NACHI

NACHI-FUJIKOSHI CORP.

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

2013.11.Q-ABE-ABE

NACHI

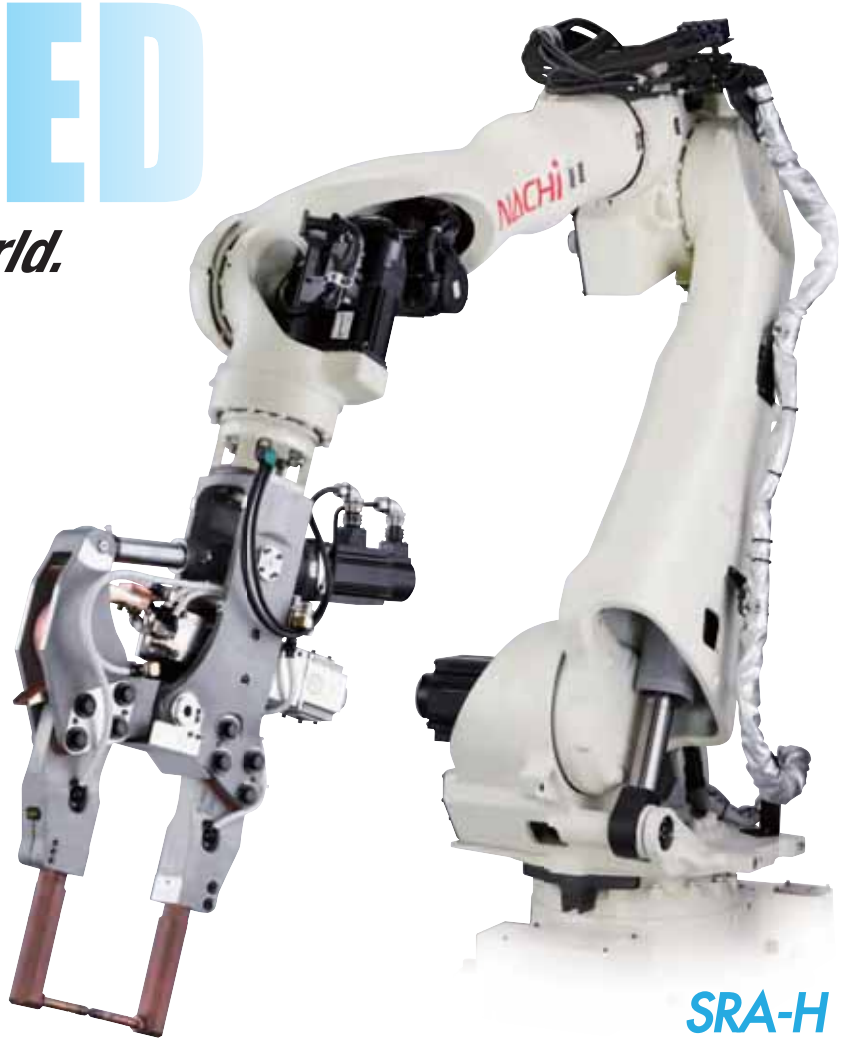
Robot

Total Robot Catalog

ALL FOR SPEED

Phenomenal speed to astound the world.

MZ07



SRA-H

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		LP/MC470P	ST-C/SC-C	SJ	SRA-H/SRA	NB/NV	Controller support software ▶P.13 List of specifications ▶P.15 Service network ▶P.27
											
