

**NACHI**



**ROBOt**

**Total Robot Catalog**

# ALL FOR SP

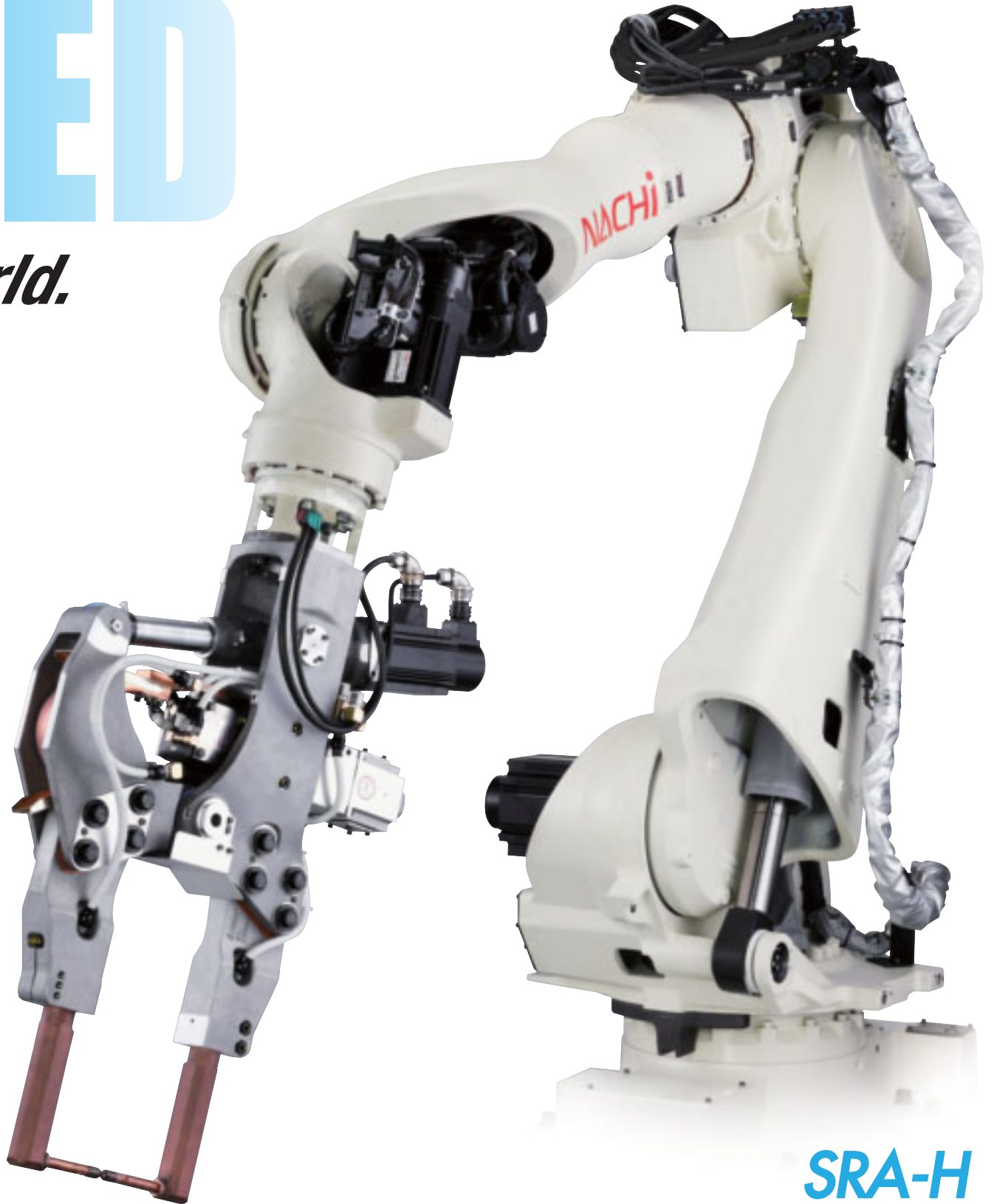
*Phenomenal speed to astound the*



MZ07

# EED

*world.*












## **Nachi Fujikoshi's industrial robots are breaking new ground in the era of advanced manufacturing.**

Nachi Fujikoshi started producing robots in 1968, leveraging the know-how from the hydraulic and machine tool divisions. Since then, Nachi Fujikoshi has been introducing products built on its technological excellence and innovative strength to accurately respond to market demands. Nowadays, as an irreplaceable partner working on automotive production lines with the strength and vision to support the industrial machinery market, Nachi Fujikoshi has grown and advanced to earn the trust and respect in facilities around the world. The world comes to Nachi Fujikoshi for all its needs, from compact precision operation to lifting heavy loads in a full range of assembly and welding solutions. Nachi Fujikoshi's robots are revolutionizing production facilities with their incredible speed. We will continue to evolve with customers to meet the challenge of the world's automation needs.

# NACHI's full robot series lineup supports worksites throughout the world of manufacturing with the latest in technology.

## ● NACHI ROBOT SERIES

Series  Process and application	MZ	MC/MR	ST-TP	MC and SC Heavy Loader
 <p>▶P.5 Number of controlled axes: 5 or 6 axes Payload capacity: 7 kg Maximum reach : 723 to 913 mm</p>	 <p>▶P.5~6 Number of controlled axes: 6 or 7 axes Payload capacity: 10 to 70 kg Maximum reach: 1,260 to 2,050 mm</p>	 <p>▶P.7 Number of controlled axes: 6 or 7 axes Payload capacity: 80 to 100 kg Maximum reach : 3,106 mm</p>	 <p>▶P.8 Number of controlled axes: 6 axes Payload capacity: 280 to 700 kg Maximum reach: 2,503 to 3,972 mm</p>	
Spot and seam welding				●
Arc welding		●		
Die casting	●	●		●
Resin molding	●	●		●
Press operation handling	●	●	●	
Machine loading	●	●		●
Deburring and polishing	●	●		
Sealing	●	●		
General assembling	●	●		
Tightening nuts	●	●		
Picking, aligning, packaging	●	●		
Shipping and receiving (palletizing)		●		●
Measuring, inspection, testing	●	●		●
Material handling	●	●	●	●
Glass substrate loading				

LP/MC470P	ST-C/SC-C	SJ	SRA-H/SRA	NB/NV	
 <p>►P.9 Number of controlled axes: 4 or 6 axes Payload capacity: 130 to 470 kg Maximum reach: 2,503 to 3,972 mm</p>	 <p>►P.10 Number of controlled axes: 6 axes Payload capacity: 133 to 400 kg Maximum reach: 2,654 to 3,623 mm</p>	 <p>►P.10 Number of controlled axes: 4 or 5 axes Payload capacity: 25 to 120 kg</p>	 <p>►P.11 Number of controlled axes: 6 axes Payload capacity: 100 to 250 kg Maximum reach: 1,634 to 3,951 mm</p>	 <p>►P.12 Number of controlled axes: 6 axes Payload capacity: 4 to 6 kg Maximum reach: 1,402 to 2,008 mm</p>	<p>Controller support software ►P.13</p> <p>List of specifications ►P.15</p> <p>Service network ►P.27</p>
					Field
			●		Automotive, automotive parts,
				●	metalworking, agricultural machinery, construction machinery
			●		Automotive parts, plastic,
			●		electric and electronics
			●		Automotive, automotive parts, machine tools, plastic, pharmaceuticals and cosmetics, electric and electronics, metalworking, chemistry, medical equipment, foodstuffs, agricultural machinery, construction machinery
	●		●		
			●		
			●		
			●		
			●		
			●		
●			●		
			●		
	●		●		Electric and electronics

## Handling applications

Machine loading, picking, loading, palletizing, assembling, deburring/polishing, and sealing

World's fastest lightweight compact robot

### MZ07 Series

- Number of controlled axes: 5 or 6 axes
- Payload capacity: 7 kg
- Maximum reach : 723 to 913 mm

**MZ07 (6 axes)    MZ07L (6 axes, long arm)**  
**MZ07P (5 axes)    MZ07LP (5 axes, long arm)**

World's fastest operating performance, lightweight, compact, dust-proof and drip-proof specifications, plus installation specifications are flexible for an all-around compact high performance robot. Contributes to better productivity and is applicable for automating a variety of processes. Hollow wrist construction means wiring for the hand is streamlined for doing work in narrow locations.



MZ07

Powerful and compact multi-purpose robot

### MC Series

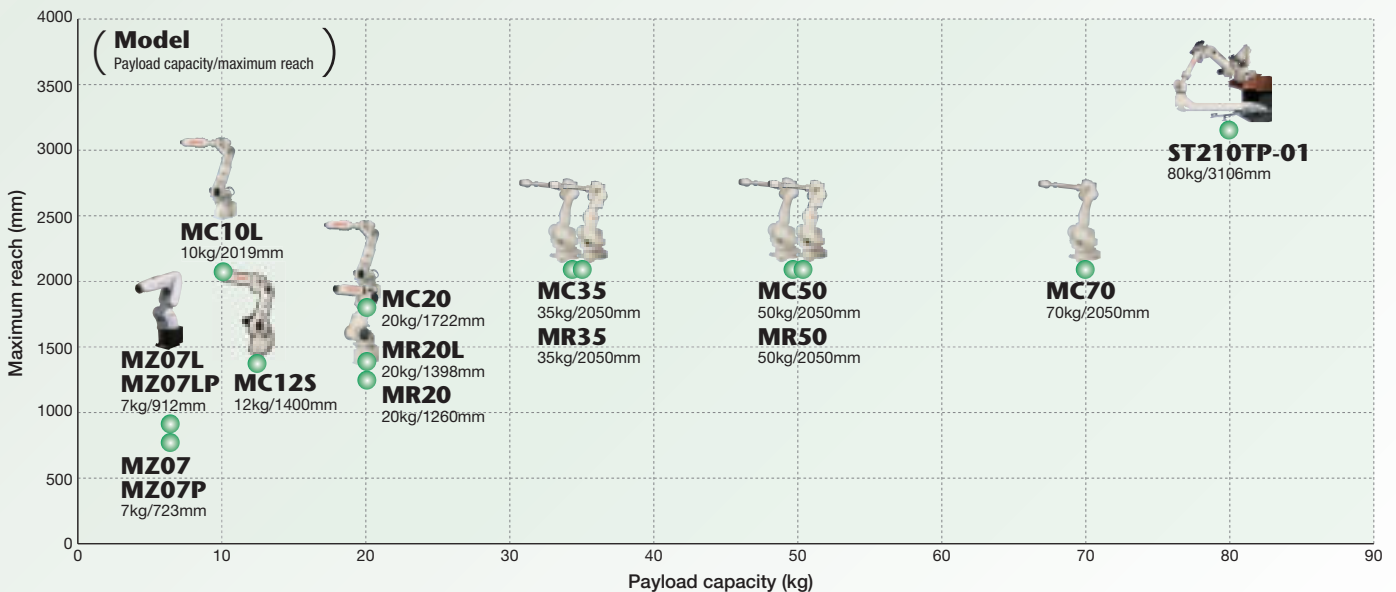
- Number of controlled axes: 6 axes
- Payload capacity: 10 to 70 kg
- Maximum reach : 1,400 to 2,050 mm

**MC20    MC10L    MC12S**  
**MC35    MC50    MC70**

High dust and drip proofing, top level operating performance, and a full range of functions to handle a variety of applications keep these robots working in a variety of production environments.



