

Product Information

New Product

Payload 30kg vertical articulated Robot AR-V1000H30 compatible with Clean environment

RPI-0176A

Issue Date : Oct-6th,2021

■ Overview

We are releasing the AR-V1000H30 Clean Robot: a 30kg payload vertical articulated robot compatible with clean environment. This robot is intended to be used in a clean environment for semiconductor-related equipment. Since the robot arm size is designed to be compact, it can be used even in the narrow space of semiconductor equipment. The features and robot specification of this robot are followings.

■ Key Features

- Compact arm length (1000mm) and large payload(30kg)
- Supports ISO class 4 cleanliness as standard type
- Compatible with ISO class 3 cleanliness by sucking the inside of the robot with an ejector device (See below for requirements)
- Abundant service taps to facilitate harness alignment work
- Abundant IO points: 18 points x 2 systems
- The auto accelerator function automatically generates the optimum acceleration / deceleration according to the hand load and arm posture to improve the line cycle time.
- Hirata Robot Simulator supports this robot for motion simulation before installation.
- 4 solenoid valves can be built in (optional)

※ISO Class 3 Clean Performance Achievement Requirements

- Suction the inside of the machine so that the suction flow rate just below the ejector connection port for suction in the machine is 20 [L/min] or more.
- The user should use the robot in a downflow environment of 0.3 [m/s] or more.



■ Robot main body model description

AR-V 1000H30 - □ - □ - □□ - □
 ① ② ③ ④ ⑤ ⑥ ⑦

| No | Items | Symbol | Contents | | |
|----|---|--------|---------------------------------|----|---------------------|
| ① | Type of robot | AR-V | Vertical articulated | | |
| ② | Arm length (1 st Arm + 2 nd Arm) | 1000 | 1000mm | | |
| ③ | Payload | 30 | 30kg | | |
| ④ | Solenoid valve (3-position closed center) Quantity | N | None | | |
| | | 1 | 1 piece | | |
| | | 2 | 2 pieces | | |
| | | 3 | 3 pieces | | |
| ④ | Solenoid valve (3-position closed center) Quantity | 4 | 4 pieces | | |
| | | X | - | | |
| | | ⑤ | Environmental specifications | NN | No standard support |
| | | | | CN | CE (No stopper) |
| CS | CE (With stopper) | | | | |
| ⑦ | Hand hollow hole | N | None | | |
| | | H | φ22 hollow hole * | | |

*The cleanliness is ISO class 3 only when "N" is selected in ⑦ and the air is sucked into the cabin.

