

i4-350L/450L/550L

Industry leading performance, flexibility, and ease of use to address a wide range of applications.

- 5 kg payload, high inertia, and high duty ratings enable the i4L to tackle more challenging processes with ease.
- Compact built-in internal controller, out-of-the-box table or wall mounting, and options for rear or bottom cabling reduce the physical area required and enable a customized installation.
- High visibility multi-colored LED dome light provides an intuitive visual indication of status.
- Available in 350 mm, 450 mm, and 550 mm reaches to accommodate a wide variety of applications.
- Easily integrates with the full line of OMRON automation products as well as 3rd party automation platforms.



Ordering Information

RS4-20□□□□□

1 2 3 4 5

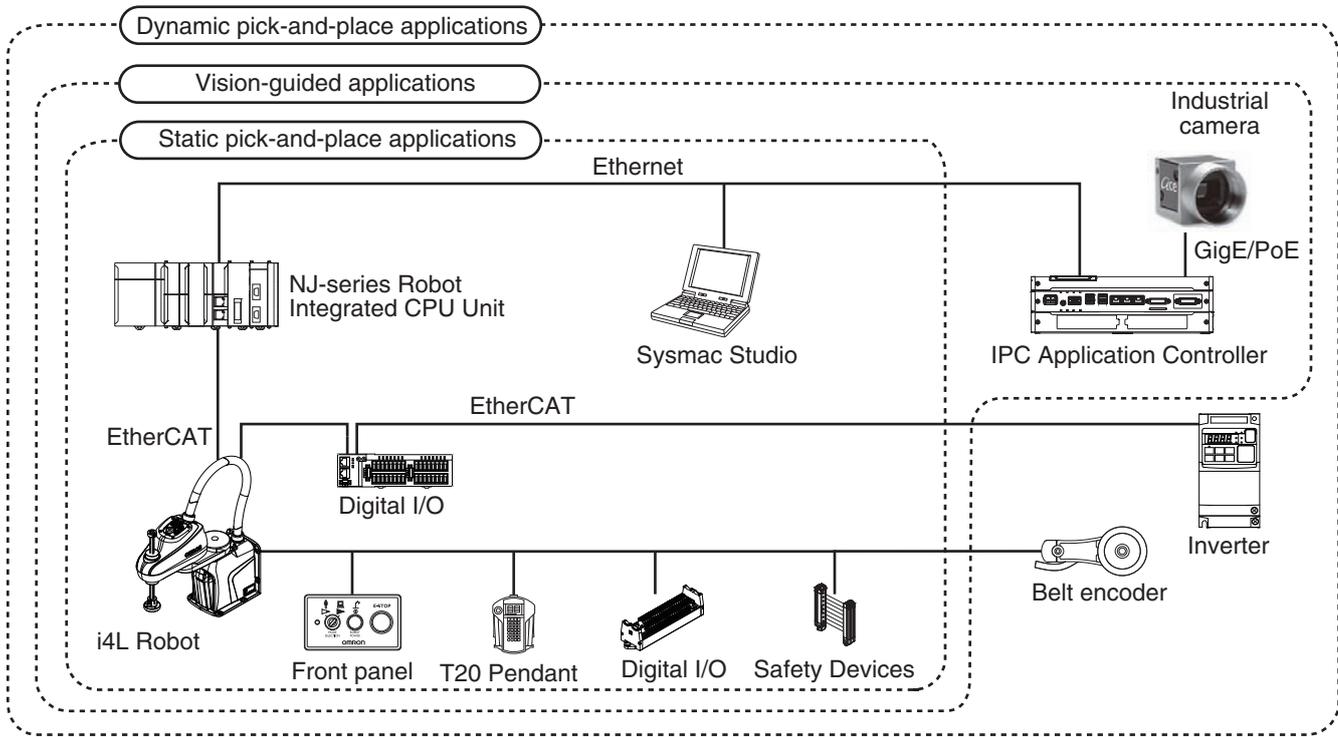
Item	Description	Details	Designation
1	Robot Type	SCARA	RS4-20
2	Control Type	Standard Control	5
		Integrated Control	6
3	Reach	350 mm	3
		450 mm	4
		550 mm	5
4	Interface Panel Orientation	Rear	0
		Bottom	1
5	Z-axis Quill Stroke Length	180 mm (standard)	2
		350 mm (i4 550L only)	4