MC20





Flexible motion "Arm" robot with 7-axes

## MR Series

- Number of controlled axes: 7 axes
- Payload capacity: 20 to 50 kg
- Maximum reach : 1,260 to 2,050 mm

### MR20 MR20L MR35 MR50

With a rotating approach, this 7-axis construction can handle complex motions to flexibly work doing processes that existing robots cannot. The compact robot arm really helps to reduce the amount of space needed for installations.



MR20

## Options

### • FLEXhand FH360, FH150-F2, FH150-F3

Servo hand controlled as an additional axis by the robot controller. Capable of handling many shapes without changing out the hand. This is an excellent tool for small-lot multiple item production.



FH360-01 (3 fingers)



FH150F2-01 (2 fingers)



FH150F3-01 (3 fingers)

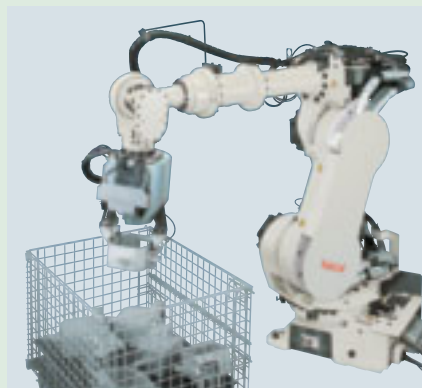
### • Force sensor

This function controls the robot by accurately detecting the applied force. This powerful tool makes it possible for robots to do delicate operations at high speed, such as following, pushing, loading (press fitting), detecting position and phase during assembly and production processes.



### • Vision sensor NV-Pro

Our vision sensor was developed in-house at NACHI. Excellent interfacing with robot because it is possible to check images, operations, and program the robot by using the teach pendant. Excellent for picking up parts that have not been positioned because robot is aware of position of part in 2 or 3 dimensions. Can be equipped with functions to detect models of products (or detect abnormal products).



Vision sensor unit

### Press operation handling robots

## ST210TP

- Number of controlled axes: 6 or 7 axes
- Payload capacity: 80 to 100 kg
- Maximum reach : 3,106 mm

### ST210TP-01 (with press arm)

### ST210TP-02 (without press arm)

Highly rigid design and vibration dampening give this robot its great speed. Newly developed specialized press arm attachment gives this robot a much larger reach that can be used for a maximum eight meter press pitch. Moves parts horizontally at high speed.



ST210TP-01

### Example application



Handling and transport

Robots load work pieces into machining centers and move parts between processes during parts manufacturing. A single robot can monitor multiple machines by synchronizing the various cycle times. Selecting the right robot for the job means a compact operation with excellent maintainability.

### Example application



Deburring and polishing

Robots de-bur cast parts and machined parts and grind welding beads. They maintain consistent quality without variations in polishing or left over burrs.

### Example application



Press operation handling

Robots load and unload presses. Frees workers from the dangerous job of handling the sharp edges of sheet metal parts. Helps increase productivity by quickly loading parts ranging in size from large to small.



Solving your automation needs for assembly, loading, and other jobs with a lineup of high performance and highly functional product applications such as vision sensors and our FLEXhand series for our high-speed and super precise robots.

Heavy loader robot

**MC Heavy Loader Series**

- Number of controlled axes: 6 axes
- Payload capacity: 280 to 350 kg
- Maximum reach : 2,771 to 3,101 mm

**MC280L MC350**

These are our new innovative link-less type heavy load bearing robots. With plenty of wrist torque and working envelope, these robots are opening up a new era of heavy loading robots.



MC350

Super heavy loader robot

**SC Heavy Loader Series**

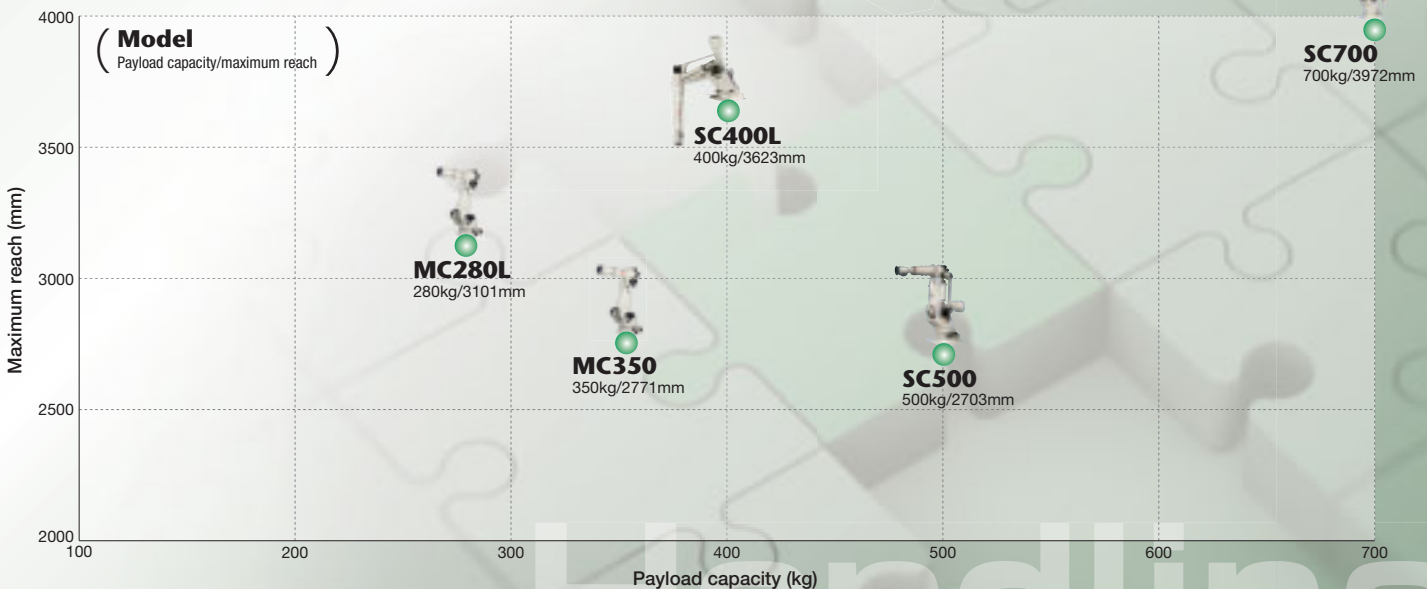
- Number of controlled axes: 6 axes
- Payload capacity: 400 to 700 kg
- Maximum reach : 2,503 to 3,972 mm

**SC400L SC500 SC700**

The SC heavy loader robots, with huge load capacity and reach, are excellent for jobs that require heavy loading. Their vertical stroke is especially big, so they can help create more flexible production lines by replacing conventional specialized machinery, such as auto body loaders, with robots.



SC400L



**Palletizing  
(shipping and  
receiving)**

**Palletizing robots**

By improving productivity, these robots handle manufacturing jobs that produce more products in a shorter time NACHI's palletizing robots help with intricate stacking work for shipping and receiving processes.

High-speed palletizing robot

**LP Series**

- Number of controlled axes: 4 axes
- Payload capacity: 130 to 210 kg
- Maximum reach : 2,503 to 3,972 mm

**LP130 LP180 LP210**

The LP series of specialized palletizing robots do large movements quickly. They can stack boxes of products, such as cardboard boxes, or products in bags, such as foodstuffs or chemicals, onto pallets at high speeds. Loaded with palletizing functions, they can handle a variety of stacking patterns.



LP130

**Example application**



Palletizing

Robots stack goods of various sizes in specified patterns on pallets. They help to automate a wide range of logistics operations with their high speeds and variety of stacking patterns.

Heavy loader palletizing robot

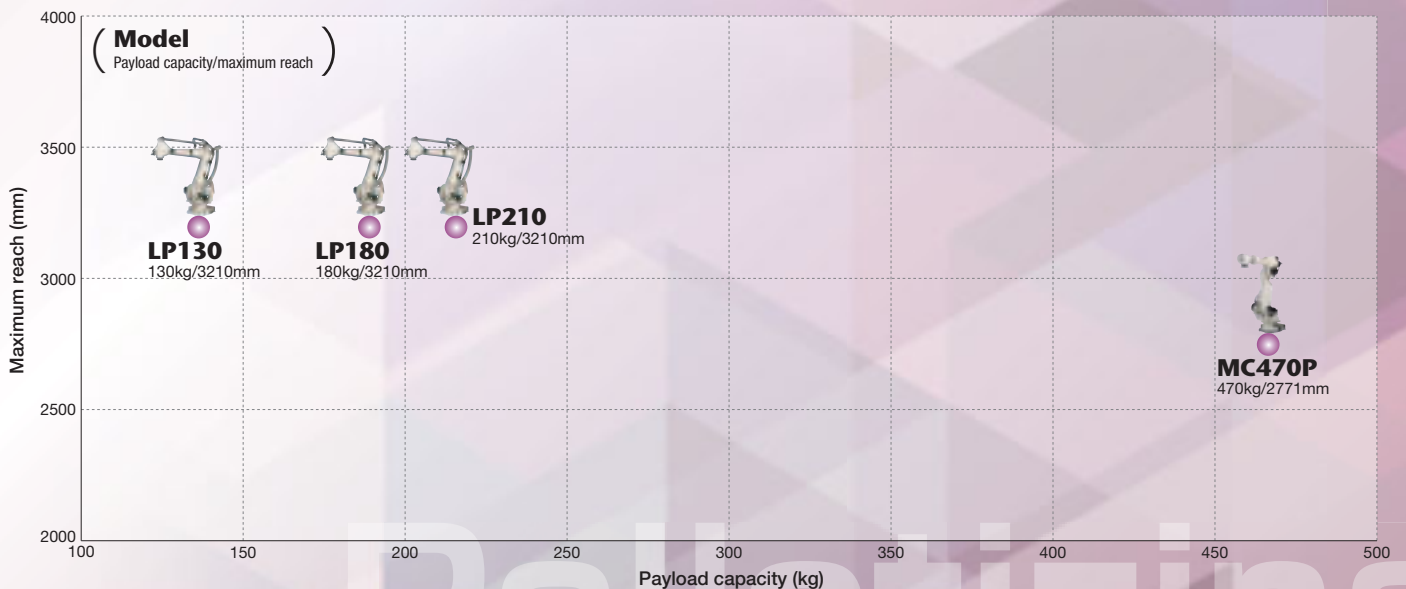
**MC470P**

- Number of controlled axes: 6 axes
- Payload capacity: 470 kg
- Maximum reach: 2,771 mm

This robot has enough lifting power to handle jobs loading and stacking beverages, bricks, plastic resins, concrete and other heavy goods. While having only 6 controlled axes, it can handle large and heavy loads with a wrist that is always directed downward.



