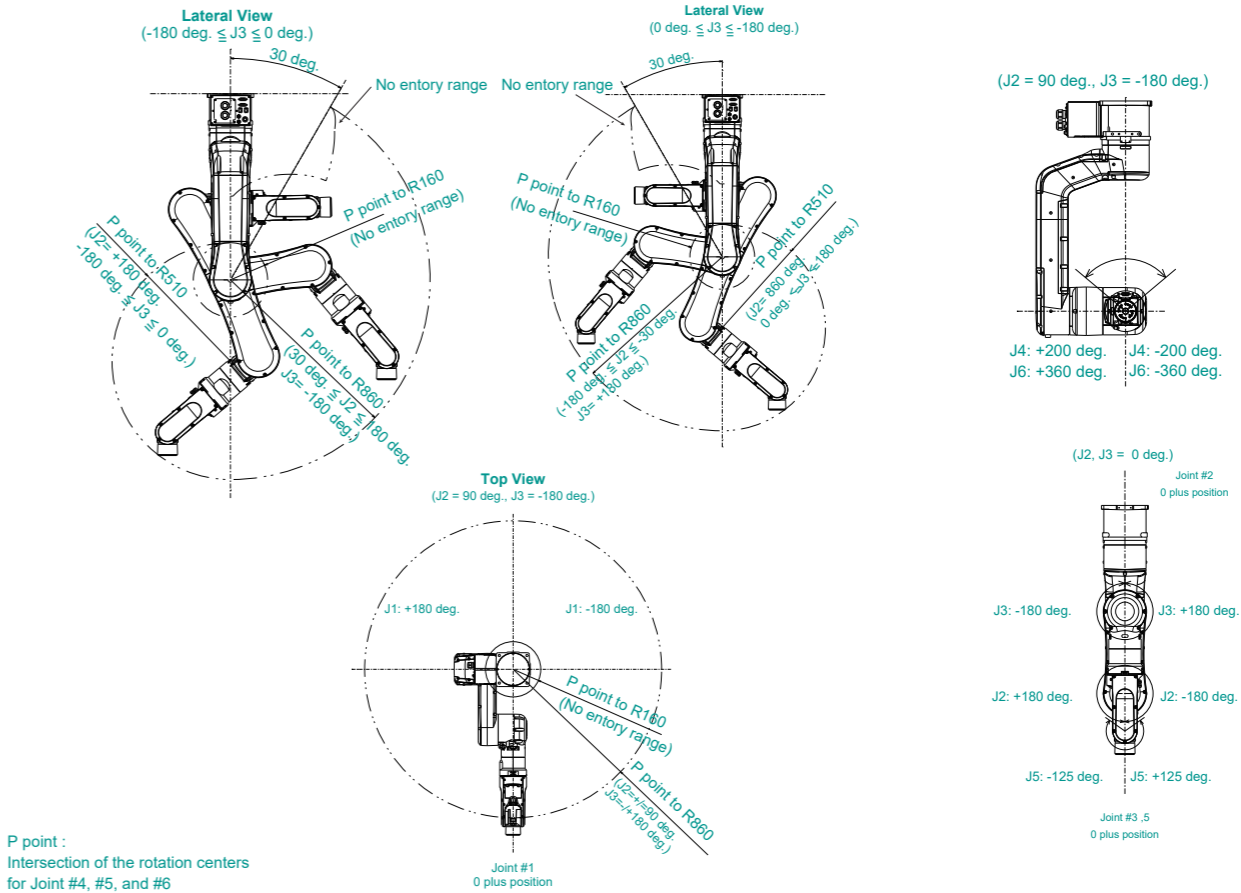
## Outer Dimensions

[Unit:mm]



## Motion Range

[Unit:mm]



N6-A1000



GYROPLUS  
Technology

Original folding arm mechanism reduces  
6-axis robot installation space requirements

- High space utilization efficiency
- Extended reach for tall workpieces and high shelving
- Folding arm design enables installation in limited space
- Hollow arm construction for easy cabling setup

Model Number

N6 - A 100 0 S B R

Payload

6 : 6kg

Arm length

100 : 1010mm

Brake equipment

0 : Brakes on the Joints #2 to #6

Mounting type

□

 : Table Top Mounting

R

 : Ceiling Mounting

Cable exit direction

□

 : Standard (side)

B

 : Upward/downward

Environment

S

 : Standard

C

 : Cleanroom & ESD (Anti-static)



Specifications

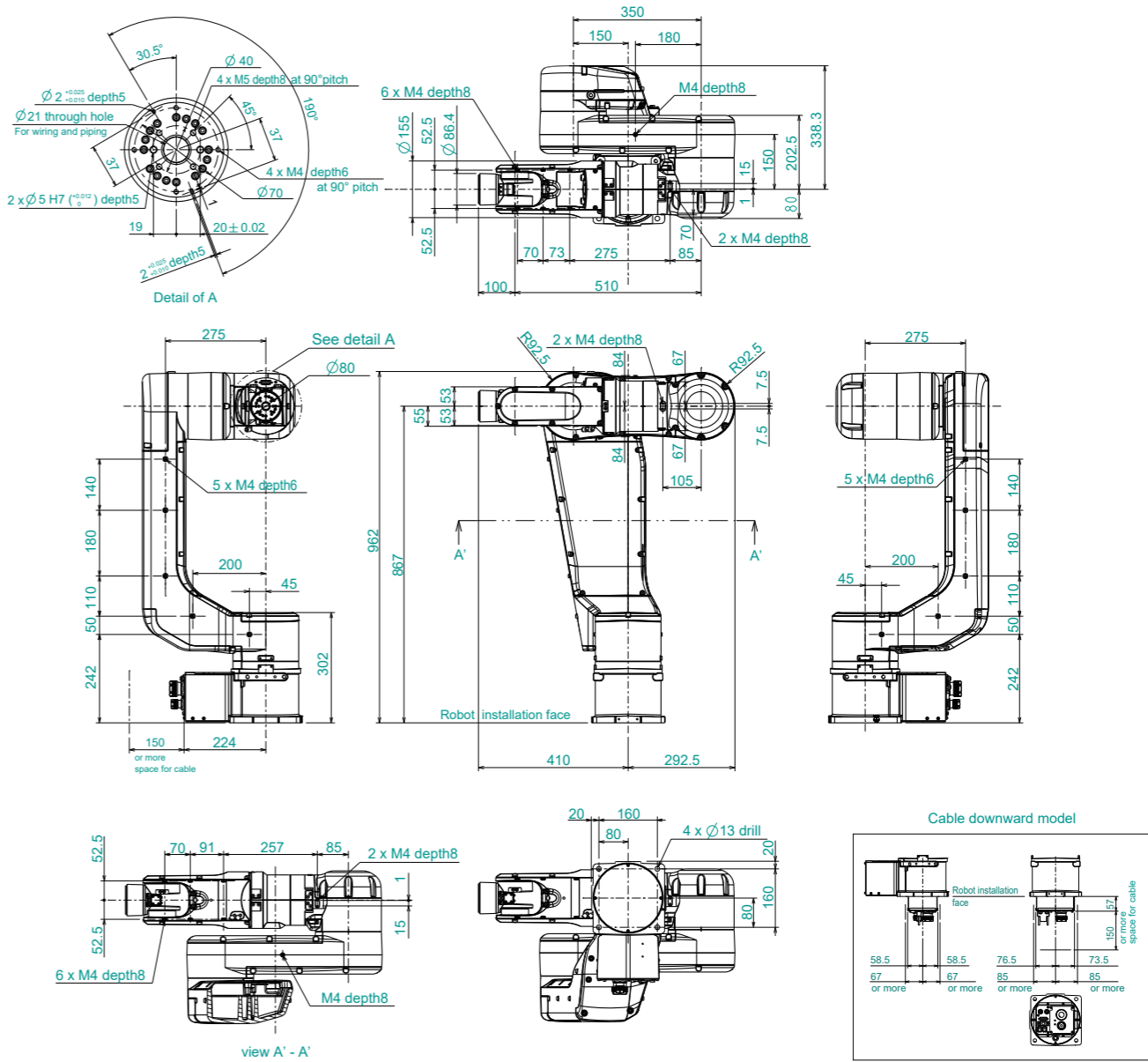
Model number		N6-A1000□□□
Arm length	Ppoint:through the center of J4/J5/J6	1010 mm
	Wrist flange surface	1110 mm
Payload <sup>*1</sup>	Rated	3.0kg
	Maximum	6.0kg
Repeatability	Joints #1-#6	±0.04mm
Max. operating speed	Joint#1	326 deg/sec
	Joint#2	326 deg/sec
	Joint#3	444 deg/sec
	Joint#4	444 deg/sec
	Joint#5	450 deg/sec
	Joint#6	537 deg/sec
Allowablemomentof inertia <sup>*2</sup>	Joint #4	0.42kg·m <sup>2</sup>
	Joint #5	0.42kg·m <sup>2</sup>
	Joint #6	0.14kg·m <sup>2</sup>
Installation environment		Standard, Cleanroom <sup>*3</sup> &ESD
Mounting type		Table top / Ceiling <sup>**</sup>
Weight (cable not included)		69 kg
Applicable Controller		RC-700A
Installed wire for customer use		D-sub 15 pin, RJ45 8 pin x 2 (Cat 5e, for Vision and Force sensor)
Installed pneumatic tube for customer		φ6 mm x 2: 0.59 MPa (6 kgf/cm <sup>2</sup> )
Power		AC200-240 V Single phase
Power Consumption <sup>*5</sup>		2.2 kVA
cable length		3 m/5 m/10 m/15 m/20 m
Safety standard		CE, UKCA, KCs <sup>*6</sup>

\*1 : Do not apply the load exceeding the maximum payload. \*2 : If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command.

\*3 : Complies with ISO Class 5 (ISO14644-1) and older Class 1 cleanroom standards. \*4 : Ceiling-mounted robots should be programmed using the Epson RC+ software ceiling-mount settings. \*5 : Varies according to operating environment and program. \*6 : Please contact us for the compatibility status of each model.

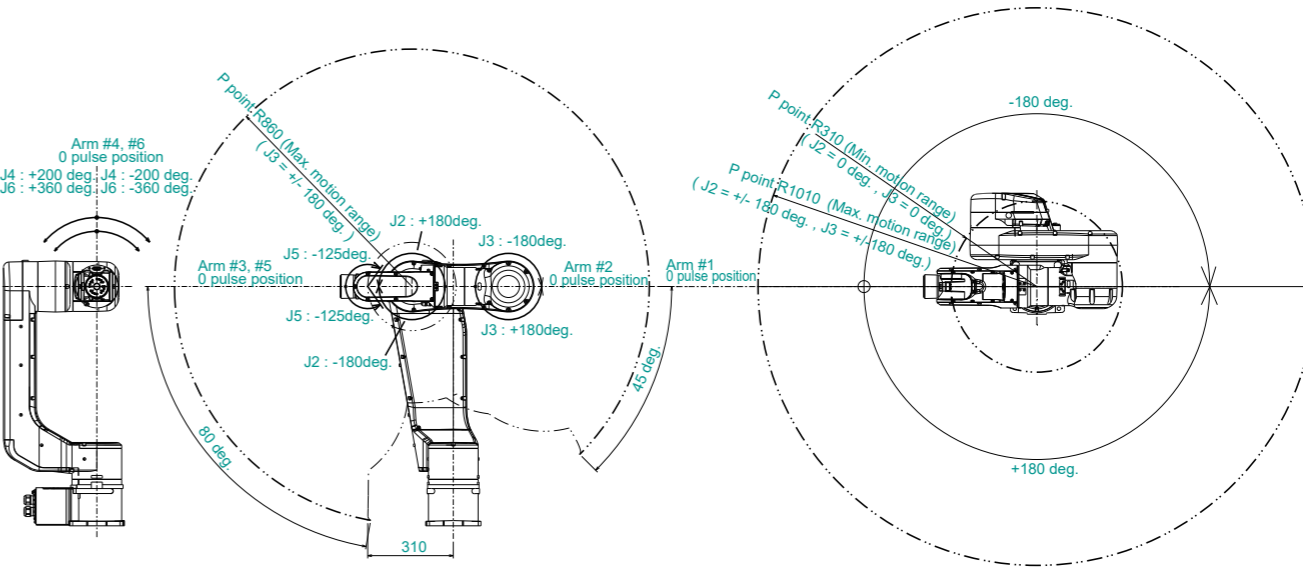
Outer Dimensions

[Unit: mm]



Motion Range

[Unit: mm]



VT6L



Simple setup and high cost-performance for easy and affordable automation

- Space-saving design with built-in controller
- 6-axis versatility without complicated setup
- 100V-240V power source compatibility
- Hollow wrist construction for internal cabling
- Batteryless motor unit for reduced maintenance

Model Number **VT6 - A90 1** ☐ ☐ - ☐

Payload

☐ 6 : 6kg

Arm length

☐ 90 : 920mm

Brake equipment

☐ 1 : Brakes on all joints

Power Supply

☐ : AC specification Manipulator  
☐ : DC specification Manipulator

Mounting type

☐ : Table Top Mounting  
☐ R : Ceiling Mounting  
☐ W : Wall Mounting

Environment

☐ S : Standard model  
☐ C : Cleanroom model  
☐ P : Protection model (IP67)

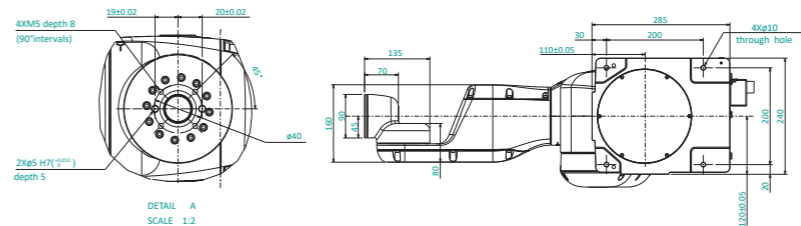
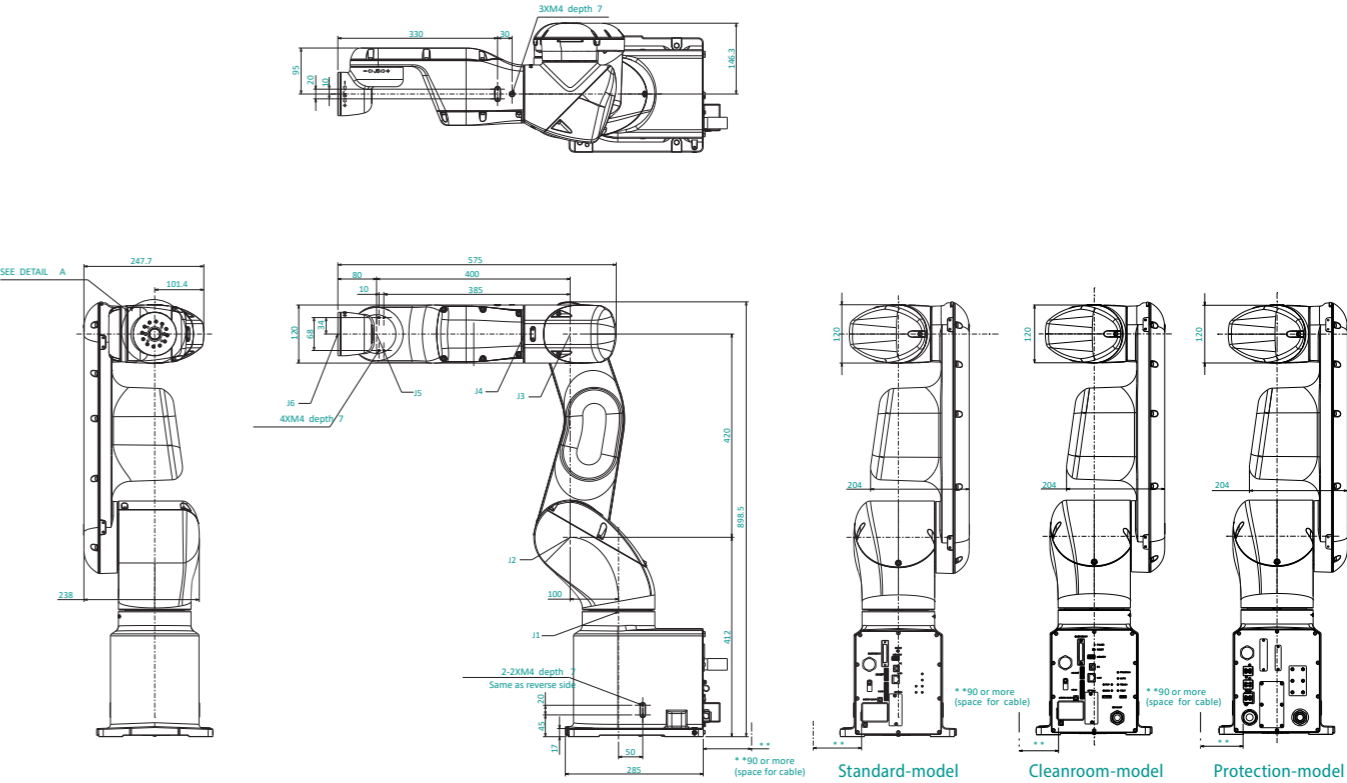
Specifications

Model number		VT6-A901 <input type="checkbox"/> <input type="checkbox"/>
Payload (Load)	Rated	3 kg
	Max.	6 kg
Max. reach	P point:Joint#1-5 center	920 mm
	Joint#1-5 flange surface	1000 mm
Repeatability	Joints#1-6	± 0.1 mm
Max. operating speed	Joint#1	166.2 deg/sec
	Joint#2	122.5 deg/sec
	Joint#3	141.2 deg/sec
	Joint#4	Standard, Cleanroom : 268.7 deg / sec / Protection, DC : 188.1 deg/sec
	Joint#5	296.8 deg/sec
	Joint#6	Standard, Cleanroom : 293.2 deg/sec / Protection, DC : 234.5 deg/sec
Allowable moment of inertia*	Joint#4	0.3 kg·m <sup>2</sup>
	Joint#5	0.3 kg·m <sup>2</sup>
	Joint#6	0.1 kg·m <sup>2</sup>
Installation environment		Standard, Cleanroom** / Protection (IP67)
Mounting type**		Table top / Ceiling / Wall mounting
Weight (cables not included)		40 kg
Applicable controller		Built-in controller
Installed wire for customer use		None (External Wiring Option available)
Installed pneumatic tube for customer use		None (External Wiring Option available)
Power		<input type="checkbox"/> : AC100-240 V single phase / DC : 43-60V**
Power consumption**		<input type="checkbox"/> : 1.2 kVA / DC : 1.2kW
Cable length		<input type="checkbox"/> : 5 m / DC : 2m
I/O	Standard I/O	In 24, Out 16 (Non polarity)
	Remote I/O	In 8, Out 8 (Remote function assigned to standard I/O)
Safety standard		CE, UKCA, KCs

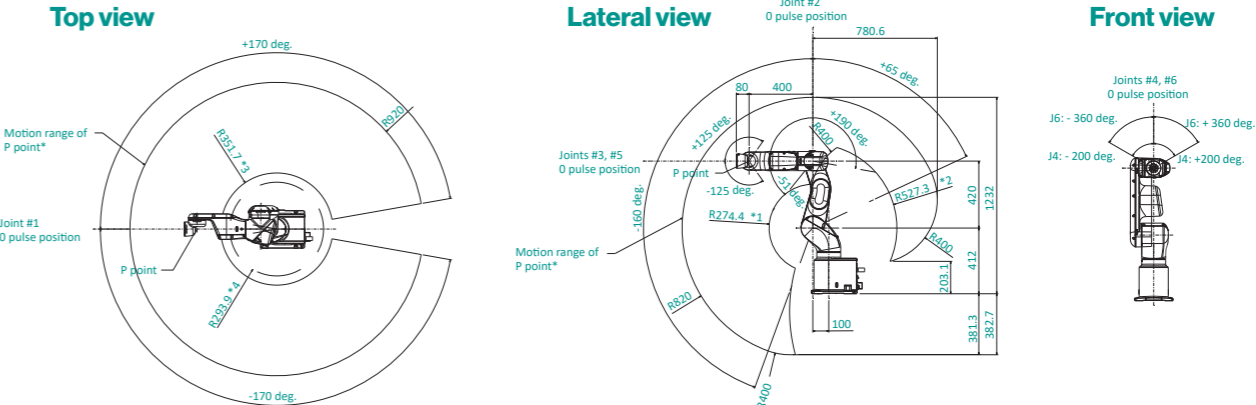
\*1 : If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command. \*2 : Clean level: ISO class 4 (ISO14644-1) \*3 : Mounting type other than table top are out of specification. (Cleanroom and IP : Table Top only) \*4: When sharing the battery power source with AGV etc., a voltage higher than the stated value may be applied to the robot, depending on the operation of AGV etc. Take measures such as overcurrent protection. \*5: It depends on operating enviroment and operation program.

