

Item	2-Axis Servo Wrist Model (Single Arm- Rz)					
	HRXIII-100Si-Rz	HRXIII-100Gi-Rz	HRXIII-150Si-Rz	HRXIII-150Gi-Rz	HRXIII-250Si-Rz	HRXIII-250Gi-Rz
Mold Clamping Force (ton)	75~125		120~250		180~350	
Main Arm Vertical Stroke (mm)	700[800][900]		800[900][1000]		1000[1100]	
Sub Arm Vertical Stroke (mm)	—	750[850][950]	—	850[950][1050]	—	1050[1150]
Main Arm Kick Stroke (mm)	525.5(243.5~701)	457.5(243.5~701)	625.5(175.5~801)	557.5(243.5~801)	625.5(160.5~786)	557.5(228.5~786)
Sub Arm Kick Stroke (mm)	—	457.5(45~502.5)	—	557.5(45~602.5)	—	557.5(30~587.5)
Traverse Stroke (mm)	1200[1400][1600]		1400[1600][1800][2000]		1600[1800][2000]	
Main Arm Home Position (mm)	130	130	150	150	250	250
Main Arm Maximum Reach (mm)	701		801		786	
Sub Arm Minimum Reach (mm)	—	45	—	45	—	30
Wrist Unit (°)	Wrist Flip 184 / Rotation 320					
Maximum Payload (kg)	7(including EOAT)					
H x W x D (mm)	1378×2289×1345	1391×2289×1445	1498×2449×1443	1511×2449×1543	1798×2689×1443	1811×2689×1543
Working Air Pressure (MPa)	0.5					
Air Consumption (ℓ/cyc[ANR])	0	0.02	0	0.02	0	0.02
Controlling Method	Digital AC Servo Motor					
Power Supply (V)	3-Phase AC200V±10% (50Hz/60Hz)					
Power Consumption (W)	1800	2400	1800	2400	1800	2400

Item	2-Axis Servo Wrist Model (Telescopic Arm - Rz)							
	HRXIII-100SWi-Rz	HRXIII-100GWi-Rz	HRXIII-150SWi-Rz	HRXIII-150GWi-Rz	HRXIII-250SWi-Rz	HRXIII-250GWi-Rz	HRXIII-350SWi-Rz	HRXIII-350GWi-Rz
Mold Clamping Force (ton)	75~125		100~250		180~350		250~500	
Main Arm Vertical Stroke (mm)	800[900]		900[1000]		1200		1200[1400]	
Sub Arm Vertical Stroke (mm)	—	850[950]	—	950[1050][1150]	—	1250	—	1250[1450]
Main Arm Kick Stroke (mm)	506(195~701)	399(302~701)	606(195~801)	499(302~801)	610(147~786)	503(283~807)	905(189~1094)	798(296~1094)
Sub Arm Kick Stroke (mm)	—	399(95~494)	—	499(95~594)	—	503(80~583)	—	798(80~878)
Traverse Stroke (mm)	1200[1400][1600]		1400[1600][1800][2000]		1600[1800][2000]		1800[2000]	
Main Arm Home Position (mm)	130		150		250		300	
Main Arm Maximum Reach (mm)	701		801		786		1094	
Sub Arm Minimum Reach (mm)	—	95	—	95	—	80	—	80
Wrist Unit (°)	Wrist Flip 184 / Rotation 320							
Maximum Payload (kg)	7(including EOAT)				12(including EOAT)			
H x W x D (mm)	1130×2289×1345	1130×2289×1445	1210×2449×1443	1210×2449×1543	1490×2689×1447	1490×2689×1547	1560×2849×1742	1560×2849×1842
Working Air Pressure (MPa)	0.5							
Air Consumption (ℓ/cyc[ANR])	0	0.02	0	0.02	0	0.02	0	0.02
Controlling Method	Digital AC Servo Motor							
Power Supply (V)	3-Phase AC200V±10% (50Hz/60Hz)							
Power Consumption (W)	1800	2400	1800	2400	1800	2400	1800	2400

