

**YUSHIN**

**CT** series

Clamp-End Traverse Take-out Robot



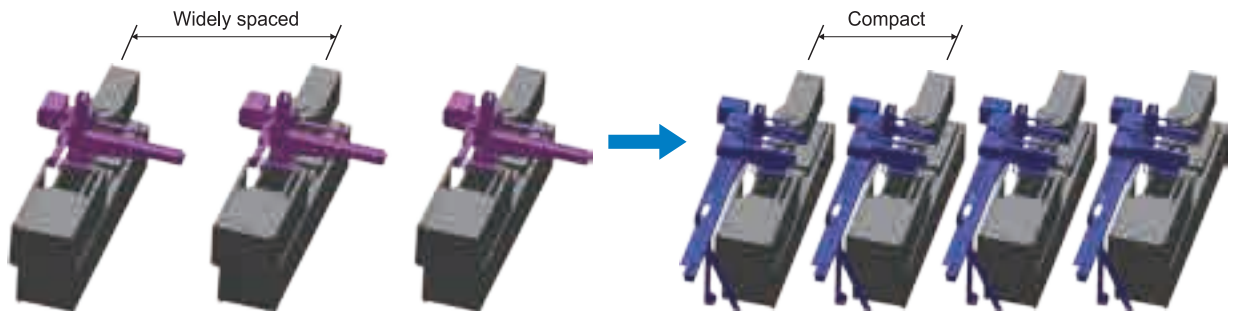
**YUSHIN PRECISION EQUIPMENT CO., LTD.**

# Clamp-end traverse type robots that products to the clamp end of injection

Innovative new concept allows for more effective production floor layouts

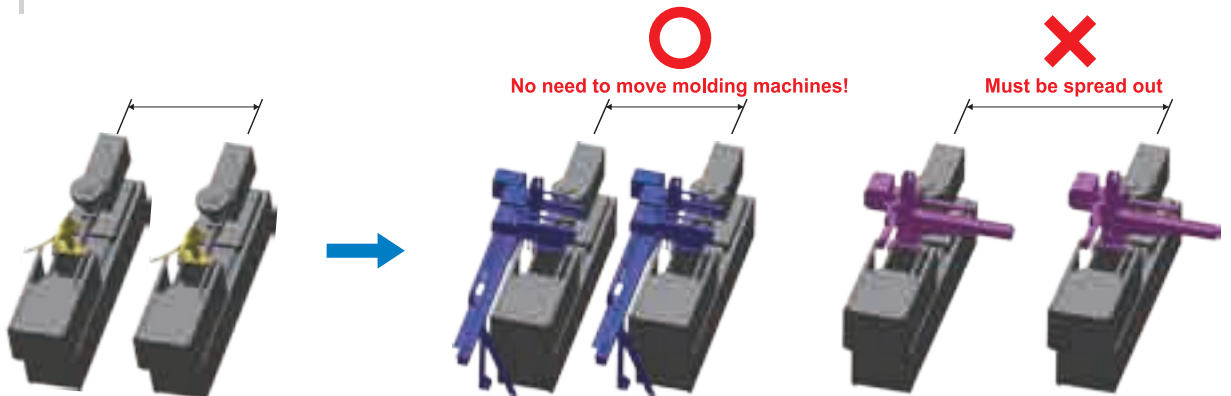
## 1 Space Efficient

CT robots require less clearance between molding machines, which helps molders fit more units on the production floor.



