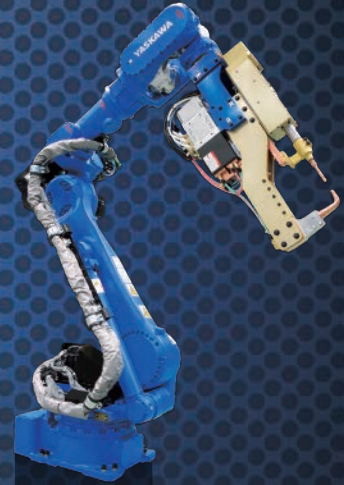


YASKAWA

Industrial Robots
MOTOMAN Series
Product Catalog





ROBOTICS × DIGITAL

Yaskawa creates the future of manufacturing with “Robotics × Digital”

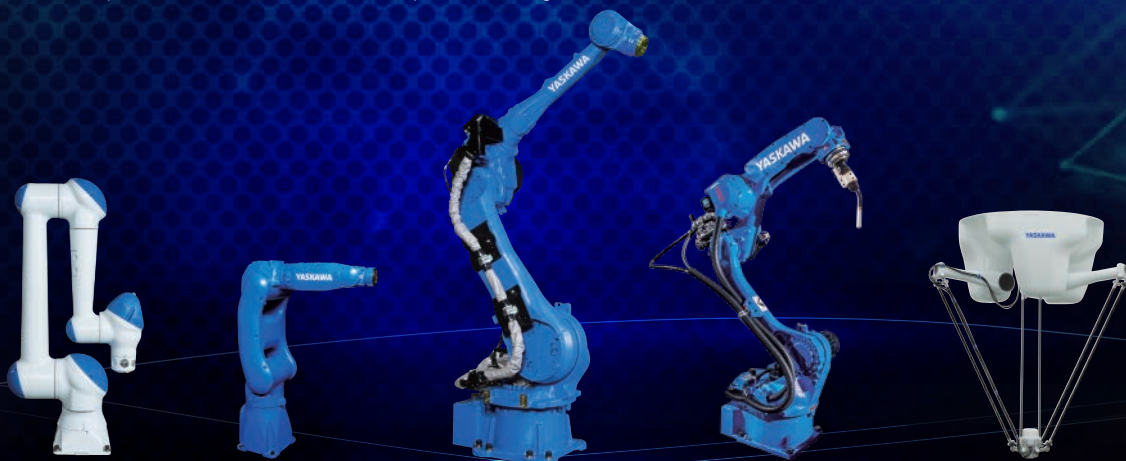
Since introducing its first model in 1977, Yaskawa has successfully sold more than 500,000 MOTOMAN industrial robots.

These robots are being used to automate processes such as transferring, assembly, welding and painting in various industrial fields across the globe.

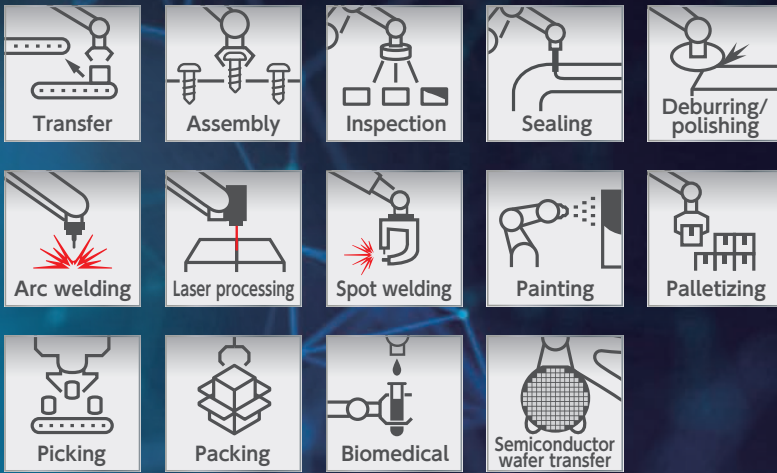
Manufacturing sites have undergone drastic changes in recent years, with more companies utilizing digital data to enhance the efficiency and competitiveness of their manufacturing devices and equipment.

MOTOMAN is designed to achieve further enhancements in performance and quality by linking robots and controllers with peripheral technologies, while simultaneously providing DX* solutions that integrate customer devices and robots.

*DX: Abbreviation for “Digital Transformation.” This refers to the utilization of digital data to transform products, services, business models, and business processes in order to establish a competitive advantage.