Item	High Payload Model	
	HRXIII-150SWi-Rz-W	HRXIII-150GWi-Rz-W
Mold Clamping Force (ton)	100~250	
Main Arm Vertical Stroke (mm)	900[1000]	
Sub Arm Vertical Stroke (mm)	—	950[1050][1150]
Main Arm Kick Stroke (mm)	606(204~810)	499(311~810)
Sub Arm Kick Stroke (mm)	—	499(95~594)
Traverse Stroke (mm)	1400[1600][1800][2000]	
Main Arm Home Position (mm)	130	
Main Arm Maximum Reach (mm)	810	
Sub Arm Minimum Reach (mm)	—	95
Wrist Unit (°)	Wrist Flip 184 / Rotation 320	
Maximum Payload (kg)	12(including EOAT)	
H x W x D (mm)	1210×2449×1443	1210×2449×1543
Working Air Pressure (MPa)	0.5	
Air Consumption (ℓ/cyc[ANR])	0	0.02
Controlling Method	Digital AC Servo Motor	
Power Supply (V)	3-Phase AC200V±10% (50Hz/60Hz)	
Power Consumption (W)	1800	2400

\*The additional 46L/min [ANR] per circuit will be consumed when using a vacuum ejector.  
[ ] =Option

### Standard Specifications

- Vacuum ejector : 1 circuit
- Part grip : 1 circuit
- Main Sprue Grip: 1 circuit
- Palletizing (up to 999 points per axis)
- Built-in memory for mold data (up to 1000 memories)
- Adjustable point coordinates during the auto-run
- Selectable home positions (1st Entry / Out-Mold / Above Mold / Backward)
- Smart Programming
- Customizable screen display layout
- Reject circuit
- Initial reject
- Sampling
- Counters (Example: Initial Reject / Sampling)
- Take out from moving platen
- Wrist flip en-route (speedup motion)
- Pass motion (speedup motion)
- Display language selector
- Quick point-teaching features (Teach & Go / Point Stop / Coordinates entry)

\*This brochure is subject to change without notice.

Manufacturer: **HARMO** CO.,LTD.

ISO9001 CERTIFIED

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<http://www.harmonet.co.jp>



# NEW HARXIII-i Series

HRX3\_01E 18011KP

SERVO TECHNOLOGY

## Improve the Productivity

- Faster take-out time
- Increased payload capacity
  - for an insert type EOAT
  - for a multiple placement EOAT

## Shorten the Mold Changing Time

- Datalink Integration System (IMM↔ Robot↔Auxiliaries) for centralized setup/power control/monitoring (integration with HARMO auxiliaries)
- One-touch EOAT for quick changing
- Enhanced mold data memory capacity

## Reduce the Defect Rate

- Datalink Integration System (IMM↔ Robot↔Auxiliaries) for centralized setup/power control/monitoring (integration with HARMO auxiliaries)
- Monitoring the sensors and sending the error information (integration with HARMO auxiliaries)

## Cut back the Programming Cost

- User friendly on-site programming (Smart Programming)

### ● Ideally Designed Structure for Faster Take-out Time (up to 20%)

- The durability has been improved for 69% by analyzing its frame structure and re-evaluating the balance of its center gravity. The range of vibration and the convergence time is reduced.
- The balance and driving specification of the arm has been re-evaluated to suppress its twisting and increased its moving speed.

### ● Improved maximum payload performance

Model 150 5kg to 7kg (highest payload in industry)  
 Model 350 10kg to 12kg  
 A complex EOAT for insert/multiple placement is adaptable.

### *i* (intelligent) controller

8.4 XGA (1024x768) high resolution LCD screen with 260,000 colors.

Colorful LED screen for high visibility

Three-position safety switch for simple and safe operations

Ergonomic design and lightweight

Scroll & Push. HARMO original jog dial for quick access

Switching the menu displays and data processing speed are faster and more smooth.

Easy-to-press membrane manual operation switches

### ● Smart Programming

- On-site programming: directly editable with the controller pendant.
- Off-site (Offline) programming: editable by using a Windows PC
- Alphabets and numbers are usable in the names of the mold data, point coordinates or setting items.

### ● Screen Customization

Customizing the menu display layout

### ● HAL-NET (HARMO ALL-AROUND LINK - NET)



### ● Signal Light (adaptable up to 7 colors)

7-color LED shows the status of the robot: power-on/stop/error, and the error status of the HARMO auxiliaries (with HAL-NET).



### ● Quick Change EOAT

The newly designed EOAT adapter is equipped to drastically reduce the EOAT changing time (Model 100 to 250).