	▶P.5 Number of controlled axes: 5 or 6 axes Payload capacity: 7 kg Maximum reach : 723 to 913 mm	▶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.7 Number of controlled axes: 6 or 7 axes Payload capacity: 80 to 100 kg Maximum reach : 3,106 mm	▶P.8 Number of controlled axes: 6 axes Payload capacity: 280 to 700 kg Maximum reach: 2,503 to 3,972 mm		▶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.10 Number of controlled axes: 6 axes Payload capacity: 133 to 400 kg Maximum reach: 2,654 to 3,623 mm	▶P.10 Number of controlled axes: 4 or 5 axes Payload capacity: 25 to 120 kg	▶P.11 Number of controlled axes: 6 axes Payload capacity: 100 to 250 kg Maximum reach: 1,634 to 3,951 mm	▶P.12 Number of controlled axes: 6 axes Payload capacity: 4 to 6 kg Maximum reach: 1,402 to 2,008 mm	Field
Spot and seam welding				●					●		Automotive, automotive parts, metalworking, agricultural machinery, construction machinery
Arc welding		●								●	
Die casting	●	●		●					●		Automotive parts, plastic, electric and electronics
Resin molding	●	●		●					●		
Press operation handling	●	●	●						●		Automotive, automotive parts, machine tools, plastic, pharmaceuticals and cosmetics, electric and electronics, metalworking, chemistry, medical equipment, foodstuffs, agricultural machinery, construction machinery
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							●	●			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

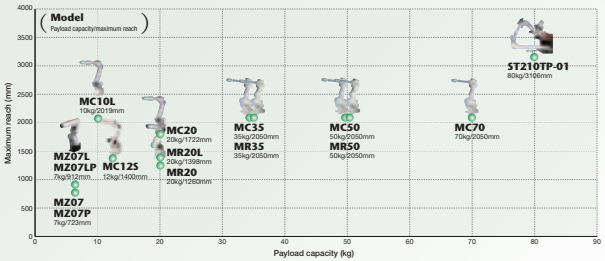
MC Series

- 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.

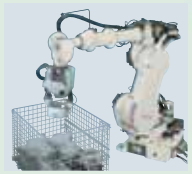
FH360-01 (3 fingers) FH150F2-01 (2 fingers) FH150F3-01 (3 fingers)

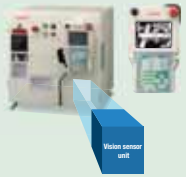
• Force sensor

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).





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.

Handling

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

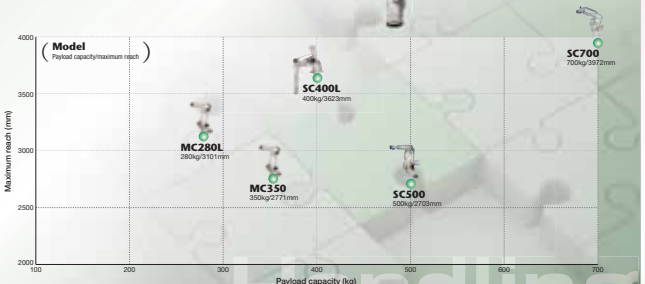
SC Heavy Loader Series

- 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



Handling

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

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

Palletizing

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

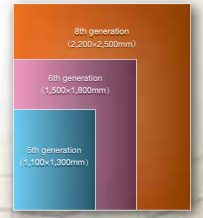
SJ Series

- 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



Clean

Welding applications

Spot welding, arc welding, and seam welding

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.

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 **SRA240**
SRA166 **SRA250**
SRA210

SRA100B (Short arm) **SRA100J (Extra-short arm)**
SRA133L (Long arm) **SRA120EL (Extra-long arm)**
SRA166L (Long arm)
SRA166T (Shelf mount) **SRA166TL (Shelf mount long arm)**
SRA210T (Shelf mount)

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

SRA210T

Example application

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.

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

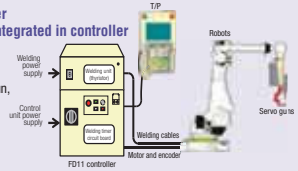
- Capable of seam welding on work surfaces in three dimensions
- Fast and consistent welding
- Equipped with various application functions such as electrode polishing, electrode wear compensation, and others

Options

• Integrated timer
Welder timer integrated in controller

- All-in-one package

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



• Slider

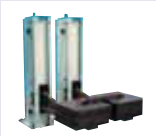
Slider controlled as an additional axis by the robot controller. Expands possibilities of automated systems and working envelope of robots.

• 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.

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.

• 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 *1	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

*1 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.