i4L-Series

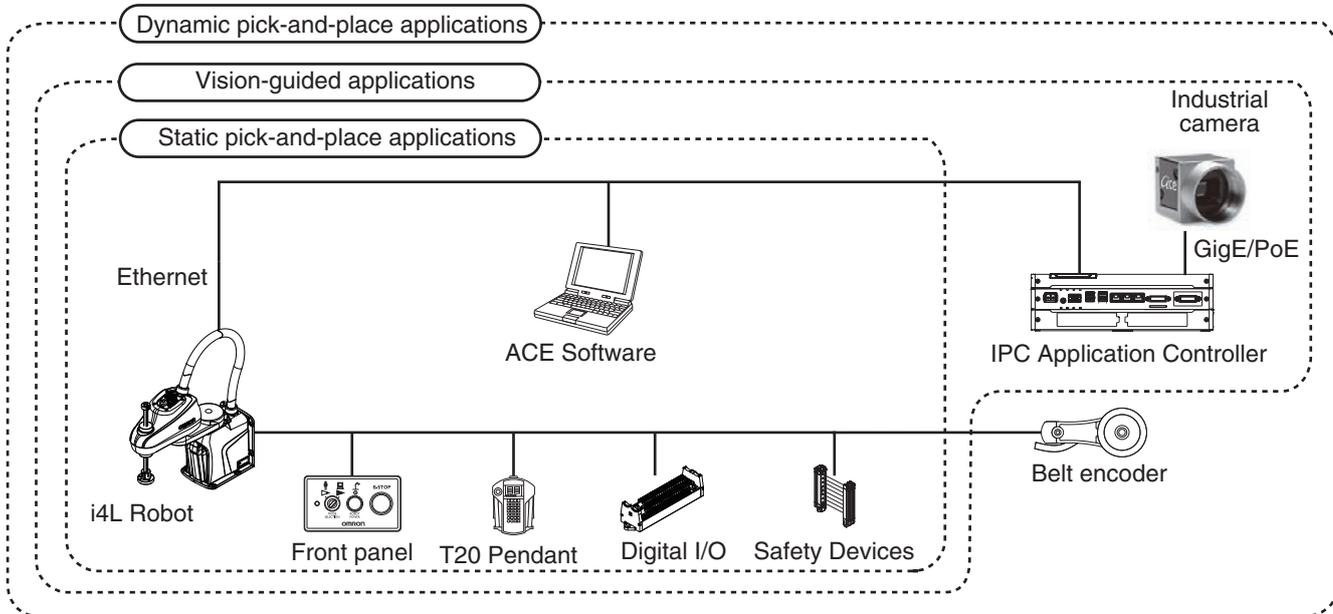
System Configuration

Typical system configurations are shown below. Other equipment and connections are possible.

