

IH-500-150

Vertical axis stroke 150 150mm (Number 3 axis (Z)-axis stroke) ... Standard
 300 300mm (Number 3 axis (Z)-axis stroke) ... Option

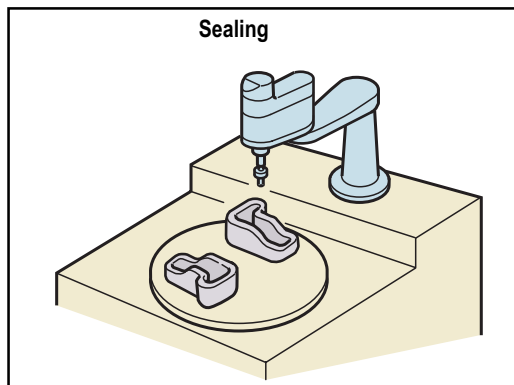
Arm length 500 500mm (Number 1 arm 250 mm + Number 2 arm 250mm)
 600 600mm (Number 1 arm 350 mm + Number 2 arm 250mm)
 700 700mm (Number 1 arm 350 mm + Number 2 arm 350mm)
 800 800mm (Number 1 arm 450 mm + Number 2 arm 350mm)

Series: IH

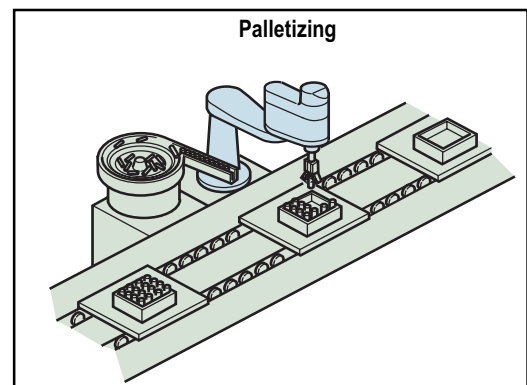
IH Series line-up

Model	Arm length (No. 1 arm + No. 2 arm)	No. 3 (Z)-axis stroke	No. 4 (R)-axis angle
IH-500-150	500mm (250mm + 250mm)	150mm	± 360°
IH-500-300	500mm (250mm + 250mm)	300mm (option)	± 360°
IH-600-150	600mm (350mm + 250mm)	150mm	± 360°
IH-600-300	600mm (350mm + 250mm)	300mm (option)	± 360°
IH-700-150	700mm (350mm + 350mm)	150mm	± 360°
IH-700-300	700mm (350mm + 350mm)	300mm (option)	± 360°
IH-800-150	800mm (450mm + 350mm)	150mm	± 360°
IH-800-300	800mm (450mm + 350mm)	300mm (option)	± 360°