Main applications



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Product Lineup **P6**

Manipulator
Specifications **P12**

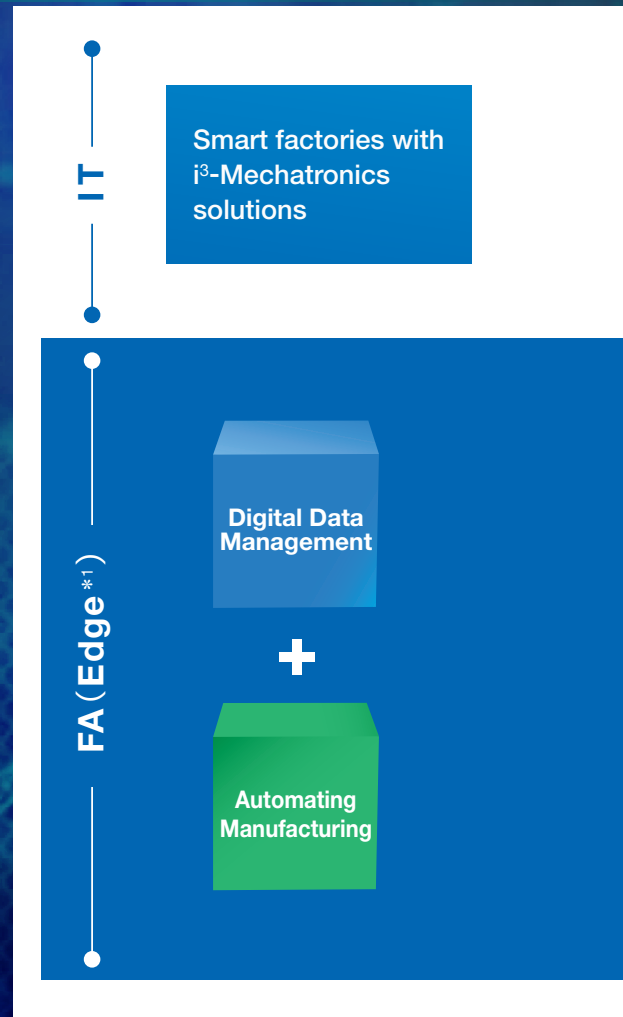
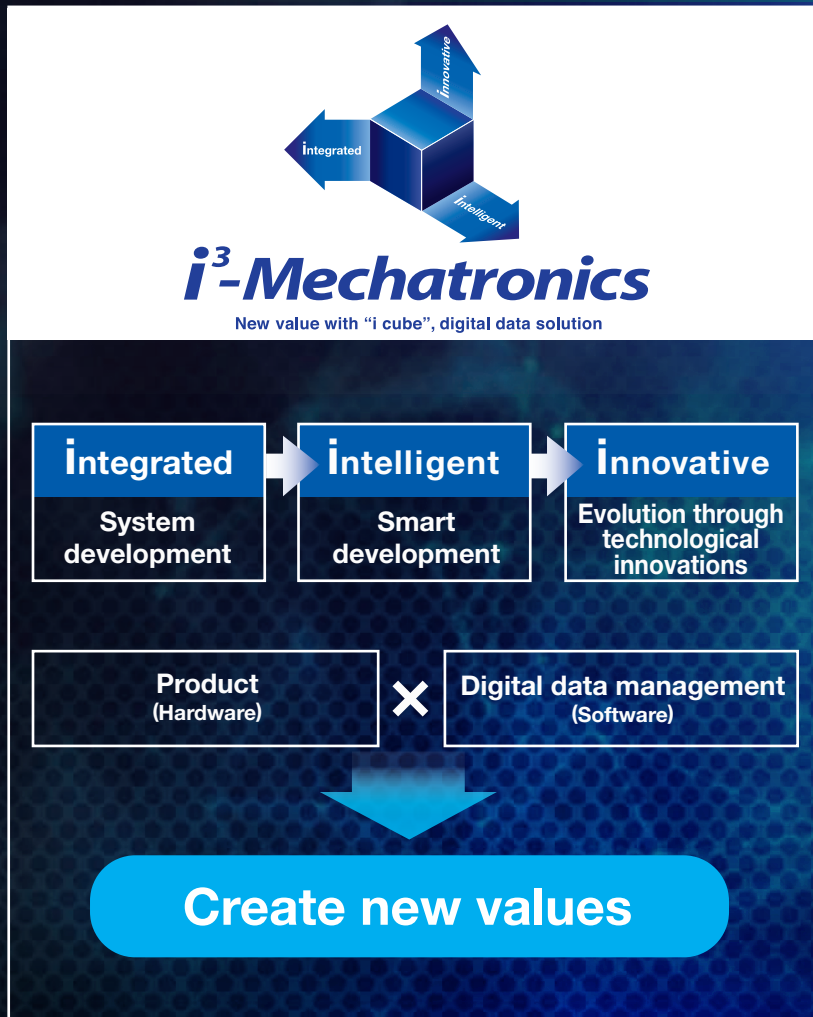
Controllers **P22**

