

NC Servo Wrist Flips and Rotates End-of-Arm Tools

- Servo-powered axes means the EOAT may be flipped or rotated to precise user-set angles.
- Equipped with this wrist unit, a take-out robot can have as many as 7 total numerically-controlled axes, giving it a range of motion comparable to an articulated robot.
- Motions for undercut molds and fixed platen take-out may be programmed quickly just by teaching.

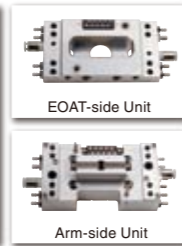
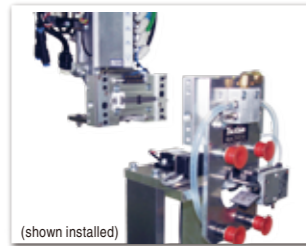


Robot Compatibility
Small Models (100/150/250)
Medium Model (400/600)
 Flip Range:
 max. 184° (Medium Model: max. 188°)
 Rotation Range:
 max. 320°
Now 20% more compact!
 (compared to previous model)



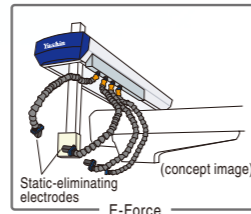
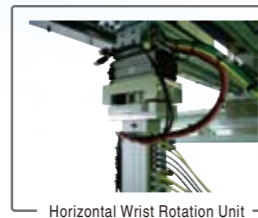
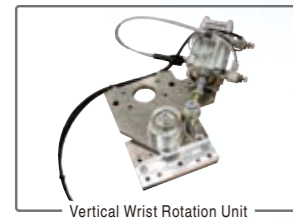
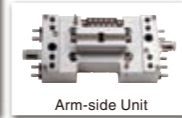
Robot Compatibility
Large Models (800/1300)
 Flip Range:
 max. 190°
 Rotation Range:
 max. 330°

EOAT Quick-Change Unit



Greatly reduces set-up times by allowing instant attachment/detachment of end-of-arm tool and its pneumatic and wiring connections.

- Connect pneumatics and control wiring at the touch of a button!
- Eliminates need for hand tools.
- Check valve (on robot arm side) guards against air leaks.



Safety information

- These products are industrial robots as defined in the labor safety rules. Always take great care when operating any robots.
- To improve visual clarity, these robots may be shown without the safety guards that are identified in the safety rules. Never operate the robots without all safety guards in place.
- Before using any product introduced in this literature, all operators must read and understand the instruction manual and other related documents for proper and safe equipment operation.

□ The contents in this catalog are subject to change without notice.

Heartful Technology
Yushin Precision Equipment Co., Ltd.



Yushin commits itself to the pursuit of more eco-sensitive technologies by employing eco-friendly principles.

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Inquiry



Servo Traverse Robot
RC/RCII series

Yushin Precision Equipment Co., Ltd.

Speed, Reliability, and Savings are Standard Equipment

Speed Elevating Productivity to New Heights

A Stock Unit that Does High-Speed Take-Out

Fully upgraded vertical and kick axis units provide a huge jump in part extraction speed!

Take-Out Time Comparison

- Target molding machine clamping force 150-ton class **13% faster**
- Target molding machine clamping force 400-ton class **12% faster**
- Target molding machine clamping force 600-ton class **13% faster**
- Target molding machine clamping force 800-ton class **14% faster**
- Target molding machine clamping force 1300-ton class **14% faster**

Much Shorter Take-Out Times

*As compared to previous model line under controlled conditions.

Reliability Boost your Production Floor Efficiency

Vibration-free, Precise Picking and Placing of Products

The RCI series features even more rigid, robust construction and new arm-end vibration suppression!

Easy-to-Use E-Touch II Controller



Large, Highly Visible Monitor

- 10.4 inch, full-color touch panel

Extra Tough Construction

- Rubber shock panels on each side of the controller help cushion accidental drops.
- IP44* Rating for Dust and Moisture Resistance

Easy Operation

- Directional pad makes navigating easy.
- Settings and menus are icon-based.
- Audio Guidance gives vocal cues to support complex operations.

* International IP (Ingress Protection) Rating Solids Rating: 4 (protection from tools, small wires, etc. with a diameter or thickness greater than 1.0mm) Moisture Rating: 4 (all-around protection from splashed water)

Easy Operation

- Operator "Easy Screen" allows simple standard operation.
- Lead Through Teaching allows the operator to add or modify positions, timers, or speeds with ease.
- Robot Simulator Screen enables the user to simulate and check newly-programmed motions on a 3D screen on the controller or another PC.