Application example



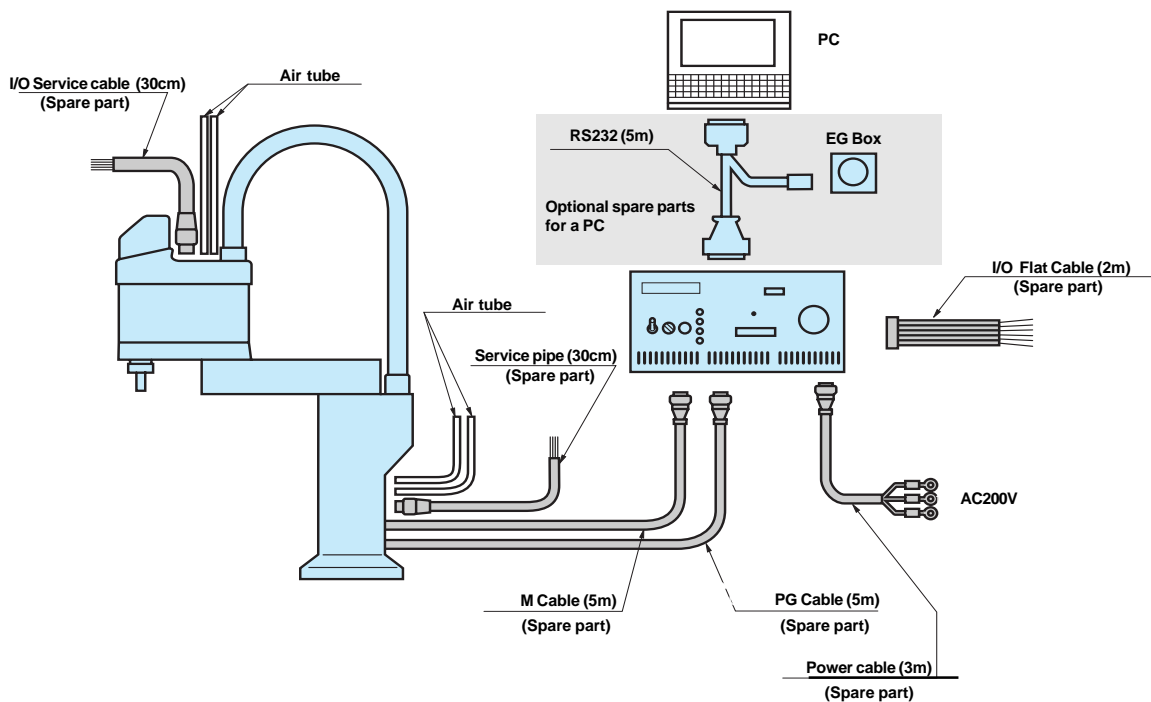
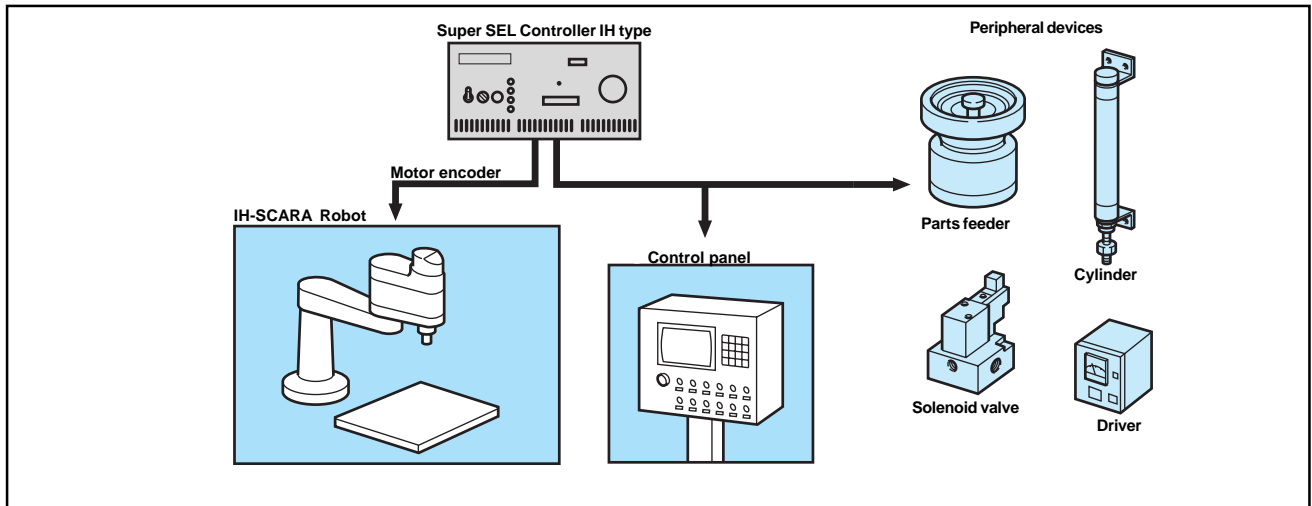
The IH-SCARA is used for sealing. In this example, two pieces are placed on the turn table. After completing the task on the first piece, the table rotates 180 degrees and seals the second one.



The IH-SCARA is used for palletizing. In this example, pieces removed from the parts feeder are transferred to the pallet above the conveyor.

Control system

Since the Super SEL controller can multi-task up to 16 programs, a single controller can operate 1 program via actuator control; 1 to 2 programs via peripheral devices and 1 program via control panel. In addition, it can run from 3 to 4 programs simultaneously. A sequencer is not necessary in such a system. This results in a lower cost for the entire system.