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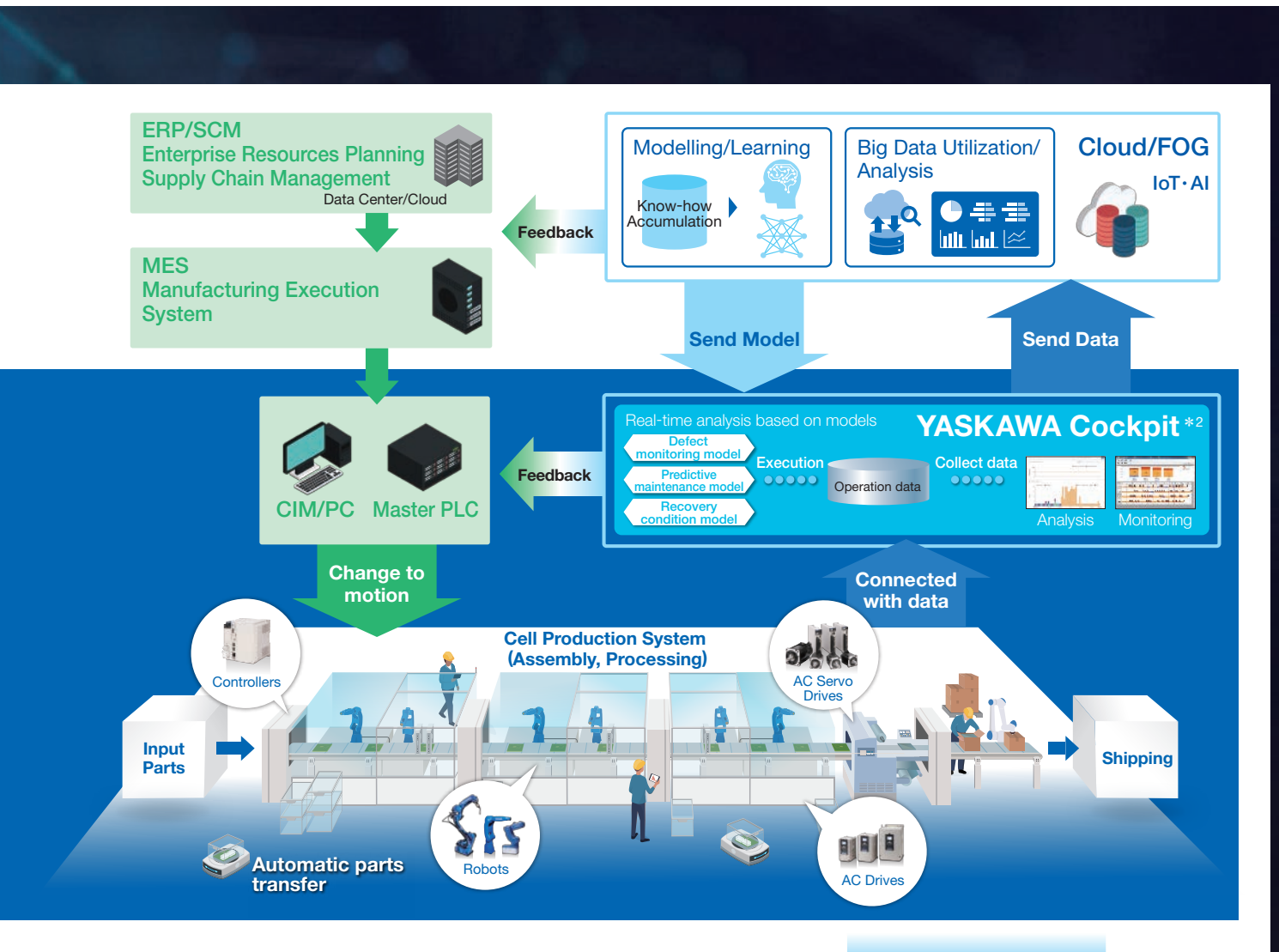


Smart Factories with i³-Mechatronics

i³-Mechatronics is a solution concept promoted by Yaskawa that incorporates digital data management as an advance in the evolution of mechatronics. Through solutions integrating competitive hardware and software, we pursue a new industrial automation revolution for our customers' production facilities.



i³-Mechatronics assists customers in creating new value while helping solve business issues at production sites.



Solutions to business issues at production sites

i³-Mechatronics helps customers solve business issues by making their factories more adaptable through the collection, analysis, and utilization of valuable factory data.



Variable-type and variable-quantity production



Manufacturing site visualization through the utilization of real-time/time-synchronized data —Cell DX—

*1: Where information is processed, such as data analysis and feedback that must be performed in real time (areas close to production sites, such as inside factories and production bases)

*2: Software to collect, store, and analyze real-time data from equipment at production sites



Work safely and securely together with humans



Collaborative robots
MOTOMAN-HC Series

MOTOMAN-HC series collaborative robots can work in close proximity to humans without the need for a safety fence*. This series offers a high degree of safety and is easy to operate, even for first-time users. Eliminating the need for a safety fence increases the degree of freedom of equipment. That allows production sites to be automated with the introduction of robots in environments where they have not yet been used or in processes where installation has proven difficult.

*: Although safety functions allow systems to be constructed without safety fences, risk assessments and risk reduction measures must be implemented in all such cases.

Applications



→ Manipulator Specifications (p. 12)



Compatible with Smart Pendant

The MOTOMAN-HC series is compatible with the Smart Pendant, a tablet-type programming pendant. The Smart Pendant enables the robots to be intuitively controlled in a manner similar to using a smartphone, in turn facilitating the introduction of robot systems for customers using robots for the first time.





Small robots
Payload **4 to 25 kg**

MOTOMAN-
GP Series

With their top-class operating speed and high level of accuracy, small models in the MOTOMAN-GP series are capable of enhancing productivity at various types of manufacturing sites. Food industry specifications and environmental resistance specifications are available, enabling customers to select the optimal model to suit their application.