• 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

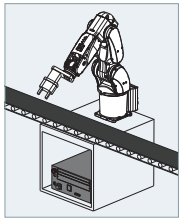
• Teaching pendant display specifications

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)
Operation functions	Axis operation key, value input key, selection/function key 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

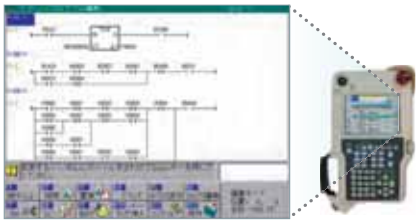
*Separate installation type

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 pendent 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

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

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)

Robot Monitoring Unit RMU — Options

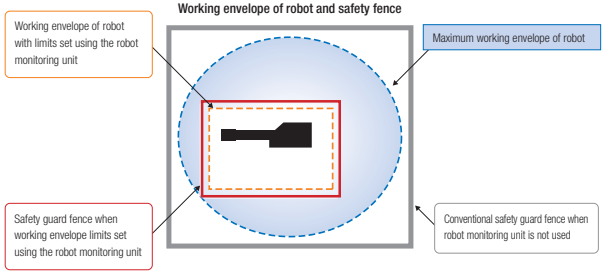
- Safety control unit monitors robot conditions (position and speed)
- Possible to reduce costs and space

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

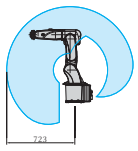
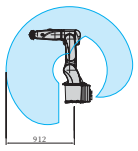
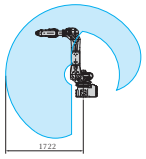
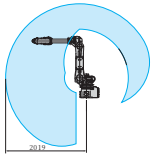
→Limit working envelope of robot

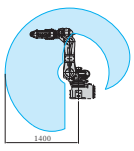
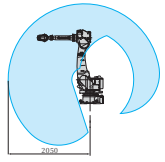
→Minimize size of safety fences

Working envelope of robot and safety fence



List of specifications

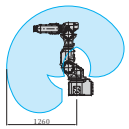
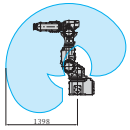
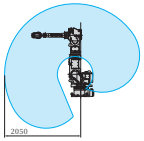

Model				MZ07(MZ07P)	MZ07L(MZ07LP)	MC20	MC10L
No. of axes				6(5)		6	
Max. working envelope	Arm	J1	Swivel 1	±170°		±180°	
		J2	Horizontal	−135～+80°		−145～+60°	
		J7	Swivel 2	–		–	
		J3	Vertical	−136～+270°	−139～+270°	−163～+242°	
	Wrist	J4[*1]	Rotation 2	±190°		±180°	
		J5	Bend	±120°		±139°	
		J6	Rotation 1	±360°		±360°	
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[*1]	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^2		1.6kg・m^2	1.6kg・m^2
		J5	Bend	0.47kg・m^2		1.6kg・m^2	1.6kg・m^2
		J6	Rotation 1	0.15kg・m^2		0.8kg・m^2	0.7kg・m^2
Maximum reach				723mm	912mm	1,722mm	2,019mm
Position repeatability				±0.02mm	±0.03mm	±0.06mm	
Ambient temperature[*2]/humidity				0 to 45℃/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							


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^2	16kg・m^2	30kg・m^2	
1.3kg・m^2	16kg・m^2	30kg・m^2	
0.47kg・m^2	5kg・m^2	12kg・m^2	
1,400mm	2,050mm		
±0.06mm	±0.07mm		
0 to 45℃/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		
			

* 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.