Teaching is a Breeze

- New Motion Chart Screen combines position, speed, and timer settings into one intuitive 3D interface.

Improved Safety

- Operator may easily set additional motion prohibit zones.

Other Features

- Troubleshooting Mode enables users to personally track down problems.
- Auto Slow-down Mode decreases motion speed just before part placement to ensure a vibration-free release.



Operator "Easy Screen"



Take-Out Robot Simulator Screen



Motion Chart Screen

Savings Lower Running Costs

ECO Vacuum PAT. P Compressed Air Economizing Tool

Monitors air pressure while robot suction-grips parts and only turns on air lines when necessary.

Lowers Electricity Cost for Air Compressors

Reduces Equipment Cost

Helps Protect the Environment

(Real-Life Results)



Air Consumption 75% Down

<Test Conditions>

Take-Out Robot	150-ton class
Test Interval	24 hours
Molding Cycle	15 seconds (Where take-out time [the interval from part take-out through to part placement] is 25% of the total cycle, ECO Vacuum is activated for 75% of the cycle)
Air Usage (for 1 Vacuum Line)	19 NI/cycle (without ECO Vacuum) 4.75 NI/cycle (with ECO Vacuum)
Air Compressor Output	2,300 NI/minute
Compressor Motor Power	16kW
Air Usage Reduction due to ECO-Vac	75%

*Test occurred under controlled conditions. Results may vary between different part shapes and suction cup types.

RC-30/70

Clamping Force of Compatible Molding Machines
Less than 80



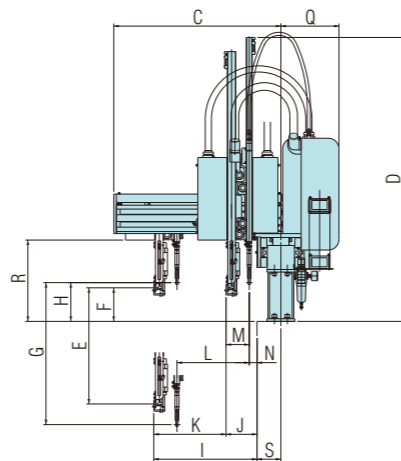
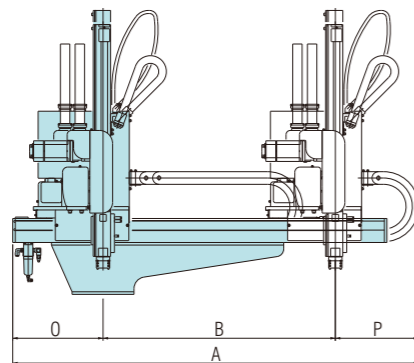
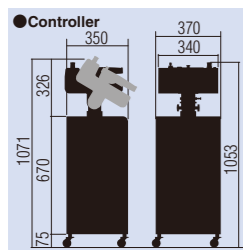
- 3/5 axes Number of Servo Axes
- Single Support Type Kick Frame
- 1-Stage Non-Telescopic Type Vertical Arm
- E-touch II Controller

Specification and Dimensions (mm)

Model	Power Source	Max. Power Consumption		Drive Method	Control Method	Air Pressure	Max. Air Pressure	Wrist Flip Angle
		S	D					
RC-30	AC200V	Single Phase AC200V 8.5A	Single Phase AC200V 10.8A	Digital Servo Motor	Micro Computer Control	0.49MPa	0.79MPa	90°
RC-70	50/60Hz	Single Phase AC200V 4.3A	Single Phase AC200V 5.5A	3/5 axes				

Model	A		Traverse Stroke		Vertical Stroke Main Arm		Vertical Stroke Sub Arm		Kick Stroke Main Arm		Kick Stroke Sub Arm												Air Consumption (Nℓ/cycle)	Max. Payload (Incl. EOAT)	Main Unit Weight (kg)
	Operator side	Rear side	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S					
RC-30S	1580	1570	900	648	1045	450	130	—	—	400	80	320	—	—	30	350	330	225	315	92.5	3	2kg	116		
RC-30D	[1880]	[1870]	[1200]	(798)	1100	—	—	550	150	(550)	120	280	280	90	(330)	(340)	—	—	—	—					
RC-70SL	2061.5	1400	873	1259	600	145	—	—	600	100	500	—	—	35	265	396.5	228	443	100	3	3kg	195			
RC-70DL	[2361.5]	[1700]	1309	<700>	<700>	195	150	450	450	115	—	—	—	—	—	—	—	—	—						