Outer Dimensions (Table Top Mounting)

[Unit: mm]



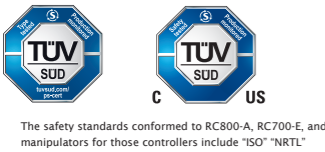
Motion Range (Table Top Mounting)



RC800-A

New robot controller RC800-A integrates RC700  
Further advances for easier implementation of various applications

- Increased processing speed for conveyor tracking
- Force sensor option function included as standard for smooth connection
- No controller battery replacement is required
- Conform to the ISO10218-1 and NRTL



Abundant Options

- Conveyor Tracking Option Kit B
  - Combines a terminal block for connecting encoders and a power supply function, making it easier to build conveyor tracking applications.



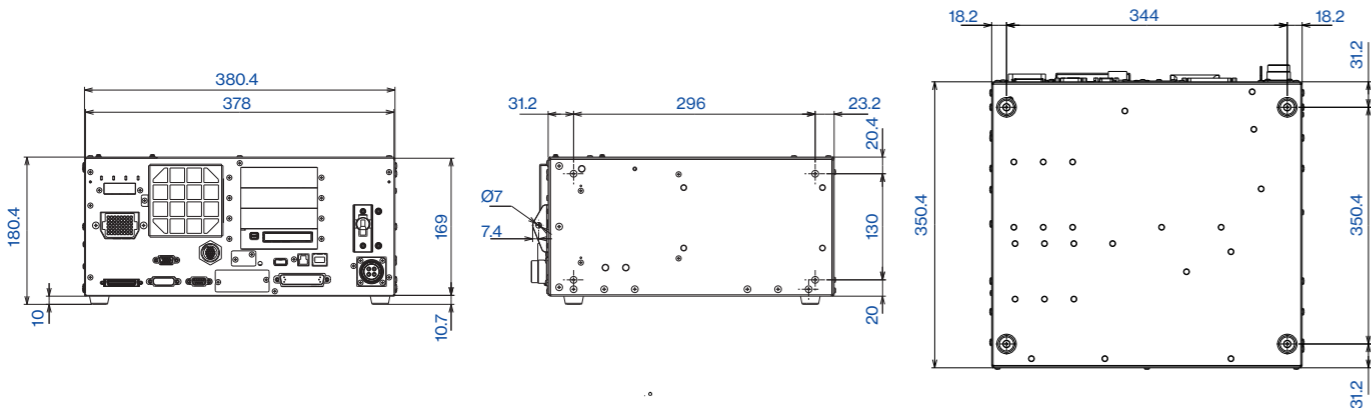
- Fieldbus I/O Slave
  - Dedicated slotted and installed directly from the front
  - Compact and affordable



RC800-A software/Manipulator support		
Software	Epson RC+8.0	
Manipulator	SCARA robots	GX series
		LS series
		RS series
		T series
	6-axis robots	C series
		N series
		VT series

\*GX-C series Only

Outer Dimensions [Unit: mm]



RC700-E

Multi-function Controller with Enhanced Safety

Safety board for flexible machine design



RC700-E software/Manipulator support		
Software	Epson RC+7.0 / 8.0	
Manipulator	SCARA robots	GX series
		LS series
		RS series
		T series
	6-axis robots	C series
		N series
		VT series

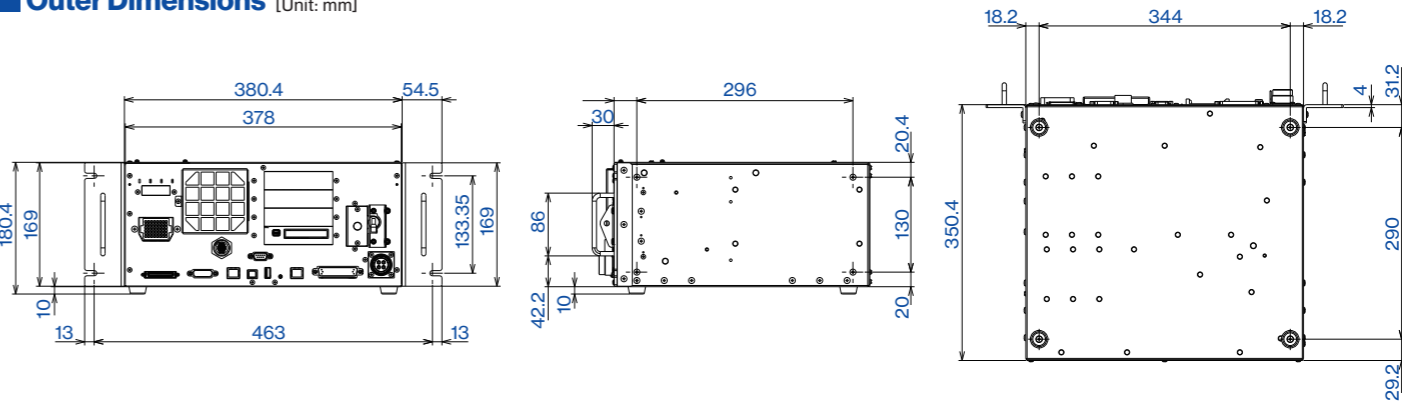
\*GX-A series is not supported

\*C-A series is not supported



The safety standards conformed to RC800-A, RC700-E, and manipulators for those controllers include "ISO" "NRTL"

Outer Dimensions [Unit: mm]



RC700-A

Multi-function Controller

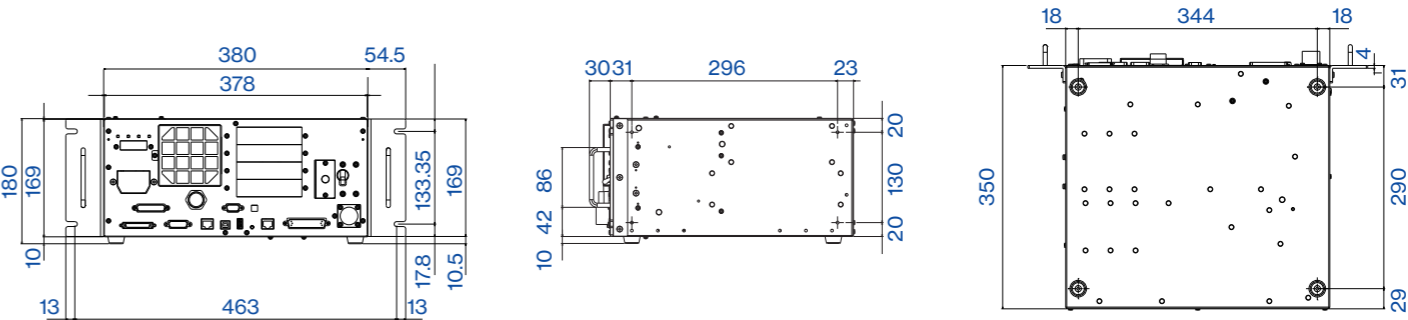
USB connectivity; easy setup Drive units can be added for multi-robot control

RC700-A software/Manipulator support		
Software	Epson RC+7.0 / 8.0	
Manipulator	SCARA robots	G series
		LS series
		RS series
		T series
	6-axis robots	C series
		N series
		VT series

\*C-B series is not supported



Outer Dimensions [Unit: mm]



RC700DU-A Controller for Multi-Manipulator Control

Connected to RC700-A controllers for multi-robot control

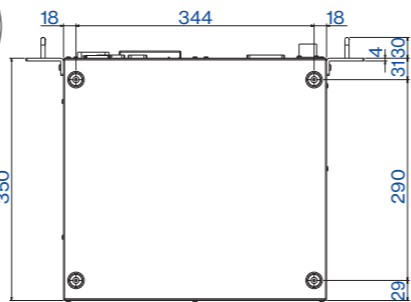
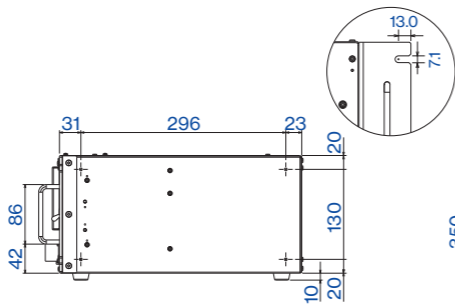
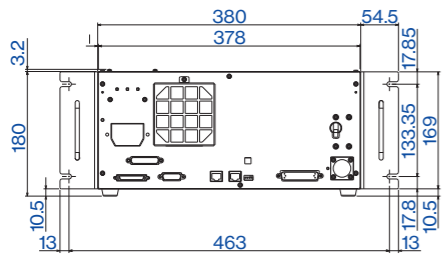
RC700DU-A software/Manipulator support			
Manipulator	SCARA robots	G series	●
		LS series	—
		RS series	●
		T series	—
	6-axis robots	C series	●
		N series	●
		VT series	—

\*C-B series is not supported

\*N2 is not supported



Outer Dimensions [Unit: mm]



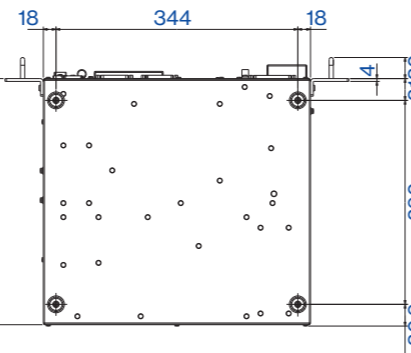
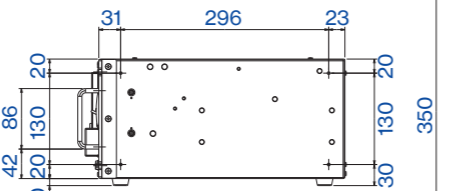
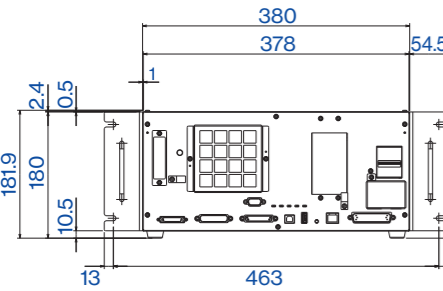
RC90-B Dedicated LS series Controller

USB connectivity; easy setup

RC90-B software/Manipulator support			
Software		Epson RC+7.0 / 8.0	●
Manipulator	SCARA robots	G series	—
		LS series	●
		RS series	—
		T series	—
	6-axis robots	C series	—
		N series	—
		VT series	—



Outer Dimensions [Unit: mm]



Specifications

	RC800-A	RC700-E	RC700-A	Drive units RC700DU-A	RC90-B
Controllable axes					
	Max. 4 AC servo motors	Max. 6 AC servo motors	Max. 6 AC servo motors		Max. 4 AC servo motors
Robot manipulator control					
Programming language and Robot control software	Epson RC+ 8.0	Epson RC+ 7.0 / RC+ 8.0			
Joint control	Max. 4 axes simultaneous	Max. 6 axes simultaneous	Max. 6 axes simultaneous		Max. 4 axes simultaneous
	Software AC servo control				
Speed control	PTP control: 1-100% / CP control: real speed setting				
	PTP control: 1-100% (auto acceleration) / CP control: real speed setting				
Positioning control					
	PTP (Point-To-Point control) / CP (Continuous Path control)				
Storage capacity					
	Max. object size: 4 MB Point data area: 1,000 points/file Backup variable area: Max. 768 KB (Include management table area) Approx. 4,000 variables are available. However, this varies depending on the size of array variables and other factors.	Max. 100 kB (including management table area) About 1,000 variables can be used. However, this varies depending on the size of array variables and other factors	Max. object size: 4 MB Point data area: 1000 points/file Backup variable area: Max. 100 KB (incl. control table) Approx. 1,000 variables are available. The number varies depending on the size of array variables	—	Max. object size: 4 MB Point data area: 1000 points/file Backup variable area: Max. 100 KB (incl. control table) Approx. 1,000 variables are available. The number varies depending on the size of array variables
External input/output signals (standard)					
Standard I/O	Input : 24 / Output : 16				
Real time - I/O	Input : 4	—			
Communication interface (standard)					
Ethernet	1 port			—	1 port
RS-232C	(Option)	1 port		—	1 port
Safety function					
STO*1	●				
SS1*2	●	—			
Safety I/O	●	—			
	Emergency Stop / Safeguard(SG)/Safety Door(Protective Stop) / Enable / "Speed monitoring in low-speed program verification function (T1 test mode) (250mm/sec or less)" / Soft Axis Limiting / Safety Outputs / SLS / SLP / Safety Outputs / SLS / SLP		Emergency Stop / Safeguard(SG)/Safety Door(Protective Stop) / Enable / "Speed monitoring in low-speed program verification function (T1 test mode) (250mm/sec or less)"		
Protective function					
	Low power mode / Dynamic braking / Overload detection / Torque error detection / Speed error detection / Position deviation overflow detection / CPU error detection* / Speed deviation overflow detection / Overheat detection /Memory error detection* / Fan error detection / Relay melting detection Overvoltage detection / AC power voltage detection / Temperature error detection				
Power source					
	AC200-240 V Single phase 50/60 Hz				
Weight (max.)*3					
	11 kg	12 kg	11 kg	9 kg	7.5 kg or 10 kg (depending on effector in use)
Mounting method					
	Flat, Vertical, Rack, Wall (option)				Flat, Vertical, Rack

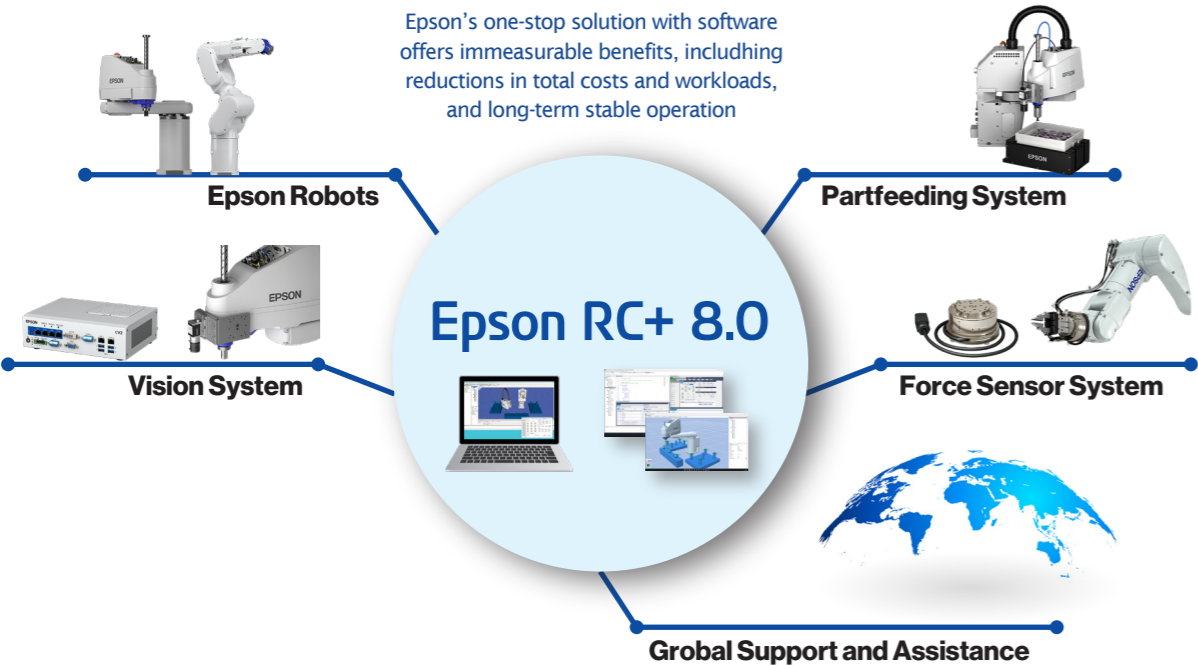
\*1 : Safe Torque Off : Shuts off power to the motor. \*2 : Safe Stop 1 : Shifts to STO state after control stops. \*3 : The Controller body is labeled with the weight. When transporting or relocating the Controller, check the weight and be careful not to hurt your back when lifting it. Also, be careful not to pinch or injure your hands, feet, or other body part due to dropping it.

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

Software

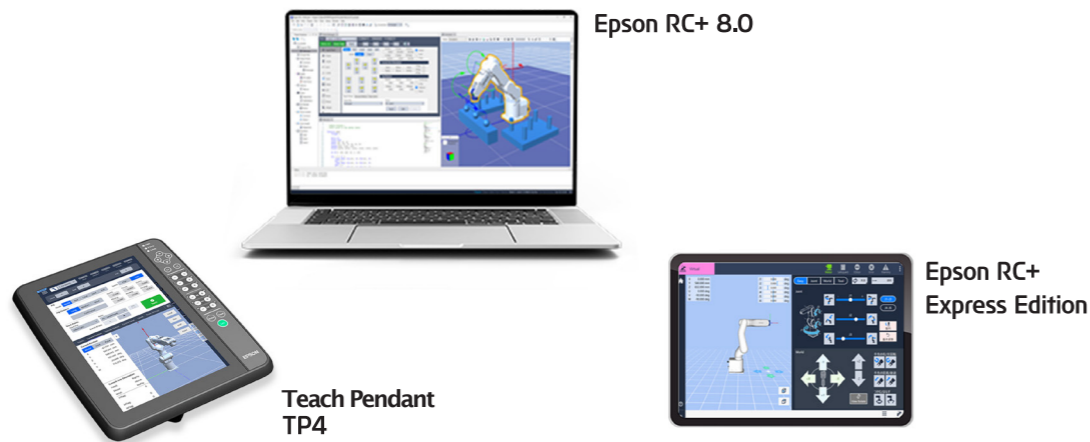
The Source of Epson Robot Ease of Use

Epson's software lineup has powerful, easy-to-use features for each of its user's demand. Minimize the time required to develop, debug, and operate and maintain robotic automation applications. In addition, unified usability allows users to move seamlessly back and forth between each software.



Unified and Sophisticated Usability

- Epson RC+ integrates a variety of options including Vision Guidance, Force Guidance, Conveyor Tracking, and Part Feeding.
- Epson RC+ Express Edition features an easy-to-learn, block-style robot teaching environment that is ideal for new users with limited coding experience.
- TP4, a highly functional Teach Pendant with built-in Epson RC+, is equipped with tools for intuitive teaching, program editing, debugging and creating GUI operate the workcell.

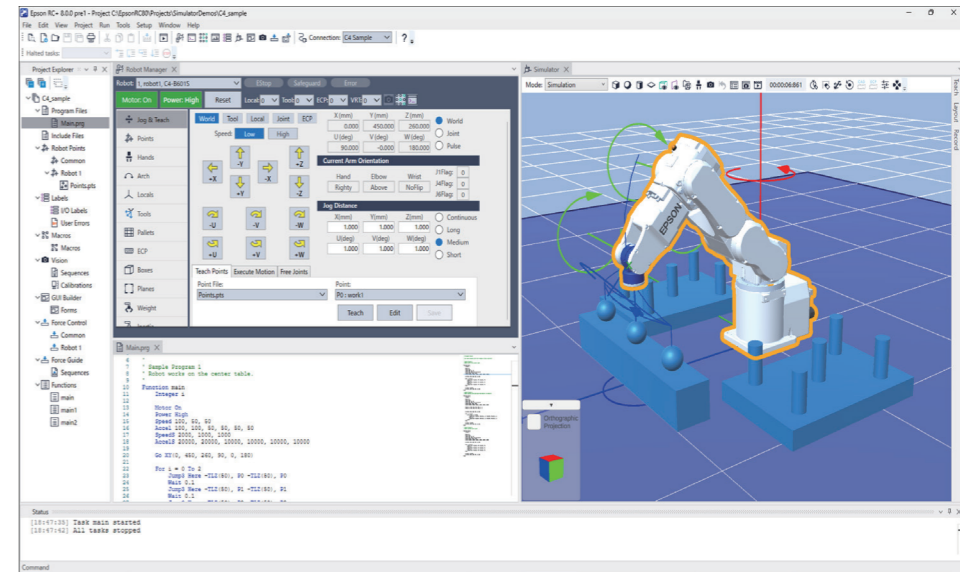


\*Users are required provide their own PCs and tablets.  
For recommended specifications, please check the manual.