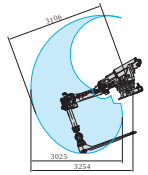
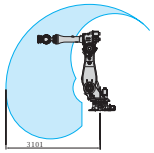
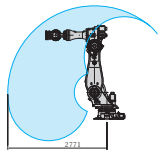
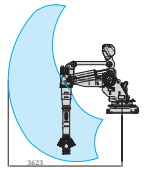
1[N・m]=1/9.8[kgf・m]

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°	
		J3	Vertical	−166～+135°		−146～+140°	
	Wrist	J4	Rotation 2	±180°		±360°	
		J5	Bend	±135°	±139°	±125°	
		J6	Rotation 1	±360°		±450°	
Max. speed	Arm	J1	Swivel 1	170°/s		180°/s	175°/s
		J2	Horizontal	170°/s		175°/s	140°/s
		J7	Swivel 2	170°/s		130°/s	
		J3	Vertical	170°/s		180°/s	165°/s
	Wrist	J4	Rotation 2	250°/s	360°/s	305°/s	255°/s
		J5	Bend	250°/s	360°/s	305°/s	255°/s
		J6	Rotation 1	300°/s	600°/s	420°/s	370°/s
Maximum load			Wrist	20 (max. 30) kg	20kg	35kg	50kg
			Load capacity on forearm	–		15kg	
			Upper of J3	–			
Allowable static load torque 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
Allowable moment of inertia for wrist		J4	Rotation 2	6.0kg・m²	1.6kg・m²	16kg・m²	30kg・m²
		J5	Bend	6.0kg・m²	1.6kg・m²	16kg・m²	30kg・m²
		J6	Rotation 1	2.3kg・m²	0.8kg・m²	5kg・m²	12kg・m²
Maximum reach				1,260mm	1,398mm	2,050mm	
Position repeatability				±0.06mm		±0.07mm	
Ambient temperature*1/humidity				0 to 45˚C/20 to 85% RH (without condensation)			
Vibration				0.5 G or less			
Installation				Floor, inverted mount		Floor mount (OP: inverted, wall, tilted)	
Dust proof, Drip proof				IP65 equivalent		IP67 equivalent	
Weight				230Kg		745Kg	
Power consumption				1.0KVA		4.1KVA	
Working envelope							

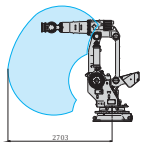
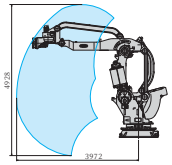
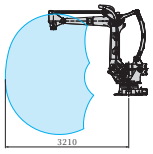
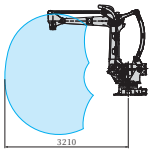
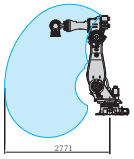
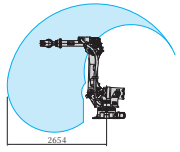
*1: When used at less than 1,000 m above sea level. Exceeding the allowable altitude limits the acceptable ambient temperature.



Model				ST210TP−01	MC280L	MC350	SC400L
No. of axes				7	6		
Max. working envelope	Arm	J1	Swivel 1	±180°	±180°		±150°
		J2	Horizontal	−35～+120°	−100～+40°		−25～+105°
		J7	Swivel 2	±65°	–		–
		J3	Vertical	−96～+210°	−147～+130°	−180～+130°	−25～+120°
	Wrist	J4	Rotation 2	±360°	±360°		±300°
		J5	Bend	±120°	±125°		±120°
		J6	Rotation 1	±360°	±360°		±360°
Max. speed	Arm	J1	Swivel 1	110°/s	105°/s		80°/s
		J2	Horizontal	90°/s	105°/s	95°/s	80°/s
		J7	Swivel 2	(Press arm link) 120°/s	–		–
		J3	Vertical	95°/s	95°/s		80°/s
	Wrist	J4	Rotation 2	130°/s	120°/s	110°/s	90°/s
		J5	Bend	130°/s	120°/s	110°/s	90°/s
		J6	Rotation 1	250°/s	200°/s	180°/s	145°/s
Maximum load			Wrist	80kg	280kg	350kg	400kg
			Load capacity on forearm	30kg	25kg	50kg	10kg
			Upper of J3	–	–		30kg
Allowable static load torque for wrist		J4	Rotation 2	–	1,921N・m	2,750N・m	1,960N・m
		J5	Bend	–	1,921N・m	2,750N・m	1,960N・m
		J6	Rotation 1	–	988N・m	1,235N・m	980N・m
Allowable moment of inertia for wrist		J4	Rotation 2	J7 axis rotation 80 kg・m²	400kg・m²		200kg・m²
		J5	Bend		400kg・m²		200kg・m²
		J6	Rotation 1		250kg・m²		147kg・m²
Maximum reach				3,106mm	3,101mm	2,771mm	3,623mm
Position repeatability				±0.3mm	±0.2mm		±0.5mm
Ambient temperature*1/humidity				0 to 45˚C/20 to 85% RH (without condensation)			
Vibration				0.5 G or less			
Installation				Shelf mount (installed at 20° angle)	Floor mount		Shelf mount
Dust proof, Drip proof				Wrist has IP67 and main body has IP54 equivalent			Wrist has IP65 and main body has IP54 equivalent
Weight				1,650kg	1,700kg	1,620kg	3,800kg
Power consumption				7.0KVA		8.6KVA	6.7KVA
Working envelope							

