

YUSHIN

HOP series

Sprue Picker



YUSHIN PRECISION EQUIPMENT CO., LTD.

HOP SERIES

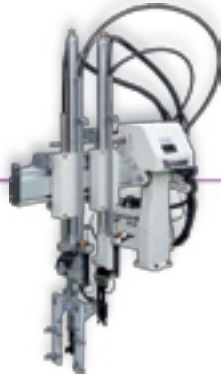


HOP Five 450~1000

3 axis pneumatic high-speed sprue pickers for horizontal molding machines from 30-350 tons

G II B-type controller

CH-type controller



TWINHOP-G 450/550

3 axis pneumatic sprue and product pickers for horizontal molding machines from 30-100 tons

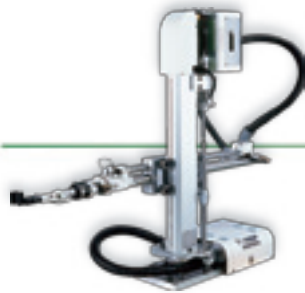
G-type controller



miniHOP-G 300

3 axis pneumatic sprue pickers for horizontal molding machines under 30 tons

G-type controller



V-HOP 350~750

2 axis pneumatic sprue pickers for vertical molding machines from 20-150 tons

G-type controller



N-HOP-GII 450~900

Single servo-powered axis sprue pickers for horizontal molding machines from 30-350 tons

G II B-type controller

CH-type controller

Basic model with carefully-selected functions for simple, efficient controls

- LCD Screen with 2 lines of text
- Saves up to 15 patterns of mold set-up data.



G II B-type controller panel

G II B-type controller

Next generation G-type controller offering higher performance and features

- Equipped with eye-friendly large LCD.
- Icon selection is possible on the menu panel.
- The user-friendly raised silicone keys are featured on the pendant.
- Up to 30 mold set ups storage is possible.
- Data backup is possible with SDCard.



G-type controller

- Multilingual display function(optional).
- Easy operation by LCD.
- Light-weight handheld controller.
- Up to 15 mold set ups storage is possible.
- Production count memory.

3 axis pneumatic high-speed sprue pickers for horizontal molding machines from 30-350 tons