Epson RC+ 8.0

About Epson RC+ 8.0

Epson RC+ is a software tool that supports various tasks from application conception and layout studies to operational design, debugging, and routine maintenance. An easy-to-understand GUI and a wealth of integrated options allow for maximum productivity with minimal programming workload.



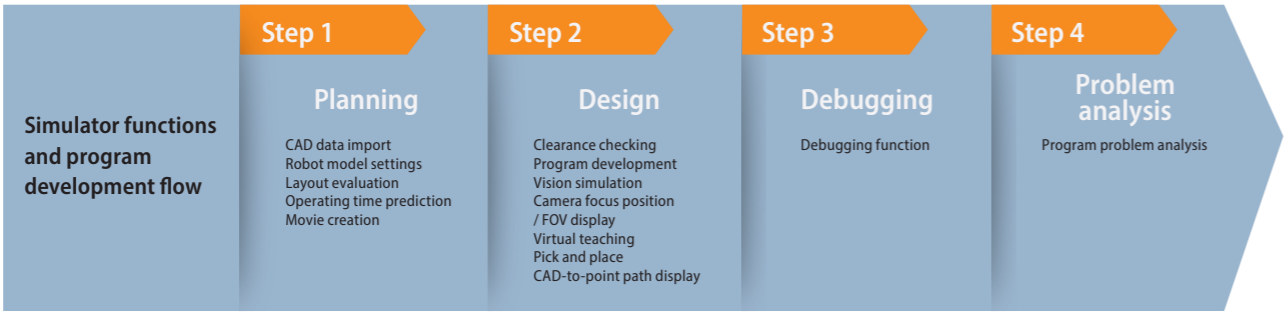
The Integrated Development Environment (IDE) Pursuing Efficiency

Epson RC+ software includes the following selected features to assist users efficiently develop automation solutions. it is the Integrated Development Environment (IDE) for beginners and experts alike.

Epson RC+ functions		
Robot programming functions	Project Data & Explorer Robot Manager Task Manager Jog & Teach Run Window Operator Window Coordinate Conversion Wizard Program Editor & Syntax Assist 3D Simulator I/O Monitor Variable Monitor	Simple teaching functions
		Jog & teach / Tool settings Local coordinate settings
Options	Software options RC+ API 7.0 GUI Builder ECP VRT	Maintenance and management functions
		Consumables management Controller settings backup
	Force-sensing systems / GUI Force Guide	Simulator functions
		Layout review / Interference checking programming / Debugging functions, etc.
	Image processing systems / GUI Vision Guide Catch-On-Fly OCR	

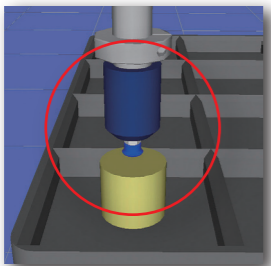
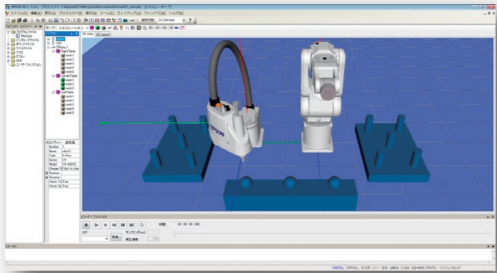
Simulator

The simulator displays a 3D view of the robot that enables you to thoroughly test programs and confirm robot motion and operating clearances in a virtual environment before putting them into use on the factory floor.



Layout evaluation

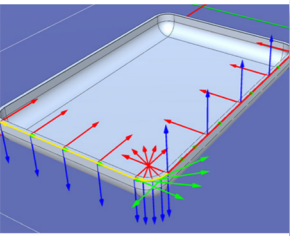
3D simulation of robot operation enables you to determine workcell space requirements and necessary clearances.



Enlarged view of effector

CAD data import

CAD data points for peripheral equipment and the effector can be imported directly to the simulator.

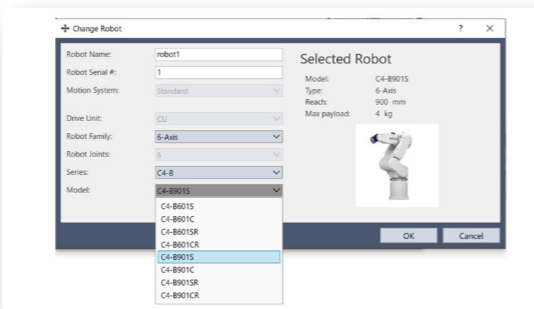


**Supported CAD data formats for 3D display**

- VRML 2.0  
Limitations: VRML 2.0 prototypes are not supported.
- STEP (AP203/AP214)  
Limitations: Only ASCII code files are supported. Face colors can be displayed only when specified in the imported data.
- IGES
- DXF  
AutoCAD® DXF formats (DXF R13, DXF R14, DXF 2000/2000i, DXF 2002)

Robot model settings

Workcell layout are easy because 3D data is built into the software.



Robot operating time prediction

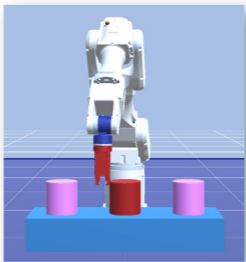
Robot operating time can be predicted based on motion speed and acceleration settings.

Still image / movie creation

Simulation results can be displayed as movies or still images that can be used as tools for evaluation, debugging, and information sharing.

Clearance checking

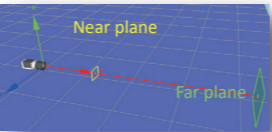
Clearances can be checked to ensure that the effector and arm do not interfere with the robot body or nearby equipment.



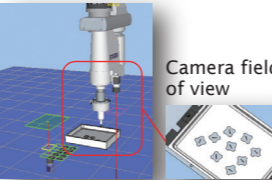
Program development

Programs can be written in SPEL+ and executed within the simulator.

Camera and field of view positioning



The simulator displays the position and angle of view for the selected camera and lens, making it easy to check camera positioning.

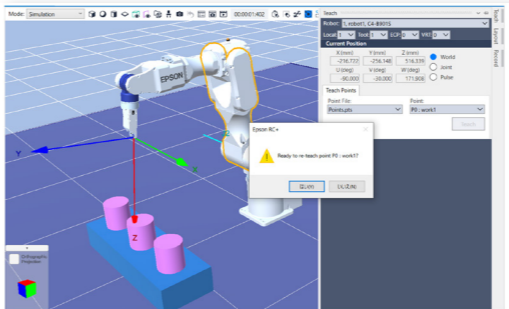


An image of the camera's field of view can also be displayed to facilitate positioning of workpieces and nearby equipment.

\*Please note that live camera image display and Vision Guide connectivity are not supported, and displayed images cannot be image processed.

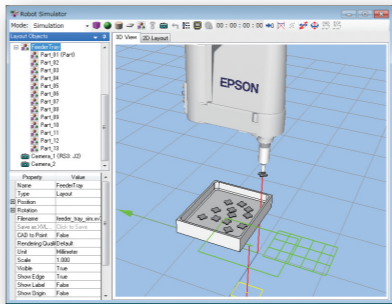
Virtual teaching

Teaching can be carried out within the simulator by positioning the robot with CAD data.



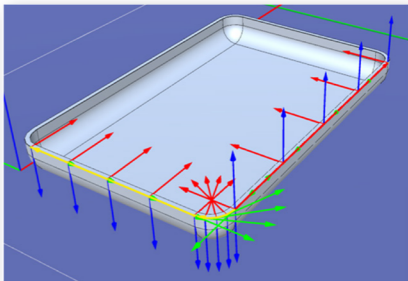
Pick and place

Pick and place program CAD data can be evaluated in the simulator to ensure nearby equipment does not interfere with arm movement.



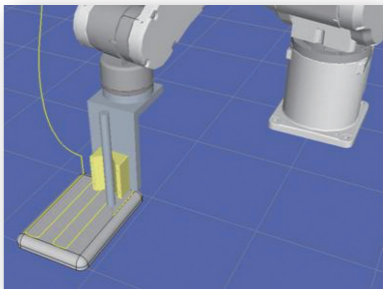
CAD-to-Point teaching

Teaching points can be set using imported CAD data.



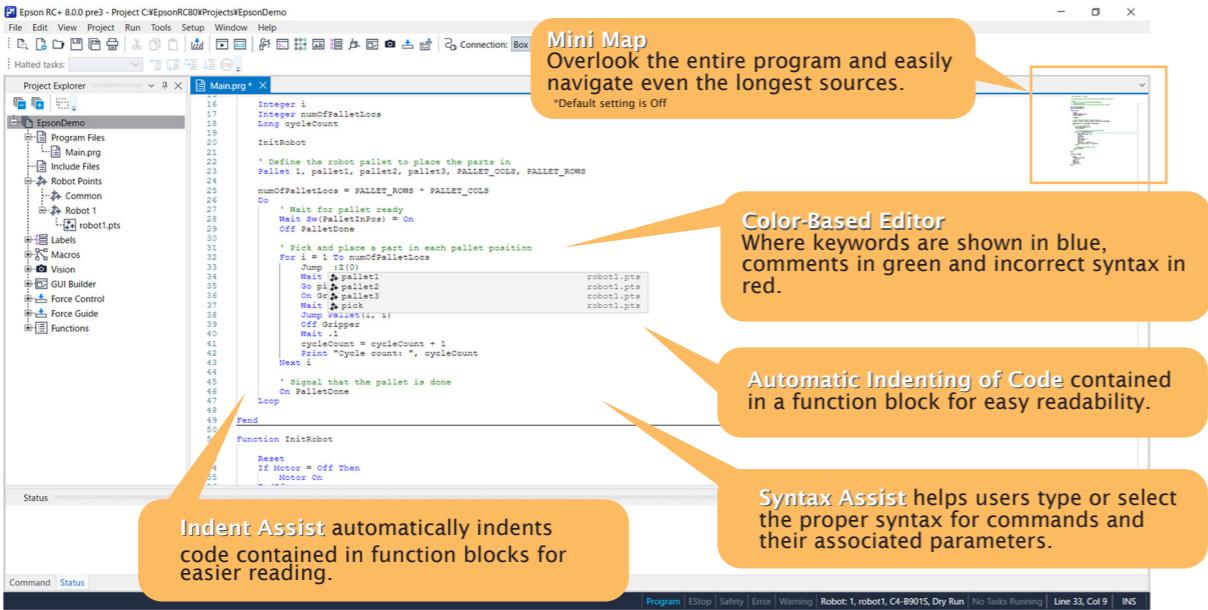
Path display

Robot motion paths can be displayed to confirm teaching points and programs.



Editor Auto-assist makes editing easier than ever

Epson RC+ includes powerful editing capabilities to minimize mistakes and streamline program development. In addition to basics such as cut, copy and paste, it also includes indent assist, syntax assist, syntax highlighting, comment blocks, indent/outdent, find/replace and more.



**Mini Map**  
Overlook the entire program and easily navigate even the longest sources.  
\*Default setting is Off

**Color-Based Editor**  
Where keywords are shown in blue, comments in green and incorrect syntax in red.

**Automatic Indenting of Code**  
Code contained in a function block for easy readability.

**Syntax Assist**  
Helps users type or select the proper syntax for commands and their associated parameters.

**Indent Assist**  
Automatically indents code contained in function blocks for easier reading.

SPEL+ language

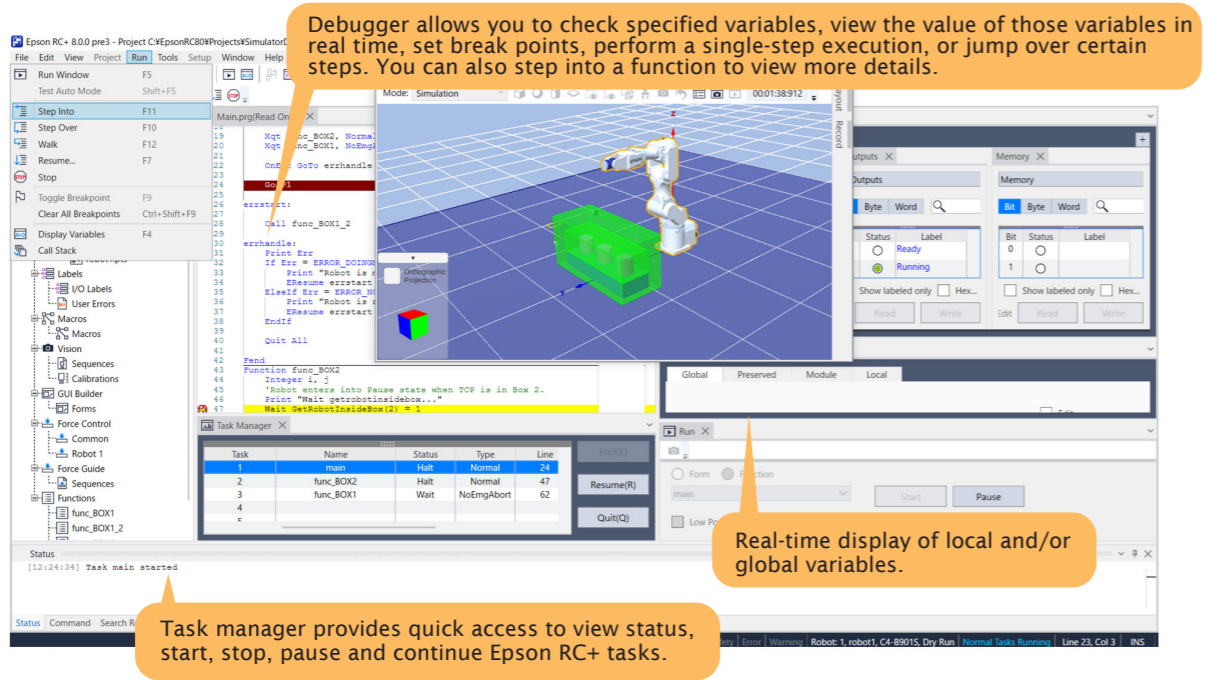
Easy-to-learn SPEL+ programming is similar to BASIC, and provides full support for multitasking, motion control, I/O control, and a wide range of other functions.

Remote control expansion I/O

Using the remote control expansion I/O, the robot can be controlled simply by entering I/O commands — there's no need for complex program development.

Integrated Debugger Easily test programs and identify problems

The integrated debugger offers many clever ways to check the status of your program or identify issues you may find while running it.



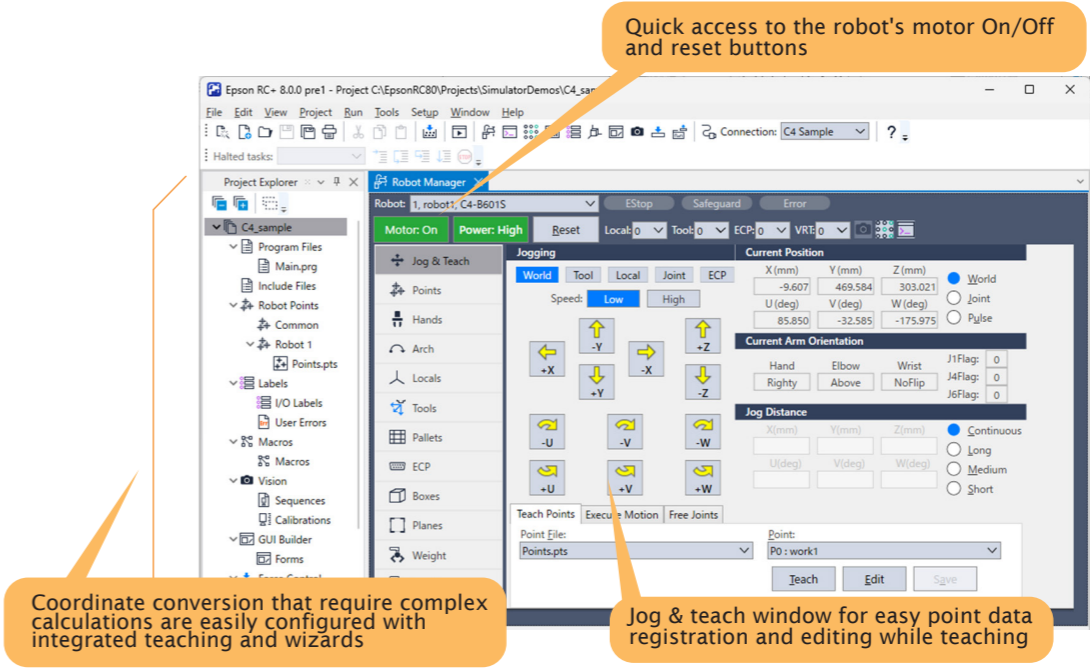
**Debugger**  
allows you to check specified variables, view the value of those variables in real time, set break points, perform a single-step execution, or jump over certain steps. You can also step into a function to view more details.

**Real-time display of local and/or global variables.**

**Task manager**  
provides quick access to view status, start, stop, pause and continue Epson RC+ tasks.

Robot Manager Simple and high functionality

Robot Manager, integrates a variety of functions related to robot operation into a single system, is an intuitive graphical interface that enables users to manage functions and wizards to simplify automation tasks.



**Quick access to the robot's motor On/Off and reset buttons**

**Coordinate conversion**  
that require complex calculations are easily configured with integrated teaching and wizards

**Jog & teach window**  
for easy point data registration and editing while teaching

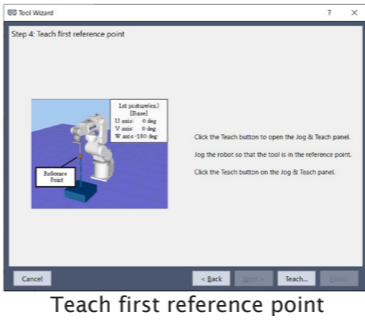
Palettes and entry area definitions can be easily configured with integrated teaching and wizards

Tool Wizard

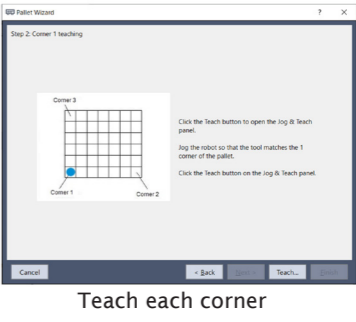
Enables you to define a tool - oriented coordinate, complicated end effector setting can be quickly.

Pallet Wizard

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



Teach first reference point




Teach each corner

Plane Wizard

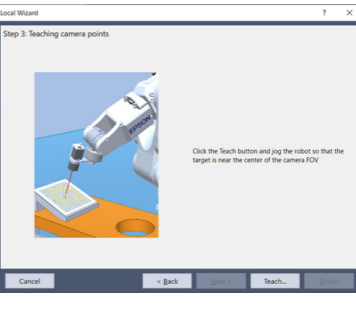
Enables you to check effector approach within an arbitrarily defined area or plane to prevent interference with other robots or peripheral equipment, and to restore effector position after an error occurs.

Local coordinate settings

A local coordinate system can be defined relative to the base coordinate system, enabling you to define workspaces based on angled coordinate systems or CAD point data.



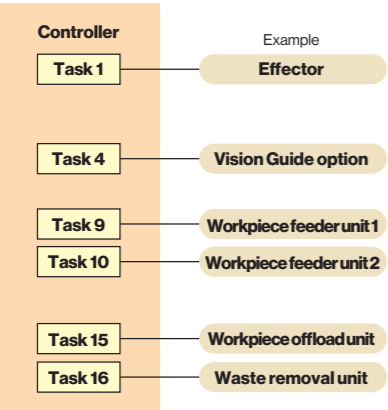
Teach plane origin point



Local coordinate settings

Multitasking function

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



Operating speed and acceleration/deceleration settings

Operating speed and acceleration/deceleration of the arm can be set in 100 steps.

- PTP motion** Maximum point-to-point speed is set as a percentage relative to the maximum acceleration speed. Ascent and descent speeds can also be set.
- CP motion** For continuous path motion, maximum effector speed and acceleration/deceleration speed can be set in mm/sec<sup>2</sup> increments.