Applications



→ Manipulator Specifications (p. 13)

MOTOMAN smart series

Target models
MotoMINI,
MOTOMAN-GP4, -GP7, -GP8

This MOTOMAN smart series package includes Yaskawa's Smart Pendant, a tablet-type programming pendant that can be used with four small robot models (MotoMINI, MOTOMAN-GP4, -GP7, and -GP8).

This series opens up opportunities for robot utilization at production sites where there may be a number of first-time or inexperienced users.



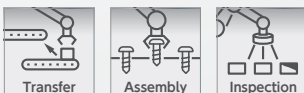
Ultra-small robot
Payload **0.5 kg***

MotoMINI

Weighing approximately 7 kg and being light enough for a human to carry, the MotoMINI makes it easy to reconstruct production lines or change layouts. It is truly a robot with great potential in a small body.

*: Maximum payload is 1 kg when the T-axis faces downward.

Applications



→ Manipulator Specifications (p. 12)

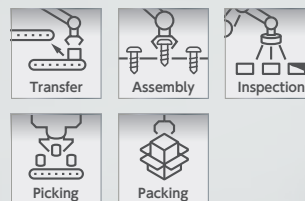


SCARA robots
Payload **3 kg, 6 kg**

MOTOMAN-
SG Series

The MOTOMAN-SG series of SCARA robots is ideal for performing processes that require high cycle times, such as small part assembly, transferring, packaging, sorting, and inspection.

Applications



→ Manipulator Specifications (p. 12)





Medium- and large-sized robots

Payload **20 to 600 kg**

MOTOMAN-

GP Series

The MOTOMAN-GP series features a wide lineup of medium- and large-sized models with payloads ranging from 20 to 600 kg and maximum reaches from 2061 mm to 3518 mm. This enables customers to select a model that suits their needs.

Applications



→ Manipulator Specifications (p. 13-15)



Arc welding robots

MOTOMAN-AR Series

Models in the MOTOMAN-AR series feature slim bodies that allow torch cables to be built into the upper arm. They can improve productivity at a wide range of welding sites with their top-class payloads and operating speed. MOTOPAC packages which include accessories such as welding power sources and torches are also available.

Application



→ Manipulator Specifications (p. 16)



High path accuracy robot

MOTOMAN-GA50

With its optimized motor and arm design with increased rigidity, the MOTOMAN-GA50 can perform high-speed, high-precision small circle cutting and linear cutting. This robot is ideal for both laser welding and laser cutting.

Application



→ Manipulator Specifications (p. 16)



Spot welding robots

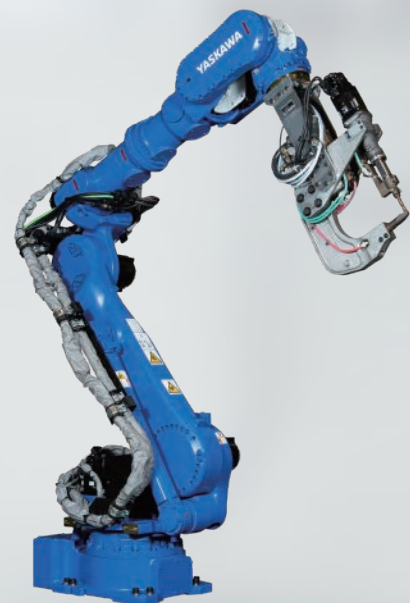
MOTOMAN-SP Series

The MOTOMAN-SP series features a broad lineup of models that allows customers to select the most optimal robots for their operating environments, including a 6-axis hollow arm model with built-in spot welding cables and a 7-axis model with an expanded effective operating range.

Application



→ Manipulator Specifications (p. 17-18)



Painting robots

MOTOMAN-
MPX Series

The MOTOMAN-MPX series features an extensive lineup of models for various painting applications, ranging from small items, such as smartphones and figurines, to automobile bodies.

Numerous peripheral devices for enhancing productivity are also available, such as intrinsically safe handling robots capable of use in painting booths.

Application



Painting

→ Manipulator Specifications (p. 19-20)



Picking and packing robots

MOTOMAN-
MPP, MPK Series

The MOTOMAN-MPP and MPK series is ideal for use in picking and packing processes for products such as foods, pharmaceuticals, or cosmetics. With their top-class operating speed, these robots perform high-speed transferring and packaging.

Applications



Picking



Packing

→ Manipulator Specifications (p. 20-21)



Palletizing robots

MOTOMAN-
PL Series

The MOTOMAN-PL series features models with payloads ranging from 80 to 800 kg, enabling them to be used for various types of workpieces. These robots are useful for distribution processes in a range of industries, including the food industry.

Application



Palletizing

→ Manipulator Specifications (p. 21)



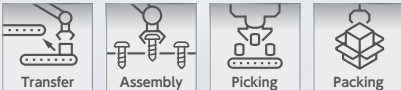
Dual-arm/
7-axis robots

MOTOMAN-

SDA, SIA Series

The MOTOMAN-SDA series of dual-arm robots feature a human-like shape. With dual arms featuring a 7-axis structure that enables the robot to move in the same way as human arms, a single robot can be used to automate complex tasks that would normally be performed manually. The MOTOMAN-SIA series features robots with a single 7-axis arm. Featuring a slim arm with 7 joints, these robots are capable of performing work in narrow spaces with a high level of flexibility.