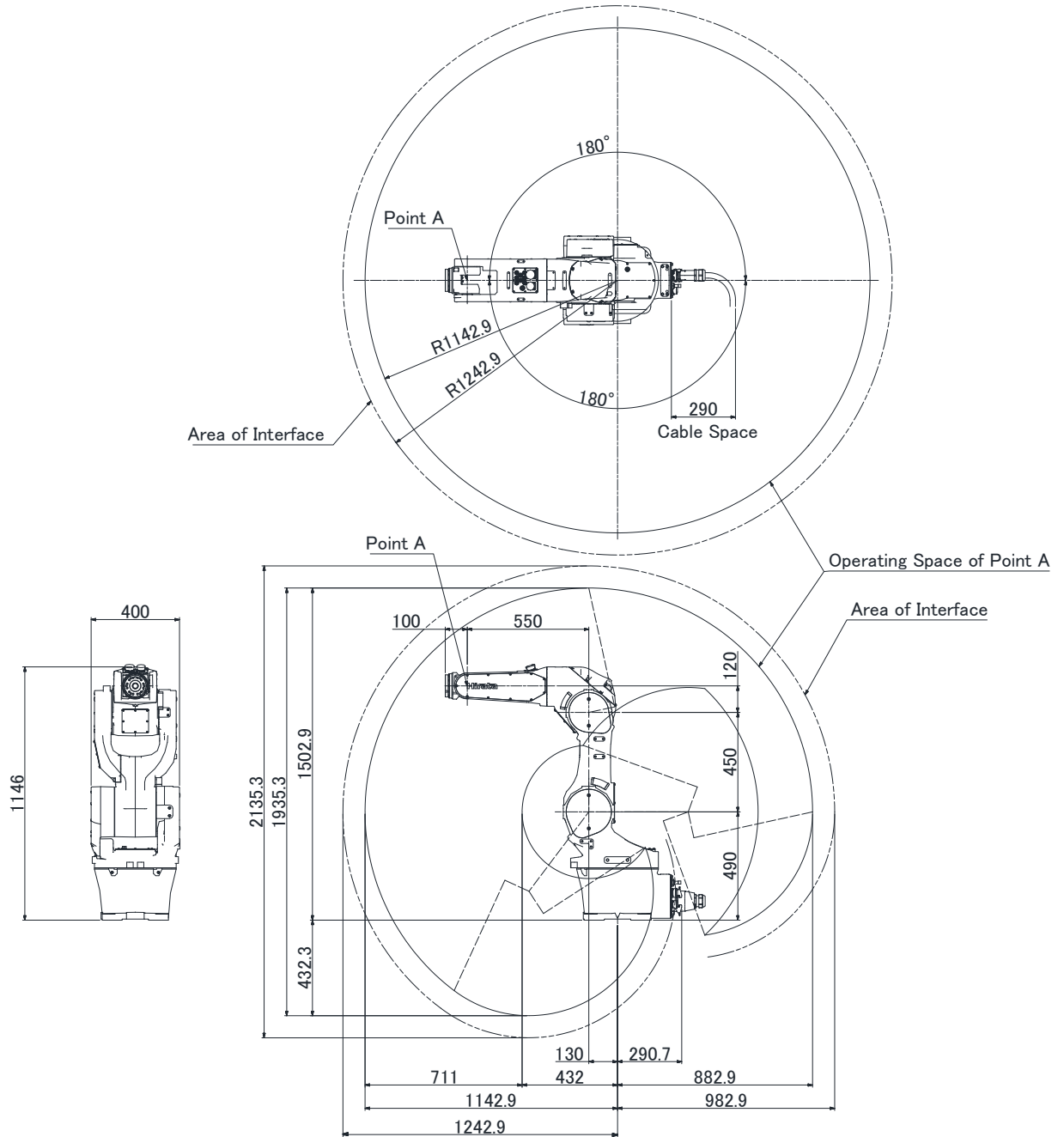
■ Robot main body specification

| | | |
|--|--------------|--|
| Model | | AR-V1000H30 |
| Structure / number of axes | | Vertical articulated / 6-axes |
| Brake / position detection method | | All-axis brake / battery-less absolute encoder |
| Payload | | 30 kg |
| Arm length (1 st Arm + 2 nd Arm) | | 1000 mm |
| Maximum speed for each axis | J1-axis | 200 deg/s |
| | J2-axis | 150 deg/s |
| | J3-axis | 200 deg/s |
| | J4-axis | 250 deg/s |
| | J5-axis | 250 deg/s |
| | J6-axis | 420 deg/s |
| Maximum synthesis speed | | 6700 mm/s |
| Position repeatability accuracy | | ±0.05 mm |
| Allowable moment | J4-axis | 51 Nm |
| | J5-axis | 51 Nm |
| | J6-axis | 30 Nm |
| Application | Signal line | IO 1:18 core(AWG25)、IO 2 : 18 core(AWG25) |
| | Air | Φ6x1、Φ4x8 (Solenoid valve option) |
| Installation method | | Floor-standing, Ceiling-mounted |
| Main body weight | | 161kg |
| Protection code | | IP65 equivalent |
| Cleanliness | Standard | ISO Class 4 |
| | With ejector | ISO Class 3 * |
| Solenoid valve | | 3-position closed center x 4 (Maximum) |
| Matching Controller | | HNC-X8LS、HNC-X8ES-D |

※ISO Class 3 Clean Performance Achievement Requirements

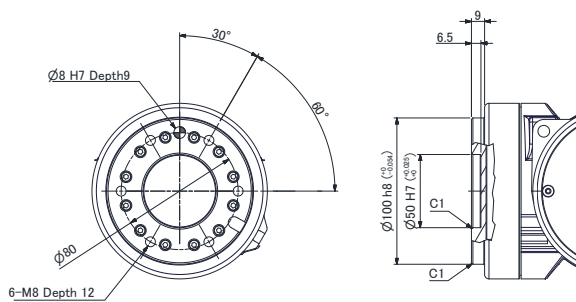
- Suction the inside of the machine so that the suction flow rate just below the ejector connection port for suction in the machine is 20 [L/min] or more.
- The user should use the robot in a downflow environment of 0.3 [m/s] or more.