1[N・m]=1/9.8[kgf・m]

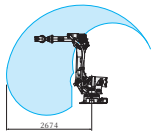
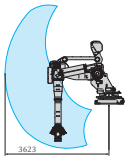
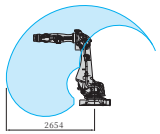
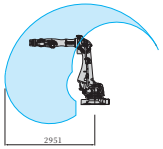
List of specifications

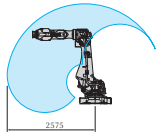
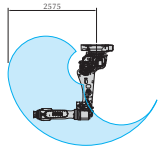
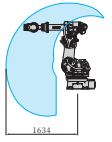
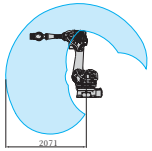
												
Model				SC500	SC700	LP130–01	LP180–01	LP210	MC470P	ST133CF		ST166CF
No. of axes				6		4		4	6			
Max. working envelope	Arm	J1	Swivel 1	±150°	±160°	±180°		±180°	±180°	±165°		
		J2	Horizontal	–75～+55°	–85～+45°	–95～ +41°		–95～+41°	–100～+40°	–80～+60°		
		J7	Swivel 2	–	–	–		–	–	–		
		J3	Vertical	–125～+30°	–90～+40°	–117～+17°		–117～+17°	–180～+35°	–137～+150°		
	Wrist	J4	Rotation 2	±300°	–10～+90°	±360°		±360°	±360°*3	±360°		
		J5	Bend	±120°	±125°	–		–	±125°*3	±135°		
		J6	Rotation 1	±360°	±10°	–		–	±360°	±360°		
Max. speed	Arm	J1	Swivel 1	80°/s	45°/s	130°/s	115°/s	105°/s	105°/s	130°/s		110°/s
		J2	Horizontal	80°/s	30°/s	115°/s	100°/s	100°/s	95°/s	130°/s		110°/s
		J7	Swivel 2	–	–	–	–	–	–	–		
		J3	Vertical	80°/s	30°/s	115°/s	105°/s	100°/s	95°/s	130°/s		110°/s
	Wrist	J4	Rotation 2	90°/s	30°/s	400°/s	360°/s	300°/s	110°/s	230°/s		170°/s
		J5	Bend	90°/s	50°/s	–		–	110°/s	230°/s		170°/s
		J6	Rotation 1	145°/s	30°/s	–		–	180°/s	305°/s		260°/s
Maximum load			Wrist	500kg	700kg	130kg	180kg	210kg	470kg	133kg		166kg
			Load capacity on forearm	30kg	–	25kg		25kg	30kg	70kg		
			Upper of J3	30kg	–	–		–	–	–		
Allowable static load torque for wrist		J4	Rotation 2	1,960N・m	13,800N・m	–		–	2750N・m	745N・m		951N・m
		J5	Bend	1,960N・m	3,920N・m	–		–	2750N・m	745N・m		951N・m
		J6	Rotation 1	980N・m	2,940N・m	–		–	0N・m	411N・m		490N・m
Allowable moment of inertia for wrist		J4	Rotation 2	200kg・m^2	3,000kg・m^2	50kg・m^2	69kg・m^2	100kg・m^2	400kg・m^2	60.9kg・m^2		88.9kg・m^2
		J5	Bend	200kg・m^2	1,800kg・m^2	–		–	400kg・m^2	60.9kg・m^2		88.9kg・m^2
		J6	Rotation 1	147kg・m^2	1,000kg・m^2	–		–	250kg・m^2	30.2kg・m^2		45.0kg・m^2
Maximum reach				2,703mm	3,972mm	3,210mm		3,210mm	2,771mm	2,654mm		
Position repeatability				±0.5mm		±0.3mm	±0.4mm	±0.4mm	±0.2mm	±0.2mm		
Ambient temperature*1/humidity				0 to 45℃/20 to 85% RH (without condensation)				0 to 45℃/20 to 85% RH (without condensation)		10 to 45℃/20 to 85% RH (without condensation)		
Vibration				0.5 G or less				0.5 G or less				
Installation				Floor mount				Floor mount				
Dust proof, Drip proof				Wrist has IP67 and main body has IP54 equivalent		IP54 equivalent		IP54 equivalent	Wrist has IP67 and main body has IP54 equivalent	–		
Weight				3,000kg	7,000kg	1,150kg		1,150kg	1,620kg	1,120kg		
Power consumption				6.7KVA	7.0KVA	6.2KVA		6.2KVA	8.6KVA	4.2KVA		
Clean rating*2				–				–		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
*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.