Applications



Pharmaceutical/
medical robots

Biomedical Robot Series

Models in the biomedical robot series are capable of performing manual work in place of humans in R&D settings, such as during pharmaceutical development and manufacturing or in clinical laboratories. These robots can be used to improve the quality of manufacturing and testing processes by automating operations in hygienic environments, such as isolators and safety cabinets.

Application

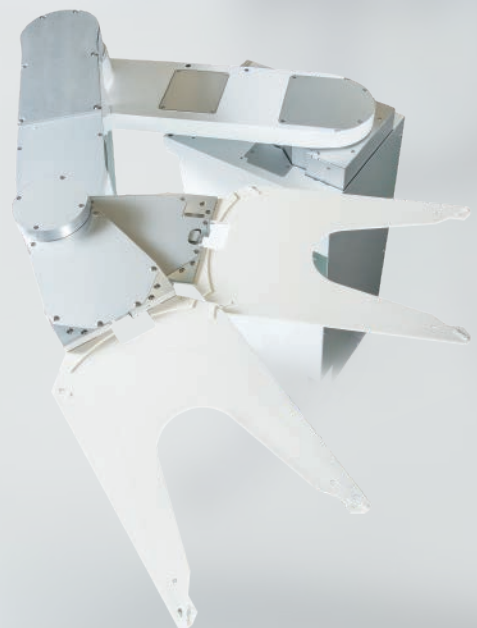


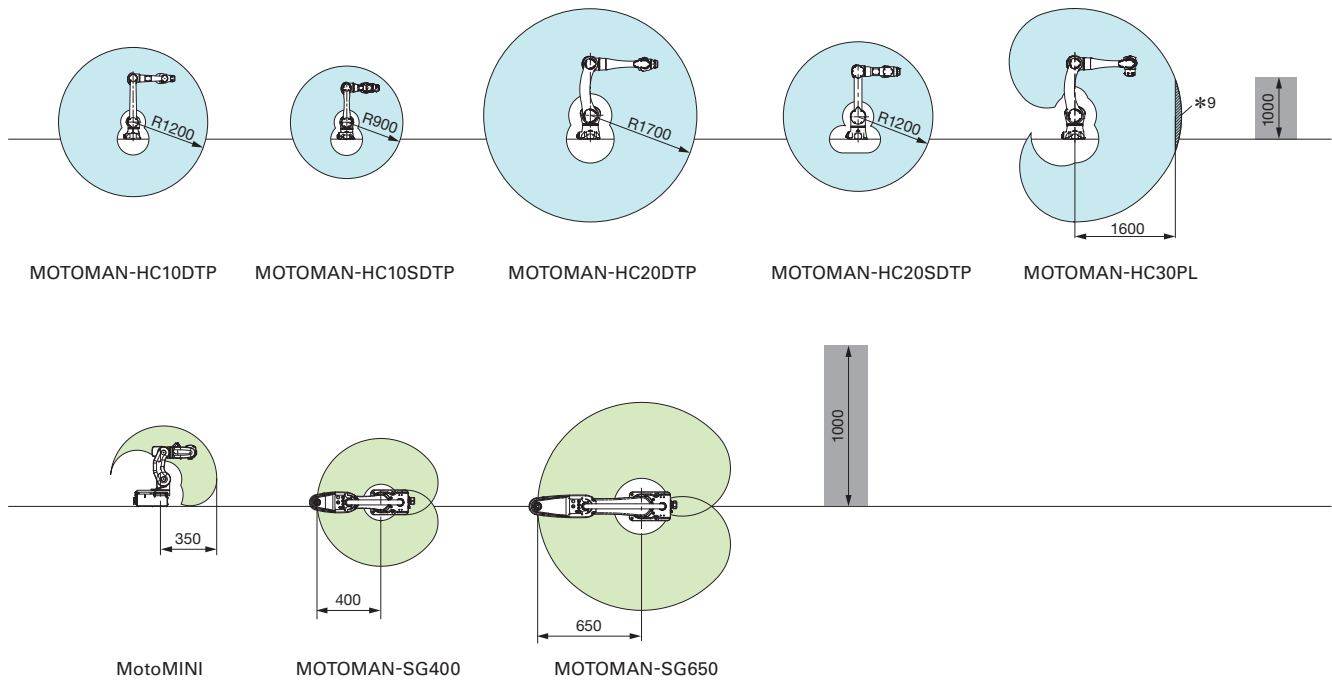
Clean robots for
semiconductor
wafer transfer

SEMISTAR Series

Semiconductor wafer transfer robots in the SEMISTAR series contribute to ever-evolving semiconductor technology, such as miniaturization and multi-layering. Designed using proprietary Yaskawa technology, these robots provide further added value such as by reducing wafer damage.