HOP Five 450~1000

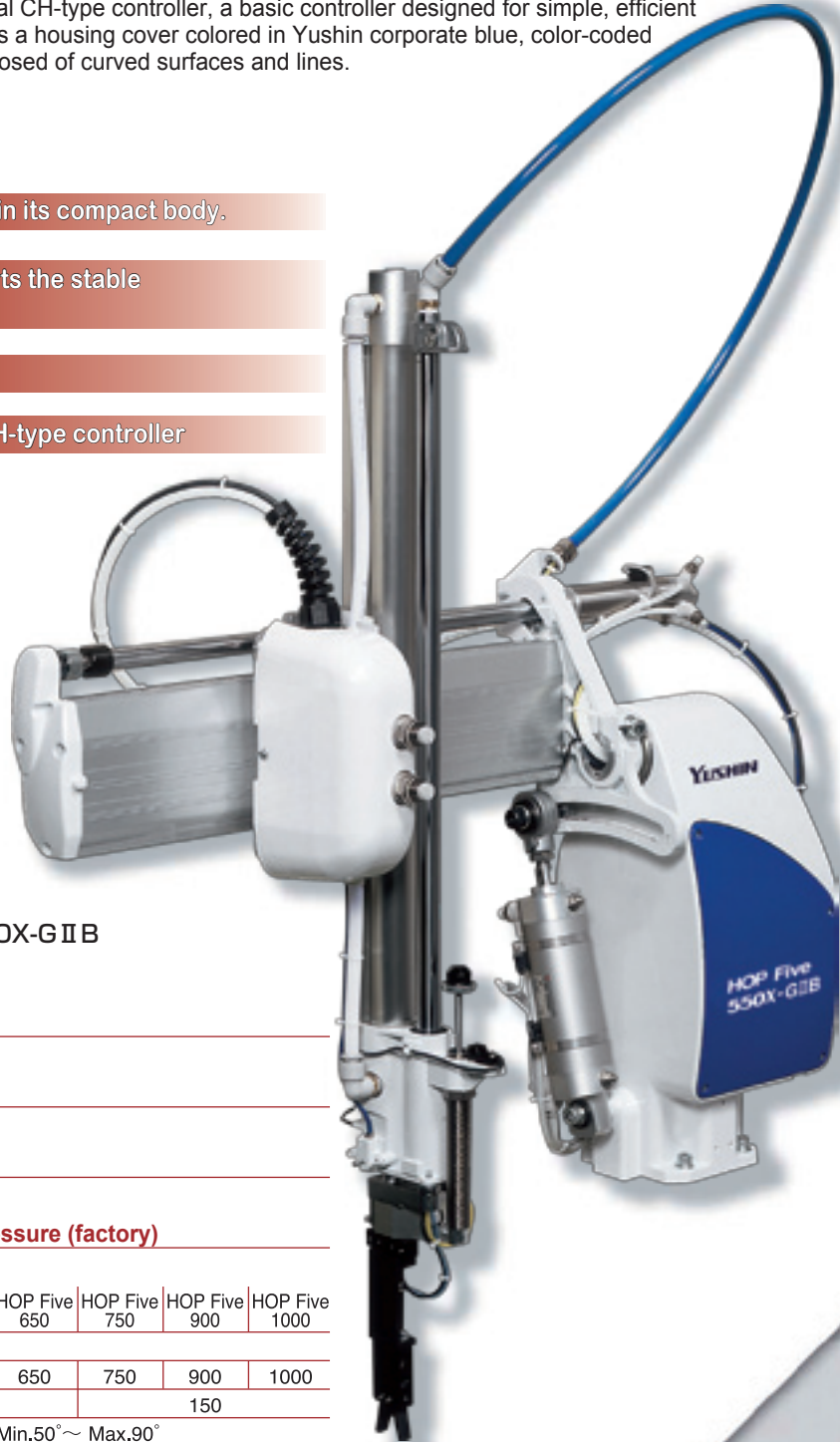
The "HOP Five" is the product of many years of research, development and experience with swing-type take-out robots. It offers a space saving design with integration of robot body and control mechanism including transformer and control circuit board. Furthermore, it also offers efficient operation as its design enables operators to do all of the main adjusting operations at the operator side of molding machines. The HOP Five is available with one of two new controller systems to best fit your production needs. The high performance GII B-type controller improves on the already superior functionality of the previous G-type controller. Or, users may choose the economical CH-type controller, a basic controller designed for simple, efficient controls. As for appearance, it adopts a housing cover colored in Yushin corporate blue, color-coded piping and user-friendly shape composed of curved surfaces and lines.

Equipped with ample functions in its compact body.

The robust construction supports the stable high-speed take-out operation.