## 2 Easily upgrade from Sprue Picker to Take-out Servo Robot

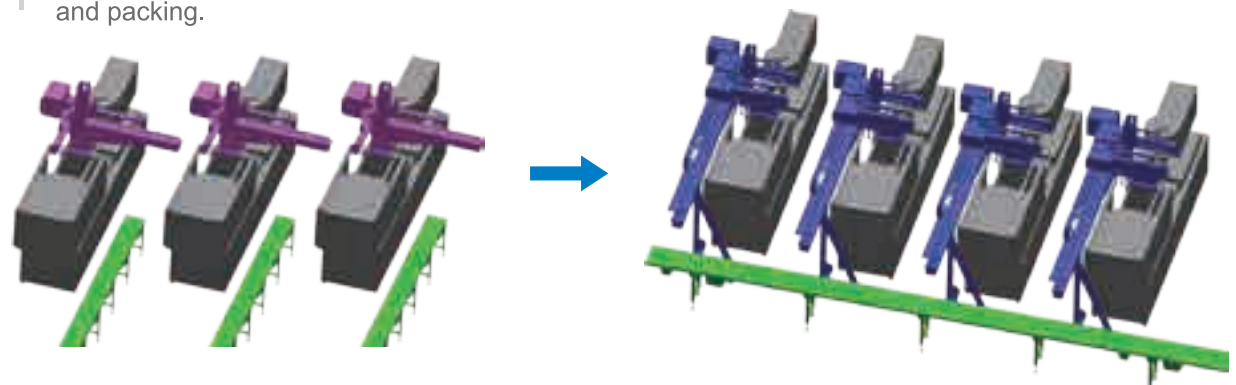
Replace your existing sprue picker robot with a new CT servo robot – no additional clearance needed



\*Clamp-end traverse type robots do not require that injection molding machines are relocated or expansion of production floorspace.

## 3 Centralization of Conveyor Belts

Two or more conveyor belts can be unified into one conveyor belt, which allows centralized inspection and packing.



# takeout molded molding machines

YPE no longer looks at take-out robots as a replacement for human labor, but rather as the starting point for industrial automation.

## Energy Conservation

- 1 Design Optimization → Downsizing of motors
- 2 ECO vacuum circuit → Reduces air consumption
- 3 ECO monitor with new added functions → Allows operators to check power and air consumption in real time

## Vibration Suppression

- 1 Design optimization + CFRP + Vibration control → Reduces settling times
- 2 Better vibration attenuation performance → Accurate and stable take-out motion

# Expanded Lineup of Standard Features



## ECO Vacuum Circuit

Auto-monitoring of the vacuum suction pressure allows air consumption to be reduced up to 75%\*.

CT robots include one ECO vacuum circuit as a standard feature.

\* Measured at Yushin during product testing

## ECO Monitor

Electricity and air consumption is monitored and displayed in real-time, which helps save energy.

## Predictive Maintenance

Robot status is always monitored and, if a potential fault is detected, an alarm message is issued. The maintenance technique has evolved from "preventive" to "predictive".

## Reject Circuit

When the robot receives a "reject" signal from the molding machine, it releases the defective product at a position other than the product release position.

## Initial Shots Discharge Motion

At the start of auto operation, a preset number of molded products can be discharged at a position other than the product release position.

## Sampling Motion

During auto operation, a molded product can be released at the sampling position every preset number of molding shots.

## Undercut Motion

Up to three teaching points can be added so that molded products can be taken out from an undercut mold.

## Flip on Clamp-end Traverse

The clamp-end traverse motion and the flip motion can be done simultaneously, to shorten cycle times.

## Stationary Side/ Movable Side Selection

Operator can choose whether robot performs take-out on the stationary side or movable side of the mold.

## Wait for Descent Order

When the downstream equipment is not ready, the robot waits for the descent signal to turn on. If the signal does not come before the corresponding timer expires, the robot either proceeds with the discharge motion or it error-stops immediately, depending on the operator's selection.

## Detection Sensor Status Check

If this feature is enabled, upon returning to the wait position, the robot will verify that no molded parts or sprues are present in EOAT.

## Lead Through Teaching

Operators can change the robot's motion program (e.g. add points or timers and set motion speeds) through intuitive teaching.

## Production Monitor

Displays current useful production data including the production count and the cumulative operating hours.

## One Standard Product Chuck Circuit

CT robots include one standard-equipped pressure circuit for product chuck. Additional circuits are available as options.

