

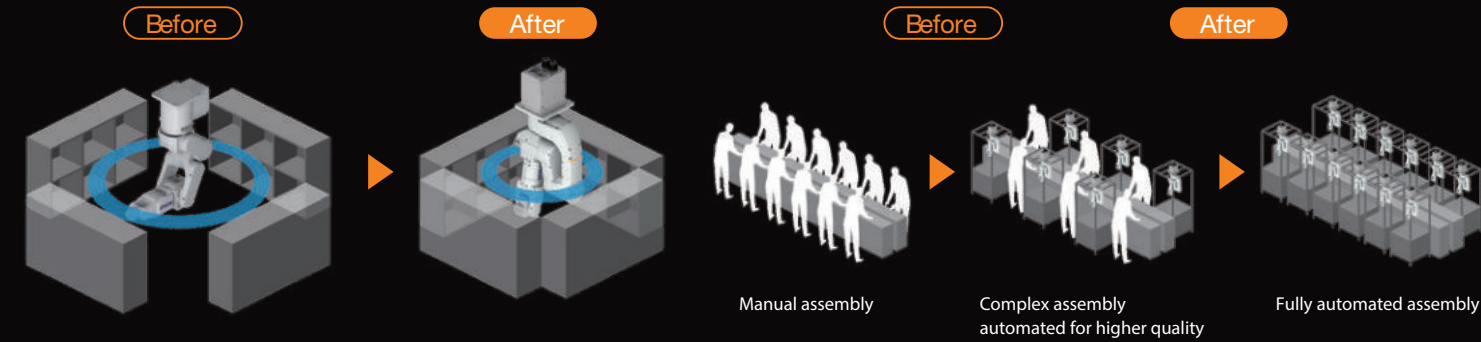
## N2 Series: Before & After

- More compact and productive assembly lines

New folding arm design and shortcut motions boost productivity by allowing more efficient assembly line layout and achieving shorter cycle times.

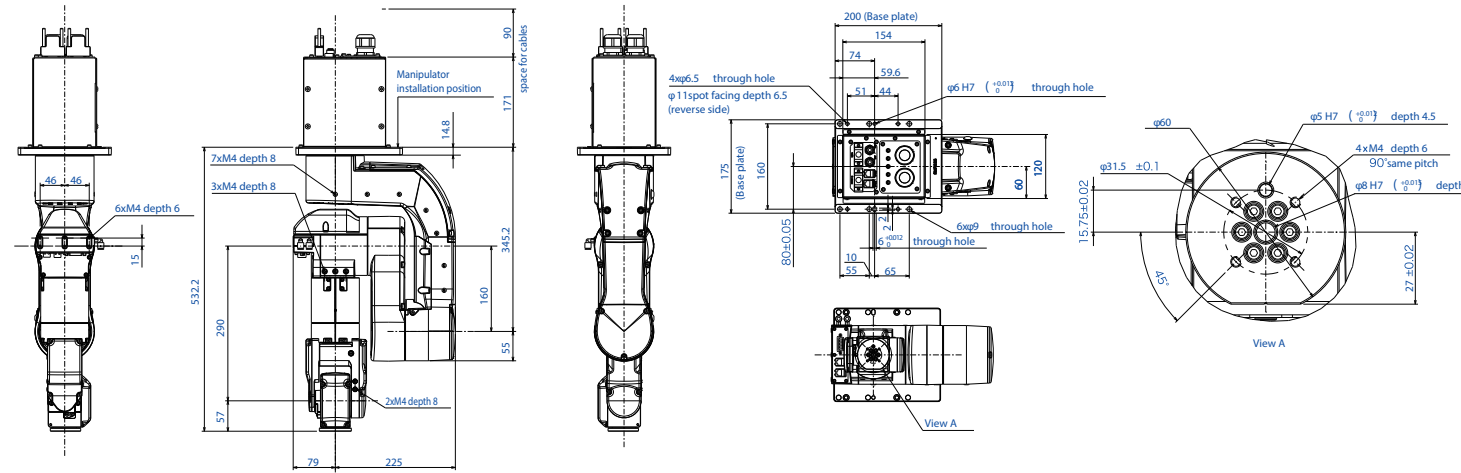
- Automate manual assembly without changing current line layout

Automation is easier to implement because the small installation space of N2 robots enables them to be easily added to existing assembly lines.