Connecting cable parts

Part name	Length	Number of pieces	Specification	Reference
M Cable (for the motor)	5m	1	Spare part	
PG Cable (for feedback)	5m	1	Spare part	
Service wire	30cm	2	Spare part	Please refer to page 10 for specification details.
Air tube			Customer to provide	Please refer to page 10 for specification details.
I/O cable	2m	1	Spare part	AWG28 (0.08□) 50 core color flat cable.
Electric cable	3m	1	Spare part	
RS232 cable	5m	1	Optional spare part for a PC	Emergency box included.

*RS232 cable is required when using the teaching pendant.

IH-CR 500/600 Clean Room Series*

NEW

**IH-CR 500/600
Clean Room Series***

SCARA Robot

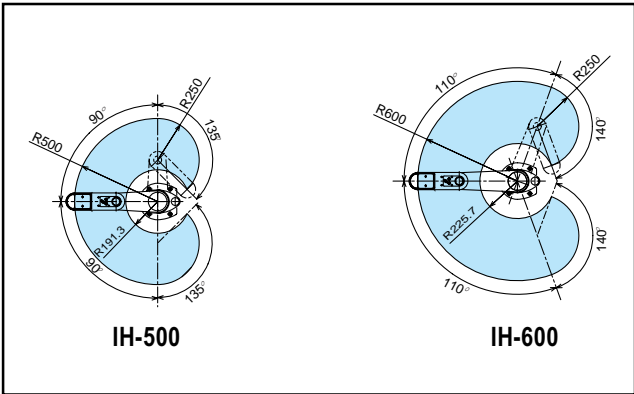
Features:

- **Class 10 System.**
- **High rigidity against moment in the vertical direction.**
- **Ultra high speed capability through the use of 32 Bit RISC CPU.**
- **Flexible multi-tasking control functions.**
- **Absolute encoder.**
(Homing is unnecessary)
- **High precision.**
Repeatability: ±0.025mm.
- **Flexible I/O commands allow easy system control.**
- **Easy programming.**
Existing customers already familiar with SEL language can easily program and operate the IH-SCARA robot through an expanded command set.
- **Serial network option is available.**

Specifications

Z-Axis (Stroke)	Speed/Acceleration (%)	Vacuum flow (NL/min)	Particle Amount
150	100	200	Under 10
	80	160	
	40	100	
300	100	200	
	80	160	
	40	100	

Range of Motion



Note: Testing was done on a Class 10 Bench. Particles of 0.3µ m or greater were counted by collecting 1ft³ of air (Downflow 0.35m/

* For IH-CR 700/800 specifications, please inquire your IAI representative.