1[N・m]=1/9.8[kgf・m]

List of specifications

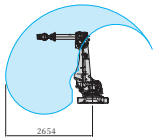
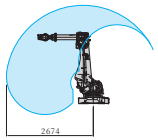
							
Model				ST210CF	SC400LC	SRA100H	SRA133HL
No. of axes				6		6	
Max. working envelope	Arm	J1	Swivel 1	±165°	±150°	±180°	
		J2	Horizontal	−80～+60°	−25～ +105°	−80～+60°	
		J7	Swivel 2	–		–	
		J3	Vertical	−137～+150°	−25～+120°	−146.5～+150°	−133.4～+150°
	Wrist	J4	Rotation 2	±360°	±300°	±210°	
		J5	Bend	±130°	±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	–		–	
		J3	Vertical	95°/s	80°/s	121°/s	113°/s
	Wrist	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^2	200kg・m^2	85kg・m^2	
		J5	Bend	141.1kg・m^2	200kg・m^2	85kg・m^2	
		J6	Rotation 1	79.0kg・m^2	147kg・m^2	45kg・m^2	
Maximum reach				2,674mm	3,623mm	2,654mm	2,951mm
Position repeatability				±0.3mm	±0.5mm	±0.1mm	±0.15mm
Ambient temperature*1/humidity				10 to 45℃/20 to 85% RH (without condensation)	10 to 30℃/20 to 85% RH (without condensation)	0 to 45℃/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*2				Class 6		–	
Working envelope							

							
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^2		45kg・m^2	45kg・m^2				
141.1kg・m^2		45kg・m^2	45kg・m^2				
79.0kg・m^2		22.7kg・m^2	22.7kg・m^2				
2,575mm		1,634mm	2,071mm				
±0.15mm		±0.1mm	±0.1mm				
0 to 45℃/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							
–							
							

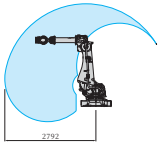
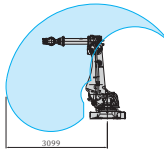
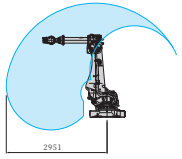
*1: When used at less than 1,000 m above sea level. Exceeding the allowable altitude limits the acceptable ambient temperature.
*2: Clean rating complies with ISO 14644−1

1[N・m]=1/9.8[kgf・m]