■ Robot main body appearance diagram

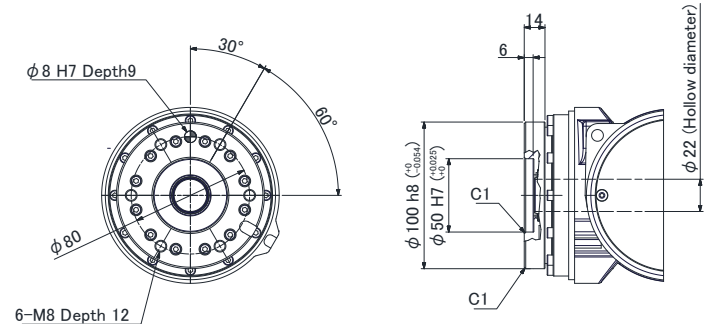


■ Application interface

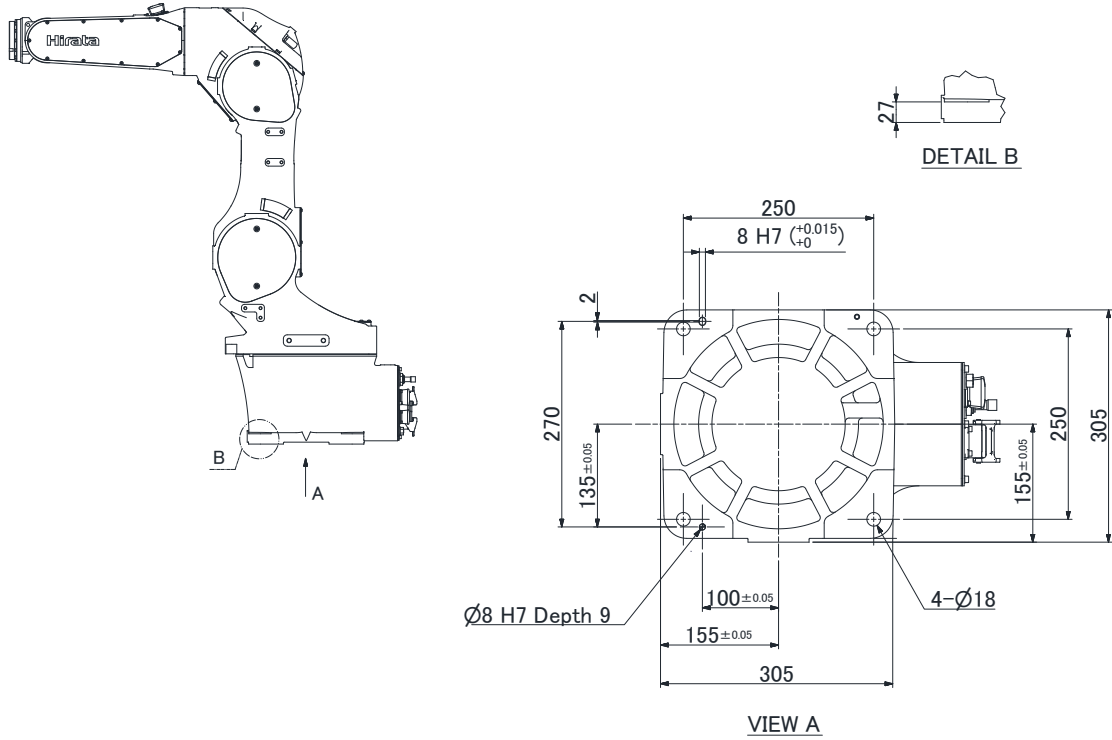
No hole on application interface



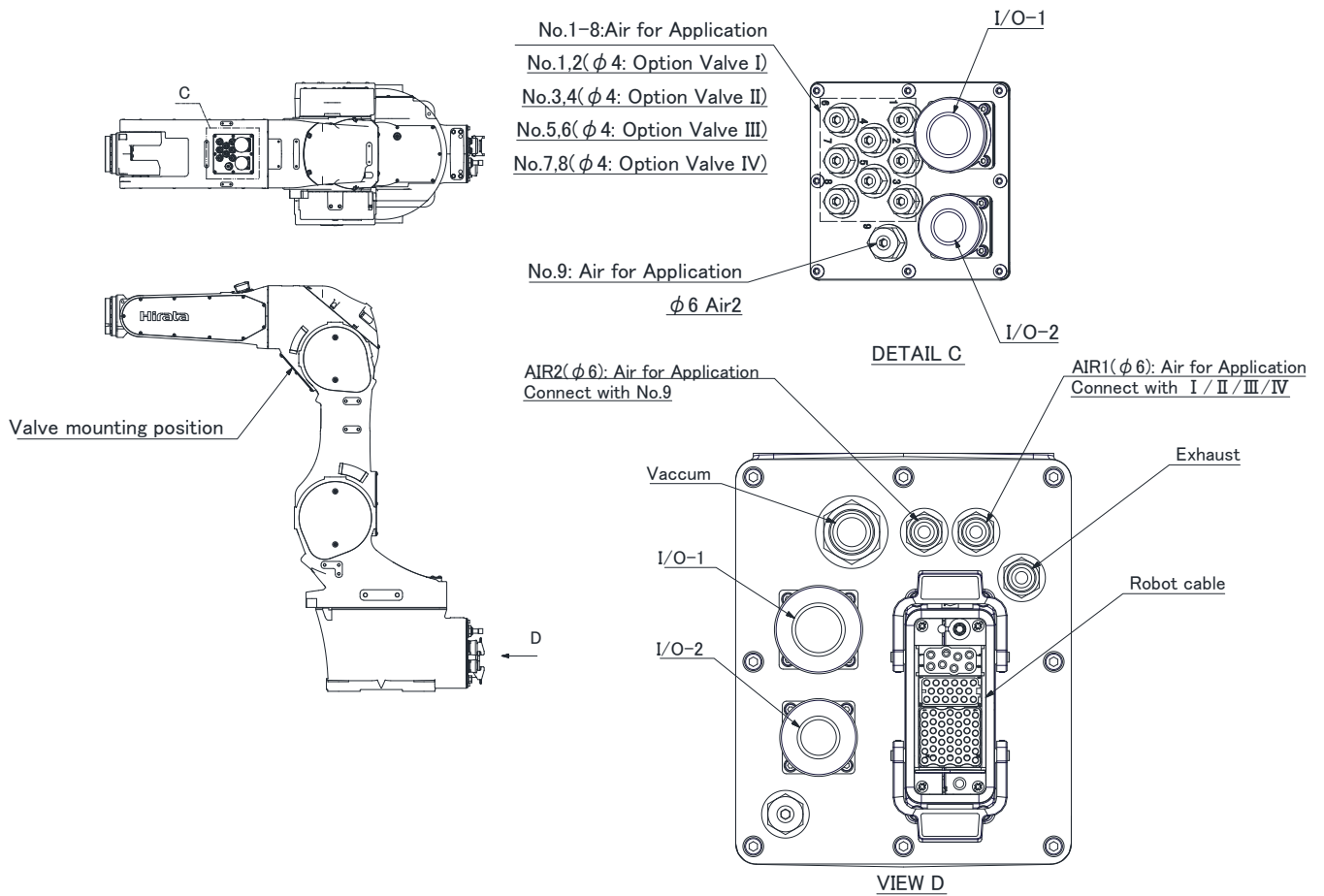
$\phi 22$ hollow hole on application interface



■ Robot installation dimensions



■ Layout of Connectors on Back panel/ Front panel



■ Controller model description

(1) Stand-alone type

HNC-X8LS-0001 □-6
 ① ② ③ ④

| No. | Items | Symbol | Contents |
|-----|------------------------|-------------------|---|
| ① | Series name | X8LS | HNC-X series Stand-alone type |
| ② | Specification number | 0001 ~ 9999 | Depends on customer specifications |
| ③ | Revision | A~ | Revision of specification number ※The 1 st edition is blank |
| ④ | Number of control axes | 6 | 6 axes |