### ● Longer Vertical Strokes

Model 150: up to 1000mm, Model 350: up to 1400mm

### ● Higher Payload Performance

Model 150 with higher payload: 12kg can adapt a heavier and more complex EOAT such as for insert molding with very little vibration

# Redesigned Body with Improved Speed and Payload

The ideally designed HRXIII series contributes to improve the productivity in your factory with faster take-out time and wider range of the maximum payload.



## MODEL NOTATION

# HRXIII-150GWi-W

Series Name

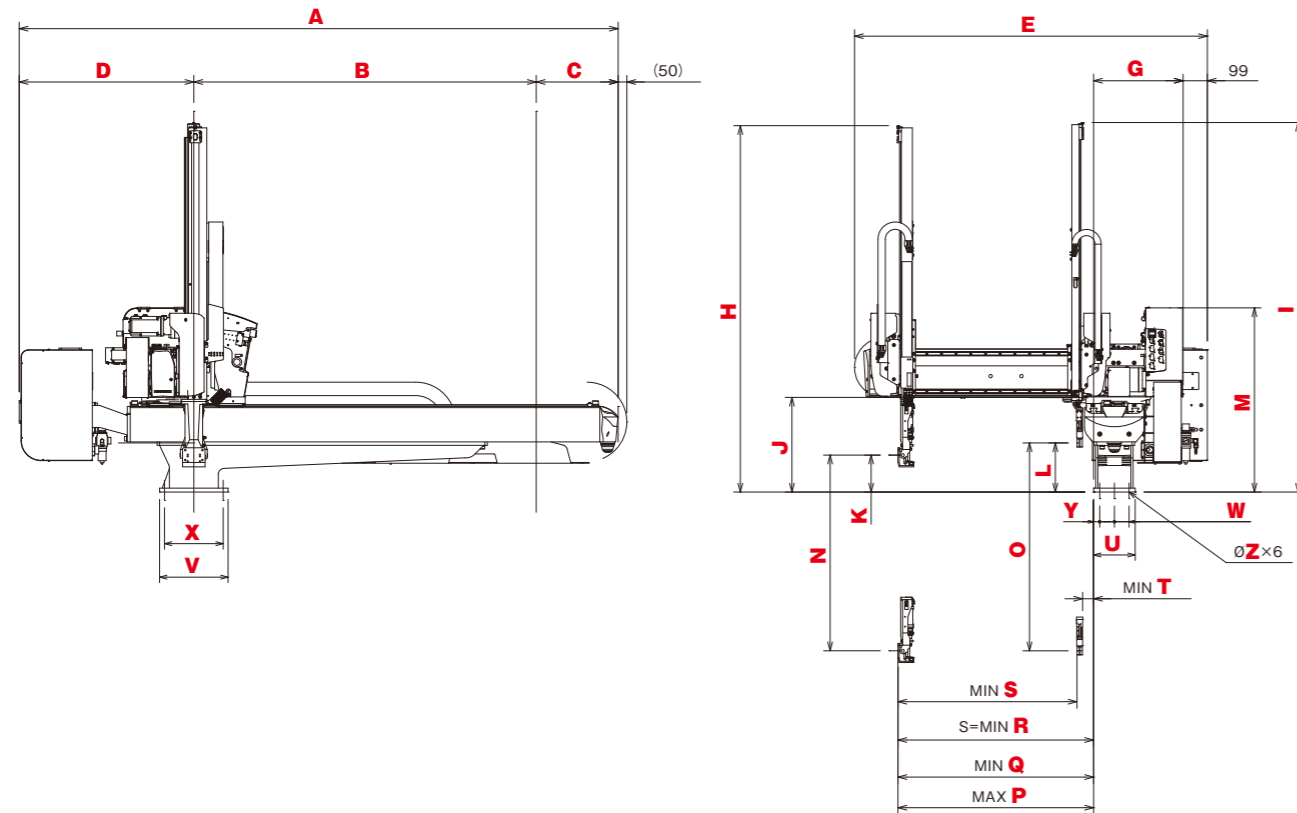
IMM Tonnage (t)

High Payload Type

Controller Type (HRS-1500)