## Sprue Chuck Circuit

Via mode selection, operators can set the timing at which sprues are released. CT robots include one standard-equipped sprue chuck circuit. Additional circuits are available as options.

# Options

## • Servo Wrist Units(2 types)

Adds 2 servo-powered axes of motion to the arm wrist, enabling precision control and motion comparable to an articulated 6-axis robot. Available in two types: "wrist vertical rotation + flip" or "wrist horizontal rotation + flip".



\*Please be aware of maximum payload capacity of servo wrist units when choosing to purchase.

## • External Beam-Mounted Nipper Unit

Installed on the end of the clamp-end traverse beam, this unit works with EOAT to automatically separate gates from molded products.



## • Wrist Horizontal Rotation Unit

Installing this unit to the robot main arm allows swinging the EOAT horizontally and changing the direction of molded products when they are released. This pneumatic mechanism allows the robot to re-orient the EOAT during part release, etc.



## • EOAT Quick-Change Unit

Allows for instant automatic attachment/detachment of end-of-arm tool and its pneumatic and wiring connections.



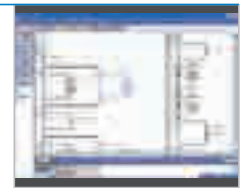
## • Wrist Vertical Rotation Unit

This pneumatic mechanism allows the robot to re-orient the EOAT during part release, etc.



## • Flexible Teaching

This software kit allows operators to create or modify complex motion programs.



**Other Options** \* Installing some options may affect standard specifications such as stroke length and maximum payload. Please consult your local Yushin sales representative.

Option Name	Description
Additional Vacuum Suction Circuit / Product Release Positions	In total, robot can accommodate up to 8 vacuum circuits and 8 release points.
Additional Product Chuck Circuits	In total, robot can accommodate up to 4 product chuck circuits.
Additional Sprue Chuck Circuits	Allows the timing of the sprue release to be set via mode selection. 1 or more additional pressure circuits can be added to the single standard circuit.
Pitch Revise Circuit	Allows operator to change orientation of parts gripped by the end-of-arm tool.
Sprue Cut Circuit	Allows nippers aboard the EOAT to cut sprues. May not be equipped together with the EOAT Gate Cut Circuit option.
EOAT Gate Cut Circuit	Allows nippers aboard the EOAT to approach and cut sprues. May not be equipped together with the Sprue Cut Circuit option above.
Chuck Soft Grip Circuit	This circuit adds a pressure reducing valve to the product chuck circuit in order to reduce stress on molded products while gripping.
EOAT Quick-Release Fitting	Allows fasy and easy manual attachment/detachment of end-of-arm tool.
Signal Light	Color signal lamps which indicate robot status. The first tier lamp is yellow, the second tier lamp is red, and the third tier lamp is available in red, yellow, green, or blue.
Ascent Limit Product Verification	This is to be located at the ascent limit and be used to detect if the EOAT holds a molded product. With this option, robot verifies product presence in EOAT upon ascending to vertical limit after product take out.
Increased Maximum Payload	Power along the vertical axis is increased, enabling robot to handle heavier payloads.
Increased Wrist Flip Torque	This increases the flip torque and is of help when the EOAT is heavy or the offset from the flip center is large.
Custom Color	The robot covers, and the enclosures of the control box and operation station are painted with a user-specified color.
8-pin Connector for Stocker Unit Interface	This is a connector that allows interlock with our stacking system.
Pause for Mold Open	Used for manual ejection
Centralized Manual Lubrication System	Greasing with a hand-operated pump
Centralized Automatic Lubrication System	Automatically lubricates important areas of the robot every set number of shots (designated by operator)
Cleanroom-grade Grease	Cleanroom-grade grease is available for sensitive applications.
Controller protection Sheet	A replacement protective sheet for the controller touch screen (one protective sheet is equipped standard).
Dropped Product Detection	Robot continuously verifies its hold on products until it finally releases them.
Stop at Ascent Limit after Take-out Failure	During 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.
Low Air Pressure Detection	This feature stops the robot with an error message immediately when the supply air pressure drops below a specified limit.
Communication with Molding Machine	The robot exchanges information such as mold numbers with the molding machine, which shortens set-up time.
Multilingual Display	Three display languages are supported. You can select one from Japanese, English, and any other language you want. Standard controllers feature Japanese plus English as display languages. Purchase this option to add one of nine additional display languages.
Gate Cut Multiplier	This feature allows operator to set up to 4 gate cut motions per cycle, with up to 3 wait positions per gate cut.