MC470P



Clean-room loading  
(glass substrate  
loading)

## Clean-room Robots

Our series of clean-room robots suppress the dust created by arm movements and are designed to be used in clean rooms. These high-performance loading robots support the heart of the flat panel display production process.

Clean-room loading robot

### ST-C/SC-C Series

- Number of controlled axes: 6 axes
- Payload capacity: 133 to 400 kg
- Maximum reach : 2,654 to 3,623 mm

#### ST133CF ST166CF ST210CF SC400LC

Six-axis articulated construction with excellent flexibility and a large reach make these robots excellent for a variety of loading work in large glass substrate production processes.



ST133CF



SC400LC

Robots for glass substrate loading

### SJ Series

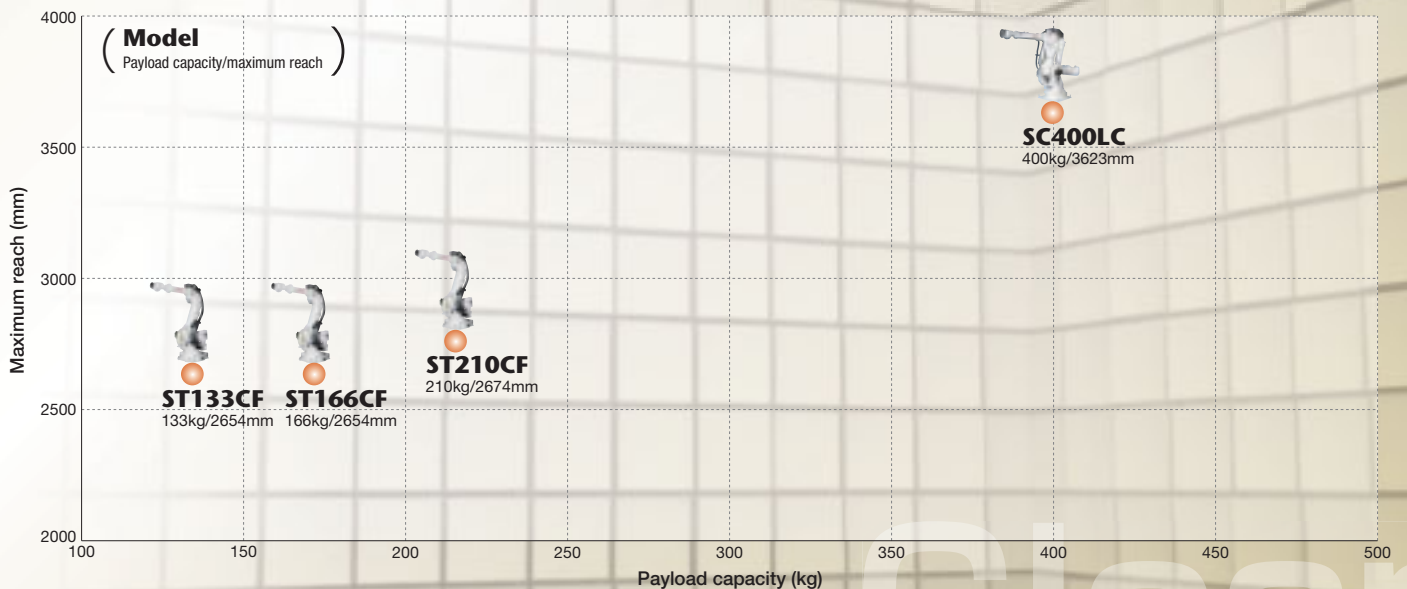
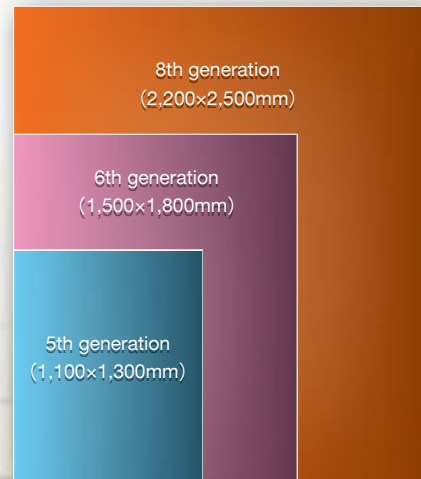
- Number of controlled axes: 4 or 5 axes
- Payload capacity: 25 to 120 kg

#### SJ80C SJ120C

These robots have been loading large glass substrates for flat panel displays ranging from the fifth through the eighth generation. Our flexing and extending construction enables extremely clean performance, which is excellent for work in clean rooms where particle control is necessary.



SJ120C







## Welding applications

## Spot welding, arc welding, and seam welding

Spot welding robot with built-in cables

### SRA-H Series

- Number of controlled axes: 6 axes
- Payload capacity: 100 to 220 kg
- Maximum reach : 2,575 to 3,951 mm

**SRA100H SRA133HL (Long arm)**

**SRA220H SRA220HV (Inverted mount)**

The next generation of hollow arm construction spot welding robots. Cables for welding gun are fully enclosed to increase cable reliability and improve rate of operation.

Contributes to installing directly in the assembly line and improves operational accuracy of offline programming, including welding cables.



SRA100H

Ultra-fast spot welding robot

### SRA Series

- Number of controlled axes: 6 axes
- Payload capacity: 100 to 250 kg
- Maximum reach : 1,634 to 3,099 mm

**SRA100**

**SRA166**

**SRA210**

**SRA100B (Short arm)**

**SRA133L (Long arm)**

**SRA166L (Long arm)**

**SRA166T (Shelf mount)**

**SRA210T (Shelf mount)**

**SRA240**

**SRA250**

**SRA100J (Extra-short arm)**

**SRA120EL (Extra-long arm)**

**SRA166TL (Shelf mount long arm)**

The Ultimate Spot Welding Robot. Pursuing higher speeds and vibration damping properties, we greatly improved productivity by shortening cycle times 30% (compared to our existing models) through improvements in three areas, weight reduction, higher rigidity, and faster controls. The compact design allows for dense installation layouts plus maintenance is streamlined making periodic inspections and parts replacement easy to do. The lighter weight and latest in motor drive controls have reduced power consumption by 15% over existing models. This reduces environmental impact too.



SRA166

### Example application



Spot welding

Spot welding guns are mounted on robots and used to spot weld steel plates. They are used to assemble auto bodies, parts, and frames. Welding guns are controlled by the robots so sputter does not occur for high quality welds and high productivity in a clean and quite environment.



SRA210T

Welding robots are the central element of automobile production, especially the auto body welding lines. The performance, functionality, and reliability of the NACHI lineup of spot welding robots are supporting the world of manufacturing.

### Arc Welding Robot NB/NV Series

- Number of controlled axes: 6 axes
- Payload capacity: 4 to 6 kg
- Maximum reach : 1,402 to 2,008 mm

#### NB04 NB04L NV06 NV06L

By housing the arc welding cable in the arm, these robots optimize layout by eliminating interference with peripheral equipment and they have consistent wire feed.



NB04

### Seam welding robots Robot seam welding package

#### Seam welders are mounted on robots

- Capable of seam welding on work surfaces in three dimensions
- Fast and consistent welding
- Equipped with various application functions such as electrode polishing, electrode wear compensation, and others

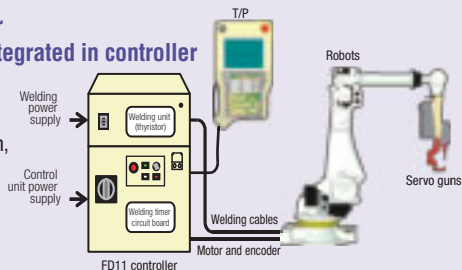


### Options

#### Integrated timer Welder timer integrated in controller

##### - All-in-one package

Package includes robot, timer, servo gun, and peripheral equipment.



#### Slider

Slider controlled as an additional axis by the robot controller. Expands possibilities of automated systems and working envelope of robots.



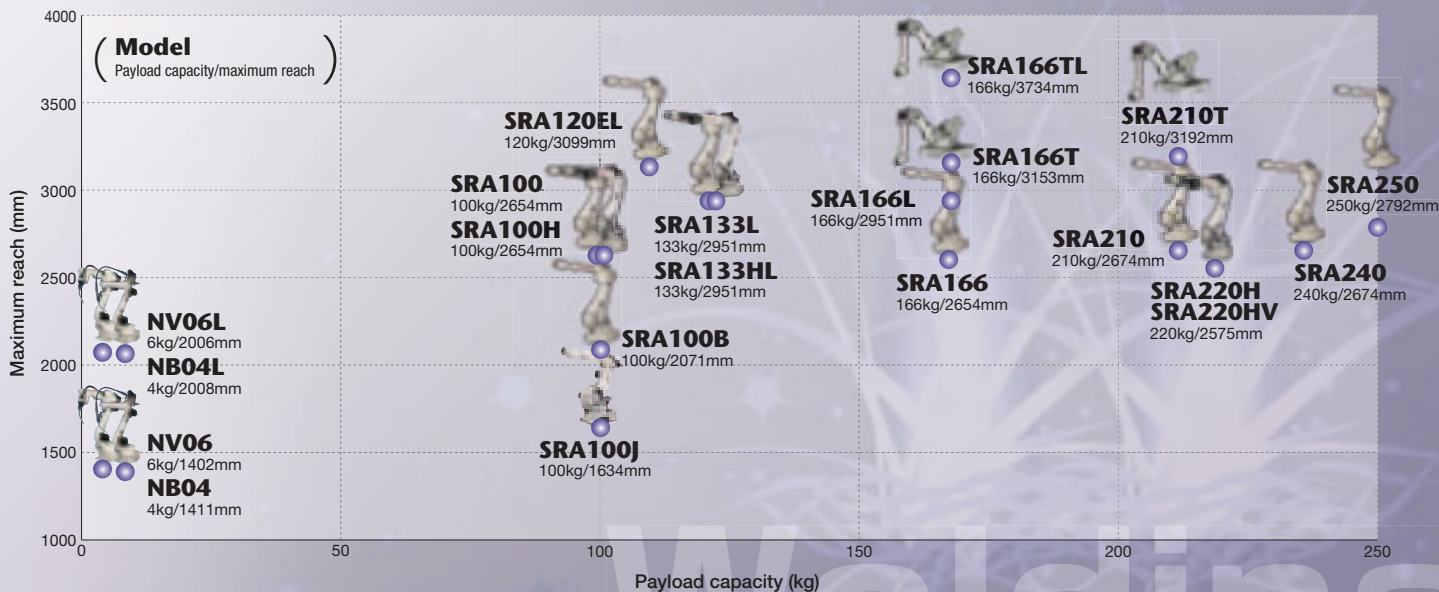
#### Revolving worktable TT2000/TT4000

Revolving table controlled as an additional axis by the robot controller. Full-circle revolving table holds heavy loads, such as jigs, that helps streamline production processes with multi-operation configurations combining production of multiple types of products.