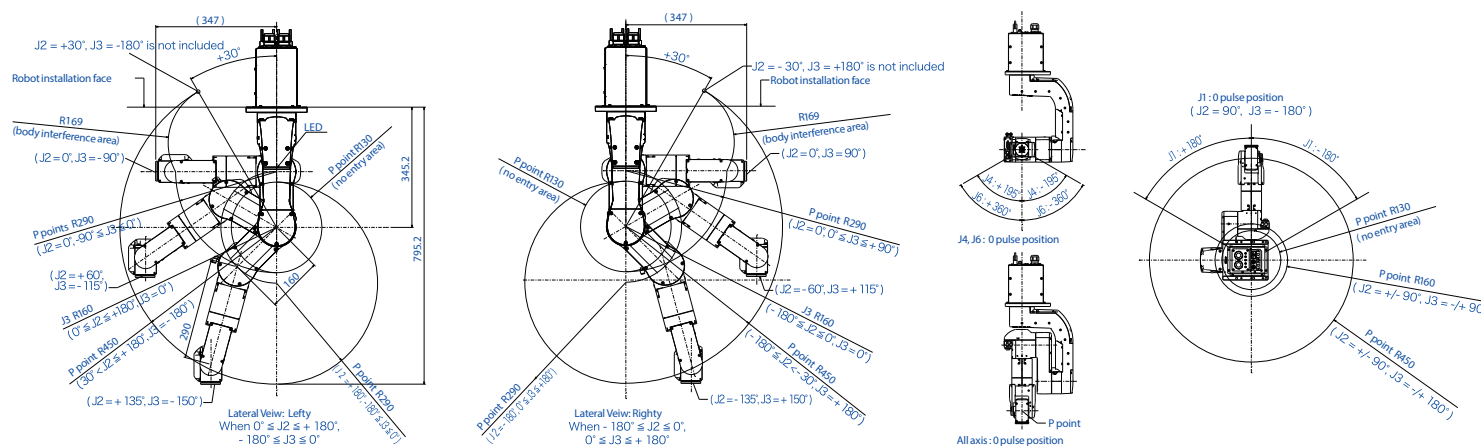
## Dimensions

[Unit: mm]



## Motion Range

[Unit: mm]



## Specifications

Model name	N2-A450SR	N2-A450S
Mounting type	Ceiling	Table top*
Degree of freedom		6
Max. motion range	P point: through the center of J4/J5/J6	450mm
Wrist flange surface		532.2mm
Max. operating speed	Joint #1 Joint #2 Joint #3 Joint #4 Joint #5 Joint #6	297°/s 297°/s 356°/s 356°/s 360°/s 360°/s
Weight (cable not included)		19kg
Repeatability	Joint #1-#6	±0.02mm
Max. motion range	Joint #1 Joint #2 Joint #3 Joint #4 Joint #5 Joint #6	±180° ±180° ±180° ±180° ±130° ±36.0°
Payload <sup>2</sup>	Rated Maximum	1kg 2.5kg
Allowable moment of inertia <sup>3</sup>	Joint #4 Joint #5 Joint #6	0.2 kg·m <sup>2</sup> 0.2 kg·m <sup>2</sup> 0.08 kg·m <sup>2</sup>
Motor power consumption	Joint #1 Joint #2 Joint #3 Joint #4 Joint #5 Joint #6	100W 100W 100W 30W 30W 15W
Installed wire for customer use	15 wires (D-sub) 8 pin (RJ45) Cat 5e or equivalent (2 cables)(also used for Force Sensor)	
Installed pneumatic tube for customer use	6 mm pneumatic tubes (2 tubes), Allowable pressure: 0.59 Mpa (6 kg/cm <sup>2</sup> ) (89 psi)	
Installation environment	Standard	
Applicable Controller	RC700-A	
Safety standard	CE Marking / KC Marking / KCs Marking	

\*1: Manipulators are set to "Ceiling mounting" at shipment. To use the manipulators as "Table Top mounting", you need to change the model settings in EPSON RC+ software.  
\*2: Do not apply the load exceeding the maximum payload.  
\*3: If the center of gravity is at the center of each arm. If the center of gravity is not at the center of each arm, set the eccentric quantity using INERTIA command.