Integrated Control



Standard Control



Specifications

Product		i4-350L	i4-450L	i4-550L	
Quill Length		180 mm	180 mm	180 mm	350 mm
Number of axes		4			
Reach		350mm	450 mm	550 mm	
Maximum Payload*1		5 kg			
Repeatability at 100% speed	XY	±0.01 mm			
	Joint 3	±0.01 mm			
	Joint 4	±0.01°			
Joint Range	Joint 1	±136°			
	Joint 2	±136°	±148°		
	Joint 3	180 mm*2			350 mm*3
	Joint 4	±360°			
Inertia Moment (Max.)	Joint 4	0.05 kg-m ²			
Maximum push force - downward, no load*4	Joint 3	150 N			
Joint Speeds	Joint 1	456 deg/s			
	Joint 2	456 deg/s			
	Joint 3	800 mm/s			
	Joint 4	6000 deg/s			
Cycle times*5	Burst*6	0.54 s	0.48 s		
	Sustained	0.57 s			0.54 s
	Blended Burst	0.45 s	0.42 s	0.38 s	
Power Requirements	Control Power	24 VDC: 5 A / 120 W max.			
	High Power	48 VDC: 20 A / 960 W max.			
Protection	IP20 / NEMA Type 1				
Mounting	Table, Wall				
Environmental Requirements	Ambient Temperature	5° to 40°C			
	Humidity Range	5% to 90% non-condensing			
Weight	15.1 kg	15.9 kg	16.4 kg	16.5 kg	
On-board I/O	8 outputs / 12 inputs (Primary Interface Panel) 4 outputs / 5 inputs (Secondary Interface Panel)				
Electrical pass-through ports	15 pin, D-sub, male				
Pneumatic pass-through ports	4 (6 mm) and 2 (4mm) push-type fittings, max. pressure 0.55 MPa				
Belt Encoder	2 line driver inputs (A, B, and Z)				
RS-232C serial communication ports	1 (troubleshooting information only)				
Programming Software	Sysmac Studio / ACE Version 4*7				
IPC Application Manager	Robot Vision Manager, PackManager				
Controller	NJ501-R Series (Integrated Control robots only)				

*1 Payload includes any object(s) attached to a robot link or tool flange, including end-effectors, tooling, valves, grippers, and objects being handled by the robot.

*2 Bellows reduce the z-axis travel by 27 mm in the retracted position and 27 mm in the extended position.

*3 Bellows reduce the z-axis travel by 53 mm in the retracted position and 53 mm in the extended position.

*4 At a duty cycle of 1 seconds pushing and then 3 seconds not pushing.

*5 Cycle time is defined as a continuous path with straight-line motion in which the robot tool moves up 25 mm, laterally 305 mm, down 25 mm, and then back along the same path (not achievable over all paths in the robot working envelope). Values listed are with no joint 4 rotation, at 20°C ambient with a 2.0 kg payload. Blended Burst cycle uses the same criteria with arc motion.

*6 Burst cycle times may increase by up to 20% when bellows are present.

*7 Use Sysmac Studio for Integrated Control robots. Use ACE Version 4.4.3.200 and above for Standard Control robots.