#### Lifter LF Series

Lifter is controlled by the robot controller for vertical movement. Each pillar can handle up to 580 kg. A maximum of 4 pillars can operate simultaneously to lift heavy and long items.





# Controller support software

## FD Controller

### Fast processing

High-speed CPU brings huge improvement to control performance such as cycle time, trajectory control, and internal processing time.

### Teach pendant is compact and lightweight

Compact and lightweight with re-tooled key operations. Touch panel is standard equipment making operations even easier.

### Improved maintainability

Maintainability improved by integrating units in base and revamping configuration. Faster parts replacement.



### Controller Standard specifications (domestic specifications: FD11-0000)

Item	Specifications
Number of controlled axes	Simultaneous 6 axes (maximum 8 axes as option)
Servo motors	AC servo motors
Position reader	Absolute encoder
Programming system	Teaching playback
Program number	9,999 programs
Memory capacity	256 MB (equivalent to 2,560,000 steps)
Memory format	Flash memory
External memory	USB memory supported (USB memory not included)
Operation panel	Mode switch (teach/playback) Emergency stop button, motors on button, start button, stop button
Safety functions	PLd (category 3 compliant)
Cable between robot and controller	5 m (controller cable specifications)
User interface	User panels: On back, side, and inside door (Some panels may not be usable if hardware options are added)
Serial interface	RS232C 1ch
Construction	Fully enclosed cabinet
Dust proof, drip proof	IP54 equivalent
Cooling method	Indirect cooling
Primary power supply specifications	200 VAC to 220 VAC ±10% (3 phase, 50/60 Hz) D type ground Breaker capacity 40 A, maximum current leakage 100 mA
Standby power consumption <sup>*1</sup>	0.13 kVA (cooling fan on), 0.08 kVA (cooling fan off)
Ambient temperature	0 to 45°C (50/60 Hz)
Ambient humidity	20 to 85% (without condensation)
Exterior dimensions	W 580 × D 542 × H 590 (mm) (not including 60 mm height of feet)
Weight	Approx. 62 kg
Color of paint	Munsell 10GY9/1

<sup>\*1</sup> The standby power consumption is when in energy-saving mode. In energy-saving mode the brakes temporarily lock, power to servo motors turns off, and the robot freezes its configuration. Refer to the basic specification sheet of a robot for the electric power requirements.

### Outstanding functionality

Excellent software functions carried over from AX controller. Easily adapts to many various applications.

### Full lineup of safety functions

Support for PL (Performance Level) d is standard. Also compliant with American and European safety standards.

### Options

Item	Specifications
Overseas compliance	North American specifications FD11-1101: ANSI/RIA compliant European specifications FD11-2101: CE mark compliant
Primary power voltage conversion (external dimensions of controller)	380/400/420/440/460/480 VAC ±10% (3 phase, 50/60 Hz) D type ground Breaker capacity 30 A, maximum current leakage 100 mA W 580×D 542×H 1,180 (mm) (not including 60 mm height of feet)
Cable between robot and controller	Extension (total): 10 m, 15 m, 20 m, 25 m (controller cable specifications)
Additional axes	Gun axis, slider axis, jig axis, hand axis
External memory	USB memory (1 GB)
Fieldbus	Device-Net, Profibus, FL-net, CC-Link and others supported Maximum 4 channels can be installed
Additional input/output signals	Input 32 points/output 32 points or input 64 points/output 64 points
Output signal relay contact specifications	32 or 64 points (available with "Additional input/output signals" option)
Analog input/output	Input 2 channels, output 4 channels
Vision sensor function	Built-in vision sensor NV-Pro
Conveyor tracking function	Conveyor tracking control
Palletize function	Palletize and de-palletize support functions
Robot language	JIS SLIM language compliant
PLC function	Software PLC IEC 1131-3 compliant

### Teaching pendant display specifications

Item	Specifications
Display	5.7 inch color LCD (640 × 480 pixels, with backlight, 65,536 colors) Touch panel
Language specifications (Option)	Japanese (kanji, hiragana, katakana, alphanumeric characters) English/Chinese/Korean
Enable SW	One-handed enable switch, three positions, (left hand side) Axis operation key, value input key, selection/function key
Operation functions	Motors on key, emergency stop button
External memory interface	USB port
Cable length (Option)	8 m (controller cable specifications) Extension (total): 15 m, 25 m (controller cable specifications)
Dust proof, Drip proof	IP65 equivalent
Exterior dimensions	W 170 × D 300 × T 65 (mm) (excluding hook and corner guard)
Weight	0.96 kg (excluding cable)

## CFD controller (for MZ07 series only)

### Compact cabinet

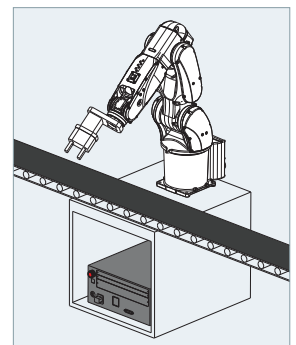
Just 369 mm wide. Can be stored inside robot raiser.

### Wide-variety of applications supported

- Supports addition of one axis (slider axis, jig axis, etc.)
- Vision sensor NV-Pro
- Force sensor applications
- Built in software PLC
- Protective box for controller (dust proof, drip proof)

### Basic specifications for controller

Item	Specifications
Standard number of controlled axes	6
Maximum number of controlled axes	7
Number of programs	9,999 programs
Memory capacity	256 MB (equivalent to 2,560,000 steps)
External memory interface	USB port
Exterior dimensions	W 369 × D 490 × H 173 (mm)
Weight	Approx. 17 kg
Power supply specifications	3-phase 200 to 230 VAC ±10% 1-phase 200 to 230 VAC ±10%
Power consumption	0.4KVA
Dust proof, drip proof	IP20
Ambient temperature	0 to 40°C
Ambient humidity	20 to 85% (without condensation)



### Controller options

Item	Specifications
Additional axes	Can add control for 1 additional axis motor (motor capacity up to 600 W/12 A)
Fieldbus	DeviceNet, Ethernet/IP, PROFIBUS, PROFINET, CC-Link
Digital I/O	32/32 I/O board, maximum 2 boards can be added 8 photo-coupler inputs, 8 transistor outputs, or 8 photo-coupler inputs and 8 relay outputs
External memory	USB memory
Vision sensor function*	NV-Pro
Robot monitoring function*	SIL3, PLe
Protective box for controller	Protection rating: IP54 ingress protection

\*Separate installation type

Introducing the intelligent robot controller based on Windows.

Robots and additional axis are easy to operate by using the teach pendant. The vision and force sensors, as well as the network, can be managed in one place.

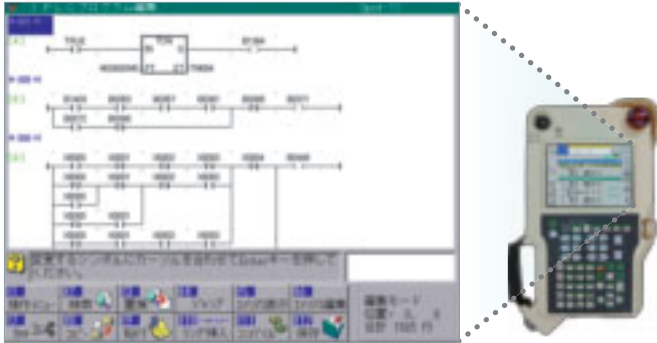
Also, the various support software helps with production processes by providing information on robot conditions and safe operations.

## Easy to use functional configuration

### Software PLC

**Standard equipment**

- Robot controller equipped with PLC functions. Peripherals can be controlled
- External system control panel not needed



### Graphic user interface FlexGui

**Options**

- Teach pendant screen can be customized
- Can be used as operation panel for entire system, including peripheral equipment



### User task functions

**Standard equipment**

- Possible to program processes in parallel with robot operations
- Application example
  - Time consuming calculations and robot operations are processed in parallel to reduce cycle times
  - Various statuses are shown on the screen on the teach pendant

### Offline programming tools

#### Robot simulator

**Options**

- Excellent for initial studies for installing robots
- Can be used as an operation instruction tool
- FD on Desk Regular (option)
  - Offline programming
  - Working envelope & layout considerations
  - Cycle time simulation
  - PLC programming editing
- FD on Desk Pro (option)
  - Create programs from CAD
  - Multiple control units supported

### Supports a variety of fieldbuses

**Options**

- DeviceNet (master and slave)
- EtherNet/IP (master and slave)
- CC-Link (master and slave)
- PROFIBUS (master and slave)
- PROFINET (slave)

DeviceNet and EtherNet/IP are registered trademarks of ODVA (Open DeviceNet Vendor Association, Inc.).  
CC-Link is a registered trademark of CC-Link Association (CC-Link Partner Association: CLPA).  
PROFIBUS and PROFINET are registered trademarks of PROFIBUS & PROFINET International.