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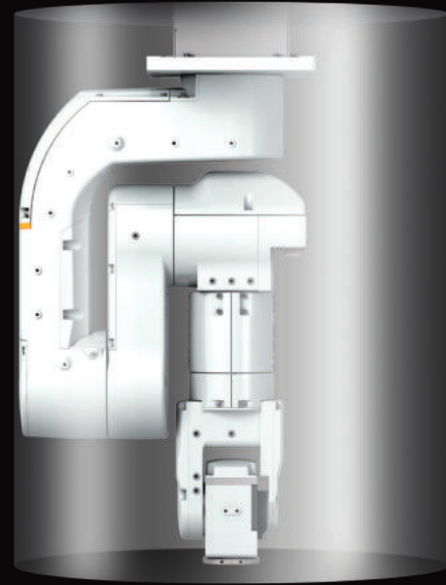
# EPSON

# Epson Robot N2 Series

New Kinematic 6-Axis



# New arm mechanism offers the ultimate in space-saving performance



**40% smaller installation space\*1**

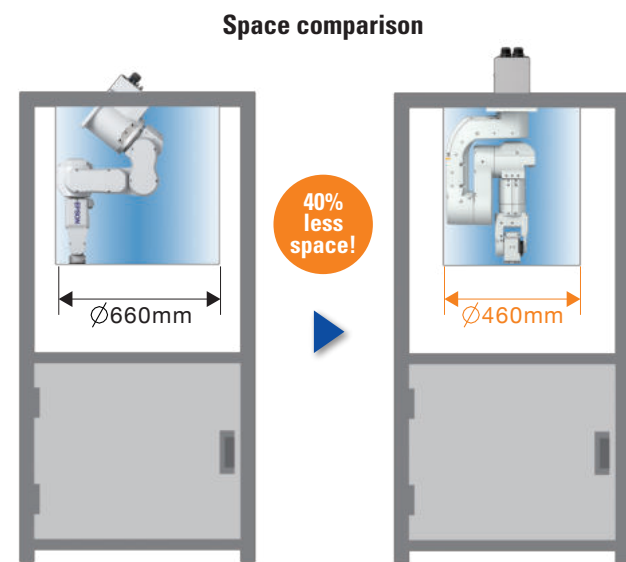
**Motion shortcuts for faster cycle times**

All-new folding arm mechanism — a world's-first\*2 in 6-axis robot design — enables complex, high-precision assembly tasks to be performed in extremely limited space, making the N2 series ideal for precision, small-component assembly and other applications that demand high space efficiency.

\*1 Compared to Epson C4 series robots  
\*2 Epson research; among 6-axis robots (as of October 2015)

## Installs in 40% less space

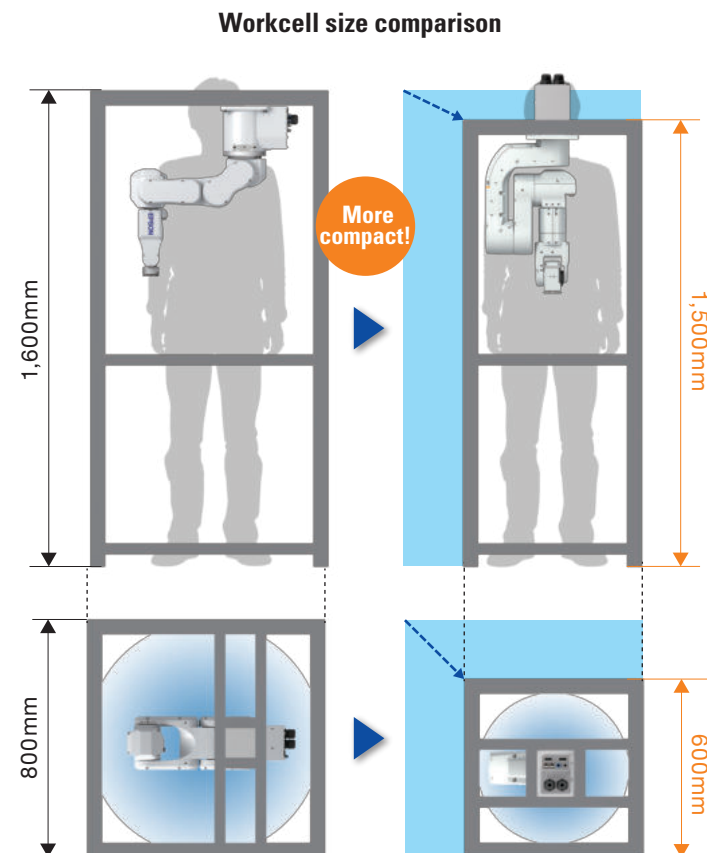
Conventional 6-axis robots require elbow room to operate, and workcells must be large enough to ensure that adjoining units do not interfere with each other when operating. Epson N2 series robots feature a unique new folding arm that allows them to operate in 40% less space than C4 series robots. As a result, workcells can be more compact, enabling factory floor space to be utilized more flexibly and efficiently.