List of specifications

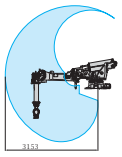
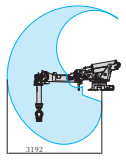
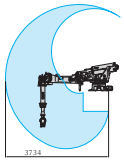
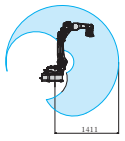
Model				SRA100–01(100–01A)	SRA166–01(166–01A)	SRA210–01(210–01A)	SRA240–01
No. of axes				6			
Max. working envelope	Arm	J1	Swivel 1	±180°			
		J2	Horizontal	–80～+60°			
		J7	Swivel 2	–			
		J3	Vertical	–146.5～+150°			
	Wrist	J4	Rotation 2	±360°	±360(±210)°		±360°
		J5	Bend	±135°	±135(±120)°	±130(±120)°	±130°
		J6	Rotation 1	±360°	±360(±205)°		±360°
Max. speed	Arm	J1	Swivel 1	136°/s	125°/s	115°/s	105°/s
		J2	Horizontal	135°/s	115°/s	105°/s	90°/s
		J7	Swivel 2	–			
		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
		J6	Rotation 1	351°/s	260°/s	200°/s	195°/s
Maximum load			Wrist	100kg	166kg	210kg	240kg
			Load capacity on forearm	45 kg (maximum 90 kg)			20 kg (maximum 45 kg)
			Upper of J3	–			
Allowable static load torque for wrist		J4	Rotation 2	580N・m	951N・m	1,337N・m	
		J5	Bend	580N・m	951N・m	1,337N・m	
		J6	Rotation 1	290N・m	490N・m	720N・m	
Allowable moment of inertia for wrist		J4	Rotation 2	60kg・m^2	88.9kg・m^2	141.1kg・m^2	
		J5	Bend	60kg・m^2	88.9kg・m^2	141.1kg・m^2	
		J6	Rotation 1	30kg・m^2	45kg・m^2	79.0kg・m^2	
Maximum reach				2,654mm	2,654mm	2,674mm	
Position repeatability				±0.1mm	±0.15mm		±0.2mm
Ambient temperature*1/humidity				0 to 45℃/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							

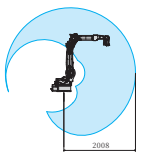
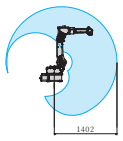
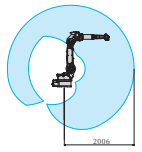
*1: When used at less than 1,000 m above sea level. Exceeding the allowable altitude limits the acceptable ambient temperature.

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^2	60kg・m^2	76kg・m^2	88.9kg・m^2
141.1kg・m^2	60kg・m^2	76kg・m^2	88.9kg・m^2
79.0kg・m^2	30kg・m^2	38kg・m^2	45.0kg・m^2
2,792mm	3,099mm	2,951mm	
±0.2mm	±0.15mm		
0 to 45℃/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			
			

1[N・m]=1/9.8[kgf・m]