Yushin linear rail

Available with either G II B or CH-type controller



HOP Five 550X-GII B

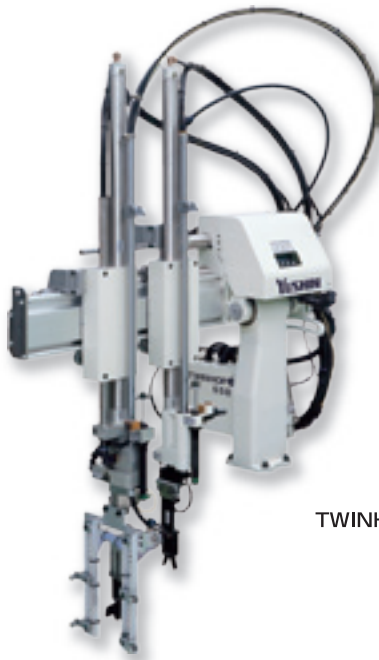
| | | | | | | | |
|-----------------------------------|---|--------------|--------------------------------|--------------|--------------|--------------|---------------|
| Standard specification | Power source | | | | | | |
| | AC200V 0.25A (50/60Hz) | | | | | | |
| | Control method | | | | | | |
| | Micro-computer | | | | | | |
| | Air Pressure | | | | | | |
| | 0.49MPa | | | | | | |
| | Maximum allowable air pressure (factory) | | | | | | |
| | 0.7MPa | | | | | | |
| | Model | HOP Five 450 | HOP Five 550 | HOP Five 650 | HOP Five 750 | HOP Five 900 | HOP Five 1000 |
| | Stroke | | | | | | |
| Vertical (mm) | 450 | 550 | 650 | 750 | 900 | 1000 | |
| Kick (mm) | 90 | | | 150 | | | |
| Swing | Min.50° ~ Max.90° | | | | | | |
| Chuck position (mm) | | | | | | | |
| Waiting position adjustable 114 | | | Waiting position adjustable 48 | | | | |
| Air consumption (NL/cycle) | | | | | | | |
| | 11 | 13 | 15 | 18 | 21 | 23 | |
| Payload(*) | | | | | | | |
| 2kg | | | | | | | |

*Payload includes the weight of chuck and/or EOAT. X-,XC-,and XN-Types are also available.

3 axis pneumatic sprue and product pickers for horizontal molding machines from 30-100 tons

TWINHOP-G 450/550

In addition to being a sprue picker, the TWINHOP-G has both a main arm and a sub arm and supports 3 plate molds. The TWINHOP-G is provided standard with an adjustable 4 cup end-of-arm tool, wrist flipping, vacuum circuit, and is capable of taking out products using suction.



TWINHOP-G 550

3 plate mold capability

End of arm tool mounting capability

Wrist flipping/vacuum/adjustable end-of-arm tool are standard.

Yushin linear rail

G-type controller

Standard specification

Power source
AC200V 0.25A (50/60Hz)

Control method
Sequence stored program

Air Pressure
0.49MPa

Maximum allowable air pressure (factory)
0.7MPa

| Model | TWINHOP-G 450 | TWINHOP-G 550 |
|-----------------------------------|--------------------------------|---------------|
| Stroke | | |
| Vertical (mm) | 450 | 550 |
| Kick (mm) | 90 | |
| Swing | Min.50° ~ Max.90° | |
| Chuck position (mm) | Waiting position adjustable 60 | |
| Air consumption (NL/cycle) | 16 | 18 |
| Payload(*) | 2kg | |

*Payload includes the weight of chuck and/or EOAT.

3 axis pneumatic sprue pickers for horizontal molding machines under 30 tons

miniHOP-G 300

The miniHOP-G300 was developed to support miniature molding machines made by various injection molding machine manufacturers. Although it is small, the use of Yushin linear rails provides high-speed stability and virtually maintenance free qualities.



miniHOP-G 300

Adjustable chuck waiting position

The chuck waiting position can be adjusted within a 65-mm range in the vertical direction and between 30 to 205mm from the mold mounting surface of the stationary platen in the horizontal direction.

Yushin linear rail

G-type controller

Standard specification

Power source
AC200V 0.25A (50/60Hz)

Control method
Sequence stored program

Air Pressure
0.49MPa

Maximum allowable air pressure (factory)
0.7MPa

Model miniHOP-G 300

| Stroke | | |
|-----------------------------------|---------------------------------------|-----------------------|
| Vertical (mm) | 300 | (Extended type 350) |
| Kick (mm) | 15~30 | (Extended type 35~50) |
| Swing | 50° 60° 80° (3 position changable) | |
| Chuck position (mm) | Waiting position adjustable 65 | |
| Air consumption (NL/cycle) | 4 | |
| Payload(*) | 1kg | |

*Payload includes the weight of chuck and/or EOAT.