IH-CR 500/600 Clean Room Series*

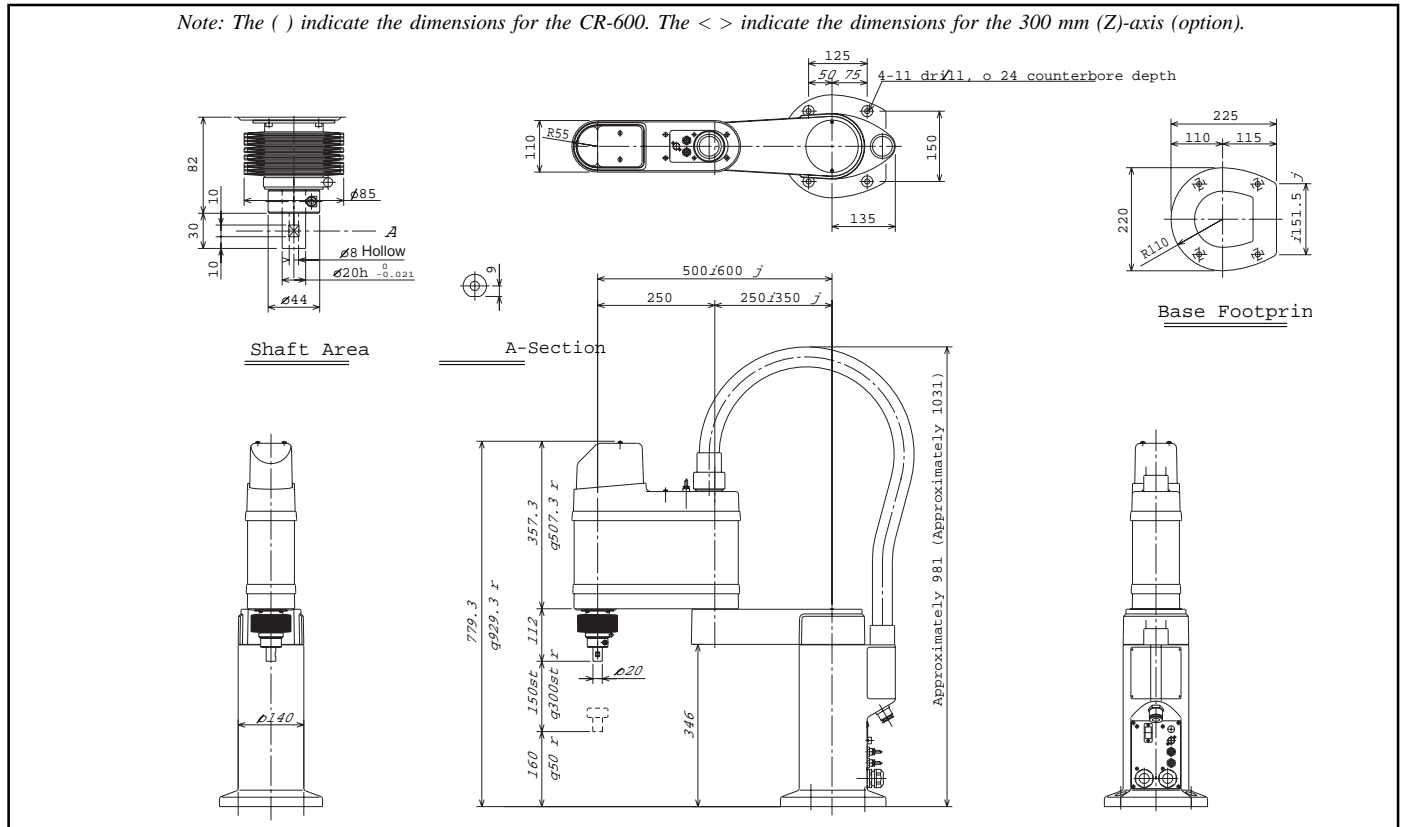
Specifications

Model Type		IH-CR-500	IH-CR-600
Degrees of motion		4 Degrees of motion	
Drive method	Axis 1	AC servo + harmonic reduction gear (1/80)	
	Axis 2	AC servo + harmonic reduction gear (1/50)	
	Axis 3 (Z)	AC servo + belt + ballscrew (lead 20)	
	Axis 4 (R)	AC servo + ball reduction gear (1/18) + belt	
Motor capacity	Axis 1	200W (4000rpm)	200W (3300rpm)
	Axis 2	100W (4000rpm)	100W (3300rpm)
	Axis 3 (Z)	100W (4000rpm)	
	Axis 4 (R)	50W (3000rpm)	
Arm length	Axis 1 + Axis 2	250mm + 250mm	350mm + 250mm
Movement range	Axis 1	±90°	±110°
	Axis 2	±135°	±140°
	Axis 3 (Z)	150mm (option 300mm)	
	Axis 4 (R)	±360°	
Maximum moving speed	Axis 1 + Axis 2	4710mm/s (Composite maximum velocity)	4310mm/s (Composite maximum velocity)
	Axis 3 (Z)	1000mm/s	
	Axis 4 (R)	1000°/s	
Repeatability	Axis 1 + Axis 2	±0.02mm	±0.025mm
	Axis 3 (Z)	±0.02mm	
	Axis 4 (R)	±0.03°	
Payload	Rated / Maximum	2kg/4kg (Note: *1)	
Axis 3 (Z)	Thrust	106N (10.8kgf)	
Axis 4 (R) allowable load	Inertia	0.02kg·m ²	
	Torque	2.68N·m (27.3kgf·cm)	
User wiring · piping		6 pair 12 lines, 0.15 sq. (with shield) Outer diameter φ6 X inner diameter φ4 air tube 2	
Origin detection		Absolute encoder	
Hand allowable diameter		φ100	
Ambient temperature · humidity		0~40°C · 20 ~ 85% RH (no condensation)	
Body weight		33kg	34kg

Note *1: For the 300 mm (Z)-axis option, the velocity and acceleration setting will be lower.