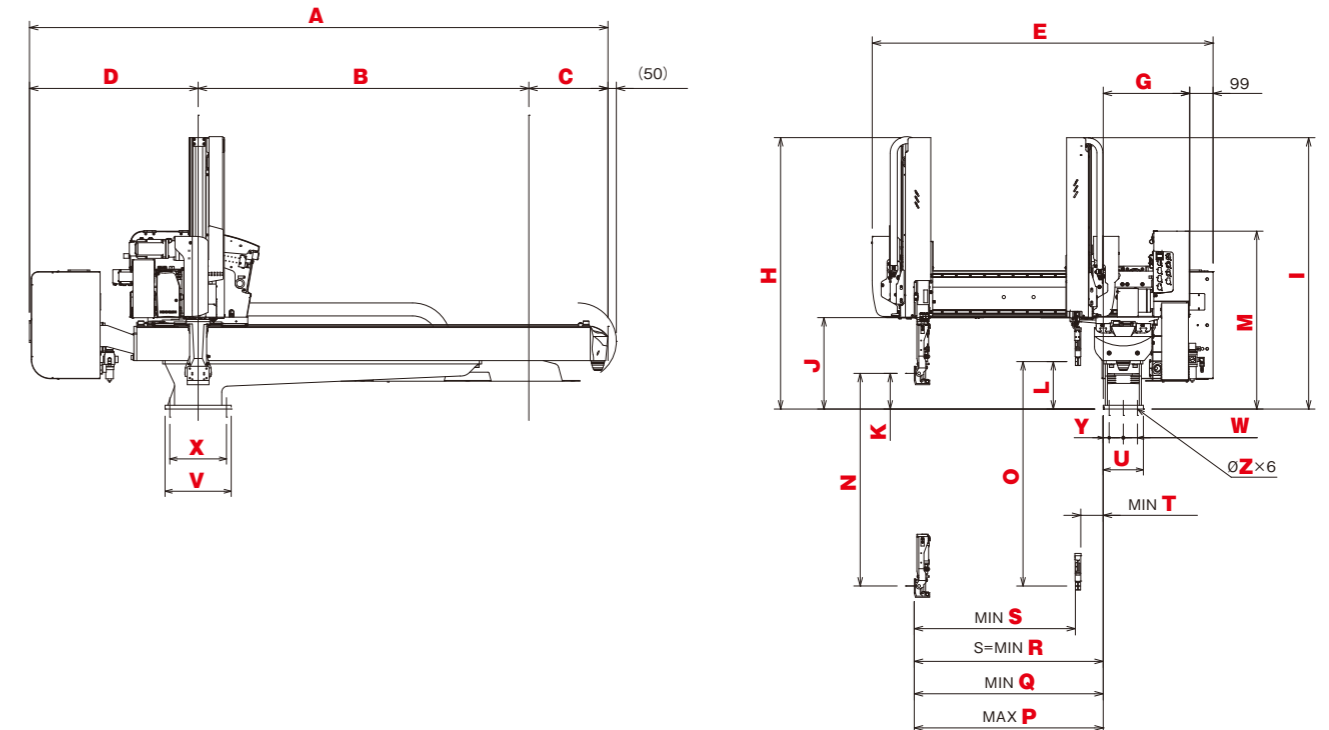
S : 3-Axis Single Arm SW : 3-Axis Telescopic Arm  
G : 5-Axis Single Arm GW : 5-Axis Telescopic Arm

### HRXIII(Single Arm)



HRXIII (Single Arm)	A	B	C	D	E	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
100Gi	2289	1200	375	714	1345	366	1378	1391	367	130	180	733	700	750	700	192.5	124.5	147.5	45	170	280	60	240	25	14
150Gi	2449	1400	335	714	1443	366	1498	1511	387	150	200	753	800	850	800	192.5	124.5	147.5	45	170	280	60	240	25	14
250Gi	2689	1600	375	714	1443	381	1798	1811	487	250	300	853	1000	1050	785	177.5	109.5	147.5	30	200	430	75	370	25	18