2 axis pneumatic sprue pickers for vertical molding machines from 20-150 tons

V-HOP 350~750

The Vertical HOP is a sprue picker robot made specifically for vertical molding machines. In addition to upper mold extraction, the robot can be set to accommodate to bottom mold extraction simply by controller and mechanical settings.

Chuck capable of a 180-degree flip motion to ensure runners can fall freely (X Specification)

Swing axis

Runner release location can be set by adjusting the swing angle between 60 and 90 degrees. (R Specification)

Yushin linear rail

G-type controller

V-HOP 550RX



Standard specification

Power source

AC200V 0.25A (50/60Hz)

Control method

Sequence stored program

Air Pressure

0.49MPa

Maximum allowable air pressure (factory)

0.7MPa

Model

| | | | | |
|--------------|--------------|--------------|--------------|--------------|
| V-HOP 350 | V-HOP 450 | V-HOP 550 | V-HOP 650 | V-HOP 750 |
|--------------|--------------|--------------|--------------|--------------|

Stroke

Traverse (mm) 350 450 550 650 750

Kick (mm) 90

Swing Min.60° ~ Max.90°

Chuck position (mm)

Waiting position adjustable 60

Air consumption(NL/cycle)

No reversal 8 10 12 14 16

Reversal possible 12 14 16 18 20

Payload(*)

1.5kg

*Payload includes the weight of chuck and/or EOAT. X- and R-Types are also available.

Single servo-powered axis sprue pickers for horizontal molding machines from 30-350 tons

N-HOP-GII 450~900

In a swing type robot, the item that requires the most frequent adjustment in connection with mold changes is the kick stroke. The kick axis of the N-HOP-G II is driven with a numerically controlled servomotor, which allows the adjustment to be executed safely and accurately without climbing on top of the molding machine. The servomotor also provides a fast and stable runner take-out motion that can only be achieved with servomotor drive.



N-HOP-GII 550X

NC servomotor for kick axis

Yushin linear rail

G II B-type controller

Standard specification

Power source

AC200V 3.0A (50/60Hz)

Control method

Sequence stored program

Air Pressure

0.49MPa

Maximum allowable air pressure (factory)

0.7MPa

Model

| | | | | |
|---------------|---------------|---------------|---------------|---------------|
| N-HOP-GII 450 | N-HOP-GII 550 | N-HOP-GII 650 | N-HOP-GII 750 | N-HOP-GII 900 |
|---------------|---------------|---------------|---------------|---------------|

Stroke

Vertical (mm) 450 550 650 750 900

Kick (mm) 350 620

Swing Min.50° ~ Max.90°

Chuck position (mm)

Waiting position adjustable 60

Air consumption(NL/cycle)

11 13 15 17 19

Payload(*)

2kg

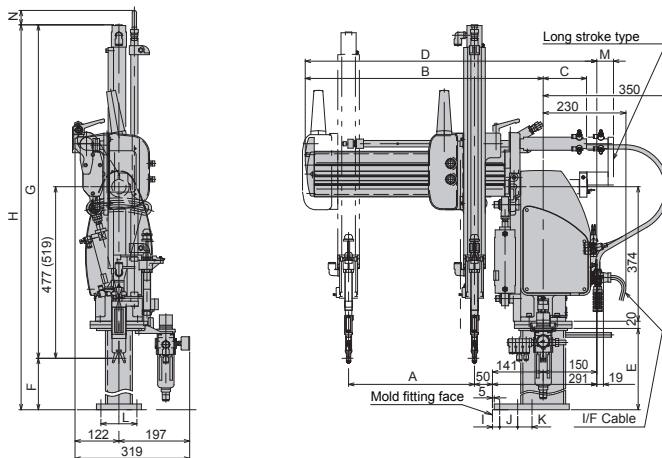
*Payload includes the weight of chuck and/or EOAT. X-,XC- and XN-Types are also available.