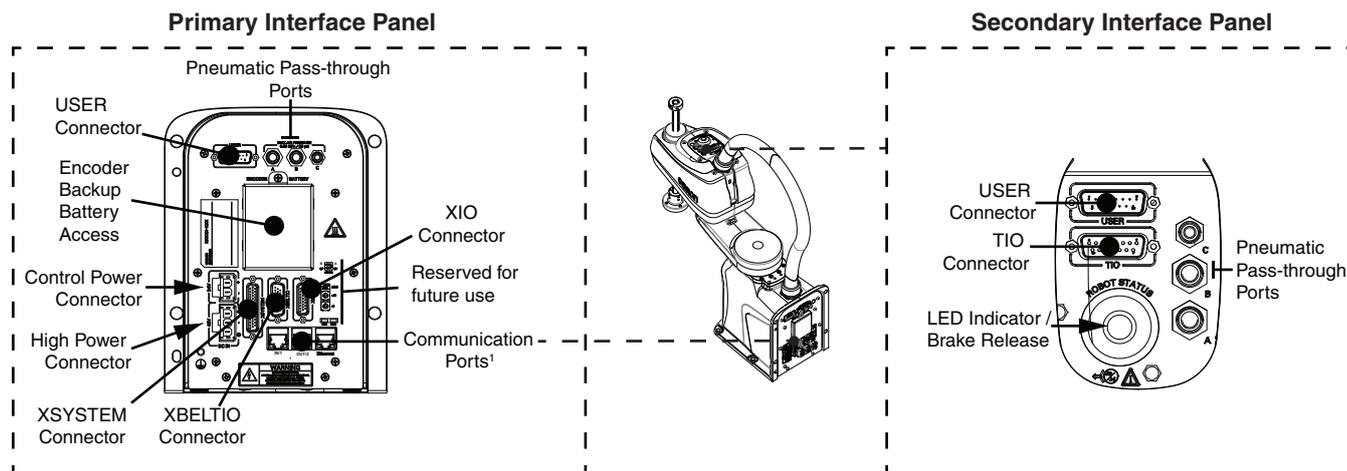
i4L-Series

Options and Additional Items

Item	Description	Details	Part Number
XSYSTEM Cable with jumpers	Provides connections for a Front Panel, Teach Pendant, and other user-supplied devices.	1.8 m cable length.	13322-000 ^{*1}
High Power Connector	Provides connection for 48 VDC High Power to the internal servo amplifiers.	Includes connector, pins, and retaining clip.	43160-2103 ^{*1}
Control Power Connector	Provides connection for 24 VDC Control Power.	Includes connector and pins.	43160-2102 ^{*1}
Control Power Kit	Provides 24 VDC Control Power to the robot.	Includes 24 VDC power supply and 5 m DC cable with pre-installed connector to robot.	23912-000
High Power Kit	Provides 48 VDC power to the robot.	Includes two 48 VDC power supplies, redundancy unit, and DC cabling with pre-installed connector to robot (5 m).	23913-000
XBELTIO Cable	Provides connections to Belt Encoder, EXPIO, and RS-232 signals.	0.6 m cable length.	13463-000
XIO Cable	Connection to XIO termination block.	2 m cable length.	03695-000
XIO Breakout Cable	Provides a flying leads connection to digital I/O at the XIO connector on the robot.	5 m cable length.	04465-000
XIO Termination Block and Cable	Provides terminal block digital I/O connections at the XIO connector on the robot.	Includes a terminal block with a 2 m cable.	90356-40100
IO Blox Kit	Provides additional I/O (8 inputs and 8 outputs).	Includes an IO Blox unit with a 0.3 m cable.	90356-30200
IO Blox Expansion Kit	Provides IO Blox unit expansion.	Includes an IO Blox unit with a 0.3 m cable.	90356-30100
IO Blox Extension Cable	Connects two IO Blox units.	3 m cable length.	04679-030
	Connects an IO Blox unit and a robot.	3 m cable length.	04677-030
Encoder Kit	Includes all equipment to add an encoder to a robot.	Includes encoder, mounting bracket, and 5 m cable.	09742-001
Encoder Extension Cable	Replaces or extends the Encoder Kit cable.	5 m cable length.	09446-050
Pneumatic Valve Kit	Provides three robot-controlled pneumatic valves.	Includes valves, components, and hardware for installation.	22872-000
Belt Encoder Y-adapter Cable	Provides two M12 connectors for the Belt Encoder signals/connector on the XSYSTEM cable.	3 m cable length.	09443-000
Front Panel Kit	Remote mounted device for robot mode, power, indication, and emergency stop.	Includes a Front Panel with a 3 m cable.	92546-10358 ^{*1}
Tool Flange (ISO)	Replacement i4L tool flange.		19360-016F
Camera Mounting Bracket	Used to mount a camera to the outer link.	Includes all hardware to mount a Basler or Sentech Camera.	23693-000
T20 Pendant Kit	Provides all required equipment for the T20 Pendant.	Includes the T20 Pendant, 3 m adapter cable, and an M23 jumper plug.	10046-010
IPC Application Controller	Used to execute PackManager and Robot Vision Manager applications.		AC1-152000
NJ501-R Series Robotics Integrated Controller	Machine controller with sequence, motion, and robotics functionality.	Refer to Cat. No. P140 for more information.	NJ501-R□□□
Sysmac Studio	Settings and creation of programs to control a robot with the Robot Integrated CPU Unit and IPC Application Controller.	A license for the Standard Edition (SYSMAC-SE201L) is required.	SYSMAC-SE200D-64
3D Simulation	Perform 3D simulation including robots and peripheral devices.		SYSMAC-SA401L-64
PackManager	Enables full functionality of the PackManager software.		20409-000
Robot Vision Manager	Enables the Robot Vision Manager functionality and inspection tools library.		20410-000
PackManager + Robot Vision Manager	Enables functionality of both PackManager and Robot Vision Manager		20433-000
Bellows Installation Kit	Two bellows and associated hardware for protecting the quill.	180 mm quill length.	22839-000
		350 mm quill length.	22868-000
Replacement Bellows	Upper and lower replacement bellows.	180 mm quill length.	22861-000F
		350 mm quill length.	22862-000F
Encoder Backup Battery Pack	Includes three 3.6 V batteries.		20269-000F ^{*1}

