

Servo Wrist Units



Robot Compatibility

Small Models (100/150/250)
Medium Models (400/600)
 Wrist flip: max.184° (Medium Model: max.188°)
 Horizontal rotation: max.320°

Now 20% more compact!
 (compared to previous model)

- 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 8 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

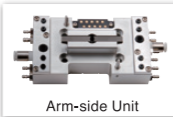
Small Models (100/150/250)
Medium Models (400/600)
Large Models (800/1300)
 Wrist flip: max.190° (Small Model: max.182°)
 Vertical rotation: max.300°
 (Large Model: max.330°)



Robot Compatibility

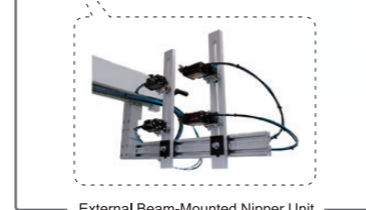
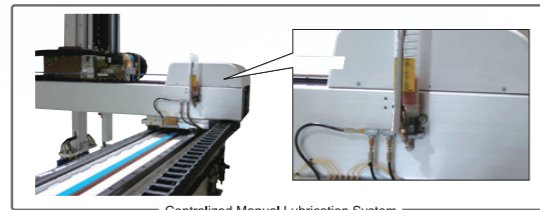
Medium Models (400/600)
Large Models (800/1300)
 Wrist flip: max.190°
 Horizontal rotation: max.280°
 Vertical rotation: max.330°
 (Medium Model: max.300°)

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.

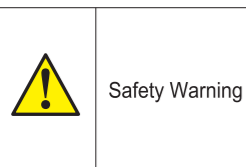
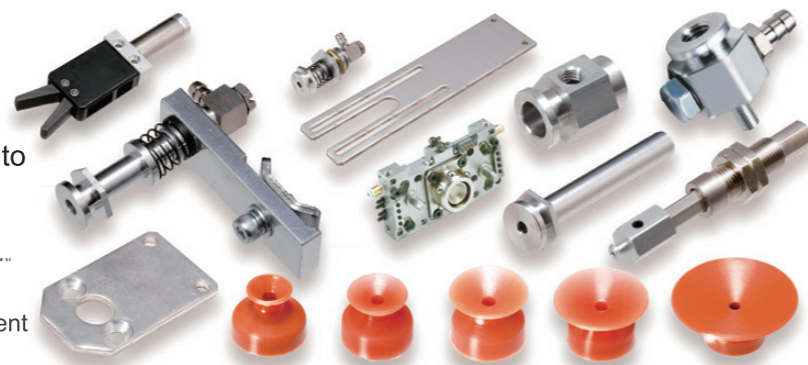


ATTACHMENT PARTS

Yushin-Approved Robot Tooling and Accessories

Yushin offers a wide range of parts to help users easily build their own end-of-arm tools.

◆ Please contact your local Yushin sales representative for tooling or tool component inquiries, orders, and catalog requests.



- The parts appearing in this catalog are for industrial robots defined by Japan's Ordinance on Industrial Safety and Health. Use them as stipulated in the safety provisions of that same ordinance.
- The photographs appearing in this catalog were taken without safety enclosures and other safety devices and equipment required by the aforementioned ordinance, in order to make product explanations easier to understand.
- Before using the product, prepare and install all required safety devices and equipment. Before using the products appearing in this catalog, carefully read all instruction manuals and other documentation provided with the product, to ensure proper use.

Yushin seeks a healthy coexistence with the planet throughout all of our business activities, including developing, employing, and promoting ergonomic and environmentally-friendly technologies.

*The content of this catalog is subject to change without notice for improvement purposes.



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



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

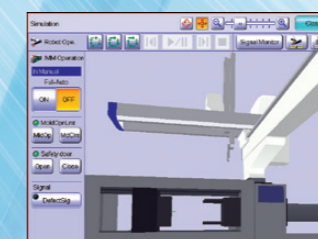
- Operator may easily set additional motion prohibit zones.

Other Features

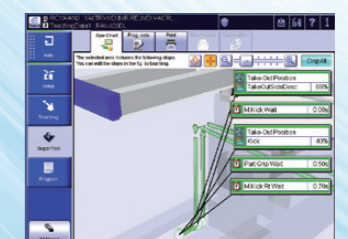
- Troubleshooting Mode enables users to personally track down problems.
- Auto Slow-down Mode decreases motion speed just before part placement to ensure a vibration-free release.
- Predictive Maintenance



Operator "Easy Screen"



Take-Out Robot Simulator Screen



Motion Chart Screen

Savings Lower Running Costs

ECO Vacuum Compressed Air Economizing Tool

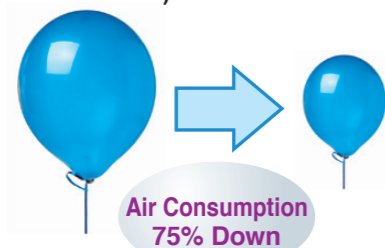
Monitors air pressure while robot suction-grips parts and only turns on air lines when necessary.