HOP Five 450~1000

| Model | A | B | C | D | E | F | G |
|---------------|-----|-----|-----|------|--------------|--------------|--------------------------|
| HOP Five 450 | | | | | | | 845 (887) <854> [896] |
| HOP Five 550 | 350 | 662 | 121 | 811 | 250 (350) | 167 (225) | 945 (987) <954> [996] |
| HOP Five 650 | | | | | | | 1045 (1087) |
| HOP Five 750 | | | | | | | 1192 (1234) |
| HOP Five 900 | 620 | 992 | 181 | 1141 | 350 (450) | 267 (325) | 1342 (1384) |
| HOP Five 1000 | | | | | | | 1442 (1484) |

| Model | H | I | J | K | L | M | N |
|---------------|------------------------------|----|----|----|-----|----|--------------|
| HOP Five 450 | 1012 (1112) <1021> [1121] | | | | | | 259 <249> |
| HOP Five 550 | 1112 (1212) <1121> [1221] | 20 | 50 | 40 | 100 | | |
| HOP Five 650 | 1212 (1312) | | | | | | 259 |
| HOP Five 750 | 1459 (1559) | | | | | | |
| HOP Five 900 | 1609 (1709) | 25 | 60 | 60 | 128 | 47 | 161 |
| HOP Five 1000 | 1709 (1809) | | | | | | |

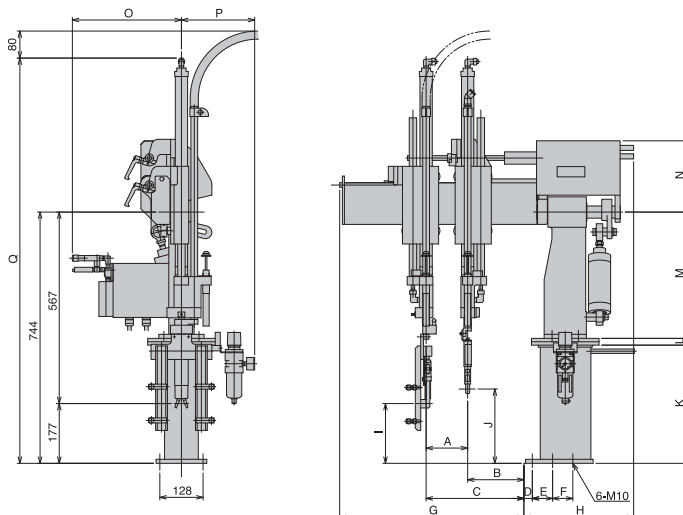
() X sprification. < > High speed specification. [] X high speed specification.



TWINHOP-G 450/550

| Model | A | B | C | D | E | F | G | H |
|---------------|--------|------|------|----|----|----|-----|-----|
| TWINHOP-G 450 | Min.85 | 44 | 129 | 25 | 60 | 60 | 546 | 325 |
| TWINHOP-G 550 | | ~285 | ~413 | | | | | |

| Model | I | J | K | L | M | N | O | P | Q |
|---------------|-----|-----|-----|----|-----|-----|-----|-----|------|
| TWINHOP-G 450 | 177 | 220 | 350 | 20 | 374 | 211 | 324 | 217 | 1200 |
| TWINHOP-G 550 | | | | | | | | | 1300 |