*1 Equipment supplied with all robots.

Interface Panels

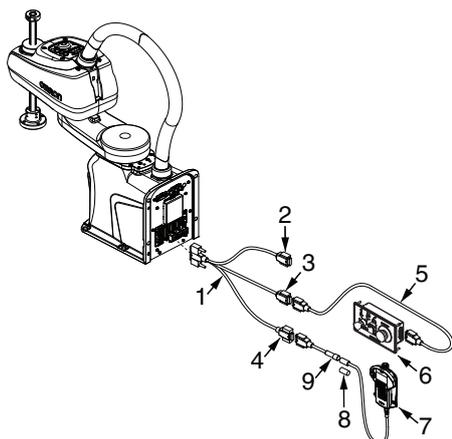


*1 Communication ports provide EtherCAT interface for Integrated Control Robots and Ethernet interface for Standard Control Robots.

Cables and Connections

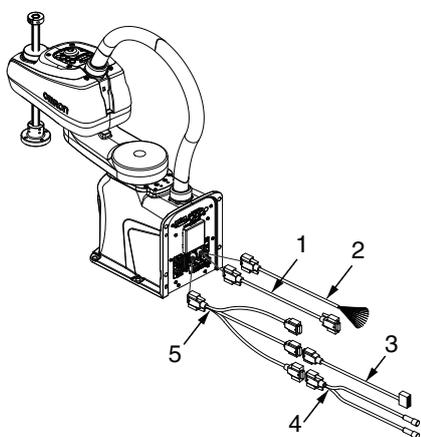
Refer to Options and Additional Items for more information.

Standard Cables and Connections



Item	Description	Function	Part Number
1	XSYSTEM Cable	Main interface cable.	13322-000
2	XUSR Connector	User-supplied safety devices.	
3	XFP Connector	Front Panel connections.	
4	XMCP Connector	T20 Pendant.	92546-10358
5	Front Panel Extension Cable		
6	Front Panel	High-power, mode, and E-stop.	
7	T20 Pendant		10046-010
8	T20 Pendant Jumper Plug	Used when T20 Pendant is not connected.	
9	T20 Pendant Adapter Cable		

Optional Cables and Connections



Item	Description	Function	Part Number
1	XIO Cable	Connection to XIO termination block.	03695-000
2	XIO Breakout Cable	I/O flying leads.	04465-000
3	EXPIO to IO Blox Cable	IO Blox connections.	04677-030
4	Belt Encoder Y-adapter Cable	Direct encoder connections.	09443-000
5	XBELTIO Adapter Cable	Encoder, force, and RS-232 signal interface cable.	13463-000

i4L-Series

Mounting Options

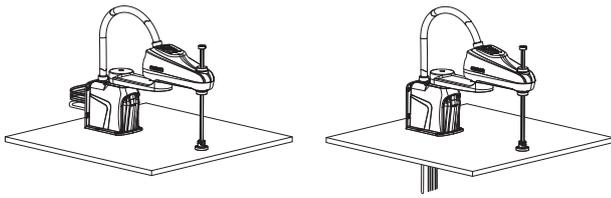
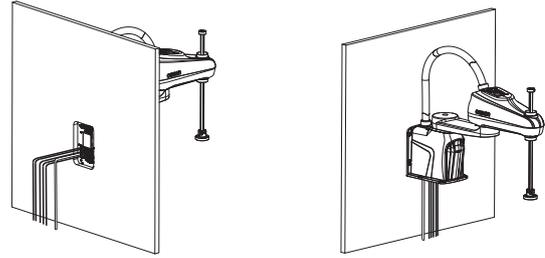