S: Equipped with main arm only; for 2-plate molds D: Equipped with main and sub arms; compatible with 3-plate molds
[]=extended traverse stroke ()=extended kick stroke < >=extended vertical stroke << >>=Rear side



RCII-100/150/250/400

Clamping Force of Compatible Molding Machines
80 – 550 tons



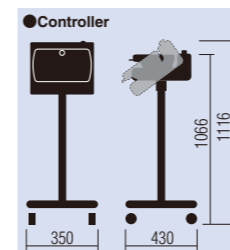
- 3/5 axes Number of Servo Axes
- Dual Support Type Kick Frame
- 2-Stage Telescopic Type Vertical Arm
- On Robot Body NC Box
- E-touch II Controller

Specification and Dimensions (mm)

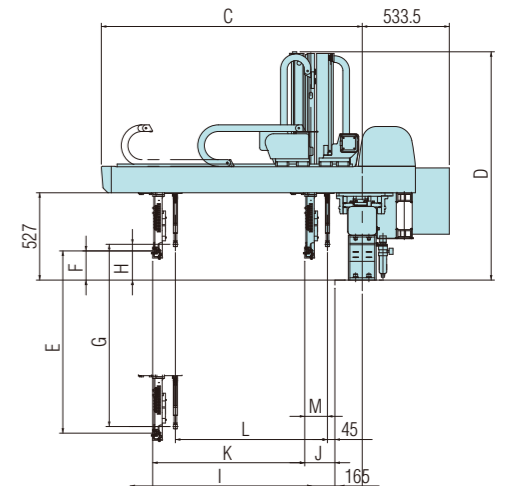
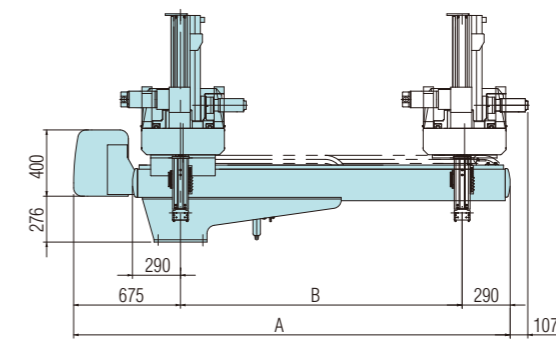
Power Source	Max. Power Consumption		Drive Method	Control Method	Air Pressure	Max. Air Pressure	Wrist Flip Angle
	S	D					
AC200V 50/60Hz	3 Phase AC200V 7.6A	3 Phase AC200V 10.4A	Digital Servo Motor 3/5 axes	Micro Computer Control	0.49MPa	0.79MPa	90°

Model	A		Traverse Stroke		Vertical Stroke Main Arm		Vertical Stroke Sub Arm		Kick Stroke Main Arm		Kick Stroke Sub Arm												Air Consumption (Nℓ/cycle)	Max. Payload (Incl. EOAT)	Main Unit Weight (kg)
	Operator side	Rear side	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S					
RCII-100S	2065	1100	1175	1180	700	—	—	700	—	335	700	117	583	—	—	—	—	—	—	—	6	5kg *11kg	385		
RCII-100D	[2465]	[1500]	1175	<1255>	<850>	—	—	<850>	—	335	700	177	523	523	132	—	—	—	—	—					
RCII-150S	2465	1500	1325	1305	850	—	—	850	—	335	850	117	583	—	—	—	—	—	—	6	5kg *11kg	410			
RCII-150D	[2665]	[1700]	1255	<1305>	<950>	300	—	<950>	—	335	850	177	523	523	132	—	—	—	—						
RCII-250S	2665	1700	1575	1380	1100	—	—	950	—	335	850	117	733	—	—	—	—	—	—	8	10kg *13kg	414			
RCII-250D	[3165]	[2200]	1305	<1480>	<1300>	—	—	<1300>	—	335	850	177	673	673	132	—	—	—	—						
RCII-400S	2665	1700	1575	1380	1100	—	—	950	—	335	850	117	733	—	—	—	—	—	—	8	10kg *13kg	433			
RCII-400D	[3465]	[2500]	1305	<1605>	<1550>	176	—	<1550>	—	335	850	177	673	673	132	—	—	—	—						

S: Equipped with main arm only; for 2-plate molds D: Equipped with main and sub arms; compatible with 3-plate molds
*Equipped with Increased Payload option []=extended traverse stroke < >=extended vertical stroke B: Stanchion is standard equipment for 2200mm or longer traverse stroke.