\*The MZ series now has FD on Desk Light (CFD controller only) as standard equipment.  
(Functions are the same as FD on Desk Regular)

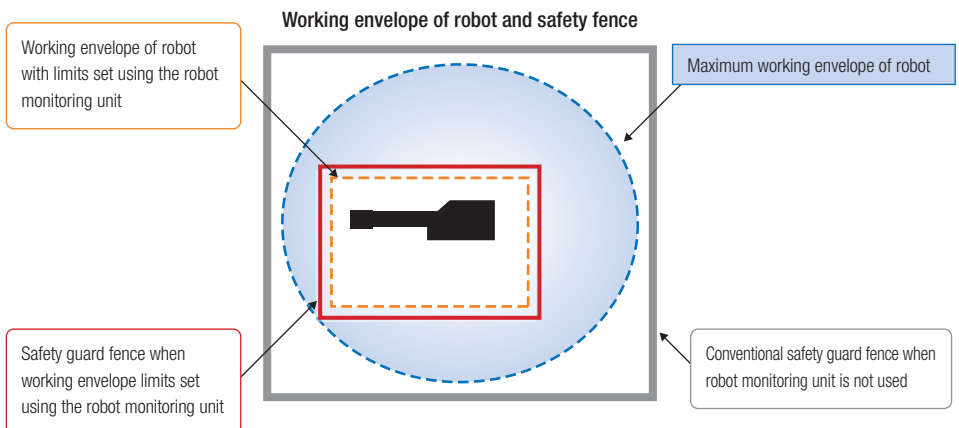
### Robot Monitoring Unit RMU

**Options**


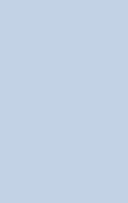

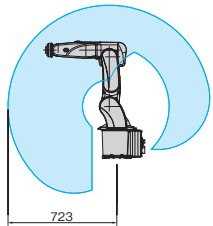
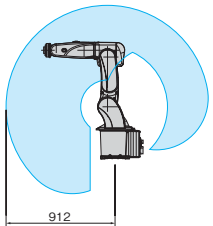
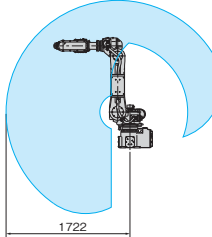
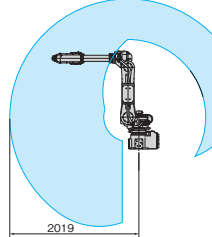
- Safety control unit monitors robot conditions (position and speed)
- Possible to reduce costs and space

Facilities are safer because the positions and speeds of robots are monitored

- Limit working envelope of robot
- Minimize size of safety fences





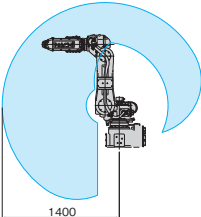
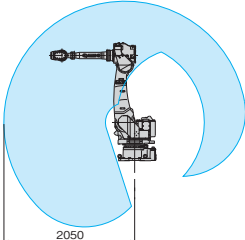
# List of specifications

										
Model			MZ07 (MZ07P)		MZ07L (MZ07LP)		MC20		MC10L	
No. of axes			6(5)				6			
Max. working envelope	Arm	J1 Swivel 1	$\pm 170^\circ$				$\pm 180^\circ$			
		J2 Horizontal	$-135 \sim +80^\circ$				$-145 \sim +60^\circ$			
		J7 Swivel 2	-				-			
		J3 Vertical	$-136 \sim +270^\circ$		$-139 \sim +270^\circ$		$-163 \sim +242^\circ$			
	Wrist	J4 <sup>1</sup> Rotation 2	$\pm 190^\circ$				$\pm 180^\circ$			
		J5 Bend	$\pm 120^\circ$				$\pm 139^\circ$			
J6 Rotation 1		$\pm 360^\circ$				$\pm 360^\circ$				
Max. speed	Arm	J1 Swivel 1	450°/s		300°/s		170°/s		150°/s	
		J2 Horizontal	380°/s		280°/s		170°/s			
		J7 Swivel 2	-				-			
		J3 Vertical	520°/s		360°/s		170°/s			
	Wrist	J4 <sup>1</sup> Rotation 2	550°/s				360°/s			
		J5 Bend	550°/s				360°/s			
J6 Rotation 1		1000°/s				600°/s				
Maximum load	Wrist	7kg				20 (max. 22) kg		10kg		
	Load capacity on forearm	-				-				
	Upper of J3	-				-				
Allowable static load torque for wrist	J4 Rotation 2	16.6N·m				49N·m		24.5N·m		
	J5 Bend	16.6N·m				49N·m		24.5N·m		
	J6 Rotation 1	9.4N·m				23.5N·m		12N·m		
Allowable moment of inertia for wrist	J4 Rotation 2	0.47kg·m <sup>2</sup>				1.6kg·m <sup>2</sup>		1.6kg·m <sup>2</sup>		
	J5 Bend	0.47kg·m <sup>2</sup>				1.6kg·m <sup>2</sup>		1.6kg·m <sup>2</sup>		
	J6 Rotation 1	0.15kg·m <sup>2</sup>				0.8kg·m <sup>2</sup>		0.7kg·m <sup>2</sup>		
Maximum reach	723mm		912mm		1,722mm		2,019mm			
Position repeatability	$\pm 0.02\text{mm}$		$\pm 0.03\text{mm}$		$\pm 0.06\text{mm}$					
Ambient temperature <sup>2</sup> /humidity	0 to 45°C/20 to 85% RH (without condensation)									
Vibration	0.5 G or less									
Installation	Floor, wall, inverted, tilted mount					Floor, inverted mount				
Dust proof, Drip proof	IP67 equivalent					IP65 equivalent				
Weight	30kg		32kg		220Kg		225Kg			
Power consumption	0.4KVA					1.7KVA				
Working envelope										

\* Maximum speeds are maximum values, they will vary depending on the wrist load conditions and operating program.

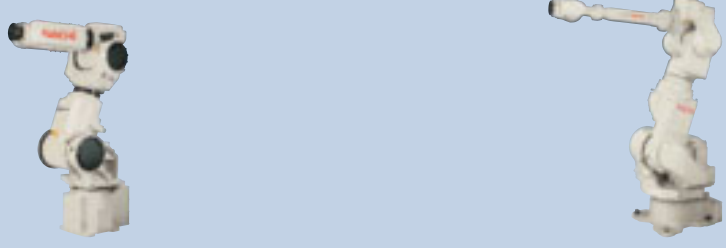
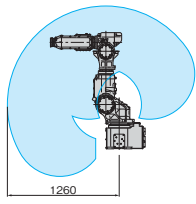
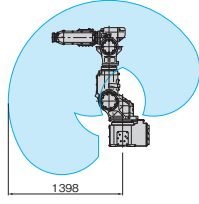
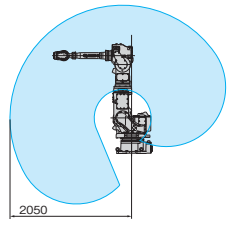
\*1: For the 5-axis specifications (MZ07P and MZ07LP), the configuration does not have the J4 axis.

\*2: When used at less than 1,000 m above sea level. Exceeding the allowable altitude limits the acceptable ambient temperature.

			
MC12S	MC35	MC50	MC70
6			
±180°	±165°		
-145~+60°	-135~+80°		
-			
-154~+242°	-146~+260°		
±180°	±360°		
±139°	±125°		
±360°	±450°		
200°/s	185°/s	180°/s	175°/s
170°/s	180°/s		145°/s
-			
170°/s	190°/s	180°/s	165°/s
370°/s	305°/s	255°/s	235°/s
370°/s	305°/s	255°/s	235°/s
700°/s	420°/s	370°/s	350°/s
12kg	35kg	50kg	70kg
-	15kg		
-			
28N·m	160N·m	210N·m	300N·m
28N·m	160N·m	210N·m	300N·m
13N·m	90N·m	130N·m	150N·m
1.3kg·m <sup>2</sup>	16kg·m <sup>2</sup>	30kg·m <sup>2</sup>	
1.3kg·m <sup>2</sup>	16kg·m <sup>2</sup>	30kg·m <sup>2</sup>	
0.47kg·m <sup>2</sup>	5kg·m <sup>2</sup>	12kg·m <sup>2</sup>	
1,400mm	2,050mm		
±0.06mm	±0.07mm		
0 to 45°C/20 to 85% RH (without condensation)			
0.5 G or less			
Floor, inverted mount	Floor mount (OP: inverted, wall, tilted)		
IP65 equivalent	Wrist: IP67 equivalent, main body: IP54 equivalent (OP: IP65/67 equivalent)		
210Kg	640Kg		
1.7KVA	5.0KVA		
			

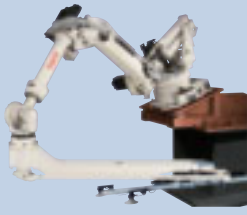


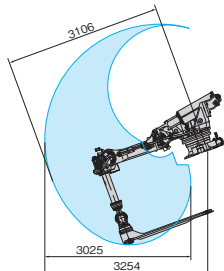
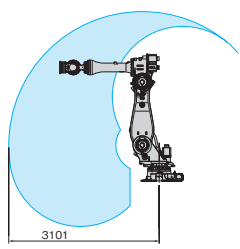
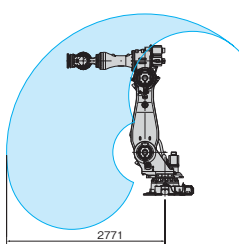
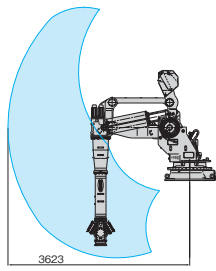
1[N·m]=1/9.8[kgf·m]

# List of specifications

						
Model			MR20	MR20L	MR35	MR50
No. of axes			7			
Max. working envelope	Arm	J1 Swivel 1	±180°		±165°	
		J2 Horizontal	-120~+55°			
		J7 Swivel 2	±180°		±190°	
	Wrist	J3 Vertical	-166~+135°		-146~+140°	
		J4 Rotation 2	±180°		±360°	
		J5 Bend	±135°	±139°	±125°	
Max. speed	Arm	J6 Rotation 1	±360°		±450°	
		J1 Swivel 1	170°/s		180°/s	175°/s
		J2 Horizontal	170°/s		175°/s	140°/s
	Wrist	J7 Swivel 2	170°/s		130°/s	
		J3 Vertical	170°/s		180°/s	165°/s
		J4 Rotation 2	250°/s	360°/s	305°/s	255°/s
Maximum load	J5 Bend	250°/s	360°/s	305°/s	255°/s	
	J6 Rotation 1	300°/s	600°/s	420°/s	370°/s	
	Wrist	20 (max. 30) kg	20kg	35kg	50kg	
Allowable static load torque for wrist	Load capacity on forearm	-		15kg		
	Upper of J3	-				
Allowable moment of inertia for wrist	J4 Rotation 2	80.8N·m	49N·m	160N·m	210N·m	
	J5 Bend	80.8N·m	49N·m	160N·m	210N·m	
	J6 Rotation 1	44.1N·m	23.5N·m	90N·m	130N·m	
Maximum reach	J4 Rotation 2	6.0kg·m <sup>2</sup>	1.6kg·m <sup>2</sup>	16kg·m <sup>2</sup>	30kg·m <sup>2</sup>	
	J5 Bend	6.0kg·m <sup>2</sup>	1.6kg·m <sup>2</sup>	16kg·m <sup>2</sup>	30kg·m <sup>2</sup>	
	J6 Rotation 1	2.3kg·m <sup>2</sup>	0.8kg·m <sup>2</sup>	5kg·m <sup>2</sup>	12kg·m <sup>2</sup>	
Position repeatability	1,260mm		1,398mm	2,050mm		
Ambient temperature <sup>*1</sup> /humidity	±0.06mm					
Vibration	0 to 45°C/20 to 85% RH (without condensation)					
Installation	0.5 G or less					
Dust proof, Drip proof	Floor, inverted mount			Floor mount (OP: inverted, wall, tilted)		
Weight	IP65 equivalent			IP67 equivalent		
Power consumption	230Kg			745Kg		
Working envelope	1.0KVA			4.1KVA		
						


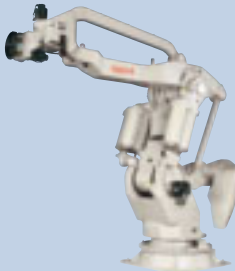
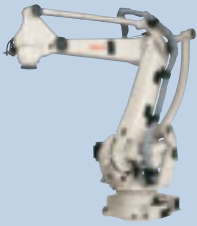
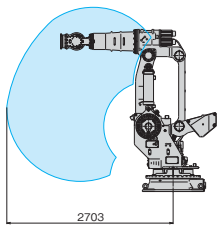
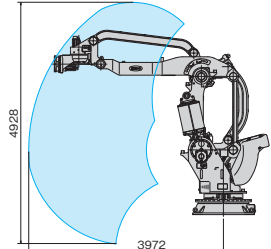
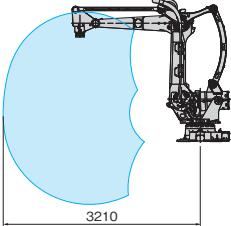
\*1: When used at less than 1,000 m above sea level. Exceeding the allowable altitude limits the acceptable ambient temperature.