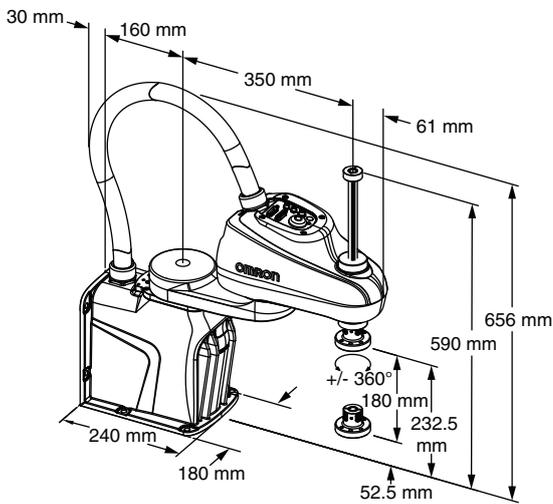
Table Mount



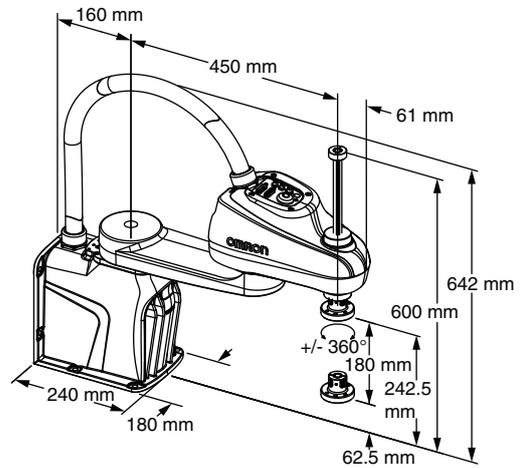
Wall Mount

Robot Dimensions

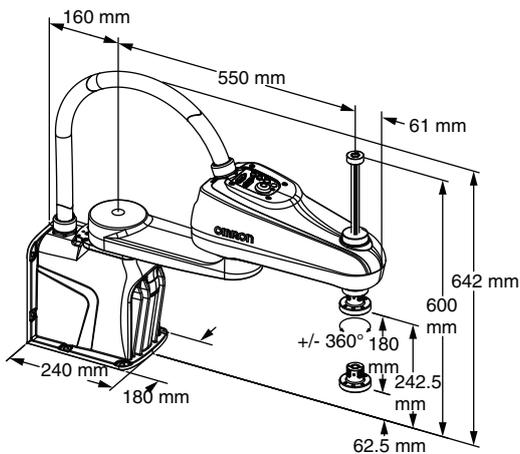
i4-350L



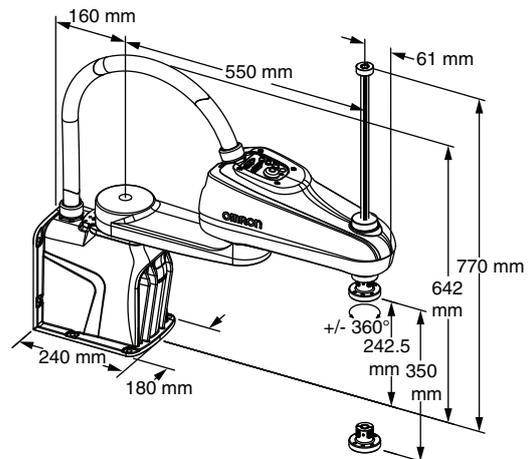
i4-450L



i4-550L

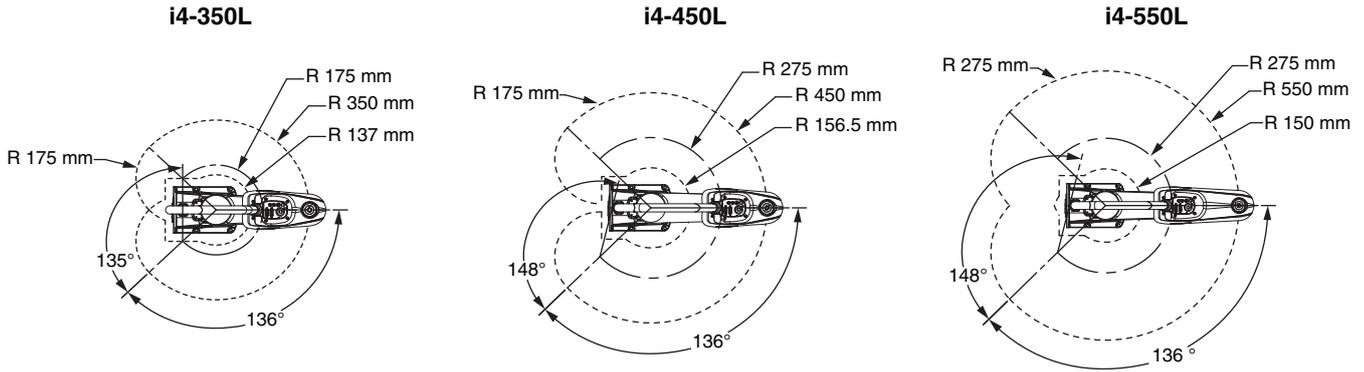


i4-550L (350 mm Z)



Note: There must be at least 183 mm of clearance from the Primary Interface Panel connectors to provide adequate space for cables.