List of specifications

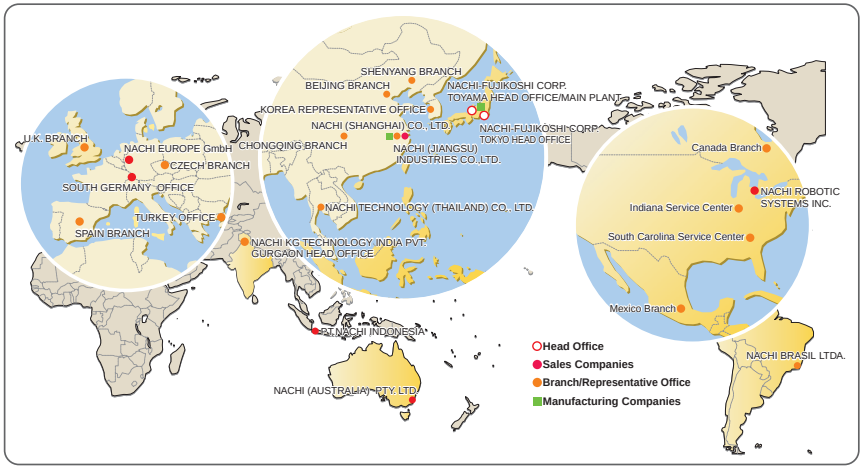

Model				SRA166T–01(166T–01A)	SRA210T–01(210T–01A)	SRA166TL–01(166TL–01A)	NB04
No. of axes				6			
Max. working envelope	Arm	J1	Swivel 1	±180°			±170°
		J2	Horizontal	–65～+120°			–155～+90°
		J7	Swivel 2	–			–
		J3	Vertical	–106～+210°		–90～+210°	–170～+180°
	Wrist	J4	Rotation 2	±360(±210)°		±360°	±155°
		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	–			–
		J3	Vertical	115°/s	100°/s	115°/s	210°/s
	Wrist	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^2	141.1kg・m^2	88.9kg・m^2	0.38kg・m^2
		J5	Bend	88.9kg・m^2	141.1kg・m^2	88.9kg・m^2	0.38kg・m^2
		J6	Rotation 1	45.0kg・m^2	79.0kg・m^2	45.0kg・m^2	0.03kg・m^2
Maximum reach				3,153mm	3,192mm	3,734mm	1,411mm
Position repeatability				±0.1mm	±0.15mm		±0.08mm
Ambient temperature*1/humidity				0 to 45℃/20 to 85% RH (without condensation)			0 to 45℃/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							


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^2	0.3kg・m^2	
0.38kg・m^2	0.25kg・m^2	
0.03kg・m^2	0.06kg・m^2	
2,008mm	1,402mm	2,006mm
±0.08mm	±0.08mm	
0 to 45℃/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: When used at less than 1,000 m above sea level. Exceeding the allowable altitude limits the acceptable ambient temperature.

1[N・m]=1/9.8[kgf・m]

World Service Network



Overseas subsidiaries

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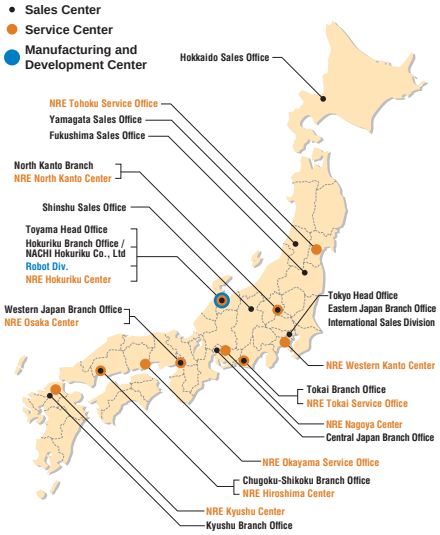
Sales and Service Network in Japan



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.

• Quick response to emergency calls
NACHI's specialized technicians are "on-call" to immediately respond to customer emergencies.

• 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.

• 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.


Offline programming


Teaching


Overhauls

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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Tokyo Head Office	Shiodome Sumitomo Bldg.17F, 1-9-2 Higashi-Shinbashi, Minato-ku, Tokyo 105-0021 Tel: 03-5568-5111 Fax: 03-5568-5206
International Sales Division	Tel: 03-5568-5245 Fax: 03-5568-5236
Eastern Japan Branch Office	Tel: 03-5568-5286 Fax: 03-5568-5292
Hokkaido Sales Office	10-4-10 1-jo, Higashi-ku, Sapporo, 065-0041 Tel: 011-782-0006 Fax: 011-782-0033
Yamagata Sales Office	130-1, Yachi Azamaki, Kahoku-cho, Nishimurayama-gun, Yamagata 999-3511, c/o Nachi Tohoku Seiko Co., Ltd. Tel: 0237-71-0321 Fax: 0237-72-5212
Fukushima Sales Office	One Bridge Bldg. 2F, 2-33-1Kuwano, Koriyama-shi, Fukushima 963-8025 Tel: 024-991-4511 Fax: 024-935-1450
North Kanto Branch	26-2 Hama-cho, Ota-shi, Gunma 373-0853 Tel: 0276-46-7511 Fax: 0276-46-4599
Shinshu Sales Office	248-3 Kamishiojiri, Ueda-shi, Nagano Prefecture 386-0042 Tel: 0268-28-7863 Fax: 0268-21-1185
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