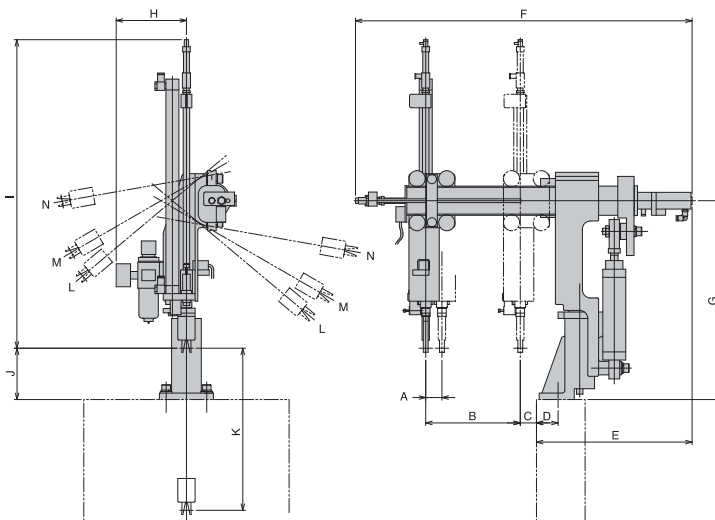


miniHOP-G 300

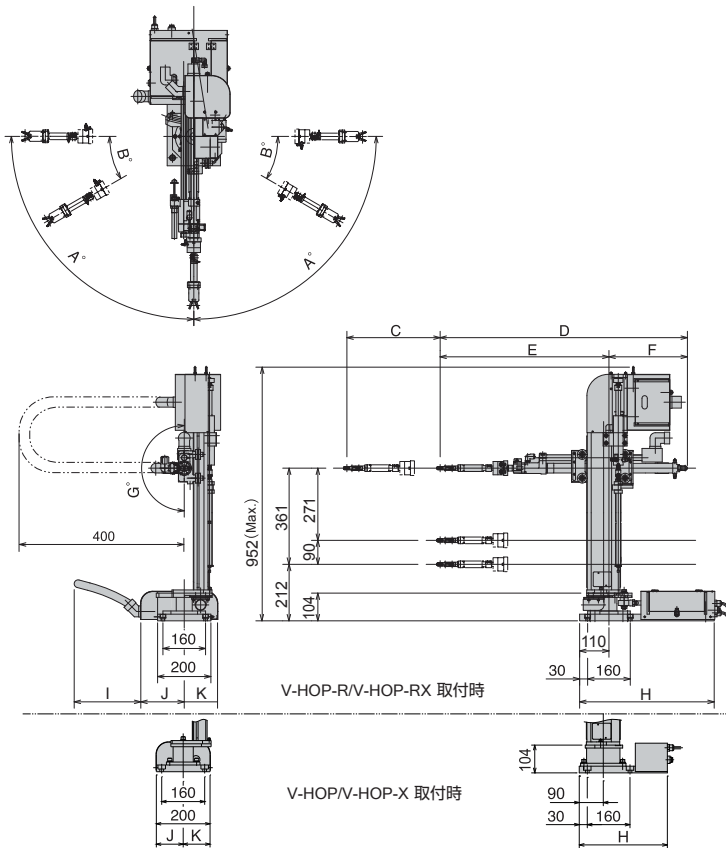
| Model | A | B | C | D | E | F | G | H |
|---------------|----------------------|-----|----|----|--------------|--------------|---------|-----|
| miniHOP-G 300 | 15~30st (30~50st) | 175 | 30 | 40 | 288 (308) | 625 (643) | 368~433 | 130 |

| Model | I | J | K | L | M | N |
|---------------|--------------|--------|------------------|-----|-----|-----|
| miniHOP-G 300 | 571 [621] | 95~160 | 0~300st [350] | 50° | 60° | 80° |