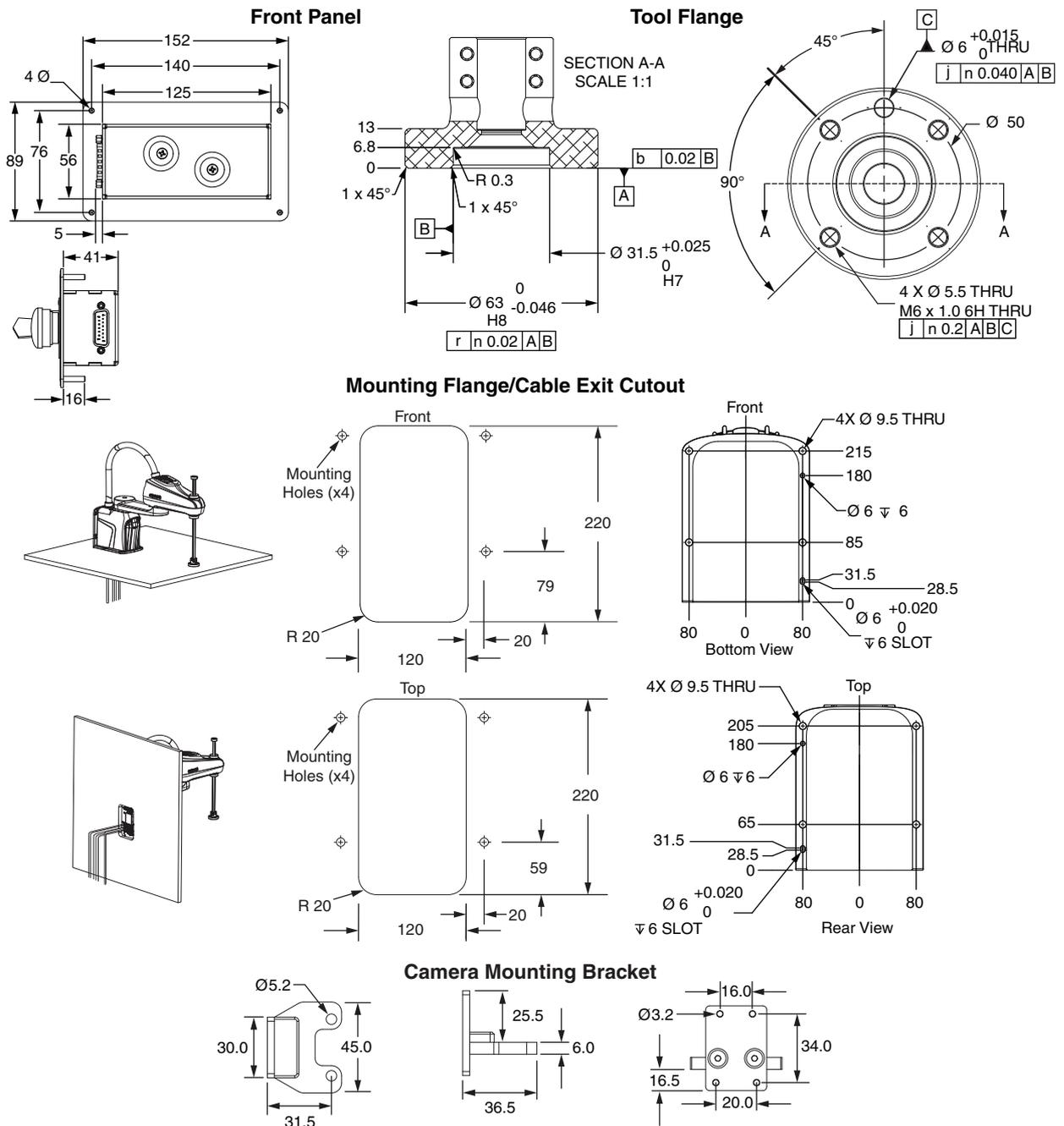
Arm Reach Dimensions



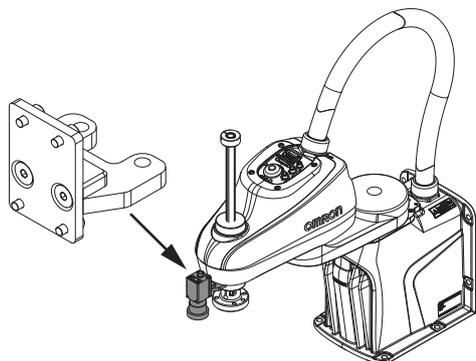
Note: Reach restrictions behind the robot may vary based on robot configuration, type, and cable configuration.

Other Dimensions

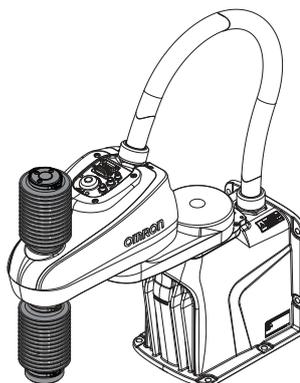
(Unit: mm)



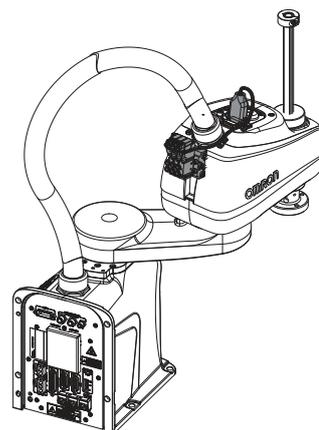
Camera Bracket



Bellows



Pneumatic Valve Kit



Related Manuals

Catalog Number	Manual Title
I590	Robot Safety Guide
I601	T20 Pendant User's Manual
I658	i4L Robots User's Manual
I659	i4L Robots with EtherCAT User's Manual
I632	IPC Application Controller User's Manual
I633	Automated Control Environment (ACE) Version 4 User's Manual
I671	V+ User's Manual
I672	V+ Keyword Reference Manual
O037	NJ-series Robot Integrated CPU Unit User's Manual
O049	Machine Automation Controller NJ-series Robot Integrated System Startup Guide
W504	Sysmac Studio Version 1 Operation Manual
W595	Sysmac Studio Robot Integrated System Building Function with Robot Integrated CPU Unit Operation Manual
W618	Sysmac Studio 3D Simulation Function Operation Manual
W621	Sysmac Studio Robot Integrated System Building Function with IPC Application Controller Operation Manual

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