### HRXIII(Telescopic Arm)



HRXIII (Telescopic Arm)	A	B	C	D	E	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
100GWi	2289	1200	375	714	1345	366	1069	1069	367	130	180	733	800	850	700	251	144	156	95	170	280	60	240	25	14
150GWi	2449	1400	335	714	1443	366	1149	1149	387	150	200	753	900	950	800	251	144	156	95	170	280	60	240	25	14
250GWi	2689	1600	375	714	1447	381	1429	1429	487	250	300	853	1200	1250	785	232	125	128	80	200	430	75	370	25	18
350GWi	2849	1800	335	714	1742	381	1499	1499	557	300	350	923	1200	1250	1075	227	120	123	80	200	530	75	470	25	18

Item	Standard Specifications (Single Arm)					
	HRXIII-100Si	HRXIII-100Gi	HRXIII-150Si	HRXIII-150Gi	HRXIII-250Si	HRXIII-250Gi
Mold Clamping Force (ton)	75~125		120~250		180~350	
Main Arm Vertical Stroke (mm)	700[800][900]					
Sub Arm Vertical Stroke (mm)	—	750[850][950]	—	850[950][1050]	—	1050[1150]
Main Arm Kick Stroke (mm)	575.5(124.5~700)	507.5(192.5~700)	675.5(124.5~800)	607.5(192.5~800)	675.5(109.5~785)	607.5(177.5~785)
Sub Arm Kick Stroke (mm)	—	507.5(45~552.5)	—	607.5(45~652.5)	—	607.5(30~637.5)
Traverse Stroke (mm)	1200[1400][1600]		1400[1600][1800][2000]		1600[1800][2000]	
Main Arm Home Position (mm)	130	130	150	150	250	250
Main Arm Maximum Reach (mm)	700		800		785	
Sub Arm Minimum Reach (mm)	—	45	—	45	—	30
Wrist Unit (°)	90		90		90	
Maximum Payload (kg)	7(including EOAT)					
H x W x D (mm)	1378x2289x1345	1391x2289x1345	1498x2449x1443	1511x2449x1443	1798x2689x1443	1811x2689x1443
Working Air Pressure (MPa)	0.5					
Air Consumption (ℓ/cyc[ANR])	1.15	1.17	1.15	1.17	1.15	1.17
Controlling Method	Digital AC Servo Motor					
Power Supply (V)	3-Phase AC200V±10% (50Hz/60Hz)					
Power Consumption (W)	1700	2300	1700	2300	1700	2300

\*The additional 46L/min [ANR] per circuit will be consumed when using a vacuum ejector. [ ] =Option

HRXIII-100SWi	HRXIII-100GWi	HRXIII-150SWi	HRXIII-150GWi	HRXIII-250SWi	HRXIII-250GWi	High Payload Model	
						HRXIII-150SWi-W	HRXIII-150GWi-W
75~125		100~250		180~350		250~500	
800[900]		900[1000]		1200		1200[1400]	
—	850[950]	—	950[1050][1150]	—	1250	—	950[1050][1150]
556(144~700)	449(251~700)	656(144~800)	549(251~800)	660(125~785)	553(232~785)	955(120~1075)	848(227~1075)
—	499(95~544)	—	549(95~644)	—	553(80~633)	—	848(80~928)
1200[1400][1600]		1400[1600][1800][2000]		1600[1800][2000]		1800[2000]	
130		150		250		300	
700		800		785		1075	
—	95	—	95	—	80	—	80
90						90	
7(including EOAT)						12(including EOAT)	
1069x2289x1345		1149x2449x1443		1429x2689x1447		1499x2849x1742	
0.5							
1.15	1.17	1.15	1.17	1.15	1.17	1.86	1.88
Digital AC Servo Motor							
3-Phase AC200V±10% (50Hz/60Hz)							
1700	2300	1700	2300	1700	2300	1700	2300