Positioning completion time control for maximum efficiency

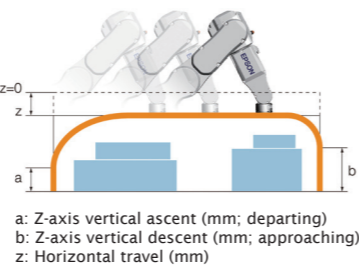
A time limit can be set for the completion of effector positioning to enable the next instruction to be executed even if the target point has not been reached. This allows you to maximize your yield by prioritizing takt (cycle) time over precision, or vice versa, according to the nature of the work to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

High repeatability with varying payloads and effector orientation

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

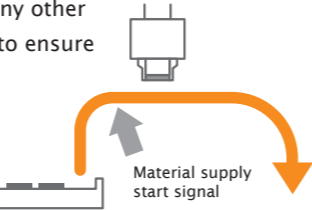
3D jump with variable arch for ultra-precise short-distance movement

EPSON SCARA and ProSix 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 regulated without interrupting operation, ensuring smooth, precise, short-distance motion that helps improve takt time and product quality stability.



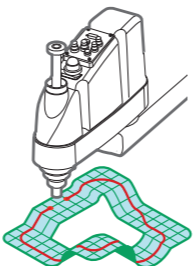
Parallel processing for higher speed and efficiency

Parallel processing enables you to control peripheral devices while the robot arm is in motion. Commands can be sent via RS-232C or any other supported I/O interface to ensure synchronized control of multi-device processes for maximum throughput efficiency.



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.



Continuous path (CP) control

Configuration singularity avoidance function

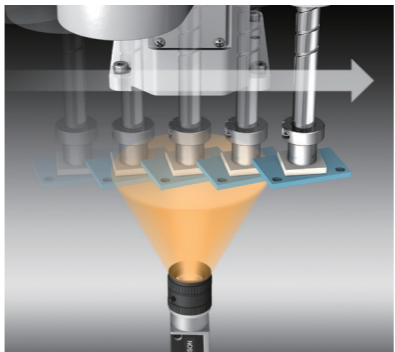
Continuous path operations that contain robot arm configuration singularities can cause joint-speed overrun. If the arm approaches such a configuration, the singularity avoidance function prevents overrun errors by maintaining joint speed until the arm has moved past the point of singularity.



On-the-fly pickup

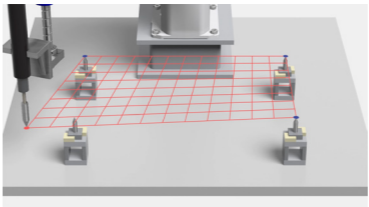
Workpiece pickup, alignment, and kitting can be carried out on-the-fly without pausing robot movement. Combined with an imaging system, it makes an ideal solution for high-speed alignment and handling of randomly arranged workpieces.

\* RC700 controllers only.



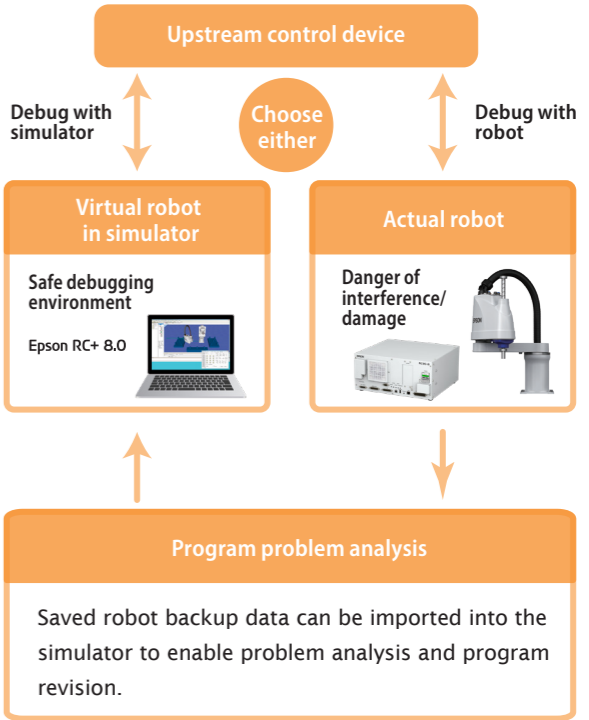
Area distortion correction

By using relationship between reference points on a drawing and actual teaching coordinate of these points, correct the target points bounded by the reference points. Re-teaching can be omitted even if absolute coordinates of target points are shifted due to change over and the like.



Debugging function

Programs can be run within the simulator, allowing full debugging without a robot. Virtual I/O control can be effected by entering values from a PC via RS-232C or TCP/IP.

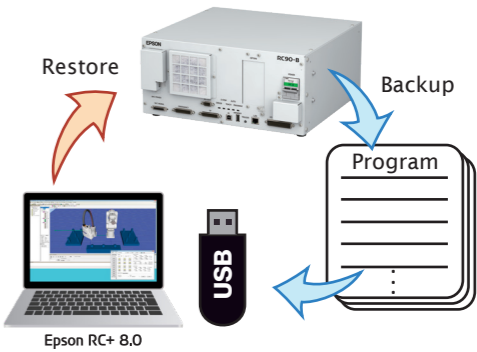


Consumables management

Enables you to set recommended maintenance alarms based on operating time or distance for batteries, grease, timing belts motors, brakes, and ball screw splines.

Controller settings backup

Controller settings and programs can be backed up to a PC or USB memory to facilitate offline analysis and enable quick restoration when needed.



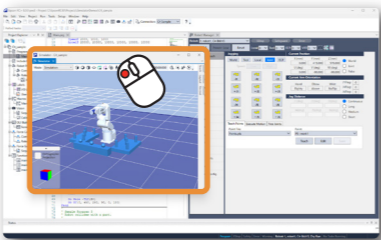
Epson RC+ 8.0 Features

NEW

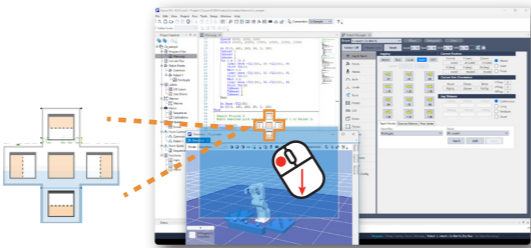
Window Layout In the office, on site, anywhere

- Various information needed for debugging is displayed in any window layout.
- For better listing, variable displays and task status windows can be docked, and floating simulator screens can be displayed on multiple displays.
- You can register and recall your preferred layout.

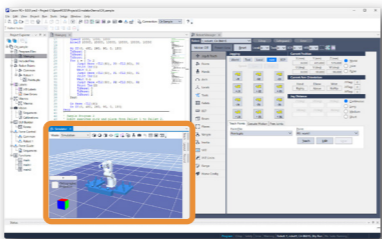
1, Drag the window of the invoked function.  
(e.g. Simulator)



2, Move the window to the location where you want to place it, a cross icon will appear indicating a docking candidate.  
(Up, down, left, right, tab)



3, It is very easy to layout to your liking without the need to adjust window size individually.  
You can save and apply your favorite layout setting.



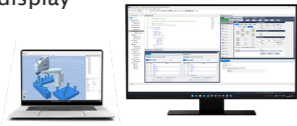
NEW

Optimal Working Environment in Every Situation

On site: Condensed information required for equipment start-up process



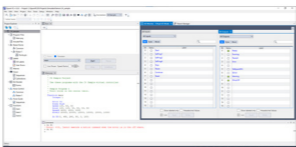
In office: Efficient coding and simulation with multi-display



When programming robot motion: Editor, Jog & Teach, Simulator, etc.

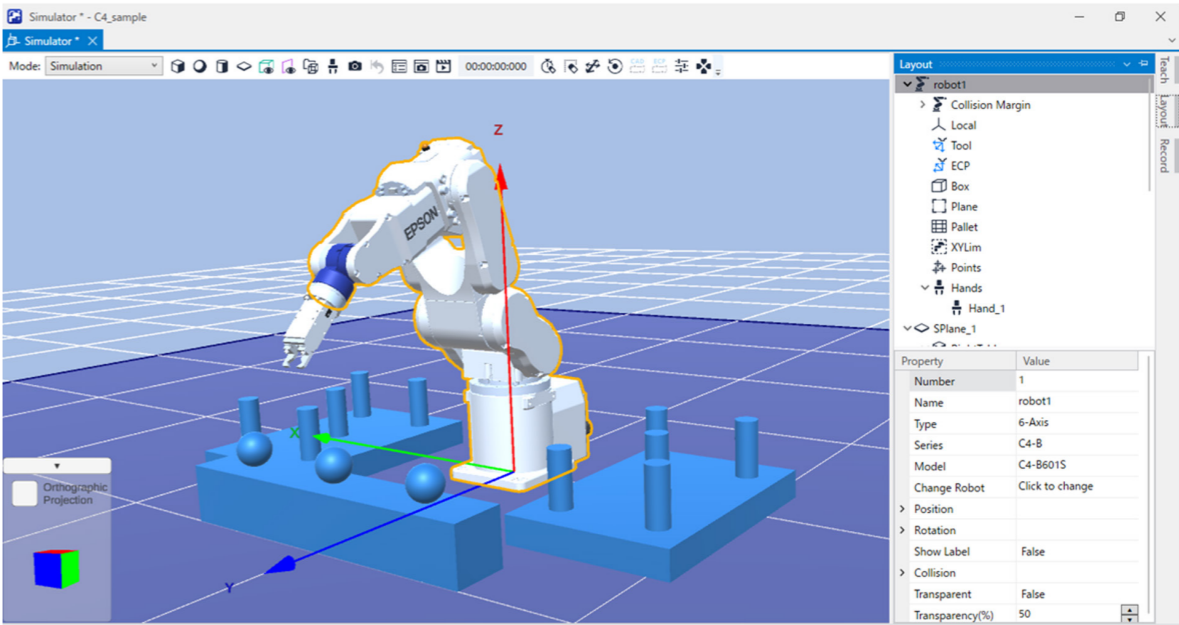


When debugging: Editor, I/O Monitor, Command Window, etc.



3D Simulator Build and fine-tune your application before hardware setup

Even before the equipment is set up, the construction of the application allows for verification and adjustment. The new 3D simulator Epson RC+ 8.0 allows you to move viewpoints and objects more easily than in previous versions. Layout conception, programming, and even debugging can now be performed in a clearly visualized virtual environment. You can program your work cell, upload CAD models, test different end-of-arm tools, and add additional components like a table, feeder, or various types of guarding - all in real time.



Features Include

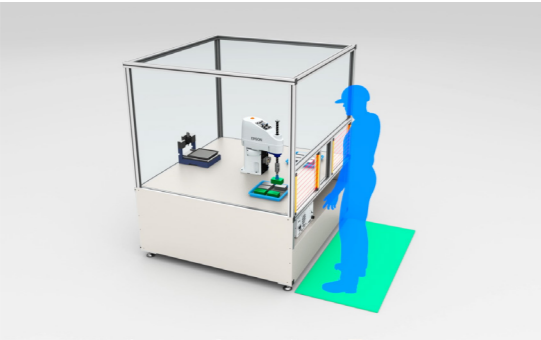
- Cycle-time Calculation  
Calculate cycle time based on real application execution
- Offline Application Checking  
Programs can be created and debugged from standalone PCs  
Debugged programs can be rolled out directly to plant floor workcells
- Machine Vision Simulation  
Machine vision image processing input can also be used within simulations
- Record and Playback Functions  
Recording and playback functions make it easy to include images and movies in presentations
- Clearance Checking  
Choosing the right robot is easy because you can check all necessary workcell and peripheral equipment  
Robot motion trajectories can be displayed, facilitating off-line teaching and debugging

Epson’s RC800-A and RC700-E controller enhanced the safety of Epson robots.<sup>(\*)1</sup>  
By activating Safety Function 7.0 /8.0 License(SLS/SLP), it becomes possible to utilize the optional safety functions which can contribute to realize more flexible layout system which allows robot and human to work in the shared space.<sup>(\*)2</sup>

Optioned Safety Function

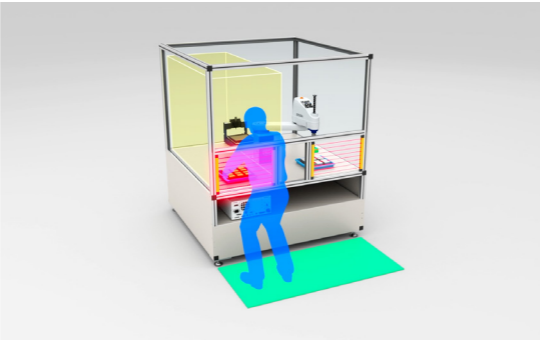
Safety Limited Speed ( SLS )

Safety Limited Speed(SLS) is a function to monitor the speed of the robot to prevent the robot from exceeding the preset speed limitation.  
By using this function together with external safety devices like safety mat, It is possible to decrease the speed and keep in motion when the human’s approach is detected.



Safety Limited Position ( SLP )

Safety Limited Position(SLP) is a function to monitor the robot’s position and the joint angles to prevent the robot from entering in the preset restricted area.  
By using this function together with external safety devices like light curtain, it is possible to set the area where the human exists as a restricted area for the robot.



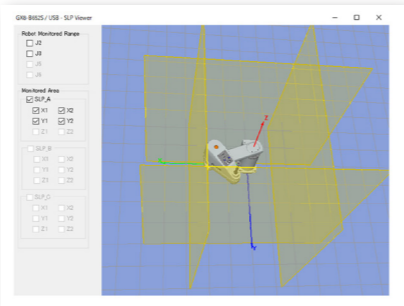
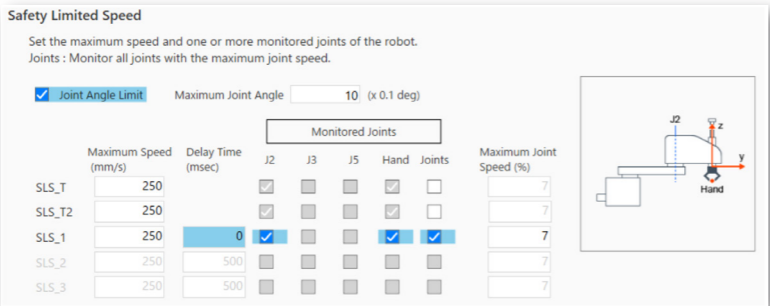
Example of Productivity Improvement and Cost Reduction by utilizing SLS and SLP

Make the manual work in the robot’s motion area possible while the robot is kept operating  
In the application that robot assembles the parts in the robot cell and human sometimes enter in the cell to load or unload the parts, if you used the robot without SLS and SLP function, the productivity of the system would be low because the robot must stop its operation during the human is working in the cell to keep his or her safety. It is possible to improve the productivity by adding

load/unload unit, but the cost of the system becomes higher, and the system size becomes bigger,  
By utilizing SLS and SLP, it is possible to keep the productivity and safety at the same time without using special load/unload unit. When a human come close to the cell, the SLS is activated to slow down the robot speed. And when the human enters in the cell to do load/unload work, SLP is activated to set the human’s working area as a restricted area for the robot.

Software Tool for Safety Function

Safety function setting tool called “Safety Function Manager” is provided as a standard tool of Epson RC+  
It is possible to assign safety I/O port and set SLS/SLP parameters with this tool.



Solutions to balance Safety, Productivity, and Cost

- Productivity -

Impact of safety considerations on productivity

- Without Safety Function -

In the case of installing the system with safety door, which requires an operator to do load and unload of the workpiece. To ensure safety, the system must be stopped every time when operator works inside of equipment.

- Before -



Benefits of adopting Safety Function from a productivity perspective

- With Safety Function -

It’s unnecessary to stop the system every time to remove workpiece to ensure safety. Ensure user safety without sacrificing productivity.

- After -



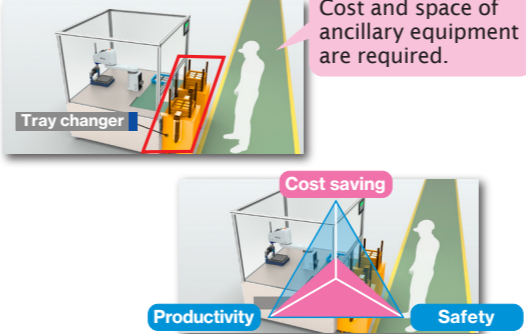
- Cost -

Impact of safety considerations on cost

- Without Safety Function -

To improve productivity, there is a way to use tray changer, but the cost of the system and installation may increase. In addition, required space is increased.

- Before -

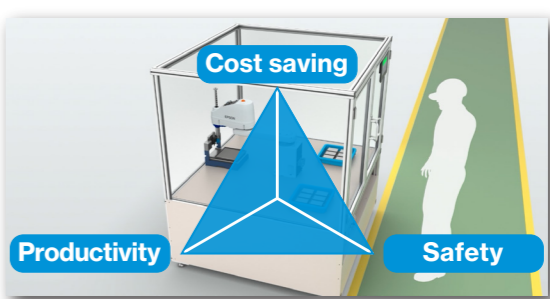


Benefits of implementing Safety Function from the cost saving perspective

- With Safety Function -

The system can be simplified; installation space and the system cost can be reduced.

- After -



Certification Provided by 3rd Party Testing Institute

Epson’s manipulators<sup>\*1</sup> and controllers<sup>\*3</sup> acquire the 3rd party certification by TÜV SÜD, international certification authority, for international standards of product safety such as ISO10218-1 and ISO13849-1(PLd, Cat3) and NRTL certification, which is the safety standard in North America.



\*1 The supported model: SCARA robot “GX-B series” “GX-C series”, 6-axis robot “C-B series”

\*2 Epson’s safety function is not “collaborative” function.

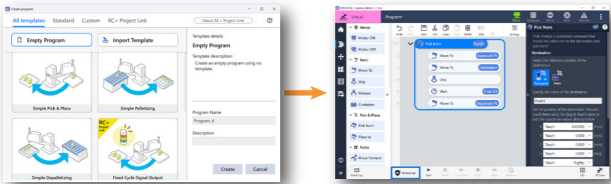
When building the system, please implement the risk assessment for your system, and consider the necessary safety measures

\*3 The supported controller : “RC800-A” and “RC700-E”

Easy to Use Software Epson RC+ Express Edition

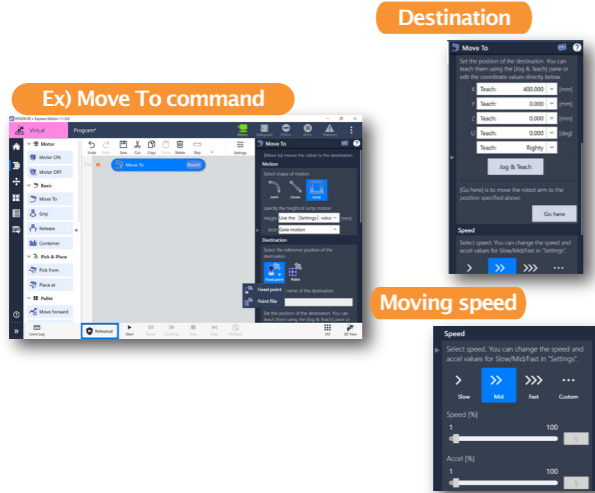
Program Template

- Premade template to create the simple program quickly. Pick-and-place, Palletizing, Depalletizing, etc.
- Complete the program simply by adding the location information for each command.



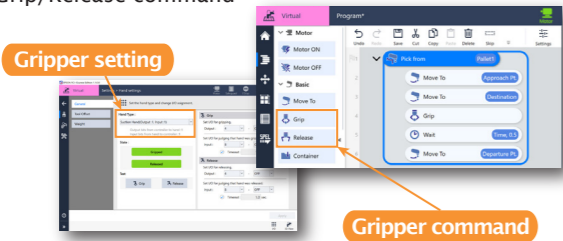
User Guidance

- When selecting a command, required setting items are displayed automatically
- Optimal preset parameters to minimize the items to set.