# CT series

## Common Specifications

Power source	Driving method	Control method	Air pressure	Wrist flip angle
AC200V/220V/230V (50/60Hz) single phase	Digital servo motor (3/6 axes)	Microcomputer control	0.49MPa	90°

## CT-100 / 150 / 250



- 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.
- Values in [ ] are optional modified strokes.

Model	Power consumption	Clamp-end Traverse (mm)		Traverse stroke (mm)		Vertical stroke (mm)		Air consumption (NL/cycle)	Payload (kg)	Clamp Force of Compatible Molding Machine (tf)
		Main arm	Sub arm	Main arm	Sub arm	Main arm	Sub arm			
CT-100S	Type S 1.9kVA AC200V 9.3A  Type D 2.9kVA AC200V 14.3A	2500	—	600	—	650	—	4.6 (ECO vacuum OFF)	5	80~130
CT-100D			2500 [3000] [3500] [4000] [4500]		600		700	1.5 (ECO vacuum ON)		
CT-150S		[3000]	—	—	800 [900]	—	4.7 (ECO vacuum OFF)	5	100~220	
CT-150D		[4000] [4500]	2500 [3000] [3500] [4000] [4500]	600		850 [950]	1.5 (ECO vacuum ON)			
CT-250S		—	—	—	900 [1050]	—	5.0 (ECO vacuum OFF)	5	180~300	
CT-250D		2500 [3000] [3500] [4000] [4500]	750	750		950 [1100]	1.7 (ECO vacuum ON)			

## CT2-100 / 150 / 250

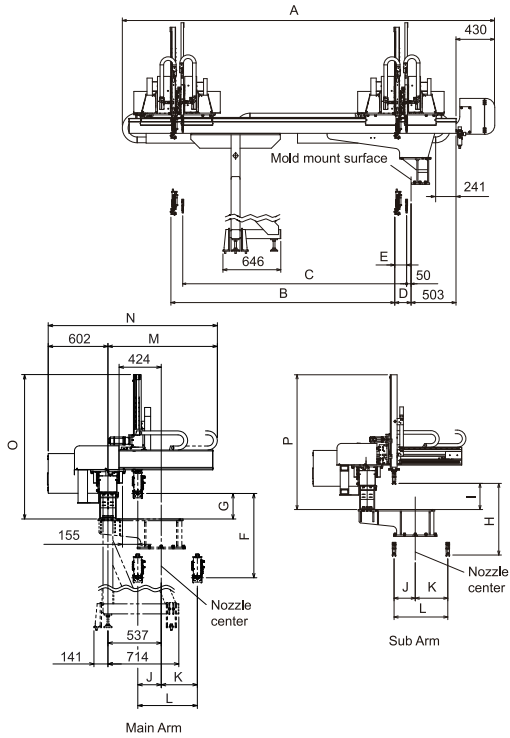


- S type: Robot is equipped with product take-out arm only.
- D type: Robot is equipped with product take-out arm and runner take-out arm.
- Values in [ ] are optional modified strokes.