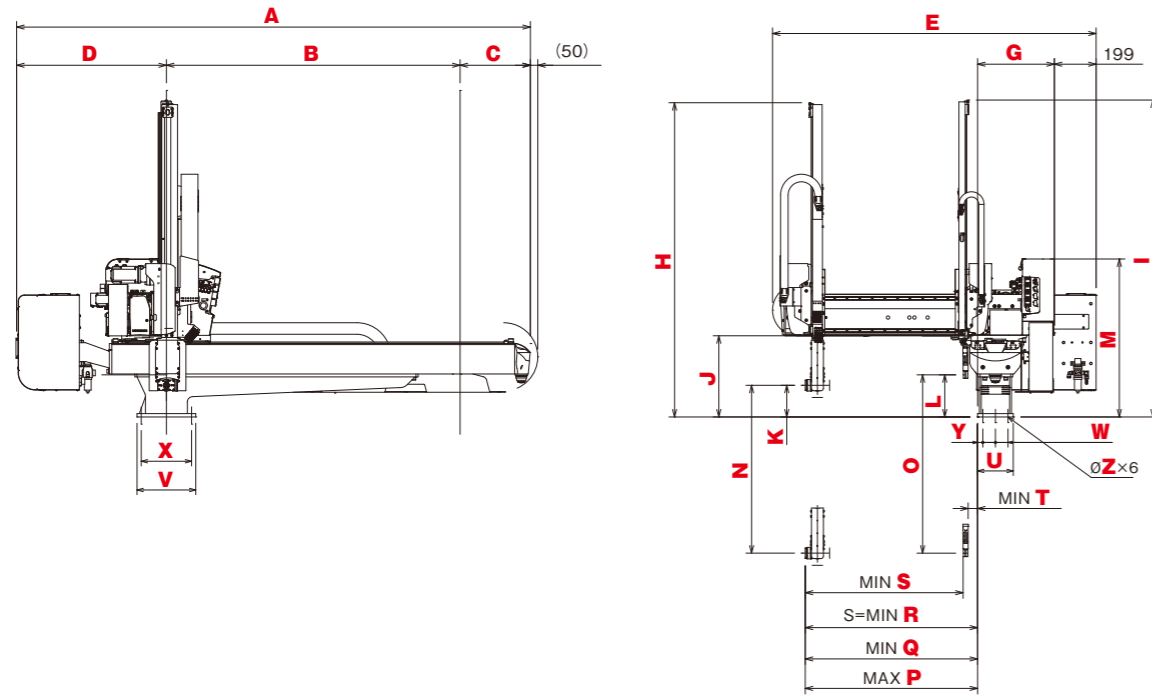
\*The additional 46L/min [ANR] per circuit will be consumed when using a vacuum ejector. [ ] =Option

# Two Types of 2-Axis Servo Wrist Rotations

There are two types of 2-axis servo wrist model (Ry or Rz).  
 Select the suitable type in accordance to the production needs;  
 parts releasing pattern or integration with other automation machines.



## HRXIII(Single Arm)



HRXIII (Single Arm)	A	B	C	D	E	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
100Gi-Ry	2289	1200	375	714	1445	366	1377	1390	367	130	180	732	700	750	721.5	214	146	169	45	170	280	60	240	25	14
150Gi-Ry	2249	1400	335	714	1543	366	1498	1511	387	150	200	753	800	850	821.5	214	146	169	45	170	280	60	240	25	14
250Gi-Ry	2689	1600	375	714	1543	381	1798	1811	487	250	300	853	1000	1050	806.5	199	131	145	30	200	430	75	370	25	18
100Gi-Rz	2289	1200	375	714	1445	366	1378	1391	367	130	180	733	700	750	701	243.5	175.5	198.5	45	170	280	60	240	25	14
150Gi-Rz	2449	1400	335	714	1543	366	1498	1511	387	150	200	753	800	850	801	243.5	175.5	198.5	45	170	280	60	240	25	14
250Gi-Rz	2689	1600	375	714	1543	381	1798	1811	487	250	300	853	1000	1050	786	228.5	160.5	174.5	30	200	430	75	370	25	18