Dimensions

Note: The () indicate the dimensions for the CR-600. The < > indicate the dimensions for the 300 mm (Z)-axis (option).



Super SEL Controller IH type

Controller main body: **M-SEL-IH-4-200-100-100-50** (Exclusive for IH-500, 600)
M-SEL-IH-4-400-200-200-100 (Exclusive for IH-700, 800)

Optional software-connecting cables for a PC: **S-101-MW** (Windows version)

Specification:

Power voltage range	Single phase AC 200/220 ± 10%	
Power frequency	50/60Hz	
Breaker capacity	200V / 10A	
Ambient temperature & humidity	Temperature: 0~40° Humidity: 85% RH or less	
Operating environment	Free of corrosive gas, no excessive dust	
Isolation resistance	500V 10 M ± Ω or more	
Noise immunity	1500V 1 microsecond pulse by noise simulator	
Weight (kg)	18kg	
Protective function	Driver temperature check Overload check Battery alarm Encoder breakage check Software limit check	
Motor capacity	IH-500,600	200W·100W·100W·50W
	IH-700,800	400W·200W·200W ·100W
Driver	Sine-wave driver	
Encoder	Absolute encoder	
Memory Device	CMOS RAM battery backup	
I/O (DC 24V)	Dedicated input	External start-Emergency stop
	Standard I/O	Input 24 (includes dedicated input) Output 24 (includes dedicated output)
	Expansion I/O (Option)	Maximum number of modules (1 module : input 24, output 24, per unit) Maximum: 3
	Maximum I/O with standard expansion (includes dedicated I/O)	Input: 96 Output: 96
	I/O Maximum load current: 100mA/per point (Transistor array: TD62083AF equivalent)	
Data input method	RS232C Communications	
Communication	EIA RS232C Asynchronous, Full duplex	
Serial I/O Option	2CH RS232C	

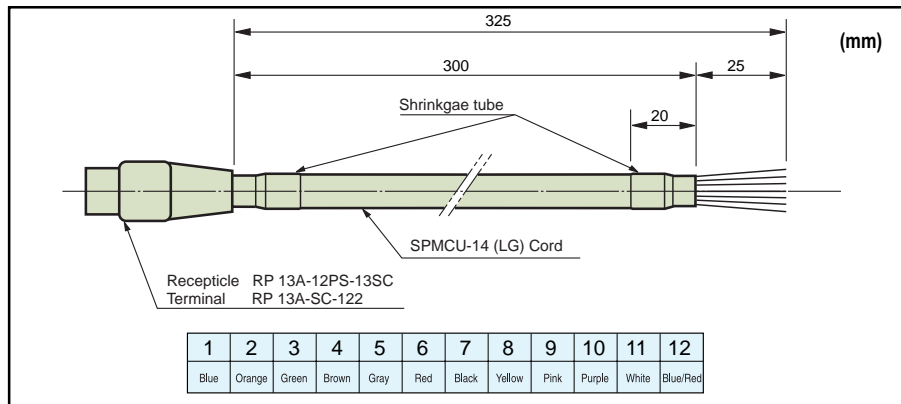
Service wiring • piping

The connections for the wires and pipes (air tubes) to attach the end-effectors come standard. For optional parts and cables, please refer to the specification below. Use SPMCU-14 (LG) cord as the service cable.

Pressure	Conductor structure	Number of lines	Outer diameter (mm)	Reference
AC500V / per minute	30/0.08	12	φ9.2	Twist pair cable with shield

The service pipe can be removed by pulling it out from above the upper cover area to the back panel base of the robot.

I/O Service cable



Pressure	Number of air tubes	Outer diameter X Inner diameter (mm)
5kg /mm ²	2	φ6 X φ4

The specification for the air tubes and the arm is listed on the left. The connector is a single-touch pneumatic coupling.

Installation of Arm or Other End-Effectors

To install an arm or other end-effectors onto your IH-SCARA robot, use a split clamping method or shaft-hub locking device as shown below.