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 NL/cycle (without ECO Vacuum) 4.75 NL/cycle (with ECO Vacuum)
Air Compressor Output	2,300 NL/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



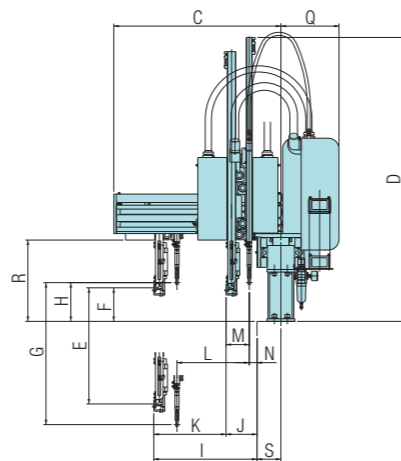
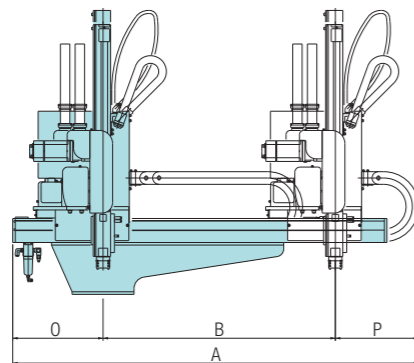
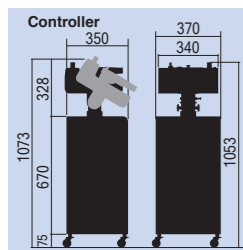
- 3/5 axes
- Single Support Type
- 1-Stage Non-Telescopic Type
- E-touch II Controller

Specification and Dimensions (mm)

Model	Power source	Power consumption		Drive method	Control method	Air pressure	Maximum allowable air pressure (factory)	Wrist flip angle
		S	D					
RC-30	AC200V	Single Phase AC200V 8.5A	Single Phase AC200V 10.8A	Digital Servo Motor 3/5 axes	Micro Computer Control	0.49MPa	0.70MPa	90°
RC-70	50/60Hz	Single Phase AC200V 4.3A	Single Phase AC200V 5.5A					

Model	A		B		C	D	Vertical stroke		H	I	J	Kick stroke		M	N	O	P	Q	R	S	Air consumption (NL/cycle)	Payload (Incl. EOAT)
	Operator side	Rear side	Traverse stroke	Traverse stroke			Main arm	Sub arm				main arm	sub arm									
RC-30S	1580	1570	900	648	1045	450	130	—	—	400	80	320 (470)	—	—	30	350 (330)	330 (340)	225	315	93	2.9 (ECO vacuum OFF)	2kg
RC-30D	[1880]	[1870]	[1200]	(798)	1100																550	
RC-70S	2062 [2362]	1400 [1700]	873	1259	600 <700>	145	—	—	600	100	500	—	—	35	265	397	228	443	100	4.0 (ECO vacuum OFF)	3kg	
RC-70D																				1309		<700>

S type: Robot is equipped with product take-out arm only. D type: Robot is equipped with product take-out arm and runner take-out arm.
[] = 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



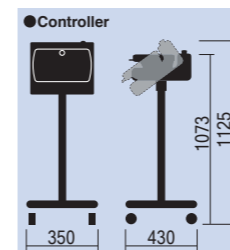
- 3/5 axes
- Dual Support Type
- 2-Stage Telescopic Type
- On Robot Body NC Box
- E-touch II Controller

Specification and Dimensions (mm)