Item	2-Axis Servo Wrist Model (Single Arm - Ry)					
	HRXIII-100Si-Ry	HRXIII-100Gi-Ry	HRXIII-150Si-Ry	HRXIII-150Gi-Ry	HRXIII-250Si-Ry	HRXIII-250Gi-Ry
Mold Clamping Force (ton)	75~125		120~250		180~350	
Main Arm Vertical Stroke (mm)	700[800][900]		800[900][1000]		1000[1100]	
Sub Arm Vertical Stroke (mm)	—	750[850][950]	—	850[950][1050]	—	1050[1150]
Main Arm Kick Stroke (mm)	575.5(146~721.5)	507.5(214~721.5)	675.5(146~821.5)	607.5(214~821.5)	675.5(131~806.5)	607.5(199~806.5)
Sub Arm Kick Stroke (mm)	—	507.5(45~552.5)	—	607.5(45~652.5)	—	607.5(30~637.5)
Traverse Stroke (mm)	1200[1400][1600]		1400[1600][1800][2000]		1600[1800][2000]	
Main Arm Home Position (mm)	130	130	150	150	250	250
Main Arm Maximum Reach (mm)	721.5		821.5		806.5	
Sub Arm Minimum Reach (mm)	—	45	—	45	—	30
Wrist Unit (°)	Wrist Flip 190 / Rotation 360					
Maximum Payload (kg)	7(including EOAT)					
H x W x D (mm)	1378x2289x1345	1391x2289x1445	1498x2449x1443	1511x2449x1543	1798x2689x1443	1811x2689x1543
Working Air Pressure (MPa)	0.5					
Air Consumption (ℓ/cyc[ANR])	0	0.02	0	0.02	0	0.02
Controlling Method	Digital AC Servo Motor					
Power Supply (V)	3-Phase AC200V±10% (50Hz/60Hz)					
Power Consumption (W)	1800	2400	1800	2400	1800	2400

\*The additional 46ℓ/min [ANR] per circuit will be consumed when using a vacuum ejector. [ ] =Option

## MODEL NOTATION

# HRXIII-150GWi-Ry-W

Series Name

IMM Tonnage (t)

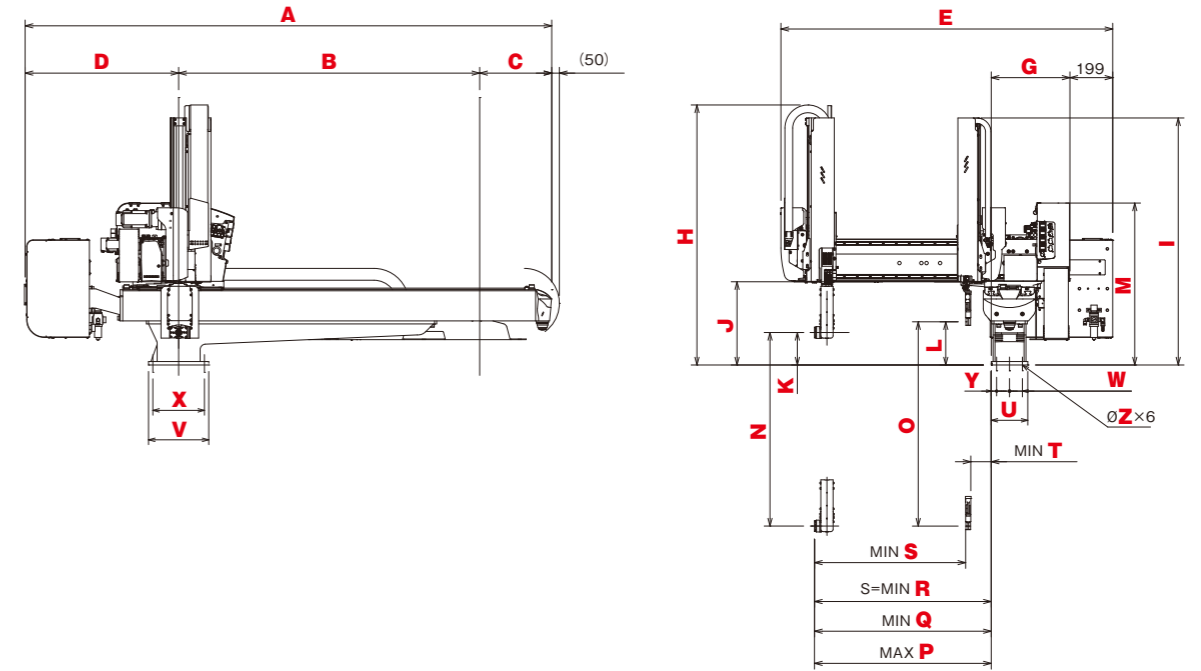
High Payload Type

Ry : 2-axis servo wrist type (Ry & Rx)  
 Rz : 2-axis servo wrist type (Rz & Rx)

S : 3-Axis Single Arm SW : 3-Axis Telescopic Arm  
 G : 5-Axis Single Arm GW : 5-Axis Telescopic Arm

Controller Type (HRS-1500)