			
ST210TP-01	MC280L	MC350	SC400L
7	6		
±180°	±180°		±150°
-35~+120°	-100~+40°		-25~+105°
±65°	-		-
-96~+210°	-147~+130°	-180~+130°	-25~+120°
±360°	±360°		±300°
±120°	±125°		±120°
±360°	±360°		±360°
110°/s	105°/s		80°/s
90°/s	105°/s	95°/s	80°/s
(Press arm link) 120°/s	-		-
95°/s	95°/s		80°/s
130°/s	120°/s	110°/s	90°/s
130°/s	120°/s	110°/s	90°/s
250°/s	200°/s	180°/s	145°/s
80kg	280kg	350kg	400kg
30kg	25kg	50kg	10kg
-	-		30kg
-	1,921N·m	2,750N·m	1,960N·m
-	1,921N·m	2,750N·m	1,960N·m
-	988N·m	1,235N·m	980N·m
J7 axis rotation 80 kg·m <sup>2</sup>	400kg·m <sup>2</sup>		200kg·m <sup>2</sup>
	400kg·m <sup>2</sup>		200kg·m <sup>2</sup>
	250kg·m <sup>2</sup>		147kg·m <sup>2</sup>
3,106mm	3,101mm	2,771mm	3,623mm
±0.3mm	±0.2mm		±0.5mm
0 to 45°C/20 to 85% RH (without condensation)			
0.5 G or less			
Shelf mount (installed at 20° angle)	Floor mount		Shelf mount
Wrist has IP67 and main body has IP54 equivalent			Wrist has IP65 and main body has IP54 equivalent
1,650kg	1,700kg	1,620kg	3,800kg
7.0KVA		8.6KVA	6.7KVA
			

1[N·m]=1/9.8[kgf·m]

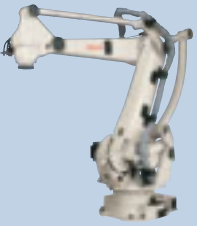

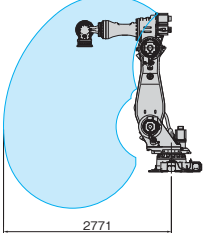
# List of specifications

			 			
Model			SC500	SC700	LP130-01	LP180-01
No. of axes			6		4	
Max. working envelope	Arm	J1 Swivel 1	±150°	±160°	±180°	
		J2 Horizontal	-75~+55°	-85~+45°	-95~ +41°	
		J7 Swivel 2	-	-	-	
		J3 Vertical	-125~+30°	-90~+40°	-117~+17°	
	Wrist	J4 Rotation 2	±300°	-10~+90°	±360°	
		J5 Bend	±120°	±125°	-	
Max. speed	Arm	J1 Swivel 1	80°/s	45°/s	130°/s	115°/s
		J2 Horizontal	80°/s	30°/s	115°/s	100°/s
		J7 Swivel 2	-	-	-	-
		J3 Vertical	80°/s	30°/s	115°/s	105°/s
	Wrist	J4 Rotation 2	90°/s	30°/s	400°/s	360°/s
		J5 Bend	90°/s	50°/s	-	
Maximum load	Wrist	500kg	700kg	130kg	180kg	
	Load capacity on forearm	30kg	-	25kg		
	Upper of J3	30kg	-	-		
Allowable static load torque for wrist	J4 Rotation 2	1,960N·m	13,800N·m	-		
	J5 Bend	1,960N·m	3,920N·m	-		
	J6 Rotation 1	980N·m	2,940N·m	-		
Allowable moment of inertia for wrist	J4 Rotation 2	200kg·m <sup>2</sup>	3,000kg·m <sup>2</sup>	50kg·m <sup>2</sup>	69kg·m <sup>2</sup>	
	J5 Bend	200kg·m <sup>2</sup>	1,800kg·m <sup>2</sup>	-		
	J6 Rotation 1	147kg·m <sup>2</sup>	1,000kg·m <sup>2</sup>	-		
Maximum reach		2,703mm	3,972mm	3,210mm		
Position repeatability		±0.5mm		±0.3mm	±0.4mm	
Ambient temperature <sup>*1</sup> /humidity		0 to 45°C/20 to 85% RH (without condensation)				
Vibration		0.5 G or less				
Installation		Floor mount				
Dust proof, Drip proof		Wrist has IP67 and main body has IP54 equivalent		IP54 equivalent		
Weight		3,000kg	7,000kg	1,150kg		
Power consumption		6.7KVA	7.0KVA	6.2KVA		
Clean rating <sup>*2</sup>		-				
Working envelope						

\*1: When used at less than 1,000 m above sea level. Exceeding the allowable altitude limits the acceptable ambient temperature.





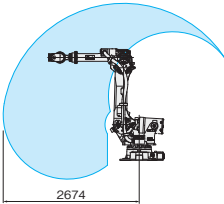
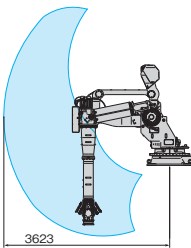
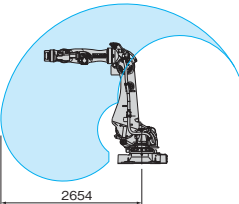
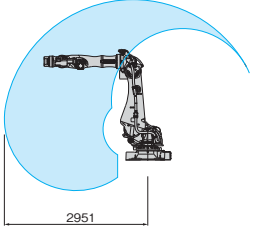
\*2: Clean rating complies with ISO 14644-1

\*3: Software limits the downward vertical range of axis 5 to ±5°. Axis 4 can move ±360° and axis 5 can move ±125° only when the encoder correction screen or software limit settings screen is open.

			
LP210	MC470P	ST133CF	ST166CF
4		6	
±180°	±180°	±165°	
-95~+41°	-100~+40°	-80~+60°	
-	-	-	
-117~+17°	-180~+35°	-137~+150°	
±360°	±360°*3	±360°	
-	±125°*3	±135°	
-	±360°	±360°	
105°/s	105°/s	130°/s	110°/s
100°/s	95°/s	130°/s	110°/s
-	-	-	
100°/s	95°/s	130°/s	110°/s
300°/s	110°/s	230°/s	170°/s
-	110°/s	230°/s	170°/s
-	180°/s	305°/s	260°/s
210kg	470kg	133kg	166kg
25kg	30kg	70kg	
-	-	-	
-	2750N·m	745N·m	951N·m
-	2750N·m	745N·m	951N·m
-	0N·m	411N·m	490N·m
100kg·m <sup>2</sup>	400kg·m <sup>2</sup>	60.9kg·m <sup>2</sup>	88.9kg·m <sup>2</sup>
-	400kg·m <sup>2</sup>	60.9kg·m <sup>2</sup>	88.9kg·m <sup>2</sup>
-	250kg·m <sup>2</sup>	30.2kg·m <sup>2</sup>	45.0kg·m <sup>2</sup>
3,210mm	2,771mm	2,654mm	
±0.4mm	±0.2mm	±0.2mm	
0 to 45°C/20 to 85% RH (without condensation)		10 to 45°C/20 to 85% RH (without condensation)	
0.5 G or less			
Floor mount			
IP54 equivalent	Wrist has IP67 and main body has IP54 equivalent	-	
1,150kg	1,620kg	1,120kg	
6.2KVA	8.6KVA	4.2KVA	
-	-	Class 6	
			
3210	2771	2654	


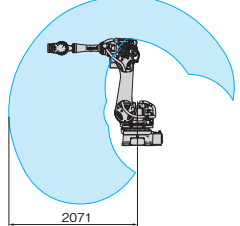
1[N·m]=1/9.8[kgf·m]

# List of specifications

						
Model			ST210CF	SC400LC	SRA100H	SRA133HL
No. of axes			6		6	
Max. working envelope	Arm	J1 Swivel 1	±165°	±150°	±180°	
		J2 Horizontal	-80~+60°	-25~ +105°	-80~+60°	
		J7 Swivel 2	-		-	
	Wrist	J3 Vertical	-137~+150°	-25~+120°	-146.5~+150°	-133.4~+150°
		J4 Rotation 2	±360°	±300°	±210°	
		J5 Bend	±130°	±120°	±125°	
		J6 Rotation 1	±360°		±210°	
Max. speed	Arm	J1 Swivel 1	100°/s	80°/s	125°/s	115°/s
		J2 Horizontal	90°/s	68°/s	115°/s	105°/s
		J7 Swivel 2	-		-	
	Wrist	J3 Vertical	95°/s	80°/s	121°/s	113°/s
		J4 Rotation 2	130°/s	90°/s	210°/s	
		J5 Bend	130°/s	90°/s	175°/s	
		J6 Rotation 1	200°/s	145°/s	310°/s	
Maximum load	Wrist		210kg	400kg	100kg	133kg
	Load capacity on forearm		Max. 70 kg	10kg	20kg	
	Upper of J3		-	30kg	-	
Allowable static load torque for wrist	J4 Rotation 2	1,337N·m	1,960N·m	830N·m		
	J5 Bend	1,337N·m	1,960N·m	830N·m		
	J6 Rotation 1	720N·m	980N·m	441N·m		
Allowable moment of inertia for wrist	J4 Rotation 2	141.1kg·m <sup>2</sup>	200kg·m <sup>2</sup>	85kg·m <sup>2</sup>		
	J5 Bend	141.1kg·m <sup>2</sup>	200kg·m <sup>2</sup>	85kg·m <sup>2</sup>		
	J6 Rotation 1	79.0kg·m <sup>2</sup>	147kg·m <sup>2</sup>	45kg·m <sup>2</sup>		
Maximum reach			2,674mm	3,623mm	2,654mm	2,951mm
Position repeatability			±0.3mm	±0.5mm	±0.1mm	±0.15mm
Ambient temperature <sup>*1</sup> /humidity			10 to 45°C/20 to 85% RH (without condensation)	10 to 30°C/20 to 85% RH (without condensation)	0 to 45°C/20 to 85% RH (without condensation)	
Vibration			0.5 G or less			
Installation			Floor mount	Shelf mount	Floor mount	
Dust proof, Drip proof			-		IP54 equivalent	
Weight			1,160kg	3,800kg	1,040kg	1,070kg
Power consumption			4.2KVA	6.7KVA	7.0KVA	
Clean rating <sup>**</sup>			Class 6		-	
Working envelope						

\*1: When used at less than 1,000 m above sea level. Exceeding the allowable altitude limits the acceptable ambient temperature.