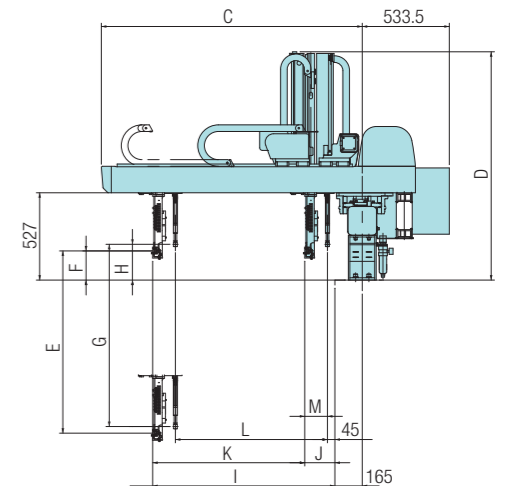
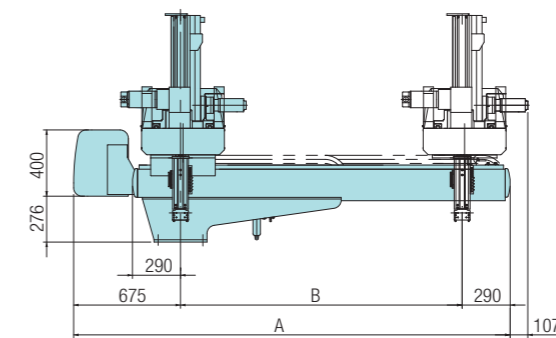
Power source	Power consumption		Drive method	Control method	Air pressure	Maximum allowable air pressure (factory)	Wrist flip angle
	S	D					
AC200V	3 Phase AC200V	3 Phase AC200V	Digital Servo Motor 3/5 axes	Micro Computer Control	0.49MPa	0.70MPa	90°
50/60Hz	7.6A	10.4A					

Model	A		B		C	D	Vertical stroke		H	I	J	Kick stroke		M	N	O	P	Q	R	S	Air consumption (NL/cycle)	Payload (Incl. EOAT)
	Operator side	Rear side	Traverse stroke	Traverse stroke			Main arm	Sub arm				main arm	sub arm									
RCII-100S	2065	[2465]	1100	[1500]	1175	1180	700	<850>	300	700	<850>	335	700	117	583	—	—	132	8.1 (ECO vacuum OFF)	5kg		
RCII-100D																					177	523
RCII-150S	2465	[2865]	1500	[1900]	1255	<1305>	850	<950>	300	850	<950>	335	850	117	583	—	—	132	8.8 (ECO vacuum OFF)	*11kg		
RCII-150D																					177	523
RCII-250S	2665	[3165]	1700	[2200]	1325	1305	950	<1300>	176	950	<1300>	335	850	117	733	—	—	132	9.2 (ECO vacuum OFF)	10kg		
RCII-250D																					177	673
RCII-400S	2665	[3465]	1700	[2500]	1575	1380	1100	<1550>	176	1100	<1550>	216	1100	122	978	—	—	137	11.7 (ECO vacuum OFF)	*13kg		
RCII-400D																					182	918

S type: Robot is equipped with product take-out arm only. D type: Robot is equipped with product take-out arm and runner take-out arm.
*Equipped with Increased Payload option [] = extended traverse stroke < > = extended vertical stroke B: Stanchion is standard equipment for 2200mm or longer traverse stroke.

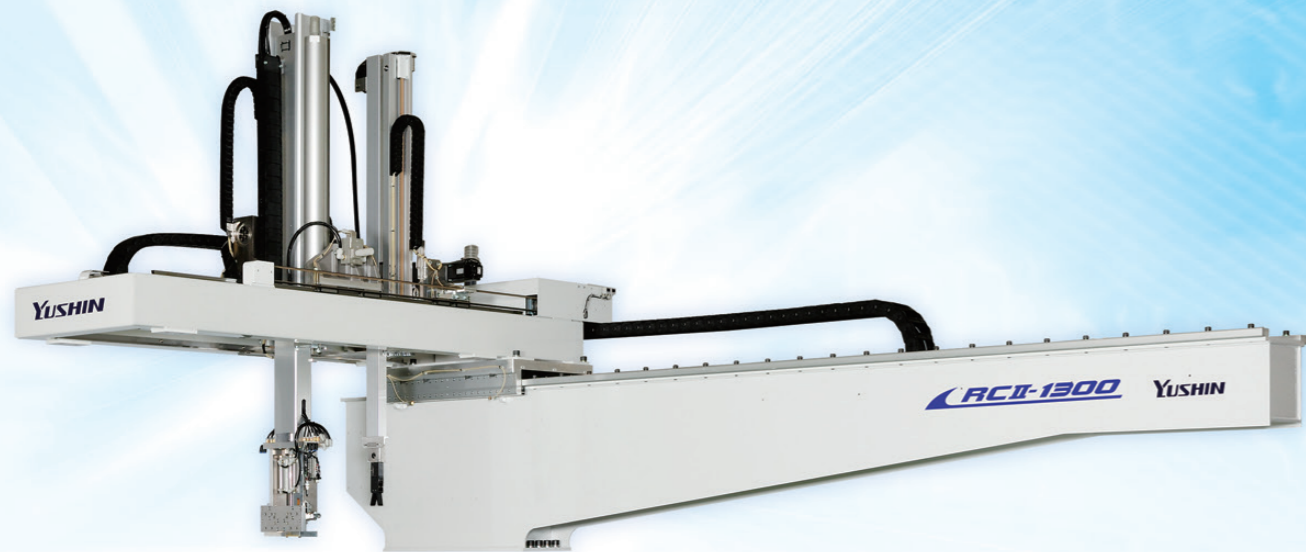


Adjustable viewing angle feature is optional.