Adjustable viewing angle feature is optional.



RCII - 600/800/1300

Clamping Force of Compatible Molding Machines
400 - 1600 tons

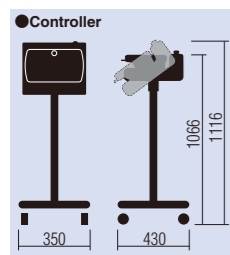


Specification and Dimensions (mm)

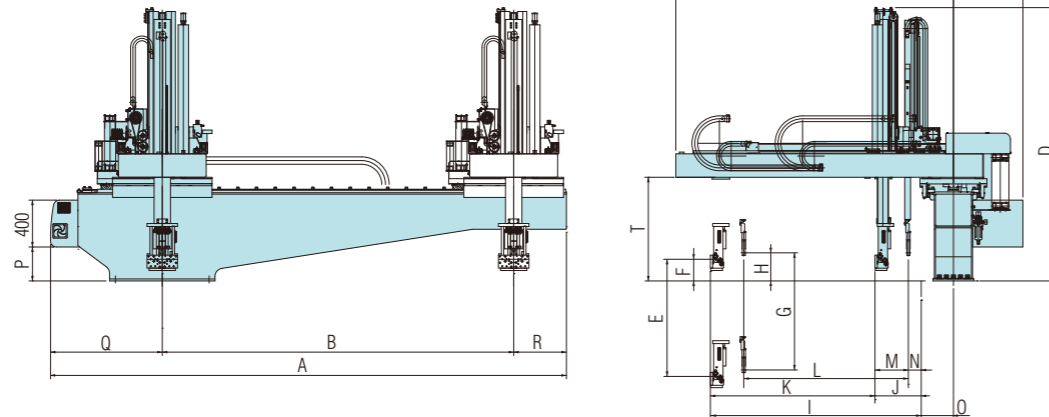
Power Source	Max. Power Consumption		Drive Method	Control Method	Air Pressure	Max. Air Pressure	Wrist Flip Angle
	S	D					
AC200V 50/60Hz	3 Phase AC200V 7.6A	3 Phase AC200V 10.4A	Digital Servo Motor 3/5 axes	Micro Computer Control	0.49MPa	0.79MPa	90°

Model	Traverse Stroke			Vertical Stroke Main Arm		Vertical Stroke Sub Arm		Kick Stroke Main Arm		Kick Stroke Sub Arm		Air Consumption (Nl/cycle)	Max. Payload (Incl. EOAT)	Main Unit Weight (kg)													
	A	B	C	E	F	G	H	I	J	K	L																
RCII-600S	3285	[3585]	2200	[2500]	1674	1700	1300	<1500>	236	1300	<1550>	301	1200	135	1065	—	—	185	407	735	350	546	676	22	15kg	625	
RCII-600D																											660
RCII-800S	3404	[3904]	2000	[2500]	1895	2205	<2330>	1550	<1800>	330	1550	<1800>	385	1300	330	970	970	275	55	330					44	25kg	1239
RCII-800D		[4404]		[3000]			<2480>		<2100>																	*35kg	1309
RCII-1300S	4404	[4904]	3000	[3500]	2330	2330	<2680>	1800	<2500>	185	1800	<2500>	240	1800	225	1575	—	—	—	290	954	450	593	885	58	35kg	1455
RCII-1300D		[5904]		[4500]																					*50kg	1528	

S: Equipped with main arm only; for 2-plate molds D: Equipped with main and sub arms; compatible with 3-plate molds
*Equipped with Increased Payload option []=extended traverse stroke < >=extended vertical stroke



Adjustable viewing angle feature is optional.