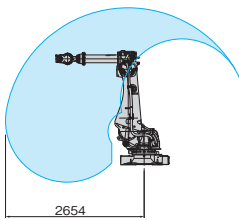
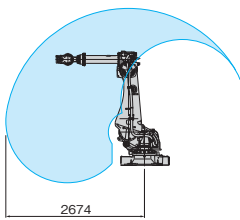
\*\*2: Clean rating complies with ISO 14644-1

			
SRA220H	SRA220HV-01	SRA100J-01	SRA100B-01
6		6	6
±180°	±165°	±180°	±180°
-80~+60°		-120~+60°	-120~+60°
-		-	-
-154~+150°		-125~+90°	-150~+180°
±210°		±360°	±360°
±130°		±135°	±135°
±210°		±360°	±360°
115°/s		136°/s	136°/s
105°/s		115°/s	110°/s
-		-	-
113°/s		160°/s	130°/s
130°/s		240°/s	240°/s
130°/s		233°/s	233°/s
205°/s		351°/s	351°/s
220kg		100kg	100kg
20 kg (maximum 45 kg)		25 kg (maximum 45 kg)	25 kg (maximum 45 kg)
-		-	-
1,337N·m		580N·m	580N·m
1,337N·m		580N·m	580N·m
720N·m		290N·m	290N·m
141.1kg·m <sup>2</sup>		45kg·m <sup>2</sup>	45kg·m <sup>2</sup>
141.1kg·m <sup>2</sup>		45kg·m <sup>2</sup>	45kg·m <sup>2</sup>
79.0kg·m <sup>2</sup>		22.7kg·m <sup>2</sup>	22.7kg·m <sup>2</sup>
2,575mm		1,634mm	2,071mm
±0.15mm		±0.1mm	±0.1mm
0 to 45°C/20 to 85% RH (without condensation)			
0.5 G or less			
Floor mount	Inverted mount	Floor mount	
IP54 equivalent		Wrist has IP67 and main body has IP54 equivalent	
1,100kg		670kg	690kg
7.0KVA			
-			
			
2575	2575	1634	2071



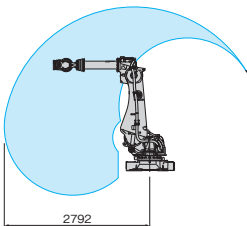
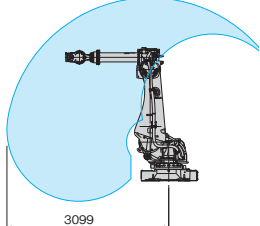
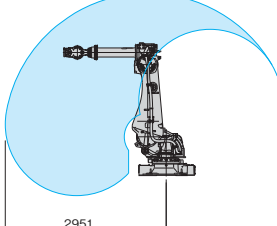
1[N·m]=1/9.8[kgf·m]



# List of specifications

						
Model		SRA100-01 (100-01A)	SRA166-01 (166-01A)	SRA210-01 (210-01A)	SRA240-01	
No. of axes		6				
Max. working envelope	Arm	J1 Swivel 1	$\pm 180^\circ$			
		J2 Horizontal	$-80 \sim +60^\circ$			
		J7 Swivel 2	-			
		J3 Vertical	$-146.5 \sim +150^\circ$			
	Wrist	J4 Rotation 2	$\pm 360^\circ$	$\pm 360(\pm 210)^\circ$		$\pm 360^\circ$
		J5 Bend	$\pm 135^\circ$	$\pm 135(\pm 120)^\circ$	$\pm 130(\pm 120)^\circ$	$\pm 130^\circ$
Max. speed	Arm	J4 Rotation 2	$\pm 360^\circ$	$\pm 360(\pm 205)^\circ$		$\pm 360^\circ$
		J1 Swivel 1	136°/s	125°/s	115°/s	105°/s
		J2 Horizontal	135°/s	115°/s	105°/s	90°/s
		J3 Vertical	135°/s	121°/s	113°/s	100°/s
	Wrist	J4 Rotation 2	240°/s	180°/s	140°/s	130°/s
		J5 Bend	233°/s	173°/s	133°/s	125°/s
Maximum load	J6 Rotation 1	351°/s	260°/s	200°/s	195°/s	
	Wrist	100kg	166kg	210kg	240kg	
	Load capacity on forearm	45 kg (maximum 90 kg)			20 kg (maximum 45 kg)	
Allowable static load torque for wrist	Upper of J3	-				
	J4 Rotation 2	580N·m	951N·m	1,337N·m		
	J5 Bend	580N·m	951N·m	1,337N·m		
Allowable moment of inertia for wrist	J6 Rotation 1	290N·m	490N·m	720N·m		
	J4 Rotation 2	60kg·m <sup>2</sup>	88.9kg·m <sup>2</sup>	141.1kg·m <sup>2</sup>		
	J5 Bend	60kg·m <sup>2</sup>	88.9kg·m <sup>2</sup>	141.1kg·m <sup>2</sup>		
Maximum reach	J6 Rotation 1	30kg·m <sup>2</sup>	45kg·m <sup>2</sup>	79.0kg·m <sup>2</sup>		
Maximum reach	2,654mm		2,654mm	2,674mm		
Position repeatability	$\pm 0.1\text{mm}$		$\pm 0.15\text{mm}$		$\pm 0.2\text{mm}$	
Ambient temperature <sup>*1</sup> /humidity	0 to 45°C/20 to 85% RH (without condensation)					
Vibration	0.5 G or less					
Installation	Floor mount					
Dust proof, Drip proof	Wrist has IP67 and main body has IP54 equivalent					
Weight	960kg	960/1,060kg	990/1,090kg	990kg		
Power consumption	7.0KVA					
Working envelope	 2654		 2674			

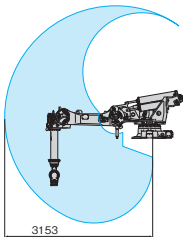
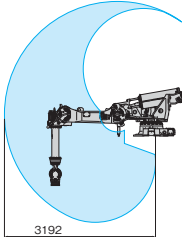
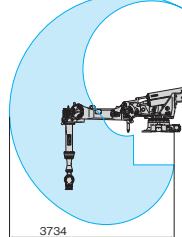
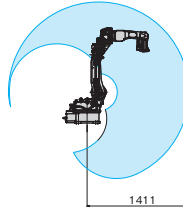
\*1: When used at less than 1,000 m above sea level. Exceeding the allowable altitude limits the acceptable ambient temperature.

			
SRA250-01	SRA120EL-01	SRA133L-01	SRA166L-01 (166L-01A)
6	6		
±180°	±180°		
-80~+60°	-80~+60°		
-	-		
-146.5~+150°	-127.7~+150°	-133.4~+150°	
±360°	±360°		
±130°	±135°		
±360°	±360°		
100°/s	115°/s	125°/s	115°/s
90°/s	105°/s	115°/s	105°/s
-	-		
95°/s	113°/s	121°/s	113°/s
125°/s	140°/s		
125°/s	173°/s		
190°/s	260°/s		
250kg	120kg	133kg	166kg
20 kg (maximum 45 kg)	45 kg (maximum 90 kg)		
-	-		
1,337N·m	687N·m	800N·m	951N·m
1,337N·m	687N·m	800N·m	951N·m
720N·m	353N·m	400N·m	490N·m
141.1kg·m <sup>2</sup>	60kg·m <sup>2</sup>	76kg·m <sup>2</sup>	88.9kg·m <sup>2</sup>
141.1kg·m <sup>2</sup>	60kg·m <sup>2</sup>	76kg·m <sup>2</sup>	88.9kg·m <sup>2</sup>
79.0kg·m <sup>2</sup>	30kg·m <sup>2</sup>	38kg·m <sup>2</sup>	45.0kg·m <sup>2</sup>
2,792mm	3,099mm	2,951mm	
±0.2mm	±0.15mm		
0 to 45°C/20 to 85% RH (without condensation)			
0.5 G or less			
Floor mount			
Wrist has IP67 and main body has IP54 equivalent			
1,030kg	985kg	980kg	
7.0KVA			
			
2792	3099	2951	

1[N·m]=1/9.8[kgf·m]

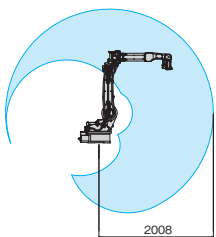
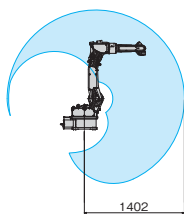
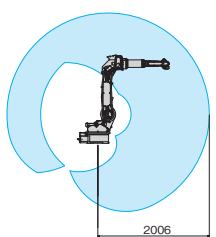
# List of specifications