RCII-600/800/1300

Clamping Force of Compatible Molding Machines
400 – 1600 tons

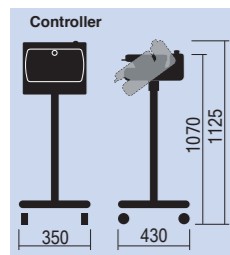


Specification and Dimensions (mm)

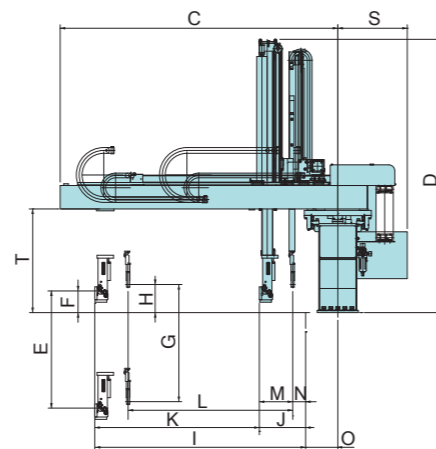
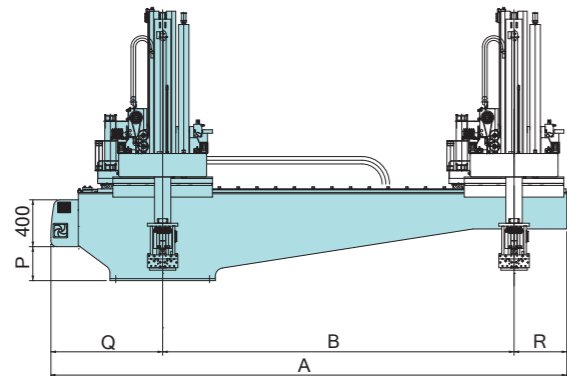
Power source	Power consumption		Drive method	Control method	Air pressure	Maximum allowable air pressure (factory)	Wrist flip angle
	S	D					
AC200V 50/60Hz	3 Phase AC200V 7.6A	3 Phase AC200V 10.4A	Digital Servo Motor 3/5 axes	Micro Computer Control	0.49MPa	0.70MPa	90°

Model	Traverse stroke		Vertical stroke Main arm	Vertical stroke Sub arm	Kick stroke main arm	Kick stroke sub arm	H	I	J	K	L	M	N	O	P	Q	R	S	T	Air consumption (NL/cycle)	Payload (Incl. EOAT)	
	A	B																				C
RCII-600S	3285	[3585]	2200	[2500]	1674	1700	1300	<1550>	236	1300	<1550>	301	1200	135	1065	—	—	—	—	—	17.2 (ECO Vacuum OFF)	15kg
RCII-600D	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.2 (ECO Vacuum On)	—	
RCII-800S	3404	[3904]	2000	[2500]	1895	2175	1550	<1800>	330	1550	<1800>	385	1300	160	1140	—	—	—	—	—	40.8 (ECO Vacuum OFF)	25kg
RCII-800D	—	[4404]	—	[3000]	—	—	—	<2300>	—	—	<2100>	—	—	330	970	970	275	55	330	31.0 (ECO Vacuum On)	*35kg	
RCII-1300S	—	[4904]	—	[3500]	—	—	—	<2450>	—	—	<2100>	—	—	—	—	—	—	—	—	56.6 (ECO Vacuum OFF)	*50kg	
RCII-1300D	4404	[5904]	3000	[4500]	2330	2300	1800	<2650>	185	1800	<2500>	240	1800	225	1575	—	—	—	—	—	44.4 (ECO Vacuum On)	35kg

S type: Robot is equipped with product take-out arm only. D type: Robot is equipped with product take-out arm and runner take-out arm.
*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 wrist allows the orientation of released products to be changed.
Servo Wrist Unit*	These NC-servo powered units replace a robot's standard wrist-flip unit to enable precision control and motion comparable to an articulated 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	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.
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 fourteen languages to display on the controller: Japanese, English, Chinese, Korean, Spanish, Dutch, German, or Slovak etc.
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.

※Equipping this option may affect the robot's strokes, payload or other standard specifications. Please consult a Yushin sales representative for details.