Application





Model	Collaborative					Small			
	HC10DTP	HC10SDTP	HC20DTP	HC20SDTP	HC30PL	MotoMINI	SG400	SG650	
Controlled Axis	6	6	6	6	6	6	4	4	
Payload	10 kg	10 kg	20 kg	20 kg	30 kg	0.5 kg (Max. 1 kg*)	3 kg	6 kg	
Maximum Reach	P-point	1200 mm	900 mm	1700 mm	1200 mm	1600 mm*5	350 mm	400 mm	650 mm
	End-flange	1379 mm	1082 mm	1900 mm	1412 mm	-	-	-	-
Repeatability*1	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.02 mm	*8	*8	
Range of Motion	S-axis	-210° - +210°	-210° - +210°	-210° - +210°	-210° - +210°	-210° - +210°	-170° - +170°	-142° - +142°	-137° - +137°
	L-axis	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-154° - +180°	- 85° - + 90°	-147° - +147°	-150° - +150°
	U-axis	-290° - +290°	-290° - +290°	- 67° - +247°	-290° - +290°	- 67° - +247°	- 50° - + 90°	200 mm	210 mm
	R-axis	-210° - +210°	-210° - +210°	-210° - +210°	-210° - +210°	- 15° - + 15°	-140° - +140°	-360° - +360°	-360° - +360°
	B-axis	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-15° - +15°*6	- 30° - +210°	-	-
	T-axis	-210° - +210°	-210° - +210°	-210° - +210°	-210° - +210°	-210° - +210°	-360° - +360°	-	-
Maximum Speed*2	S-axis	130°/s	130°/s	80°/s	105°/s	80°/s	315°/s	740°/s	450°/s
	L-axis	130°/s	130°/s	80°/s	90°/s	80°/s	315°/s	800°/s	730°/s
	U-axis	180°/s	180°/s	120°/s	135°/s	120°/s	420°/s	1200 mm/s	1300 mm/s
	R-axis	180°/s	180°/s	130°/s	130°/s	112°/s	600°/s	3000°/s	2500°/s
	B-axis	250°/s	250°/s	180°/s	180°/s	132°/s	600°/s	-	-
	T-axis	250°/s	250°/s	180°/s	180°/s	180°/s	600°/s	-	-
Allowable Moment	R-axis	27.4 N·m	27.4 N·m	58.8 N·m	58.8 N·m	-	0.42 N·m	-	-
	B-axis	27.4 N·m	27.4 N·m	58.8 N·m	58.8 N·m	-	0.42 N·m	-	-
	T-axis	9.8 N·m	9.8 N·m	29.4 N·m	29.4 N·m	-	0.37 N·m	-	-
Allowable Inertia (GD ² /4)	R-axis	0.78 kg·m ²	0.78 kg·m ²	4 kg·m ²	4 kg·m ²	-	0.00378 kg·m ²	0.06 kg·m ²	0.12 kg·m ²
	B-axis	0.78 kg·m ²	0.78 kg·m ²	4 kg·m ²	4 kg·m ²	-	0.00378 kg·m ²	-	-
	T-axis	0.1 kg·m ²	0.1 kg·m ²	2 kg·m ²	2 kg·m ²	2 kg·m ²	0.00299 kg·m ²	-	-
Approx. Mass	48 kg	56 kg	140 kg	97 kg	140 kg	7 kg	14 kg	19 kg	
Power Requirements*3	1.0 kVA	1.0 kVA	1.5 kVA	1.5 kVA	1.5 kVA	0.5 kVA	1.0 kVA	1.0 kVA	
Mounting*4	F,C,W,T	F,C,W,T	F,C,W,T	F,C,W,T	F	F,C,W,T	F	F	
Compatible Controller	YRC1000 YRC1000micro	YRC1000 YRC1000micro	YRC1000 YRC1000micro	YRC1000 YRC1000micro	YRC1000 YRC1000micro	YRC1000micro	YRC1000micro	YRC1000micro	

*1: Repeatability conforms to ISO 9283.

*2: The maximum speed in this table is the available maximum value and will vary depending on the load, posture, or range of motion.

*3: The power requirement value is obtained using Yaskawa's in-house measurement conditions and will vary depending on the load, motion pattern, or cycle time.

*4: F=Floor, C=Ceiling, W=Wall, S=Shelf, T=Tilt
(When wall- or tilt-mounted, the S-axis motion range may be limited.)

*5: The maximum reach is 1700 mm for payloads of 27 kg or less.