(2) Built-in type into control panel

HNC-X8ES-D 1-0001 □-6
 ① ②③ ④ ⑤ ⑥

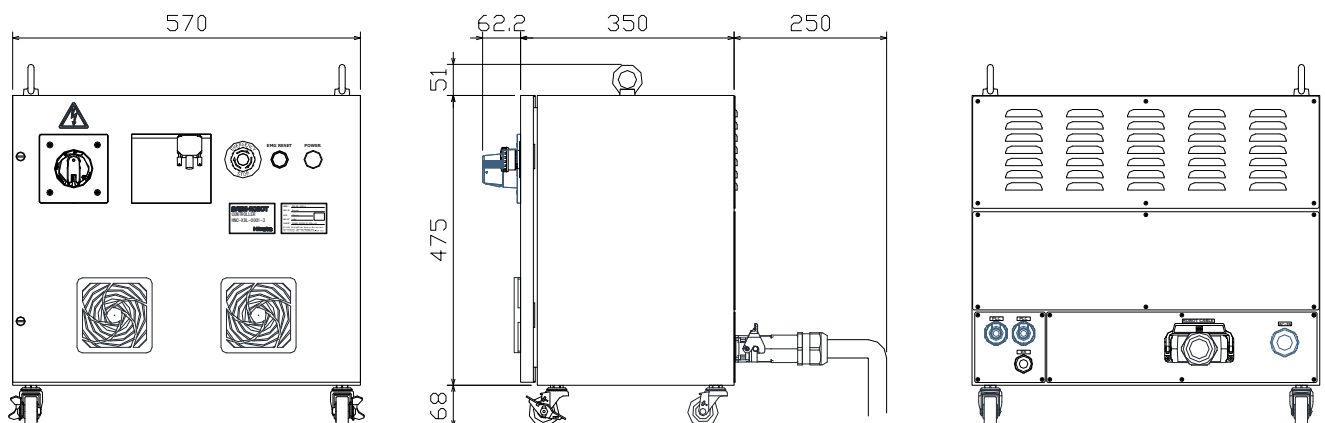
| No. | Items | Symbol | Contents |
|-----|---------------------------|-------------------|---|
| ① | Series name | X8ES | HNC-X series Built-in type into control panel |
| ② | Servo amp configuration | D | AR-V1000H30 configuration |
| ③ | Number of optional boards | 1 ~3 | Number of optional boards that can be mounted |
| ④ | Specification number | 0001 ~ 9999 | Depends on customer specifications |
| ⑤ | Revision | A~ | Revision of specification number ※The 1 st edition is blank |
| ⑥ | Number of control axes | 6 | 6 axes |

■ Controller specification

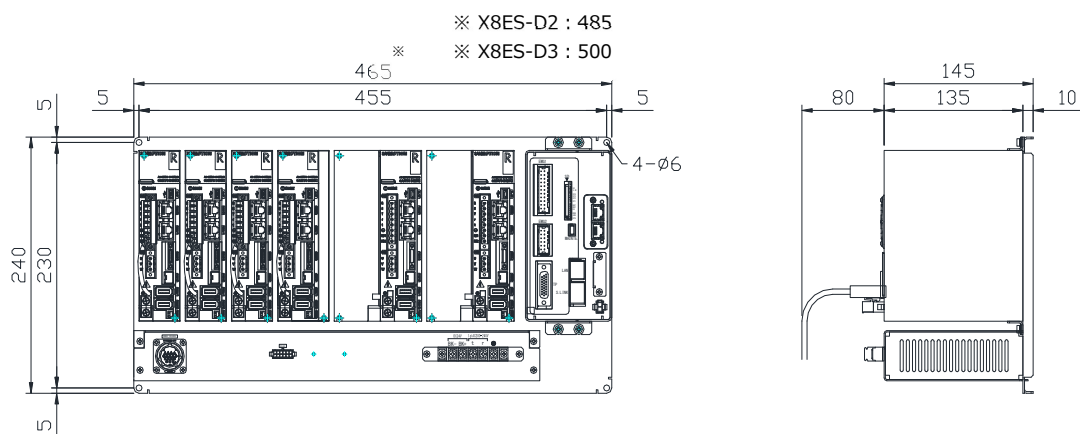
| | | |
|--|--|--|
| Model (Series) | HNC-X8LS | HNC-X8ES-D※ ※ : 1~3 |
| Type | Stand-alone type | Built-in type into control panel |
| Controlled robot | AR-V1000H30 | |
| External dimensions (Width×Height×Depth) ※Exclusive of protrusions | 570x475x350 (Up to 3 optional boards) | 465x240x145 (Optional boards = 1 piece) 485x240x145 (Optional boards = 2 pieces) 500x240x145 (Optional boards = 3 pieces) |
| Weight (MAX) | 60kg | 13kg |
| Input power supply | Three-phase AC200V~240V±10% 50/60Hz | Control power supply: Single-phase AC200V~ 240V±10% 50/60Hz Main circuit power supply: Three-phase AC200V ~240V±10% 50/60Hz Brake power supply : DC24V 2.2A ※DC24V for the brake power supply will be prepared by the customer. |
| System configuration | Can use by only connecting robot cable and power supply cable. | Customer are required to prepare control power supply, main circuit power supply, 24V DC protective equipment for braking, magnet contactor that drives the main circuit power supply supplied to servo amplifier, and safety relay unit required for the emergency stop circuit. |
| Number of control axes | 6 axes | |

■ Controller appearance diagram

(1) HNC-X8LS



(2) HNC-X8ES-D1



- Start time of receiving order
Oct, 2021

Specification described on this notice is as of the issue date and might be changed without notice.