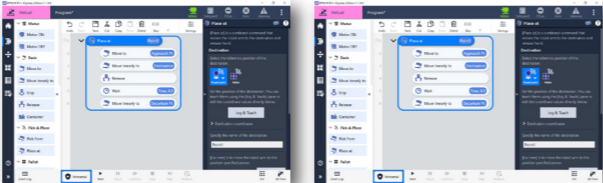
Gripper Setting

- Template and guidance for setting gripper motion in a short time. Suction pad, mechanical chuck
- Gripper operation is available from the program without being aware of I/O control Grip/Release command



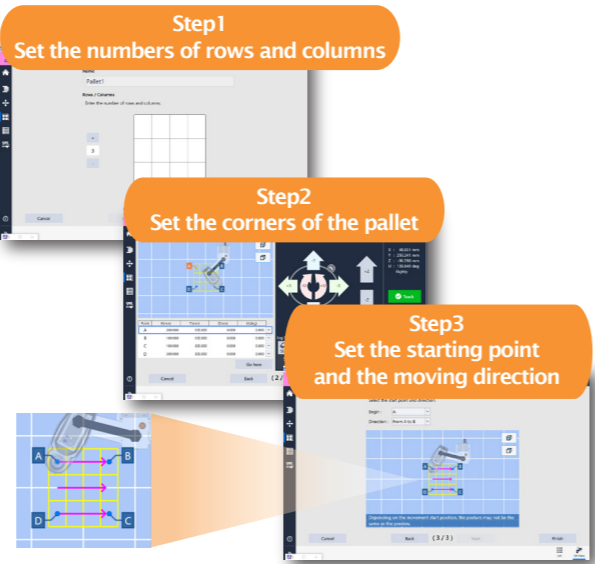
Visual Programming

- Block-style low code programming language. User friendly GUI operatable from the tablet PC with drag-and drop.
- Epson RC+ Express Edition has the ability to convert commands into SPEL+ (Epson standard robot programming commands). Programs created with Epson RC+ can be imported into Epson RC+ Express Edition as commands.



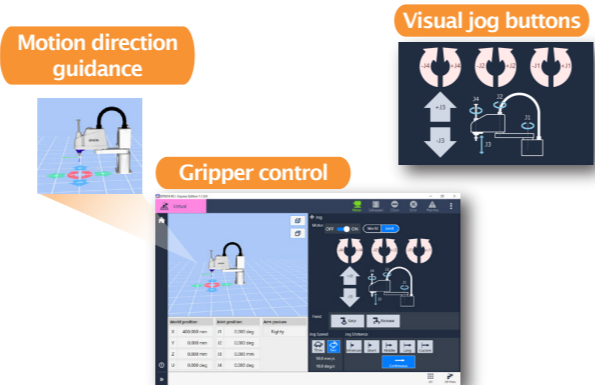
Pallet Wizard

- Possible to create a pallet in 3 steps.
- Easy to understand start point and direction.



Visualized Jog & Teach

- Intuitive GUI helps to reduce teaching difficulty and time. Visual jog buttons, Gripper control, Motion direction guidance

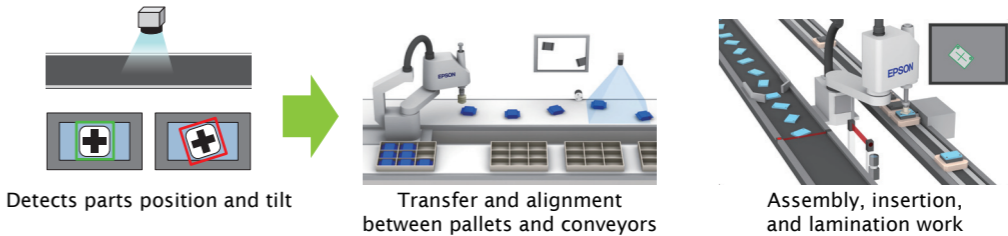


By linking Epson robots with cameras and image processing equipment, features and positions of objects can be instantly captured, enabling complex operations. This not only improves work efficiency but also reduces costs by eliminating the need for specialized jigs and line extensions.

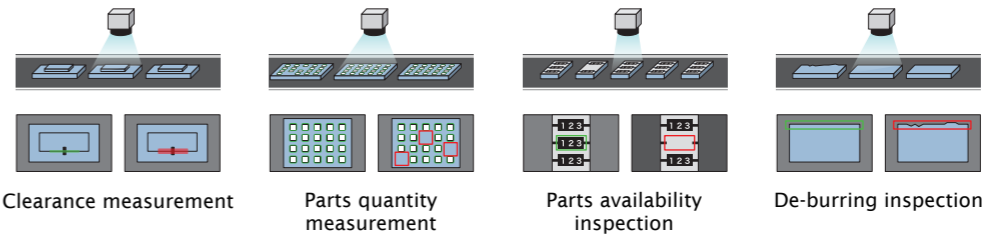
01 Vision Guide

Examples of Image Processing System Applications

Positioning application examples

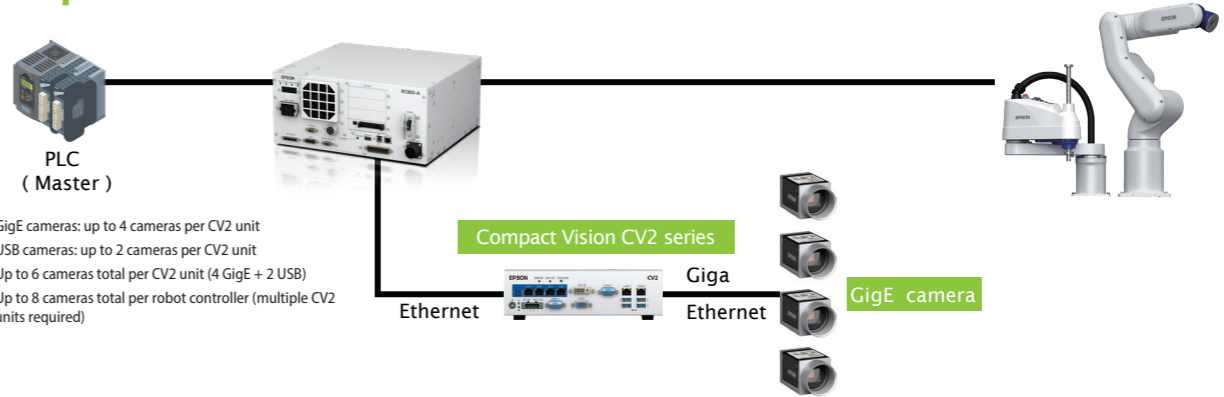


Other application examples

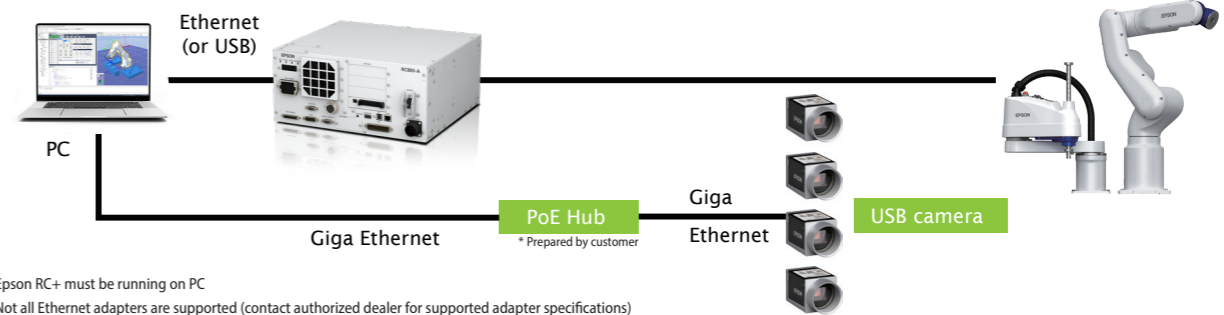


System configuration examples

Compact Vision



PC Vision



\* Epson RC+ must be running on PC  
\* Not all Ethernet adapters are supported (contact authorized dealer for supported adapter specifications)  
\* Up to 8 cameras total per robot controller

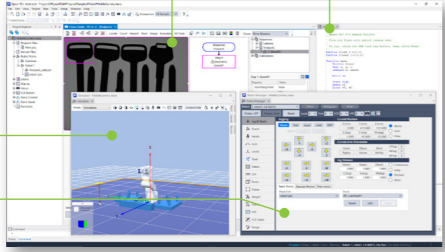
Image Processing Software “Vision Guide”

Epson's Vision Guide is a simple and easy image processing system linked with a robot. It can be used for early equipment start-up.

Convenient programming environment

Robot and vision programs can be developed on the same software.


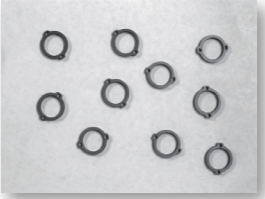
- Robot & Vision programming
- Vision Guide
- Simulator
- Jog & Teach



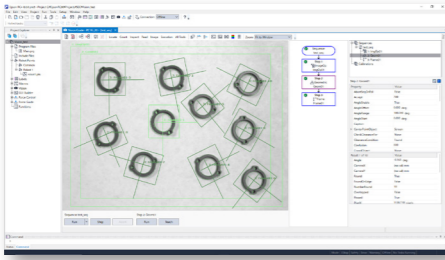
Vision simulation

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 offline.



PC



Offline vision processing evaluation

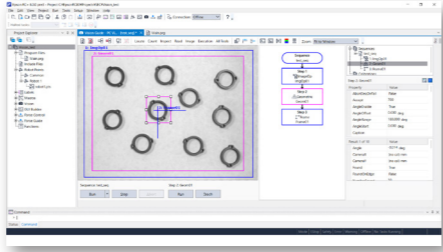
One-stop service

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.

Easy-to-use GUI

Easy registration and configuration of vision objects (tools to perform, detection, inspection, measurement, counting, etc.)

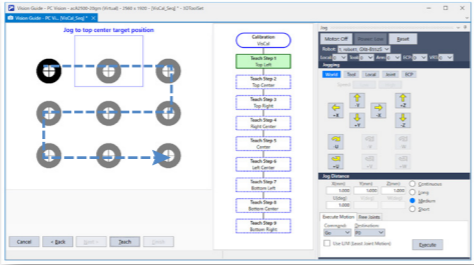

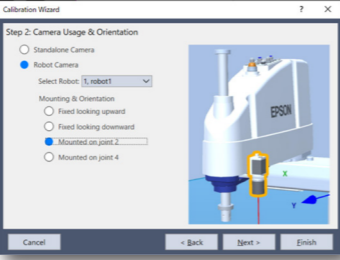
- Registration of vision objects is done only by mouse operation (drag & drop)



Easy calibration

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

Camera Calibration Wizard



The robot automatically<sup>\*1</sup> follows the steps in the Calibration Wizard to complete the calibration.<sup>\*2</sup>

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

- Robot coordinates and camera coordinates can be easily aligned by simply teaching the robot according to the wizard.
- Creation of image processing sequences by simply placing detection tools and setting parameters with the mouse.
- Execution of image processing from robot language commands without communication programs.

CV2 series			
Item	CV2-LB	CV2-SB	CV2-HB
Image processing speed	Entry	Standard	High speed
Connected cameras	up to 4 GigE cameras and 2 USB cameras (6 cameras total per CV2 unit) (all cameras must be compatible with Vision Guide)		
Interface	Ethernet (for robot controller: 2 RJ45 selectable ports [10 / 100 / 1000 Mbps]) (for GigE cameras: 4 RJ45 selectable ports [1000 Mbps])		
Dimensions (mm)	232 (W) x 175 (D) x 70 (H) (excluding rubber feet)		
Operating environment	5-40°C, 20-80%RH (no condensation)		
Installation direction	horizontal or vertical		
Voltage	DC 19-24 V		
Current	8 A (at DC 19 V) - 6.3 A (at DC 24 V)		
Weight	2.1 kg		

GigE cameras				
Camera resolution	1.3 megapixels	2 megapixels	5 megapixels	20 megapixels
Vision Guide resolution	1280 x 1080	1600 x 1200	2560 x 1920	5472 x 3648
Black & White / Color	B&W	B&W / Color	B&W / Color	B&W / Color
Dimensions (mm)	housing dimensions: 29 x 29 x 42 (total dimensions: 29 x 29 x 60.3)			
Weight	90 g (excluding lens)			
Ambient temperature	0-40°C (external surface temperature below 50°C)			
Ambient humidity	20-80% (no condensation)			
Lens mount	C mount			
Interface	PoE (Power Over Ethernet)			
Camera cable length	5 m / 10 m			

Note : 12 megapixel camera available: Customer must provide their own camera.

Camera performance by CV2 system				
Item	Resolution	CV2-LB	CV2-HB, CV2-SB	PV1
GigE cameras	1.3 megapixels	B&W		
	2 megapixels	B&W / Color		
	5 megapixels	B&W / Color		
	20 megapixels*1	B&W / Color		

<sup>\*1</sup> Requires RC+ 7.4.5 or later and CV2 firmware 3.1.1.0 or later  
Note : 12 megapixel camera available: Customer must provide their own camera.

Megapixel lenses																
Item	Megapixel lenses					Megapixel lenses (HF)					1-inch lenses					
Focal length (mm)	8	12	16	25	50	8	12	16	25	35	8	12	16	25	35	50
Minimum focus distance (mm)	0.1	0.15	0.3		0.5	0.1				0.2	0.2	0.3				0.5
Mass (g)	62.6	61.9	60	71.2	85	95	85	90	85		164.8	102.8	94.4	78.6	103.0	107.0
Filter diameter (mm)	M30.5 × P0.5					M30.5 × P0.5					—	M40.5 × P0.5	M34.0 × P0.5			
External dimensions* (mm)	ø 33.5 × 28.2		ø 33.5 × 36.0	ø 33.5 × 38.2	ø 33.0 × 48.5	ø 33.0 × 52.5		ø 33.0 × 53.1		ø 57.5 × 53.2	ø 42.0 × 36.1	ø 39.5 × 35.2	ø 39.5 × 34.0	ø 39.5 × 45.2		

<sup>\*</sup> As lenses are larger than camera bodies, protrusions on camera attachment surface may interfere with lens operation. In such case, use the optional camera bracket to ensure that protrusions do not affect lens operation.  
Note : Lens support varies according to camera type. Contact your local Epson dealer for details.

Other Options

Extension tube set	Can be inserted between the camera and lens to adjust focusing distance and field of view. This set includes 0.5, 1, 5, 10, 20, and 40 mm tubes (1 each). Tubes can be used singly or in combination to obtain the desired focusing distance.
High-flex GigE camera cable (5 m / 10m)	Cable for connecting GigE cameras to CV2, GigE camera PoE injector, or switching hub.
High-flex GigE camera trigger cable (5 m / 10 m)	Camera triggering cable for connecting GigE cameras to robot controller.
CAT5e Ethernet cable (5 m / 10 m)	Cable for connecting robot controller to CV2, GigE camera PoE injector, or switching hub.
GigE camera tripod adapter	1/4-inch threaded adapter for attaching a GigE camera to a tripod.

  |

Epson part feeding delivers a powerful solution to accomodate a wide variety of parts.  
Simply setup, improve flexibility.

02 Part Feeding

System Configuration

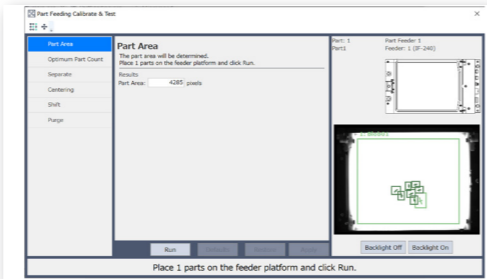


Automatic calibration shortens time from development to production

Until now, calibration work was performed by skilled workers through trial and error. Epson's parts feeding system automatically calculates the optimum conditions, greatly reducing development man-hours. In addition, up to 32 part conditions can be registered in the system, allowing easy switching on the program. Multiple parts can be handled by a single feeder, contributing to improved productivity and cost reduction.

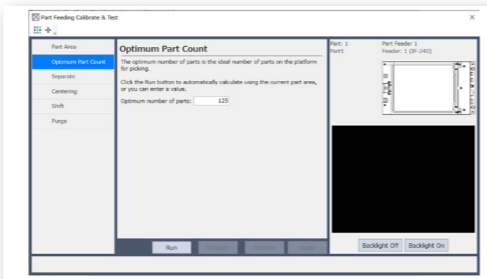
1, Set part area

Measure the area (number of pixels) of a single part with a camera (imaging system)



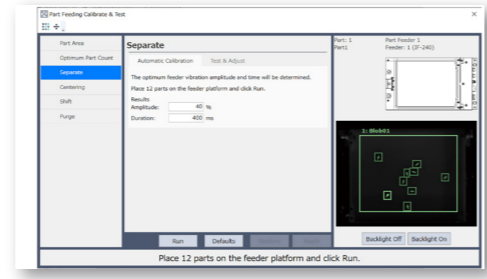
2, Calculate the optimum number of parts

Automatically calculates the optimum number of parts to be fed based on the information in 1.



3, Automatic calibration

Repeat image processing to set optimal parameters (amplitude, vibration time) for workpiece separation. Centering and shifting parameters can also be set automatically. GUI allows manual fine-tuning of parameters and test operation with simple button operation



Automatic decision making and execution

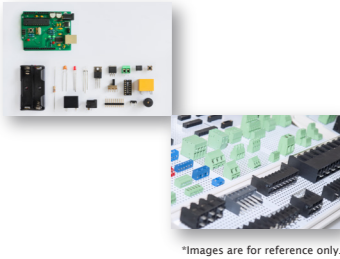
Four preset operations are executed as appropriate for the situation, enabling efficient pick-and-place operations.



Automatically determines and executes four actions according to the parts position





Supports a wide variety of parts

The amplitude, time, and timing of vibration can be precisely controlled and can be applied to a wide range of materials and shapes of parts. Since there is no need to prepare a dedicated feeder or perform special processing for each part, this system reduces running costs with factories that need to switch models.



\*Images are for reference only.

Parts Feeding System Configuration List	
Item	Specification
Applicable Robot Controller	RC800-A, RC700, RC700-A, RC700-E, RC90, RC90-B ( Depends on the manipulator )
Applicable Manipulator	GX series, G series, LS series, T series, RS series, C series, VT series, N series,
Applicable Vision	PV1, CV2
Applicable Feeder	IF-80, IF-240, IF-380, IF-530 ( See table below )
Safety Standard	CE

Feeder Specification				
Item/Specification	IF-80	IF-240	IF-380	IF-530
				
Part Size	3~8 mm	5~40 mm	15~60 mm	30~150 mm
Vibration Surface (L x W)	65 x 52 mm	195 x 150 mm	325 x 254 mm	427 x 370mm
Footprint (L x W x H)	320 x 65 x 140 mm	300 x 171 x132 mm	499 x 257 x 308 mm	600 x 374 x 328 mm
Power	DC24V, 6A	DC24, V8A	DC24V, 20A	
Communication	Ethernet (100Base-T), TCP/IP			
External Device Control	Hopper control terminal			
Backlight <small>(selected when ordering and built into the main unit)</small>	None, white, red, blue, green, infrared			
Vibration Plate	Anti-rolling (Lattice groove, rolling prevention), Anti-stick (Circular groove, rolling prevention) Plane + ESD (anti-static measures), Anti-rolling + ESD (Lattice groove, anti-static measures)			

Option list	
Item	Specification
Hopper	IF-80 : Build-In (0.16L), IF-240 : 2L, 3L, IF-380 : 10L, IF-350 : 15L
Backlight	White, Red, Blue, Green, Infrared
Pratform	Flat surface, Anti-rolling, Anti-stick, Flat surface + ESD, Anti-rolling + ESD Color : Black, White
Perge	IF-80 : Dedicated Platform IF-240 : Dedicated Platform + Actuator Kit IF-380 / IF-530 : Purge-enabled frame(with Actuator)

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

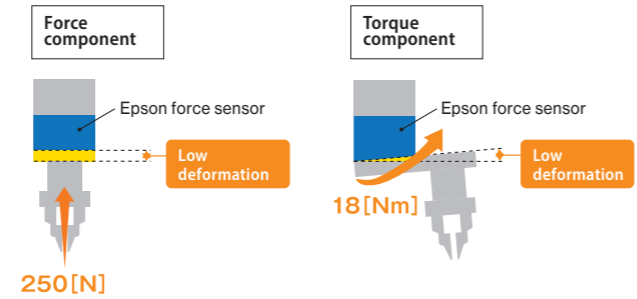
S250 Series force sensors incorporate exclusive Epson crystal piezoelectric technology that ensures a higher level of rigidity and sensitivity than conventional force sensors.

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.

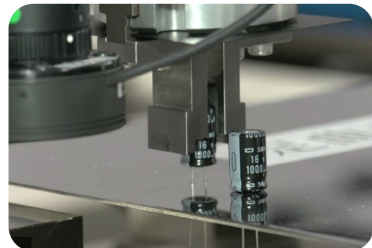
Advantage 2 High sensitivity

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.