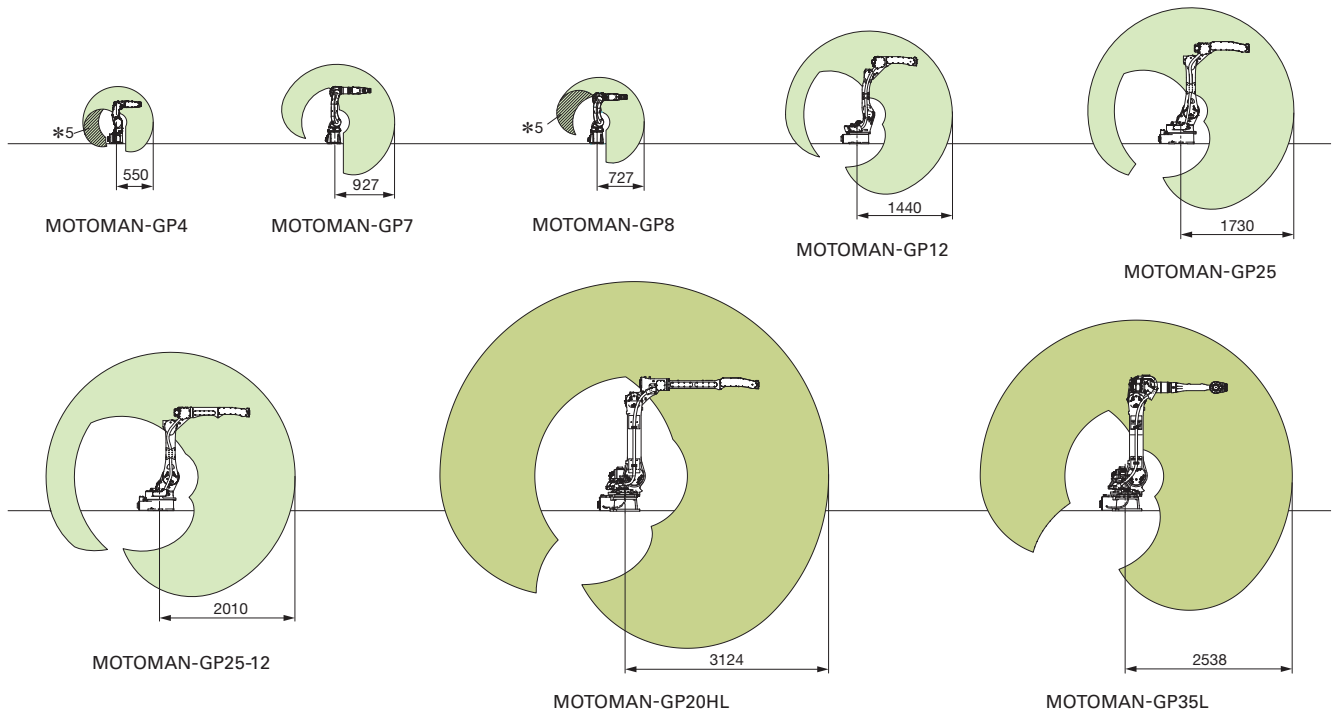
*6: The range of motion of the B-axis is an angle in the downward vertical direction. In some postures, however, the motion of the B-axis may be restricted depending on the angle with respect to the upper arm.

*7: Maximum payload is 1 kg when the T-axis faces downward.

*8: Repeatability is as follows.

S-axis + L-axis: 0.01mm, U-axis: 0.01mm, R-axis: 0.004"

*9: The shaded area shows the possible range of motion for payloads of 27 kg or less.



Model	Small						Medium- and Large-sized		
	GP4	GP7	GP8	GP12	GP25	GP25-12	GP20HL	GP35L	
Controlled Axis	6	6	6	6	6	6	6	6	
Payload	4 kg	7 kg	8 kg	12 kg	25 kg	12 kg	20 kg	35 kg	
Maximum Reach	550 mm	927 mm	727 mm	1440 mm	1730 mm	2010 mm	3124 mm	2538 mm	
Repeatability*1	0.01 mm	0.01 mm	0.01 mm	0.02 mm	0.02 mm	0.03 mm	0.07 mm	0.07 mm	
Range of Motion	S-axis	-170° – +170°	-170° – +170°	-170° – +170°	-170° – +170°	-180° – +180°	-180° – +180°	-180° – +180°	-180° – +180°
	L-axis	-110° – +130°	- 65° – +145°	- 65° – +145°	- 90° – +155°	-105° – +155°	-105° – +155°	- 90° – +135°	- 90° – +135°
	U-axis	- 65° – +200°	- 70° – +190°	- 70° – +190°	- 85° – +150°	- 86° – +160°	- 86° – +160°	- 80° – +206°	- 80° – +206°
	R-axis	-200° – +200°	-190° – +190°	-190° – +190°	-200° – +200°	-200° – +200°	-200° – +200°	-200° – +200°	-360° – +360°
	B-axis	-123° – +123°	-135° – +135°	-135° – +135°	-150° – +150°	-150° – +150°	-150° – +150°	-150° – +150°	-125° – +125°
	T-axis	-455° – +455°	-360° – +360°	-360° – +360°	-455° – +455°	-455° – +455°	-455° – +455°	-455° – +455°	-360° – +360°
Maximum Speed*2	S-axis	465°/s	375°/s	455°/s	260°/s	210°/s	210°/s	180°/s	180°/s
	L-axis	465°/s	315°/s	385°/s	230°/s	210°/s	210°/s	180°/s	140°/s
	U-axis	525°/s	410°/s	520°/s	260°/s	265°/s	220°/s	180°/s	178°/s
	R-axis	565°/s	550°/s	550°/s	470°/s	420°/s	435°/s	400°/s	250°/s
	B-axis	565°/s	550°/s	550°/s	470°/s	420°/s	435°/s	430°/s	250°/s
	T-axis	1000°/s	1000°/s	1000°/s	700°/s	885°/s	700°/s	630°/s	360°/s
Allowable Moment	R-axis	8.86 N·m	17 N·m	17 N·m	22 N·m	52 N·m	22 N·m	39.2 N·m	147 N·m
	B-axis	8.86 N·m	17 N·m	17 N·m	22 N·m	52 N·m	22 N·m	39.2 N·m	147 N·m
	T-axis	4.9 N·m	10 N·m	10 N·m	9.8 N·m	32 N·m	9.8 N·m	19.6 N·m	78 N·m
Allowable Inertia (GD ² /4)	R-axis	0.2 kg·m ²	0.5 kg·m ²	0.5 kg·m ²	0.65 kg·m ²	2.3 kg·m ²	0.65 kg·m ²	1.05 kg·m ²	10 kg·m ²
	B-axis	0.2 kg·m ²	0.5 kg·m ²	0.5 kg·m ²	0.65 kg·m ²	2.3 kg·m ²	0.65 kg·m ²	1.05 kg·m ²	10 kg·m ²
	T-axis	0.07 kg·m ²	0.2 kg·m ²	0.2 kg·m ²	0.17 kg·m ²	1.2 kg·m ²	0.17 kg·m ²	0.75 kg·m ²	4 kg·m ²
Approx. Mass	28 kg	37 kg	35 kg	150 kg	250 kg	260 kg	560 kg	600 kg	
Power Requirements*3	1.0 kVA	1.0 kVA	1.0 kVA	1.5 kVA	2.0 kVA	2.0 kVA	4.0 kVA	4.5 kVA	
Mounting*4	F,C,W,T	F,C,W,T	F,C,W,T	F,C,W,T	F,C,W,T	F,C,W,T	F,C,W,T	F,C,W,T	
Compatible Controller	YRC1000 YRC1000micro	YRC1000 YRC1000micro	YRC1000 YRC1000micro	YRC1000 YRC1000micro	YRC1000	YRC1000	YRC1000	YRC1000	