[] Vertical stroke 350mm < > Kick stroke 50mm



V-HOP 350~750

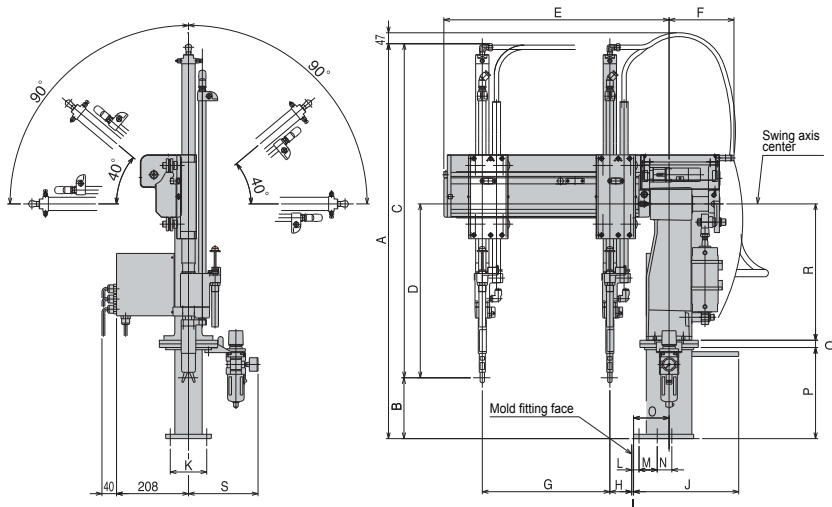


| Model | A | B | C | D | E | F | G |
|---------------------------------|----|----|-----------------------|---------------------------------------|--------------|----------------|-----|
| V-HOP (w/o Swivel w/o Wrist) | — | — | — | 817 (1127) (917) (1227) | 522 (532) | — | — |
| V-HOP-X (w Swivel w Wrist) | — | — | 350 (450) [550] | 929 (1239) (1029) (1339) [1129] | 634 (644) | 295 (395) | 180 |
| V-HOP-R (w Swivel w Wrist) | 90 | 30 | (650) (750) | 817 (1127) (917) (1227) [1017] | 522 (532) | (595) (695) | — |
| V-HOP-RX (w Swivel w Wrist) | 90 | 30 | — | 929 (1239) (1029) (1339) [1129] | 634 (644) | — | 180 |

| Model | H | I | J | K |
|---------------------------------|-----|-----|-----|-----|
| V-HOP (w/o Swivel w/o Wrist) | — | — | — | — |
| V-HOP-X (w Swivel w Wrist) | 330 | — | 100 | 100 |
| V-HOP-R (w Swivel w Wrist) | 505 | 137 | 163 | 125 |
| V-HOP-RX (w Swivel w Wrist) | — | — | — | — |

() is 450 model. [] is 550 model. < > is 650 model. < > is 750 model.
*The B dimension shows the adjustable range of the swivel angle.

N-HOP-GII 450~900



| Model | A | B | C | D | E | F | G |
|--------------|------|-----|------|-----|-----|-----|-----|
| N-HOP-GII450 | 1084 | — | 917 | — | — | — | — |
| N-HOP-GII550 | 1184 | 167 | 1017 | — | 586 | — | 350 |
| N-HOP-GII650 | 1284 | — | 1117 | 477 | — | 178 | — |
| N-HOP-GII750 | 1484 | 267 | 1217 | — | 856 | — | 620 |
| N-HOP-GII900 | 1634 | — | 1367 | — | — | — | — |

| Model | H | I | J | K | L | M | N | O |
|--------------|----|-----|-----|----|----|----|----|---|
| N-HOP-GII450 | — | — | — | — | — | — | — | — |
| N-HOP-GII550 | 5 | 289 | 100 | 20 | 50 | 40 | 98 | — |
| N-HOP-GII650 | 60 | — | — | — | — | — | — | — |
| N-HOP-GII750 | 4 | 400 | 128 | 25 | 60 | 60 | 99 | — |
| N-HOP-GII900 | — | — | — | — | — | — | — | — |

| Model | P | Q | R | S |
|--------------|-----|----|-----|---|
| N-HOP-GII450 | — | — | — | — |
| N-HOP-GII550 | 250 | — | 191 | — |
| N-HOP-GII650 | — | 20 | 374 | — |
| N-HOP-GII750 | 350 | — | 217 | — |
| N-HOP-GII900 | — | — | — | — |