Model	Power consumption	Clamp-end Traverse (mm)		Traverse stroke (mm)		Vertical stroke (mm)		Air consumption (NL/cycle)	Payload (kg)	Clamp Force of Compatible Molding Machine (tf)
		Main arm	Sub arm	Main arm	Sub arm	Main arm	Sub arm			
CT2-100S	Type S 1.9kVA AC200V 9.3A  Type D 2.9kVA AC200V 14.3A	2500	—	600	—	700	—	7.3 (ECO vacuum OFF)	5	80~130
CT2-100D			2500 [3000] [3500] [4000] [4500]		600		700	2.0 (ECO vacuum ON)		
CT2-150S		[3000]	—	—	850 [950]	—	7.4 (ECO vacuum OFF)	5	100~220	
CT2-150D		[4000] [4500]	2500 [3000] [3500] [4000] [4500]	600		850 [950]	2.0 (ECO vacuum ON)			
CT2-250S		—	—	—	950 [1100]	—	8.0 (ECO vacuum OFF)	5	180~300	
CT2-250D		2500 [3000] [3500] [4000] [4500]	750	750		950 [1100]	2.4 (ECO vacuum ON)			

## CT-100 / 150 / 250

### External Dimensions

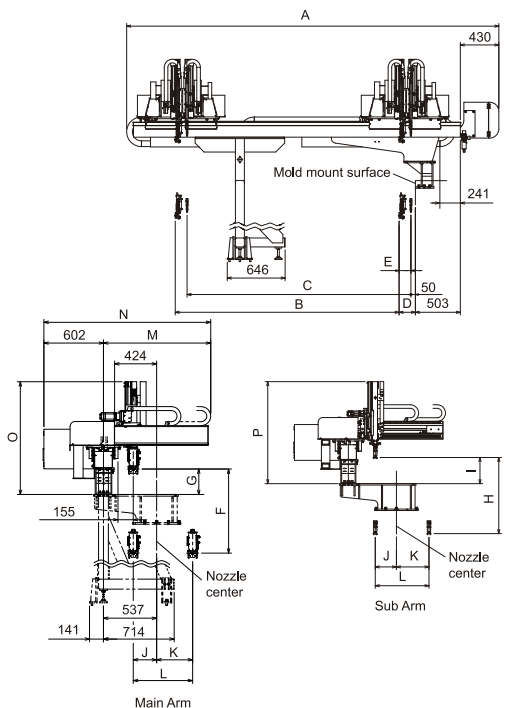


Model Name	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
CT-100S			—	122	—			—	—							—
CT-100D			2500 (3000) (3500) (4000) (4500)	182	132	650		700	292						1455	1505
CT-150S	4156 (4674)	2500 (3000)	—	122	—			—	—			364	600	1103	1705	—
CT-150D	(5116) (5633) (6153)	(3500) (4000) (4500)	2500 (3000) (3500) (4000) (4500)	182	132	800 <900>	257	850 <950>	292	237					1607 <1711>	1657 <1761>
CT-250S			—	122	—			—	—							—
CT-250D			2500 (3000) (3500) (4000) (4500)	182	132	900 <1050>		950 <1100>	292		514	750	1253	1855	1711 <1863>	1761 <1913>

( ) : Modified Clamp-end Traverse Stroke < > : Modified Vertical Stroke

## CT2-100 / 150 / 250

### External Dimensions



Model Name	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
CT2-100S			—	122	—			—	—							—
CT2-100D			2500 (3000) (3500) (4000) (4500)	182	132	700		700	292						1139	1139
CT2-150S	4156 (4674)	2500 (3000)	—	122	—			—	—			364	600	1083	1685	—
CT2-150D	(5116) (5633) (6153)	(3500) (4000) (4500)	2500 (3000) (3500) (4000) (4500)	182	132	850 <950>	257	850 <950>	292	237					1211 <1267>	1211 <1267>
CT2-250S			—	122	—			—	—							—
C2-250D			2500 (3000) (3500) (4000) (4500)	182	132	950 <1100>		950 <1100>	292		514	750	1233	1835	1267 <1339>	1267 <1339>

( ) : Modified Clamp-end Traverse Stroke < > : Modified Vertical Stroke

## ◆ 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.



### Safety Warning

- 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.

**YUSHIN** YUSHIN PRECISION EQUIPMENT CO.,LTD.

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