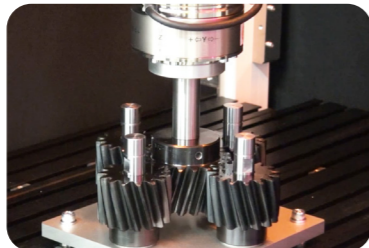


Force-sensing system applications

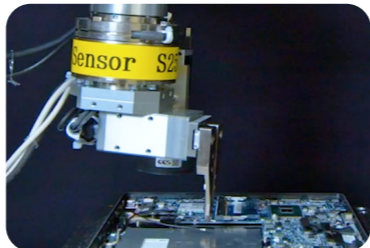
Robots equipped with an Epson S250 Series force sensing system can handle delicate works that cannot be safely automated with teaching or machine vision systems alone. As a result, even production processes that previously required experienced workers to handle delicate and easily damaged workpieces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



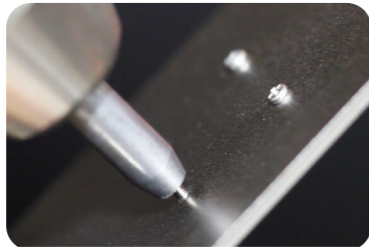
Delicate Component Assembly



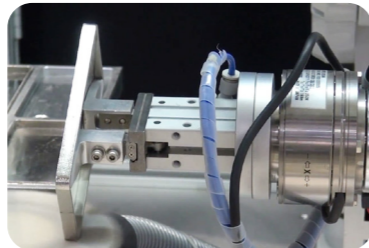
Precision Mating



Connector Insertion



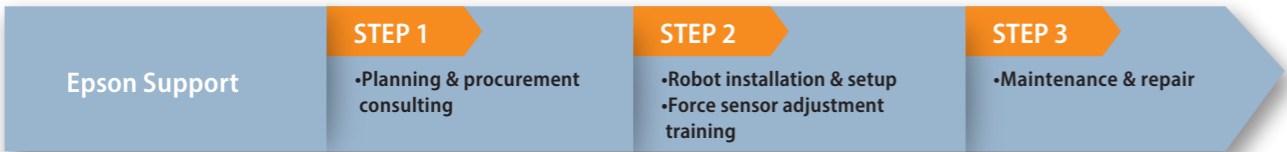
Screw Tightening



Fine Polishing

One-stop Epson support

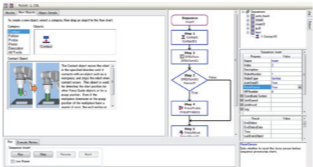
From initial planning and procurement, to setup, adjustment, ongoing maintenance and re-pair, Epson provides one-stop support for all your force-sensing system and automation needs.



Easy force sensing program development

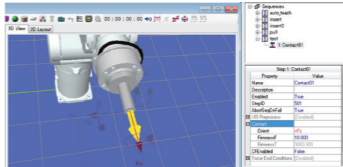
The new Force Guide interface makes it easy to develop force sensor operating programs simply by dragging Force Guide object icons into a flow chart. In addition, simulator motion display and force waveform monitoring make debugging easier than ever before.

Force Guide GUI



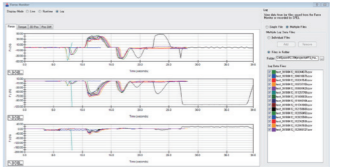
The Force Guide interface provides a clear explanation of what each programming object does, as well as a flow chart view for easy confirmation of program sequence ordering.

Simulator



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

Force waveform display & recording



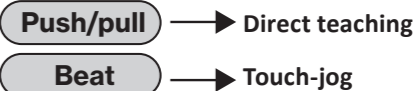
The force waveform display allows realtime waveforms to be compared with previously recorded waveforms, enabling users to identify operating anomalies and understand how various conditions affect performance.

Direct teaching function

6-axis robots equipped with force sensors can be taught using the Epson TP2/TP3/TP4 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.



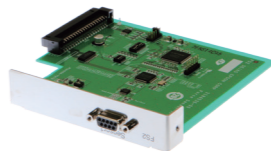
\* Supported by TP2 teaching pendant and C4, C8, N2, and N6 robots (controller firmware v7.4.6 or newer required)

Product photos

03 S250 Series force sensor



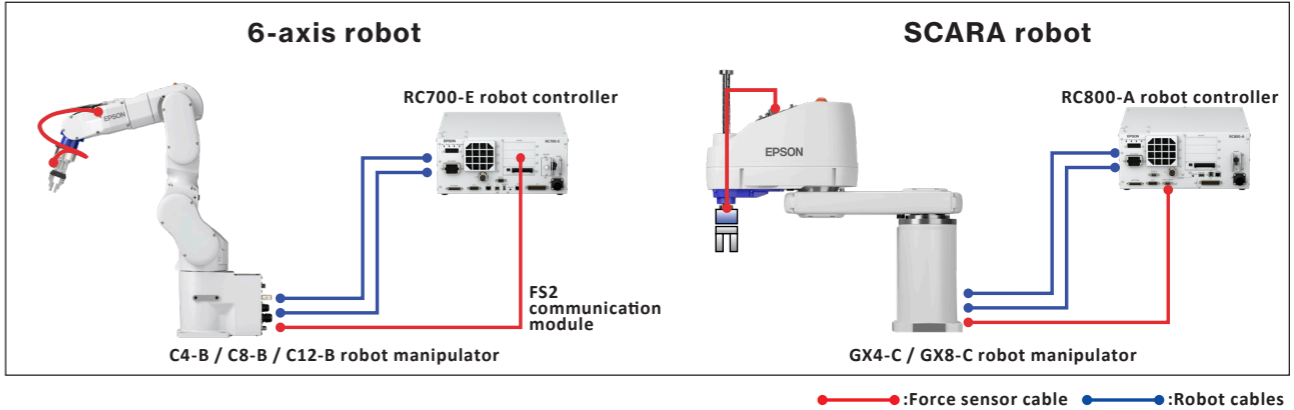
03 Force sensor I/F board



FS2 system requirements

Supported controller	RC700-E, 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

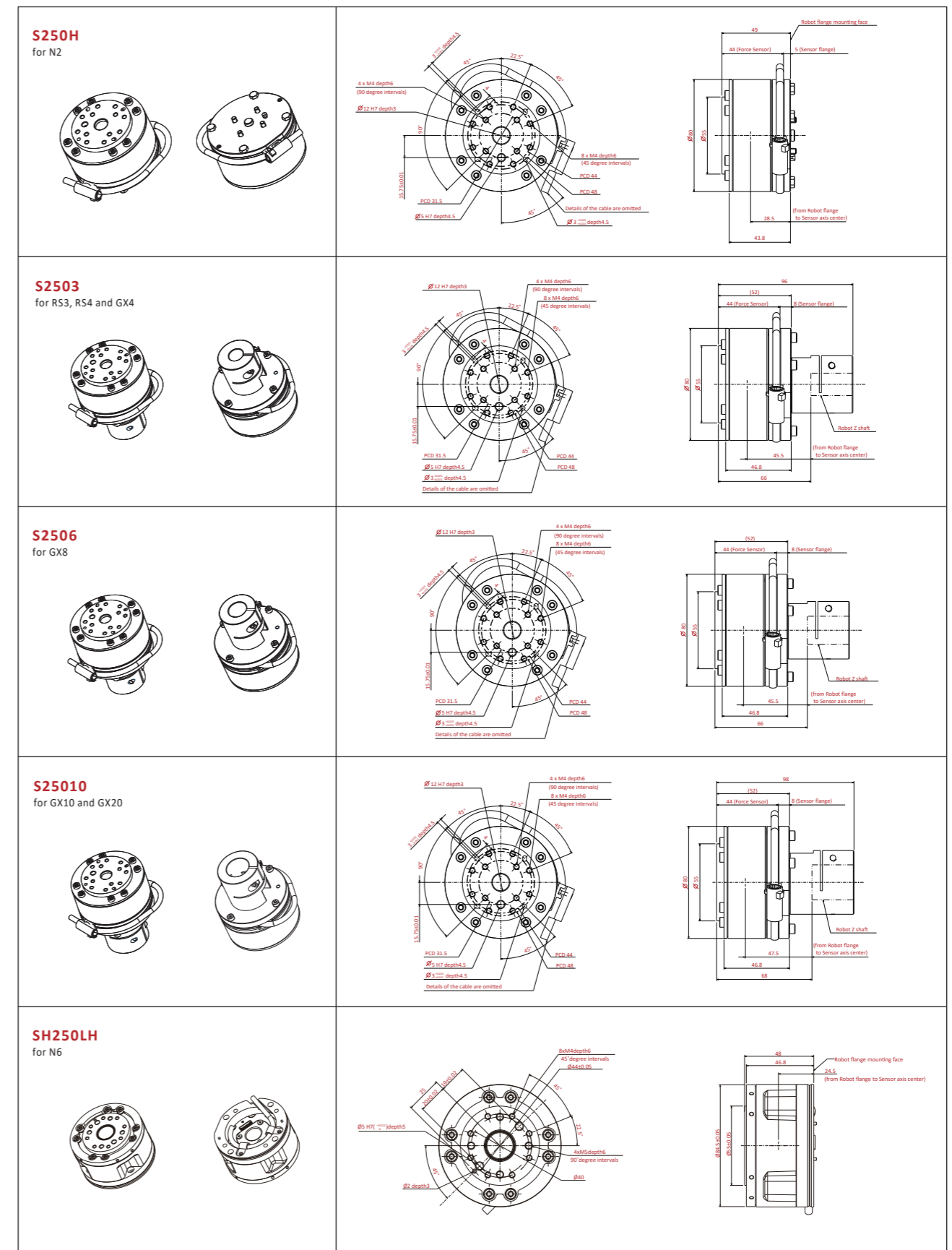
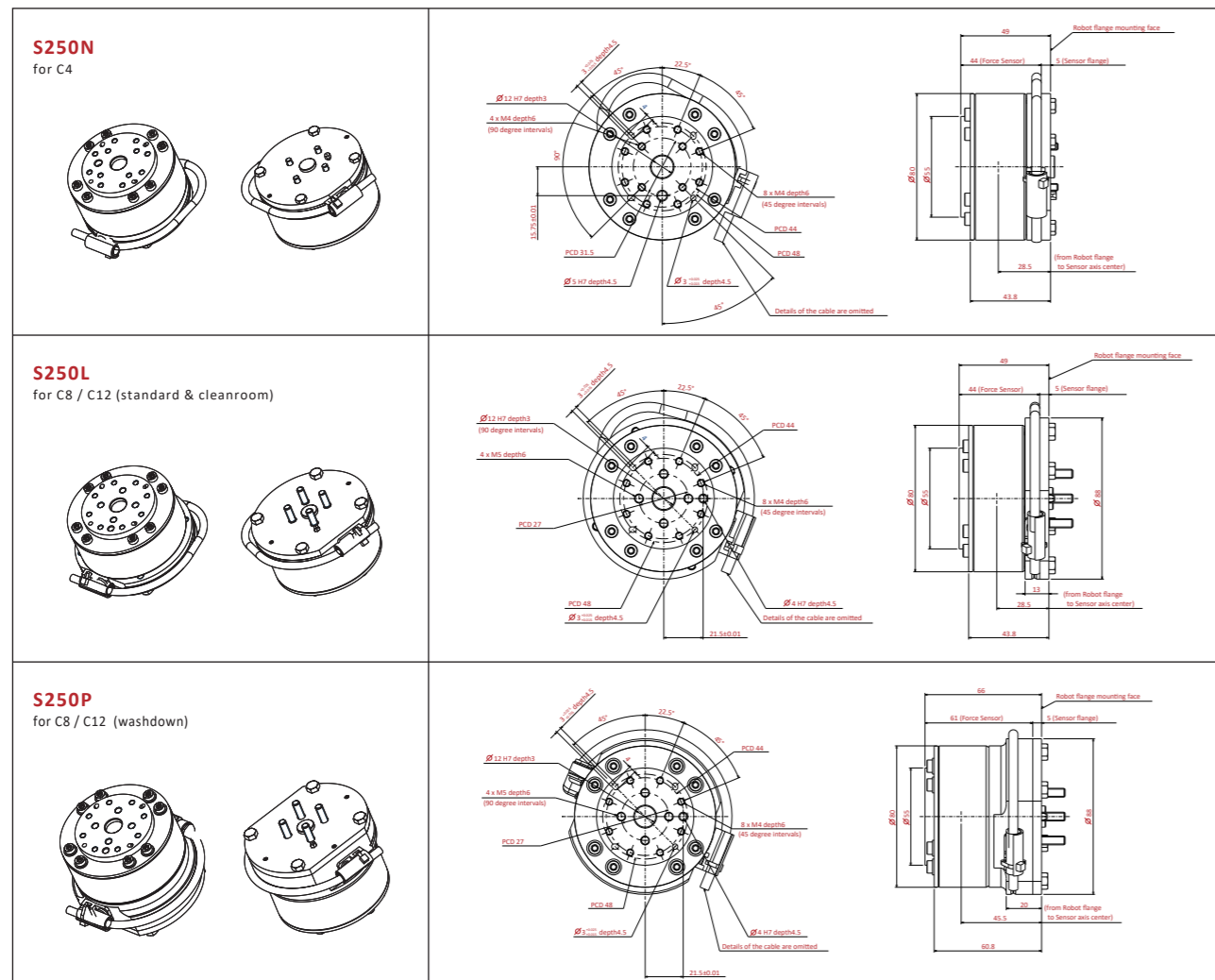


## ■ Force sensor specifications

Sensor model		S250N	S250L	S250P	S250H	S2503/S2506/S25010	SH250LH <sup>*4</sup>
Applicable robot		C4	C8 / C12 <sup>*1</sup>		N2	GX / G Series <sup>*3</sup> RS Series	N6
			Standard/Cleanroom <sup>*2</sup>	Protection			
Dimensions		Ø80 x H49mm	Ø88 x H49mm	Ø88 x H66mm	Ø80 x H49mm	Ø80 x H52mm	Ø84.5 x H48mm
Weight <sup>*5</sup>		460g	520g	680g	460g	640g	460g
Supported controller		RC800-A / RC700-A / RC700-E					
Measurement freedom		6-axis: Force Fx, Fy, Fz; Moment Tx, Ty, Tz					
Rated load		Fx, Fy, Fz: 250N, Tx, Ty, Tz: 18 N·m					
Static load capacity		Fx, Fy, Fz: 1000N, Tx, Ty, Tz: 36N·m					
Measurement resolution		Fx, Fy, Fz: ±0.1N less, Tx, Ty, Tz: ±0.003N·m					
Measurement precision		less than ±5% R.O.					
Operating environment	Temperature	-10 to 40 °C					
	Humidity	10 to 80%Rh (no condensation)					
Cable length (between robot and cable box)		3m/5m/10m/20m			3m/5m/10m		3m/5m/10m/20m
Protection class		IP67 (S250P), IP20 (S250N, S250L, S2503, S2506, S2510)					IP20
Included items		FS2 communication module <sup>*6</sup> , communication cable, mounting flange					

\*1: After Epson RC+ 7.0 Ver.7.5.2   \*2Dimensions/weight exclude vertical clearance for user-installed cabling   \*3: Except shielded and G1 robots

\*4: Supports pass-through cable connection \*5: Including sensor and mounting flange, but excluding cable \*6: RC700-A and RC700-E only



Epson's long experience in the development of industrial robots and control technologies enables us to offer a wide range of software options.

RC+ API

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

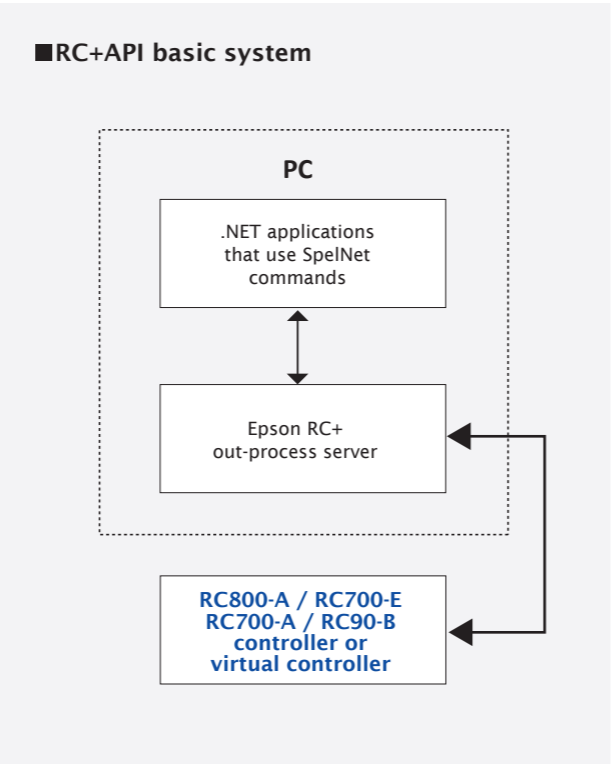
Program and execute robot applications in a familiar Windows® OS environment

- Robots can be controlled using Visual Basic®, Visual C®, LabVIEW™, and other third-party programming languages.
- Robot status and variable values can be captured.
- Third-party Visual Basic interface and database design tools can also be used for program development.
- The following Epson RC+ windows and dialogs can be called from within a Visual

Basic application:

- Robot Manager
- I/O Monitor
- Task Manager
- Maintenance Dialog
- Simulator
- Pressure Monitor

■ RC+API basic system

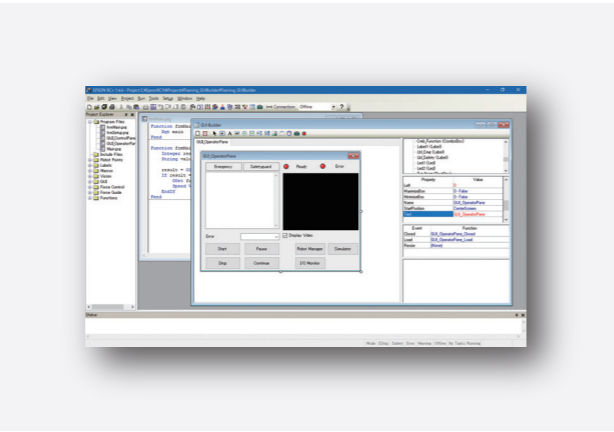


GUI Builder

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

Easily create custom interfaces for your control programs at the leading edge of industrial robot design

- Quickly and easily create control program custom interfaces that can take the place of dedicated PLCs and display devices.
- Full-featured toolset is easy to understand and use.
- Enables simple GUI creation without using Visual Studio® or other third-party software tools.
- Makes it easy to build a graphical user interface, even if you've never built one before.

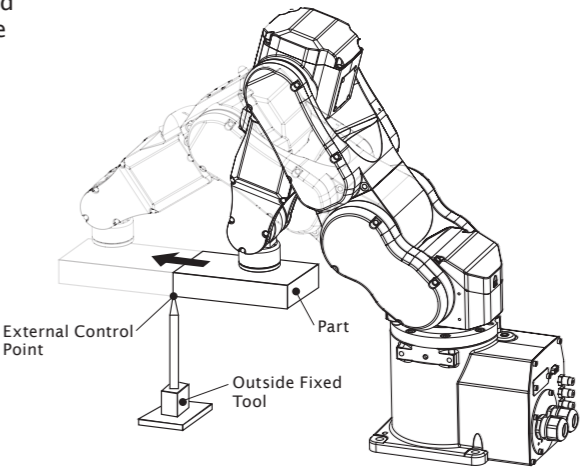


External Control Point

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

External control point(ECP) operation for precise positioning without complex calculations

- For processes requiring the workpiece to be moved against a fixed tool, external control points can be used to ensure precise positioning.
- Up to 15 external control points can be set.



OCR

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

Optical character recognition of text on parts and labels

- For use with optional Vision Guide software.
- Recognizes characters in images and converts them to text data.
- Images of characters can be registered as text target models.