HOP series Option List

| Option | Explanation | Target Models |
|--|---|---|
| X Specification | When molded products are released onto a conveyor or a chute, the chuck unit rotates 90 degrees to release the products without damaging them. ※V-HOP chuck rotates 180 degrees. | HOP Five/V-HOP/N-HOP-GII |
| XC Specification | With vacuum suction, the model can take out molded products that cannot be gripped with chuck or that are molded with multi-cavity mold. When the products are released, an end-of-arm tool rotates 90 degrees. (The vacuum suction circuit is included.) | HOP Five/N-HOP-GII |
| XN Specification | Sprues of a side-gate or direct-gate mold can be cut by nipper chuck. In releasing the products, 90 degree wrist flip is also applicable. | HOP Five/N-HOP-GII |
| R Specification | The runner release position is set at will by adjusting horizontal flip angle from 60 to 90 degree. | V-HOP |
| Conveyor interlock | By attaching the optional metal connector, it interlocks with a flat belt conveyor and becomes capable of stocking molded products by shot. | All Models※Standard function for TWINHOP-G |
| Reject circuit | When a molding machine gives reject signal, the defective product is released at a different position from that for good products. | HOP Five/TWINHOP-G/miniHOP-G/N-HOP-GII |
| Special color | The main body, frame covers, control box and operation box can be painted with the color specified by customers. | All Models(Not applicable for plastic cover) |
| Ejector interlock | The ejector goes forward after the robot moves to the take-out position. This is useful when the timing of ejector motion and robot take-out motion are to be synchronized. | All Models※Standard function for TWINHOP-G |
| Air blow circuit | When a runner is gripped and the arm ascends, fragments of the molded products that are adhering to the mold are blown away by using air. | HOP Five/TWINHOP-G/V-HOP/N-HOP-GII |
| Nipper half-grip circuit | A pressure-reducing valve which allows the nipper to grip at low pressure is added to the product chuck circuit in order to secure the products when extracting them from the mold. The nipper blade softly grips the sprue at reduced force. | HOP Five/N-HOP-GII |
| Vacuum blow off valve | When it is difficult to release products that stick to the vacuum suction pads, the robot can release the products by replacing the vacuum with pressurized air. | HOP Five/TWINHOP-G/N-HOP-GII |
| Swing limit waiting | When the robot arm cannot stay at the normal waiting position while molds closed, it can stay at swing limit position. | HOP Five/TWINHOP-G/N-HOP-GII |
| Safety door closed signal | This signal is input to the robot when the safety door of a molding machine is closed. Robot does not start without this signal under auto operation. | All Models |
| Auto injection signal | Take-out robot does not start its operation without auto injection signal of a molding machine. With this function, the take-out robot starts its operation only when real molding is done. | All Models※Standard function for V-HOP |
| Multilingual display | Displayed language on the controller can be changed by selecting from multilingual choices. | All Models ※HOP Five-G IIB : Choose 1 of 12 available alternate languages. HOP Five-CH : Up to 3 languages out of Japanese, English, Korean, Chinese and Thai miniHOP-G : One combination out of Japanese/ English/ Chinese, Japanese/English/Korean, and Japanese/English/Thai TWINHOP-G : Japanese, English and Chinese N-HOP-G II : Up to 2 languages out of Japanese, English, Chinese V-HOP : One combination out of Japanese/ English/ Chinese, Japanese/English/Korean |
| Lead Through Teaching | Operators can easily add and change output and input signals, and timer with this software by themselves. | HOP Five-G IIB |
| Three(3) position safety switch on controller | Valve operation is possible only while the operator is holding this switch in the center position. | HOP Five (3 positions) TWINHOP-G/miniHOP-G/V-HOP/N-HOP-GII(2 positions) |
| High speed specification | High speed operation is possible. | HOP Five (Not applicable for 650-1000 model xc, xn type) |
| Specification for low ceiling plants | It reduces the overall height by changing the direction of a joint of the vertical guide axis. | HOP Five |
| Mount for horizontal extraction I | This is a mount on which a take-out robot is fixed when there is no space for the take-out robot on the molding machine's bed. | V-HOP |
| Mount for horizontal extraction II | This is a mount to be set on the molding machine's bed on which a take-out robot is fixed when the take-out robot cannot be installed on it directly. | V-HOP |
| Mount for horizontal extraction III | When the space of the molding machine's bed is not enough for "Mount for horizontal extraction II", a supporting column is to be added. | V-HOP |

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

◆ 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.

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