## HRXIII(Telescopic Arm)



HRXIII (Telescopic Arm)	A	B	C	D	E	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
100GWi-Ry	2289	1200	375	714	1445	366	1130	1089	367	130	180	733	800	850	722	273	166	178	95	170	280	60	240	25	14
150GWi-Ry	2449	1400	335	714	1543	366	1210	1149	387	150	200	753	900	950	822	273	166	178	95	170	280	60	240	25	14
150GWi-Ry-W	2449	1400	335	714	1543	366	1210	1149	387	130	200	753	900	950	820	271	164	176	95	170	280	60	240	25	14
250GWi-Ry	2689	1600	375	714	1547	381	1490	1429	487	250	300	853	1200	1250	807	254	147	150	80	200	430	75	370	25	18
350GWi-Ry	2849	1800	335	714	1842	381	1560	1499	557	300	350	923	1200	1250	1104	149	256	152	80	200	530	75	470	25	18
100GWi-Rz	2289	1200	375	714	1445	366	1130	1089	367	130	180	733	800	850	701	302	195	207	95	170	280	60	240	25	14
150GWi-Rz	2449	1400	335	714	1543	366	1210	1149	387	150	200	753	900	950	801	302	195	207	95	170	280	60	240	25	14
150GWi-Rz-W	2449	1400	335	714	1543	366	1210	1149	387	130	200	753	900	950	810	311	204	216	95	170	280	60	240	25	14
250GWi-Rz	2689	1600	375	714	1547	381	1490	1429	487	250	300	853	1200	1250	786	283	176	179	80	200	430	75	370	25	18
350GWi-Rz	2849	1800	335	714	1842	381	1560	1499	557	300	350	923	1200	1250	1094	296	189	192	80	200	530	75	470	25	18

Item	2-Axis Servo Wrist Model (Telescopic Arm - Ry)								High Payload Model	
	HRXIII-100SWi-Ry	HRXIII-100GWi-Ry	HRXIII-150SWi-Ry	HRXIII-150GWi-Ry	HRXIII-250SWi-Ry	HRXIII-250GWi-Ry	HRXIII-350SWi-Ry	HRXIII-350GWi-Ry	HRXIII-150SWi-Ry-W	HRXIII-150GWi-Ry-W
Mold Clamping Force (ton)	75~125		100~250		180~350		250~500		100~250	
Main Arm Vertical Stroke (mm)	800[900]		900[1000]		1200		1200[1400]		900[1000]	
Sub Arm Vertical Stroke (mm)	—	850[950]	—	950[1050][1150]	—	1250	—	1250[1450]	—	950[1050][1150]
Main Arm Kick Stroke (mm)	556(166~722)	449(273~722)	656(166~822)	549(273~822)	660(147~807)	553(254~807)	955(147~1102)	848(254~1102)	656(162~818)	549(269~818)
Sub Arm Kick Stroke (mm)	—	499(95~544)	—	549(95~644)	—	553(80~633)	—	848(80~928)	—	549(95~644)
Traverse Stroke (mm)	1200[1400][1600]		1400[1600][1800][2000]		1600[1800][2000]		1800[2000]		1400[1600][1800][2000]	
Main Arm Home Position (mm)	130	130	150	150	250	250	300	300	130	130
Main Arm Maximum Reach (mm)	722		822		807		1102		818	
Sub Arm Minimum Reach (mm)	—	95	—	95	—	80	—	80	—	95
Wrist Unit (°)	Wrist Flip 190 / Rotation 360									
Maximum Payload (kg)	7(including EOAT)				12(including EOAT)				12(including EOAT)	
H x W x D (mm)	1130x2289x1345	1130x2289x1445	1210x2449x1443	1210x2449x1543	1490x2689x1447	1490x2689x1547	1560x2849x1742	1560x2849x1842	1210x2449x1443	1210x2449x1543
Working Air Pressure (MPa)	0.5									
Air Consumption (ℓ/cyc[ANR])	0	0.02	0	0.02	0	0.02	0	0.02	0	0.02
Controlling Method	Digital AC Servo Motor									
Power Supply (V)	3-Phase AC200V±10% (50Hz/60Hz)									
Power Consumption (W)	1800	2400	1800	2400	1800	2400	1800	2400	1800	2400

\*The additional 46ℓ/min [ANR] per circuit will be consumed when using a vacuum ejector. [ ] =Option