Conventional 6-axis (C4) N2

## Can operate in areas as small as 600mm x 600mm

N2 robots require no more space than a human worker, so you can automate manual processes without making expensive changes to your current factory and production line layout.

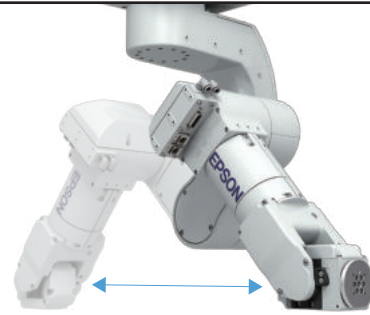


Conventional 6-axis (C4) N2

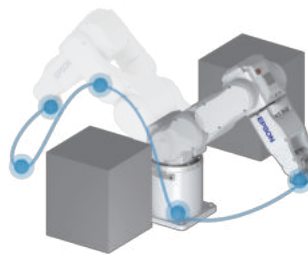
## Motion shortcuts for speedy access

Folding design enables the arm to be rotated 180° and extended in the opposite direction, using shortcut motion that reduces startup and cycle times without risk of interference with adjoining workcells.

180° reverse for shortest-path access



Obstacle avoidance with conventional 6-axis design



More efficient!

Shortest-path access with N2 folding-arm design

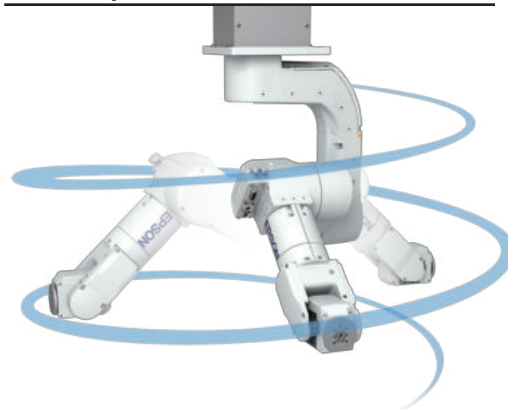


Easy teaching!  
Fast cycle times!

## Shortest accesses with unlimited circular movement

A series of 90° shortcut motions enables quick access to virtually any point 360° around the central axis. Cycle times are faster because the arm can move from point to point to access shelves or devices anywhere around the robot without performing a full rotation like a conventional 6-axis robot.

Even repeated motions over 360° are fast



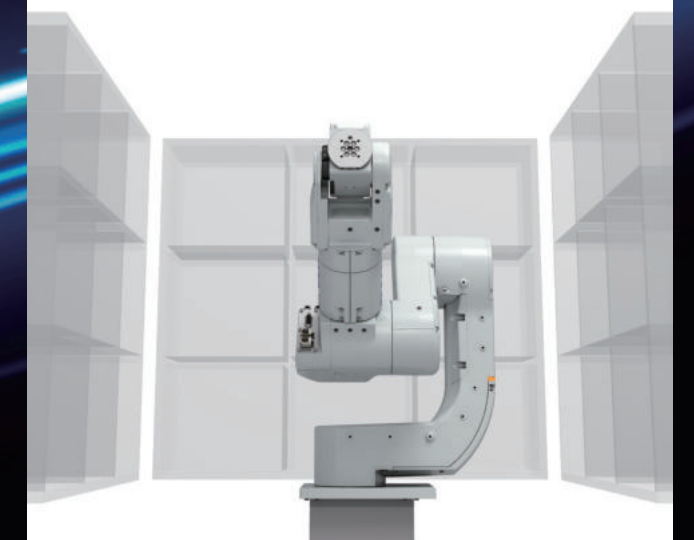
## Built-in support for force sensors

Interface ports are provided for easy connection of optional force sensors. Force control is also fully supported by the Epson RC700-A robot controller.



## Tabletop or ceiling mount

EPSON RC+ controller software makes it easy to program the N2 series for either tabletop or ceiling mounting. Tabletop mounts can also face either way, allowing even greater freedom in workcell layout.



# All-new folding arm mechanism — a world's-first\*1 in 6-axis robot design

\*1 Epson research; among 6-axis robots (as of October 2015)