Options A Full Lineup of Value-Adding Features

Option List

Options	Explanation of each option
Additional Analog Vacuum Circuit (w/ECO Vacuum)	Up to 3 additional ECO Vacuum-equipped analog vacuum circuits may be added to the single, standard-equipped circuit.
Additional Part Chuck Pressure Circuit	1 or 3 additional pressure circuits may be added to the single, standard-equipped part gripper circuit.
Additional Sprue Chuck Circuit	Allows the timing of the sprue release to be set via mode selection. 1 or more additional circuits may be added to the single, standard-equipped circuit.
Pitch Revise Circuit	Allows operator to specify pitch of parts gripped by the end-of-arm tool.
Sprue Cut Circuit	Allows nippers on-board the end-of-arm tool to cut sprues. May not be equipped together with EOAT Gate Cut Circuit option.
EOAT Gate Cut Circuit	Enables cutter within end-of-arm tool to approach the gate of a part and cut it. May not be equipped together with Sprue Cut Circuit option.
Chuck Soft Grip Circuit	A pressure reducing valve is added to adjust chuck grip and prevent deformation of molded products.
Vertical Wrist Rotation Unit (incl. detection function)*	Adding this unit to the wrist-flip mechanism allows the orientation of released products to be changed.
Horizontal Wrist Rotation Unit*	Adding this unit to the main arm wrist allows the orientation of released products to be changed.
NC Servo Wrist Flip Mechanism*	Adds 2 servo-powered axes of motion to the arm wrist, enabling precision control and motion comparable to an articulated 6-axis robot.
EOAT Quick-Change Unit*	Allows for instant attachment/detachment of end-of-arm tool and its pneumatic and wiring connections.
EOAT One-Touch Quick-Release Fitting*	Allows for fast manual attachment/detachment of end-of-arm tool.
Signal Light / Signal Tower	Colored lights indicate status of the robot.
External Beam-Mounted Nipper Unit*	After removal from the mold, gated products may be inserted into this beam-mounted external nipper unit which separates the gate from the products.
Maintenance Steps	A ladder and stage for maintenance work can be installed on the robot.
E-Force Static Electricity Eliminator*	Eliminates the static electricity charge of plastic parts, helping repel dust and particulates.
Ascent Limit Product Verification*	After product take-out, product presence is verified at the ascent limit position by a remote-mounted limit switch.
Increased Maximum Payload	Power along the vertical axis is increased, enabling the robot to handle heavier payloads.
Increased Wrist Flip Torque	1.4 times more wrist flip torque, for applications where the end-of-arm tool is heavy or attached off-center.
8-Pin Stocker Unit Connector	Metal connector which allows robot to interface with Yushin-made stocker unit.
Reject Circuit	After receiving a "defect product" signal from the molding machine, robot releases the defective part at a position separate from the ordinary parts.
Initial Shots Discharge Motion	At the start of auto operation, for a set number of shots the robot automatically places parts at a position separate from the ordinary parts.
Wait on Traverse	While the mold is closed, if the robot is unable to wait above the mold (due to obstacles, etc), a second wait position may be designated at another point along the traverse axis.
High-Cycle Motion	Traverse and flip motions may be performed simultaneously in order to shorten cycle time.
Under-Cut Motion	Up to 3 additional teaching positions may be programmed in order to extract products from an under-cut mold.
Sampling Motion	During auto operation, the robot will place products at a Sample Release position once every set number of molding cycles.
Dropped Product Detection	After extracting products, robot continuously verifies its hold on the products until it finally releases them.
Take-out Failure Stop at Ascent Limit	While in auto operation, if the robot fails to extract products it immediately error-stops at its ascent limit. Without this option, the robot completes one full cycle before it error-stops.
Wait for Descent Order	When downstream machinery is not ready, the robot waits for a set interval for the Descent Order signal to turn ON. In the event it does not receive the Descent Order, the user may mode-select whether the robot immediately error-stops the line, or if it just continues on and releases parts.
Low Air Pressure Detection	The robot displays an error if air pressure drops below a set value.
Flying Cycle Start	The timing to output the Cycle Start signal to the molding machine is adjustable.
Communication with Molding Machine	The robot exchanges information such as mold numbers with the molding machine, which shortens set-up time.
Centralized Manual Lubrication System*	Delivers lubricant from manual pump to necessary areas.
Centralized Automatic Lubrication System	Delivers lubricant from electric pump to necessary areas.
Flexible Teaching	Software kit which allows users to create robot motion programs on their PC or on their E-touch II controller.
Multilingual Display	User may select one of nine languages to display on the controller: Japanese, English, Chinese, Korean, Spanish, Dutch, German, Portuguese, or Slovak.
Free Casing Setting	Up to 250 release positions may be designated per pallet.
3rd Party Program Installation	PC-compatible programs other than the robot control program may be installed and run on the E-touch II controller.
Integrated Exhaust Control	This option, intended for clean-room environments, greatly reduces the exposure of molded products to possible exhaust-borne particulates.
High-Cycle Traverse	Traverse axis is adapted to speedier, high-cycle use by installing a larger servo motor.
Traverse Beam Stanchion	Support stanchion is installed on the end of extended-length traverse beams or when extra precision is necessary when placing products.
Custom Color	Robot body, frame caps, and control boxes will be painted with a color specified by the customer.
Protective Sheet for Touch Screen	A transparent cover sheet to protect the controller's touch screen.

*Each picture is on the next page.