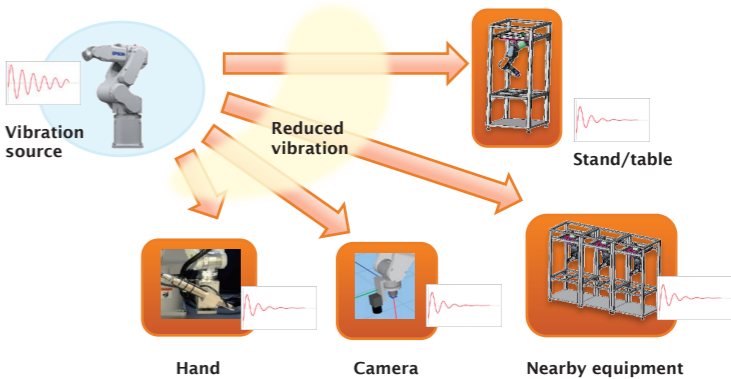
VRT

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

Reduced residual vibration for higher productivity

- Advanced vibration reduction technology (VRT) helps reduce residual vibration\* in the robot hand and mounting stand that is generated by robot motion, enabling faster acceleration for reduced cycle time and higher yield.

\* Residual vibration must be pre-measured using the optional VR unit.



OPC UA

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

Easy configuration using the dedicated software "OPC UA Configurator" reduces the total cost of building a core system.

- Easily create a system for analyzing communication data.
- It becomes possible to accurately reproduce defects that occur in remote locations on the IT system.
- Traceability data can be obtained from the robot's serial number.



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

04 Teach Pendant (TP4)

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

In addition to teaching, programming and robot settings are possible.  
Teach pendant that can be completed without a PC



- Teaching-mode that enables intuitive operation
  - 3D robot display function
  - Robot indicator display function (allows you to check error status and error details)
  - Test mode function for program verification
  - Program editing and build functions
  - Force monitor function (when using optional Force Guide)
  - Direct teach function (when using optional Force Guide)
- Equipped with integrated development environment Epson RC+ for TP4
  - In addition to the teaching-only mode, it also has a mode that runs the integrated development environment Epson RC+ for TP4. Programming possible without a PC
  - Various robot settings are possible without a PC.
- Original operation panel (HMI) can be constructed
  - GUI Builder is included as standard. It is possible to construct an original operation panel
- Ergonomic design
  - Compatible with both right-handed and left-handed people
  - Clicky hardware jog keys
  - Easy-to-operate enable switch
  - 10.1 inch capacitive multi-touch screen
  - Large screen with resolution 800X1280
  - IP65 protection structure that can be used in various environments



Items		Description
Display	Type	TFT
	Size	10.1 inch
	Resolution	800 x 1280
	Touch screen	Capacitive multi-touch
	Backlight	LED
Appearance	Outer dimension	215 x 284 x 69 mm
	Weight	Approx. 1.2 kg (excluding cables)
	Cable length	5 m
	IP rating	IP65
	Emergency	Equipped
SW	Enable switch	Equipped
	Key switch	3 position, Ethernet communication
	Power	Consumption power Less than 15 W

04 Teach Pendant (TP3)

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

Tablet-type teach pendant with 10.1-inch color touchscreen

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



04 Teach Pendant (TP2)

Compatible controllers  
RC800-A RC700-E 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.

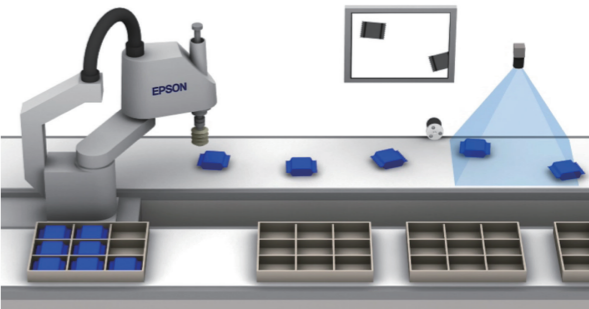


05 Conveyor Tracking

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series  
\*Vision Guide software required.

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.
- Conveyor Tracking Option Kit B does not occupy an option slot because it operates without PG board.  
(Compatible with RC800-A)



06 PG motion System

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

Control peripheral robots for fully integrated process automation

- Epson RC+ software and pulse generator (PG) board 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 board can be used to control X/Y tables, sliders,

turrets, and a wide range of other production/inspection line peripherals.  
■ Each PG board 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 PG output board. Drivers and motors for third-party devices are not included.

07 Emergency stop switch

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

Helps prevent injuries and damage

- Immediately stops robot operation in emergency situations.

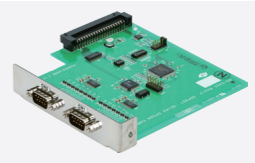


08 RS-232C Board

Compatible controllers  
RC800-A RC700-E RC700-A RC90-B T series VT series

Expanded serial port connectivity

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



09

I/O Expansion Board


Compatible controllers

RC800-A RC700-E RC700-A

RC90-B T series VT series

Expanded input/output flexibility

■ 24-input/16-output expansion board.



10

Fieldbus I/O (slave)

Compatible controllers

RC800-A RC700-E RC700-A

RC90-B T series VT series

High-speed peripheral connectivity

■ 4096-point I/O support for PROFINET® networked peripherals, Ethernet/IP™, EtherCAT®, Modbus-TCP and DeviceNet™.

2944-point I/O support for CC-Link® networked peripherals.

1952-point I/O support for PROFIBUS®.

11

Fieldbus I/O (master)

Compatible controllers

RC800-A RC700-E RC700-A

RC90-B T series VT series

Bidirectional high-speed peripheral connectivity

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

12

Analog I/O Board


Compatible controllers

RC800-A RC700-E RC700-A

RC90-B T series VT series

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.



13

EUROMAP 67 Board

Compatible controllers

RC800-A RC700-E RC700-A

RC90-B T series VT series

For use with thermoplastic injection molding machines

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



14

I/O Cable Kit


Compatible controllers

RC800-A RC700-E RC700-A

RC90-B T series VT series

Cables and connectors for easy connectivity with no soldering required

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



15

Hot Plug Kit

Compatible controllers

RC800-A RC700-E RC700-A

RC90-B T series VT series

Easy teach pendant connection/disconnection

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



\*Conversion cable required for use with TP2.

16

Wall Mount Option

Compatible controllers

RC800-A RC700-E RC700-A

RC90-B T series VT series

Optional wall mounting box

■ Allows controller to be mounted on a wall.



17

Rack Mount Option


Compatible controllers

RC800-A RC700-E RC700-A

RC90-B T series VT series

Optional wall mounting box

■ Allows controller to be mounted on a wall.



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

18

External Wiring Units


Compatible manipulators

G1 GX4 GX8 GX10 GX20 LS3 LS6 LS10 LS20 T3 T6 VT6 RS3 RS4 C4 C8 C12 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.



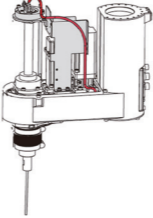
19

Internal Wiring Unit

Compatible manipulators

G1 GX4 GX8 GX10 GX20 LS3 LS6 LS10 LS20 T3 T6 VT6 RS3 RS4 C4 C8 C12 N2 N6

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




20

SCARA Tool Adapters

Compatible manipulators

G1 GX4 GX8 GX10 GX20 LS3 LS6 LS10 LS20 T3 T6 VT6 RS3 RS4 C4 C8 C12 N2 N6

Enhances handling/processing versatility and simplifies effector changes




21

ISO Flanges

Compatible manipulators

G1 GX4 GX8 GX10 GX20 LS3 LS6 LS10 LS20 T3 T6 VT6 RS3 RS4 C4 C8 C12 N2 N6

For easy attachment of effectors to 6-axis robot arms



\* Flange configuration varies according to robot model. Please specify model when ordering flanges.

22

Brake Release Units

Compatible manipulators

G1 GX4 GX8 GX10 GX20 LS3 LS6 LS10 LS20 T3 T6 VT6 RS3 RS4 C4 C8 C12 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

23

Power and Signal Cables

Compatible manipulators

G1 GX4 GX8 GX10 GX20 LS3 LS6 LS10 LS20 T3 T6 VT6 RS3 RS4 C4 C8 C12 N2 N6

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

24

Power Cable Connectors

Compatible manipulators

G1 GX4 GX8 GX10 GX20 LS3 LS6 LS10 LS20 T3 T6 VT6 RS3 RS4 C4 C8 C12 N2 N6

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

\* Controller-end connectors only





25

Camera Mounting Bracket

Compatible manipulators

G1 GX4 GX8 GX10 GX20 LS3 LS6 LS10 LS20 T3 T6 VT6 RS3 RS4 C4 C8 C12 N2 N6

Securely mount machine vision system camera to robot arm



\*Bracket design varies according to robot. Please specify model when ordering.

26

Bellows Kit for Standard SCARA Specification

Compatible manipulators

G1 GX4 GX8 GX10 GX20 LS3 LS6 LS10 LS20 T3 T6 VT6 RS3 RS4 C4 C8 C12 N2 N6

Possible to cover the ball screw which is a part of the SCARA robot for the standard environment specification with a bellow



83

SCARA Robots

6-axis Robots

Controllers

Software

Vision System

Part Feeding

Force Sensing

Options

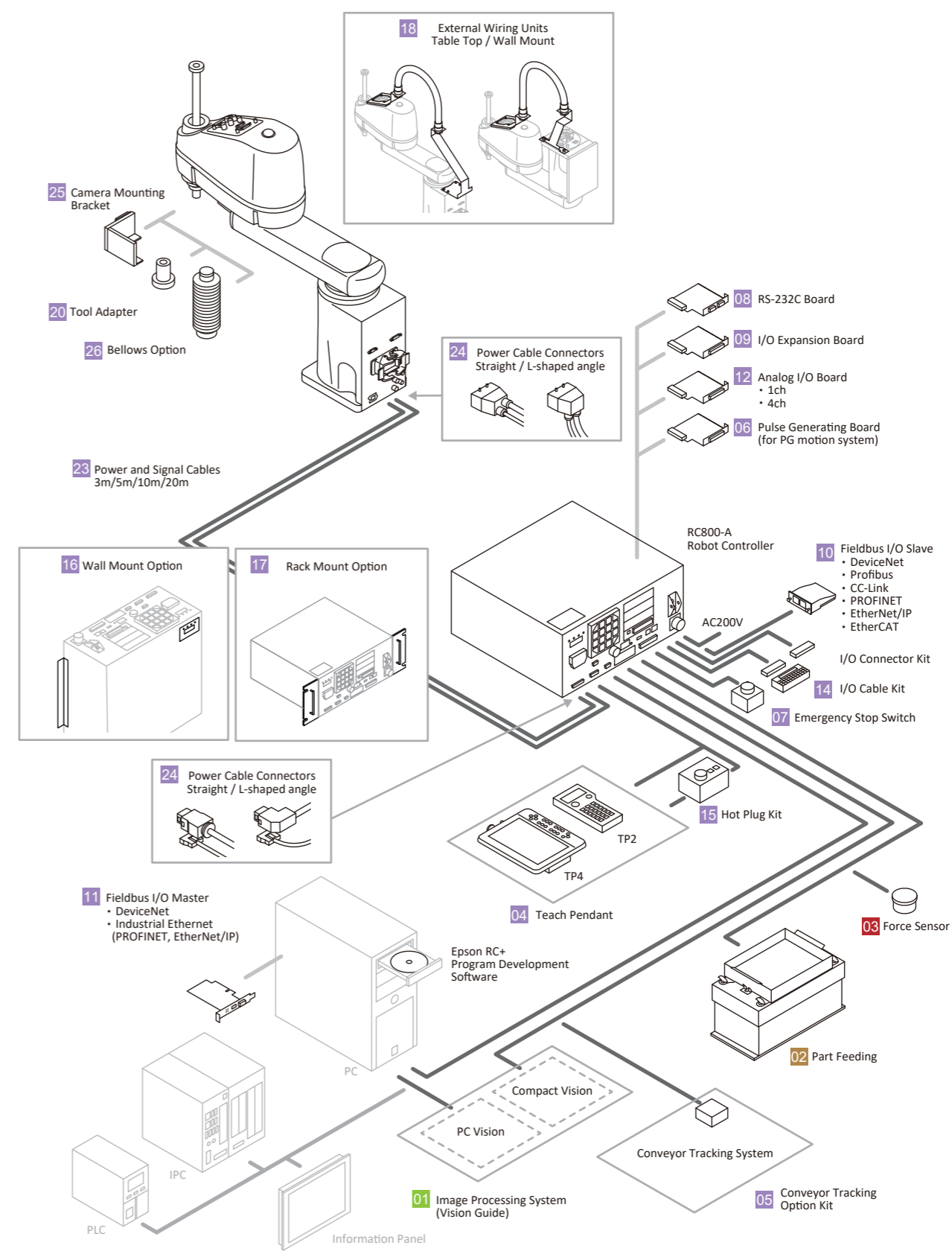
84

Software options												
	RC800-A		RC700-E		RC700-A		RC90-B		T series		VT	
01	Vision Guide		●		●		●		●		●	
02	Part Feeding		●		●		●		●		●	
03	Force Guide		● No liscense required		●		●		—		—	
	RC+ API		●		●		●		●		—	
	GUI Builder		●		●		●		●		●	
	External Contorol Point		●		●		●		●		—	
	OCR		●		●		●		●		—	
	VRT		●		●		●		●		—	
	Safety Funtion		●		●		—		—		—	
	OPC UA		●		●		●		●		●	

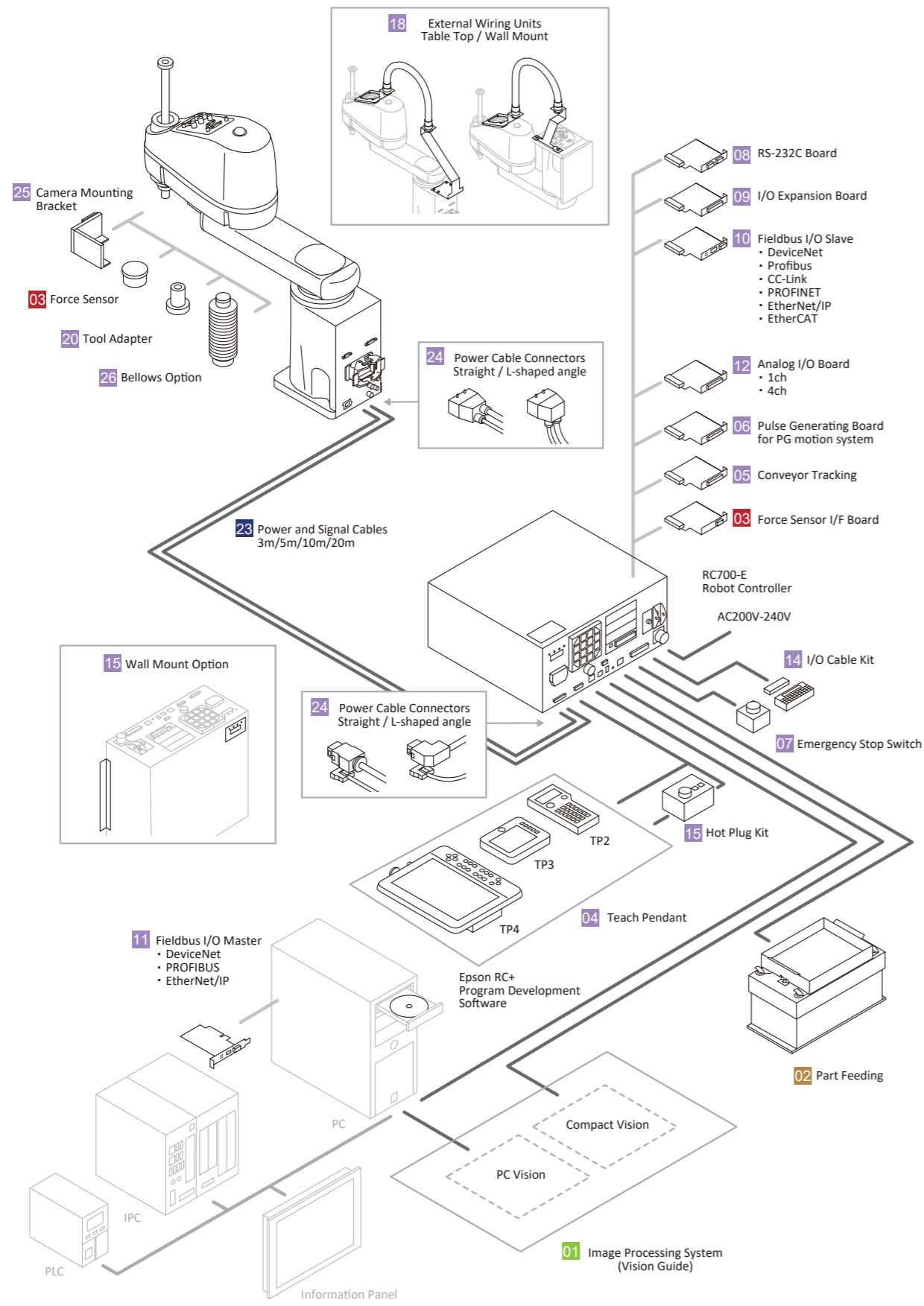
Controller options												
	RC800-A		RC700-E		RC700-A		RC90-B		T series		VT	
04	Teach Pendant (TP4)		●		●		●		—		●	
04	Teach Pendant (TP3)		—		●		●		—		●	
04	Teach Pendant (TP2)		●		●		●		●		●	
05	Conveyor Tracking		●		●		●		●		—	
06	PG Motion System		●		●		●		●		—	
07	Emergency Stop Switch		●		●		●		●		●	
08	RS-232C Board		●		●		●		●		—	
09	I/O Expansion Board		●		●		●		●		—	
10	Fieldbus I/O (Slave)		●		●		●		●		●	
11	Fieldbus I/O (Master)		●		●		●		●		●	
12	Analog I/O Board		●		●		●		●		—	
13	EUROMAP 67 Board		—		—		●		●		—	
14	I/O Cable Kit		●		●		●		●		—	
15	Hot Plug Kit		●		●		●		—		●	
15	Wall Mount Option		●		●		●		—		—	
17	Rack Mount Option		●		—		—		—		—	

Manipulator Options												
	G1	GX4	GX8 GX10/GX20	LS3/LS6 LS10/LS20	T3/T6	RS3 RS4	C4	C8	C12	N2	N6	VT6
18	External Wiring Units		—		—		—		—		●	
19	Internal Wiring Unit		—		—		●		—		—	
20	Tool Adapters / 21 ISO Flanges		—		●		●		●		●	
22	Brake Release Units		—		—		—		●		—	
23	Power and Signal Cables		●		●		●		●		●	
	Cable Length (m)		3,5,10,15,20		3,5,10		(Built-in Controller)		3,5,10,15,20		(Built-in Controller)	
	Cable Type (Standard/High-flex)		Standard				Standard		Standard/High-flex		Standard/High-flex	
24	Power Cable Connectors (Straight/L-type)		Straight/L-type		Standard				Straight/L-type			
25	Camera Mounting Bracket		—		●		●		●		●	
26	Bellows Kit		—		—		—		—		—	