Model		SRA166T-01 (166T-01A)	SRA210T-01 (210T-01A)	SRA166TL-01 (166TL-01A)	NB04	
No. of axes		6				
Max. working envelope	Arm	J1 Swivel 1	±180°		±170°	
		J2 Horizontal	-65~+120°		-155~+90°	
		J7 Swivel 2	-		-	
	Wrist	J3 Vertical	-106~+210°	-90~+210°	-170~+180°	
		J4 Rotation 2	±360(±210)°		±155°	
		J5 Bend	±135(±120)°	±130(±120)°	±135°	-45~+225°
	J6 Rotation 1	±360(±205)°		±205°		
Max. speed	Arm	J1 Swivel 1	110°/s	100°/s	105°/s	210°/s
		J2 Horizontal	110°/s	90°/s	90°/s	210°/s
		J7 Swivel 2	-		-	
	Wrist	J3 Vertical	115°/s	100°/s	115°/s	210°/s
		J4 Rotation 2	180°/s	140°/s	140°/s	420°/s
		J5 Bend	173°/s	133°/s	173°/s	420°/s
	J6 Rotation 1	260°/s	200°/s	260°/s	600°/s	
Maximum load	Wrist	166kg	210kg	166kg	4kg	
	Load capacity on forearm	45 kg (maximum 90 kg)			10kg	
	Upper of J3	-			-	
Allowable static load torque for wrist	J4 Rotation 2	951N·m	1,337N·m	951N·m	10.1N·m	
	J5 Bend	951N·m	1,337N·m	951N·m	10.1N·m	
	J6 Rotation 1	490N·m	720N·m	490N·m	2.94N·m	
Allowable moment of inertia for wrist	J4 Rotation 2	88.9kg·m <sup>2</sup>	141.1kg·m <sup>2</sup>	88.9kg·m <sup>2</sup>	0.38kg·m <sup>2</sup>	
	J5 Bend	88.9kg·m <sup>2</sup>	141.1kg·m <sup>2</sup>	88.9kg·m <sup>2</sup>	0.38kg·m <sup>2</sup>	
	J6 Rotation 1	45.0kg·m <sup>2</sup>	79.0kg·m <sup>2</sup>	45.0kg·m <sup>2</sup>	0.03kg·m <sup>2</sup>	
Maximum reach	3,153mm	3,192mm	3,734mm	1,411mm		
Position repeatability	±0.1mm	±0.15mm		±0.08mm		
Ambient temperature <sup>*1</sup> /humidity	0 to 45°C/20 to 85% RH (without condensation)			0 to 45°C/20 to 80% RH (without condensation)		
Vibration	0.5 G or less					
Installation	Shelf mount			Floor mount (OP: inverted, wall)		
Dust proof, Drip proof	Wrist has IP67 and main body has IP54 equivalent					
Weight	1,210(1,310)kg	1,250(1,350)kg	1,240kg	170kg		
Power consumption	7.0KVA			1.5KVA		
Working envelope						

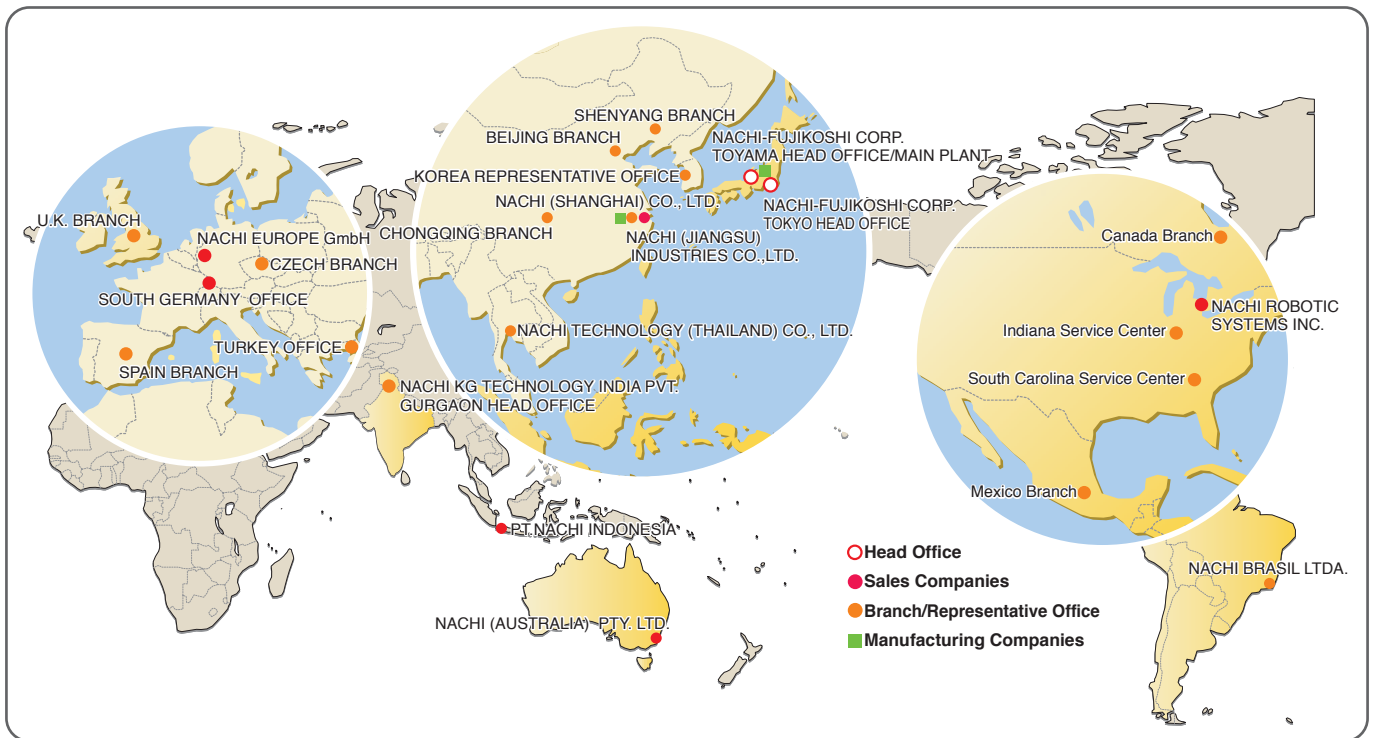
\*1: When used at less than 1,000 m above sea level. Exceeding the allowable altitude limits the acceptable ambient temperature.



NB04L	NV06	NV06L
6		
±170°		
-155~+100°	-155~+90°	-155~+100°
-		
-170~+190°	-170~+190°	-170~+205°
±155°	±180°	
-45~+225°	-50~+230°	
±205°	±360°	
195°/s	210°/s	195°/s
200°/s	210°/s	200°/s
-		
200°/s	210°/s	200°/s
420°/s		
420°/s		
600°/s	620°/s	
4kg	6kg	
20kg	10kg	20kg
-		
10.1N·m	11.8N·m	
10.1N·m	9.8N·m	
2.94N·m	5.9N·m	
0.38kg·m <sup>2</sup>	0.3kg·m <sup>2</sup>	
0.38kg·m <sup>2</sup>	0.25kg·m <sup>2</sup>	
0.03kg·m <sup>2</sup>	0.06kg·m <sup>2</sup>	
2,008mm	1,402mm	2,006mm
±0.08mm	±0.08mm	
0 to 45°C/20 to 80% RH (without condensation)		
0.5 G or less		
Floor mount (OP: inverted, wall)		
Wrist is IP54 equivalent		
280kg	160kg	280kg
2.4KVA	1.5KVA	2.4KVA
		

1[N·m]=1/9.8[kgf·m]

# World Service Network



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Tel: +1-502-517-1553 Fax: +1-317-535-3659

#### South Carolina Service Center

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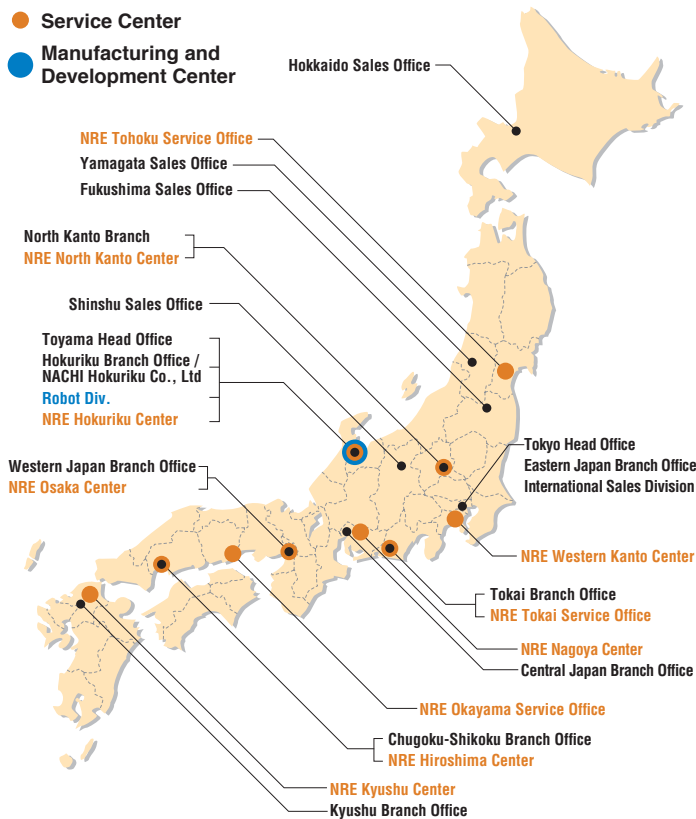
Higashi-Shinbashi, Minato-ku, Tokyo 105-0021

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# Sales and Service Network in Japan

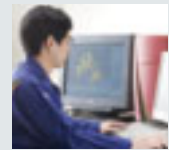
- Sales Center
- Service Center
- Manufacturing and Development Center



## Post-installation service

### • From setup through startup

NACHI's skilled technicians provide support during the installation process, from setup to connection, teaching, movement, and supervision, until the line is fully operational.



Offline programming

### • Quick response to emergency calls

NACHI's specialized technicians are "on-call" to immediately respond to customer emergencies.



Teaching

### • The right parts when you need them

Our service locations always have important maintenance parts in stock. We can deliver the parts you need quickly.



Overhauls

### • Periodic inspections

As a trusted and reliable partner, NACHI performs periodic inspections to extend the life of your robot.

### • Overhauls

NACHI provides a selection of services suited to the conditions of your robot and performs overhauls to ensure that your robot is always in the best condition. NACHI can also provide temporary replacement robots to keep your line operating during repairs.

## Training

### Robot training course

NACHI provides a curriculum to train operators about robot operations, daily inspections, basic maintenance, and safety regulations.



## Sales Centers in Japan

### NACHI-FUJIKOSHI CORP. <http://www.nachi-fujikoshi.co.jp/>

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**Eastern Japan Branch Office** Tel: 03-5568-5286 Fax: 03-5568-5292

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**Yamagata Sales Office** 130-1, Yachi Azamaki, Kahoku-cho, Nishimurayama-gun, Yamagata 999-3511, c/o Nachi Tohoku Seiko Co., Ltd.  
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**Okayama Service Office** 293-1 Monde, Soja-shi, Okayama 719-1156  
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**Hokuriku Center** 253-1 Yamamuro, Toyama 939-8006  
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### **Safety precautions**

- Before using the robots, review all documentation including operating instructions and other attached documents. Familiarize yourself with the contents in order to ensure proper robot operation.
- When a robot is to be used for an application where robot trouble or operating errors may directly threaten the life or cause physical harm to personnel, a careful examination of its intended use is required. Contact a NACHI-FUJIKOSHI sales representative to provide details of the intended use.
- Photos used in this document show the robots without safety fences, equipment, and devices that are required to comply with the applicable laws and regulations for ensuring safety. These photos are only provided to illustrate what is being described.
- The external appearances, specifications, etc. of the products portrayed in this catalog are subject to change without notice due to improvements in performance.

CATALOG NO.	R7001E-8
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