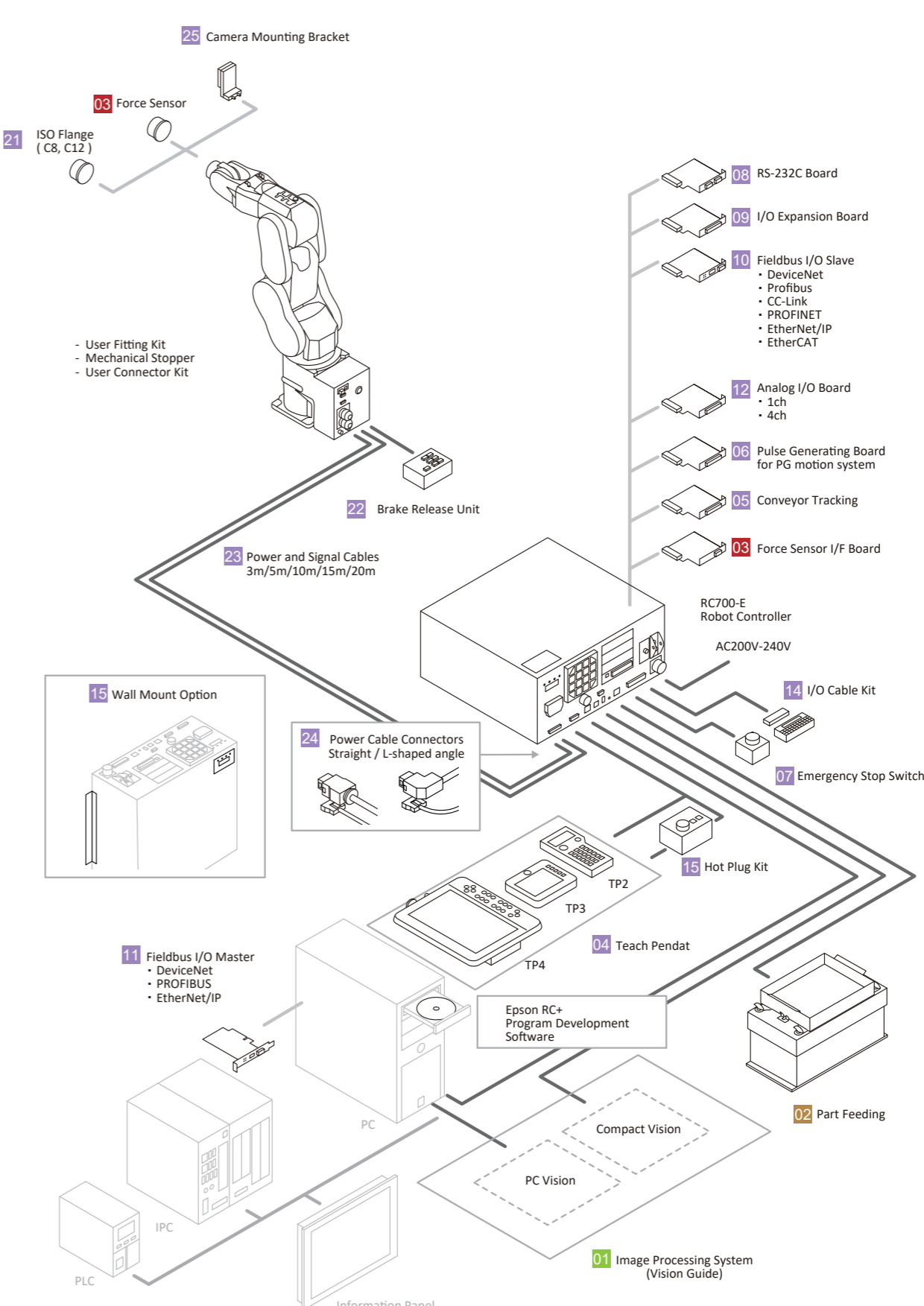
RC800-A controller



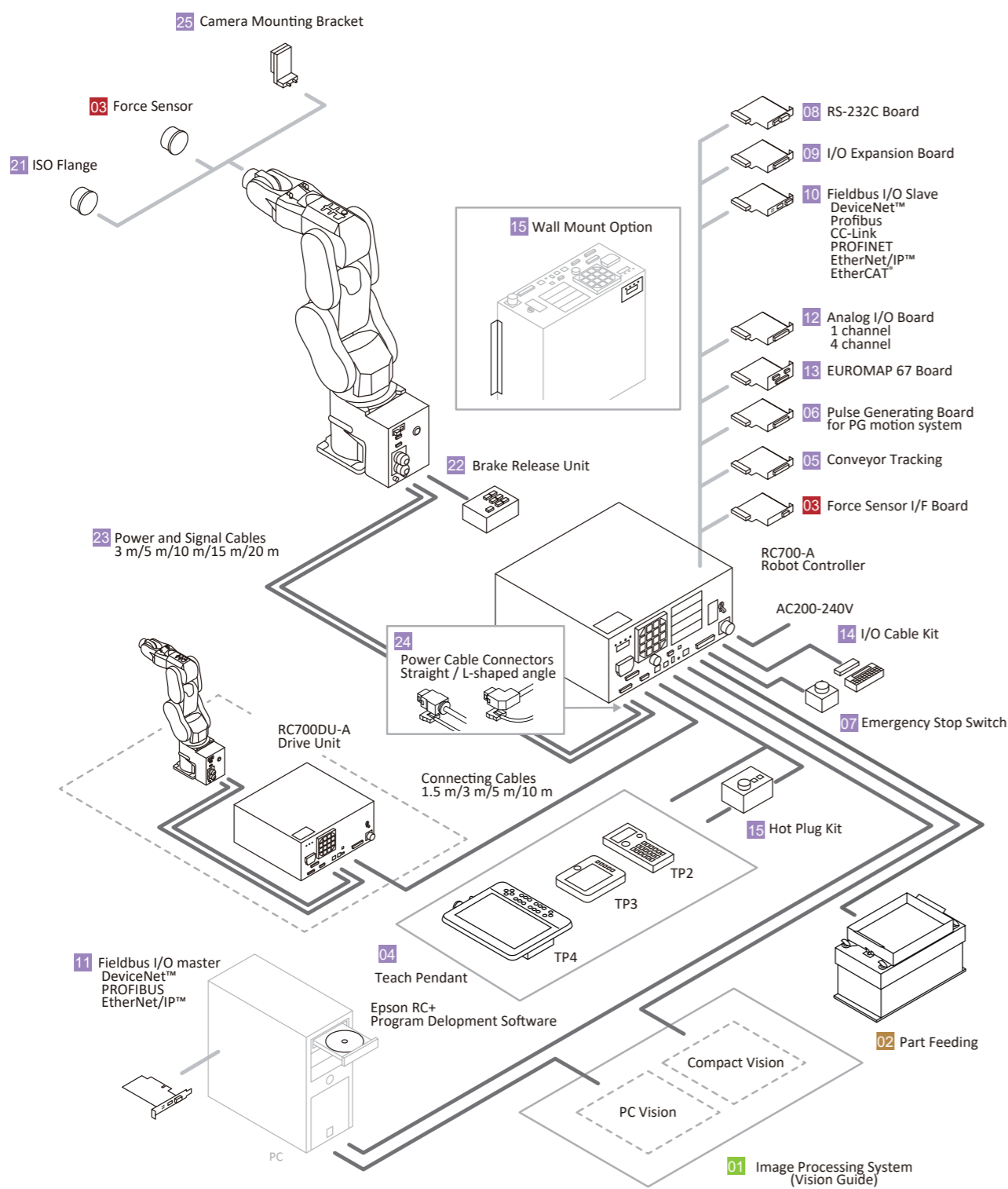
RC700-E controller for SCARA



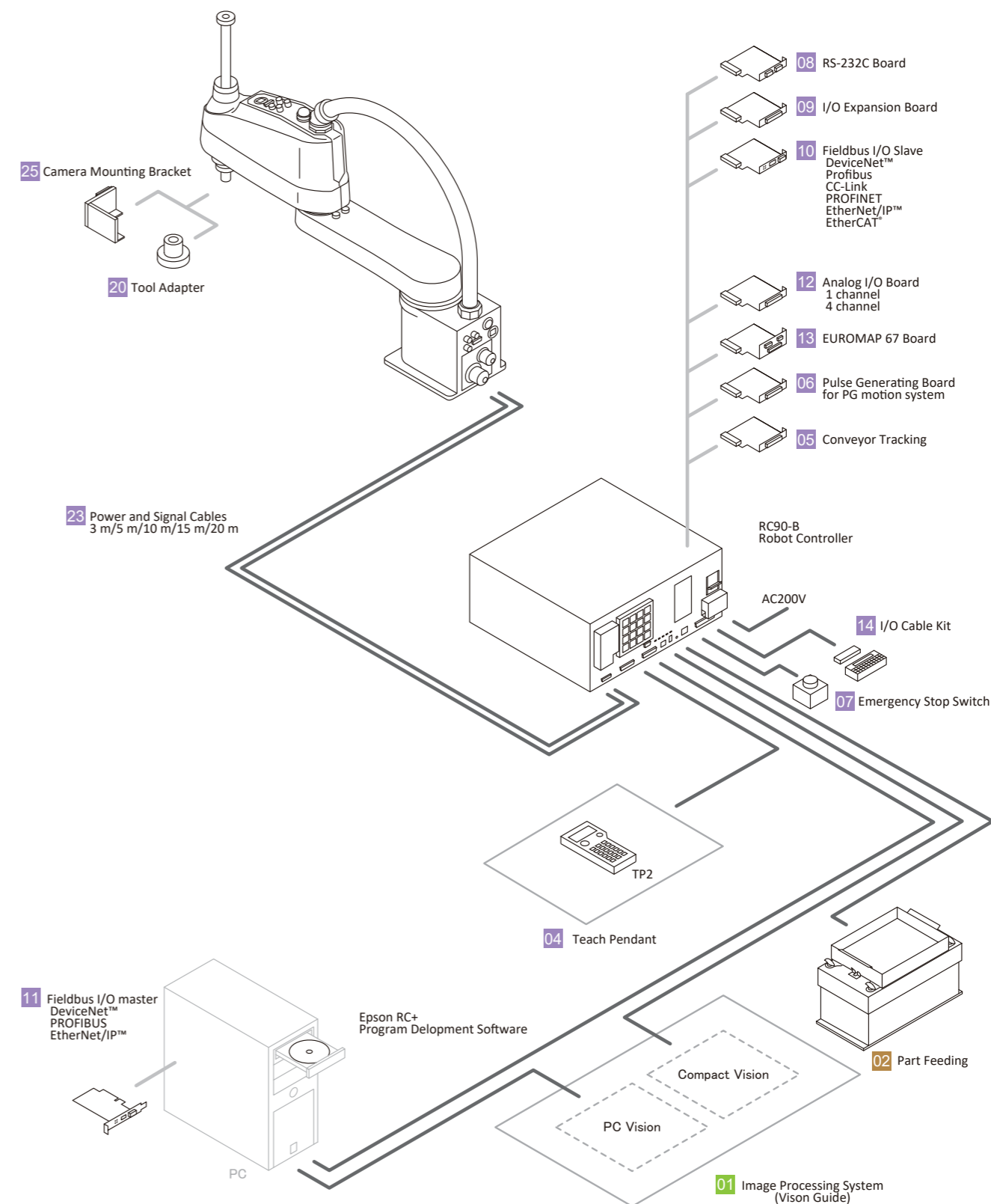
RC700-E controller for 6-axis



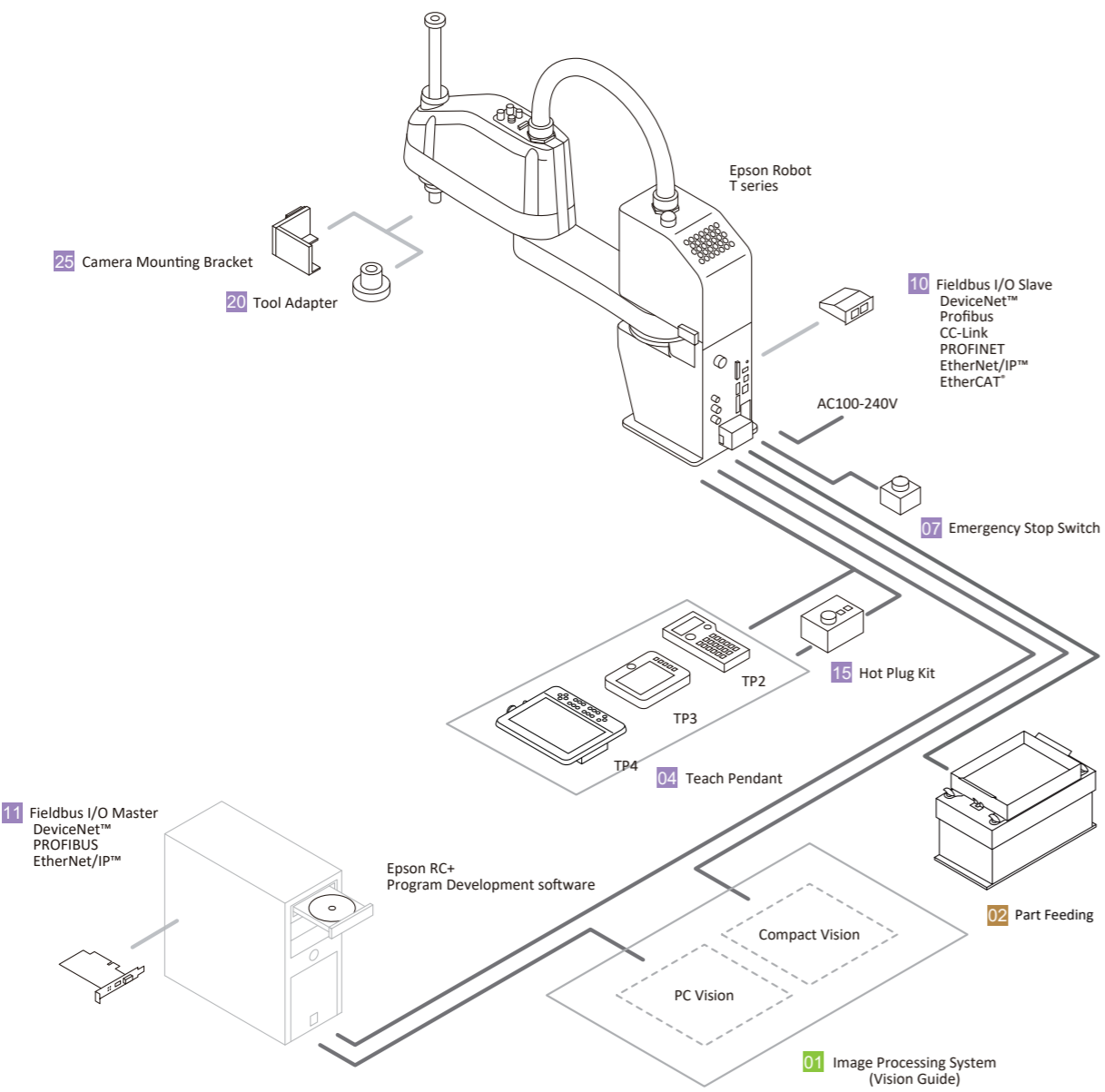
RC700-A controller for C-A series



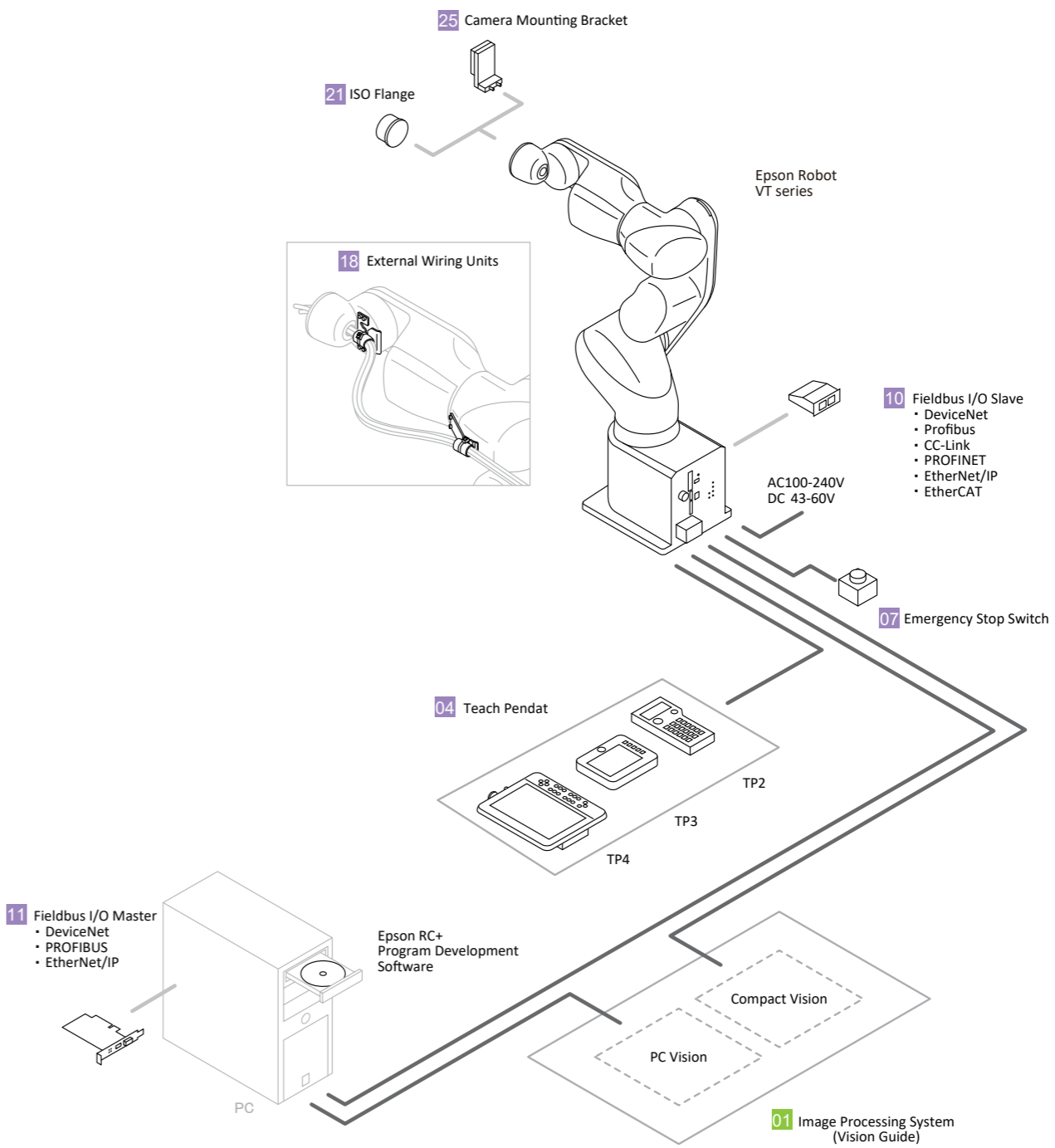
RC90-B controller



T series robot



VT series robot



With Epson industrial robots,  
you get the highest standards of safety and reliability  
and the support of a global sales and service network



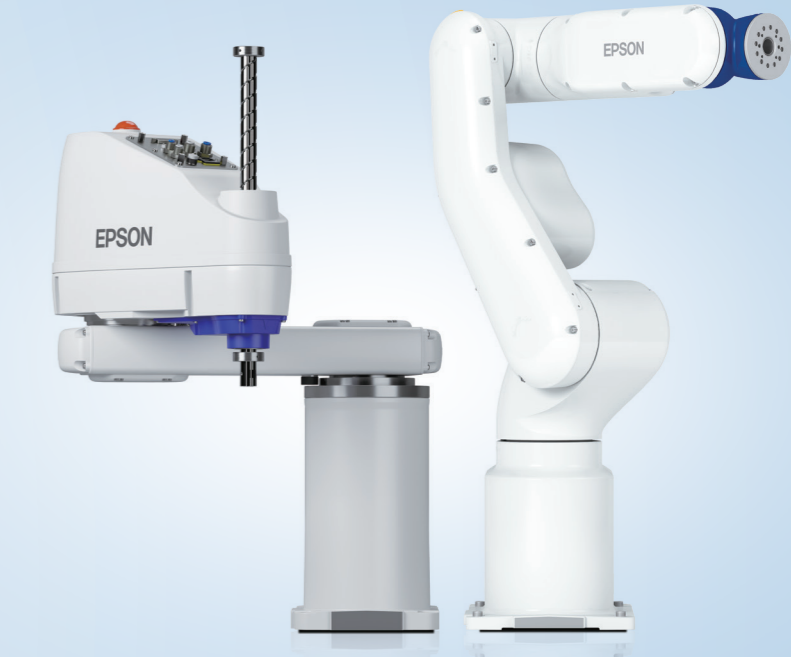
■ Top-quality service and support worldwide

Our global network of sales and service centers is firmly dedicated to maintaining a consistently high level of product and service quality in every region. For products under warranty, we offer on-site assistance to deal with any malfunctions or problems\*1, and through our authorized sales and service representatives we offer warranty coverage for machines that are later moved to other locations\*2, assuring top-quality support wherever you are.

\*1 Standard warranty limitations apply.  
\*2 Contact local sales and service representatives for details.

■ Epson Global Support Network

Japan	Epson Sales Japan Corporation
North / South America	Epson America, Inc.
Europe	Epson Deutschland GmbH
Mainland China	Epson (China) Co., Ltd
Taiwan region	Epson Taiwan Technology & Trading Ltd.
Southeast Asia	Epson Singapore Pte. Ltd.
Republic of Korea	Epson Korea Co., Ltd.
India	Epson India Pvt. Ltd.



At Epson, we continue to draw on the strengths of our global network to provide customers with the tools they need to automate manufacturing processes and achieve higher productivity. By creating the world's most trusted and reliable industrial robots, we pledge to deliver the true customer value that is the hallmark of every Epson product.