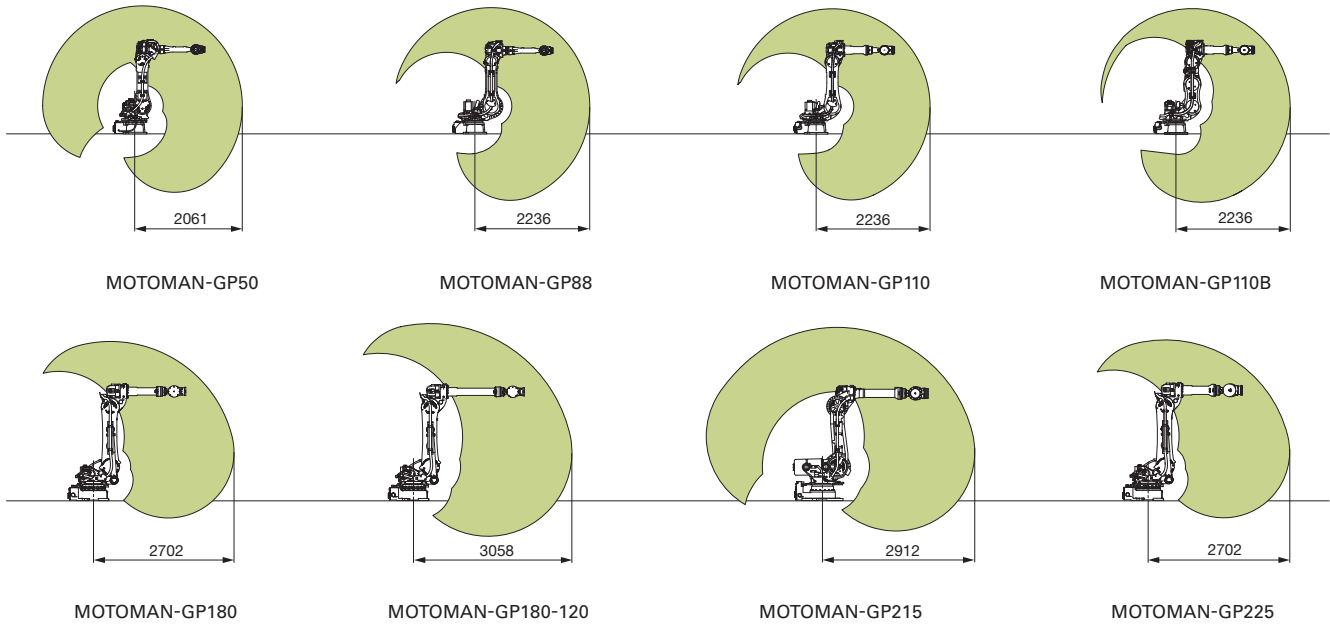
*1: Repeatability conforms to ISO 9283.

*2: The maximum speed in this table is the available maximum value and will vary depending on the load, posture, or range of motion.

*3: The power requirement value is obtained using Yaskawa's in-house measurement conditions and will vary depending on the load, motion pattern, or cycle time.

*4: F=Floor, C=Ceiling, W=Wall, S=Shelf, T=Tilt (When wall- or tilt-mounted, the S-axis motion range may be limited.)

*5: When using air, an optional solenoid valve, or a mating connector, the arm cannot be moved in the shaded area because it interferes with the connector.



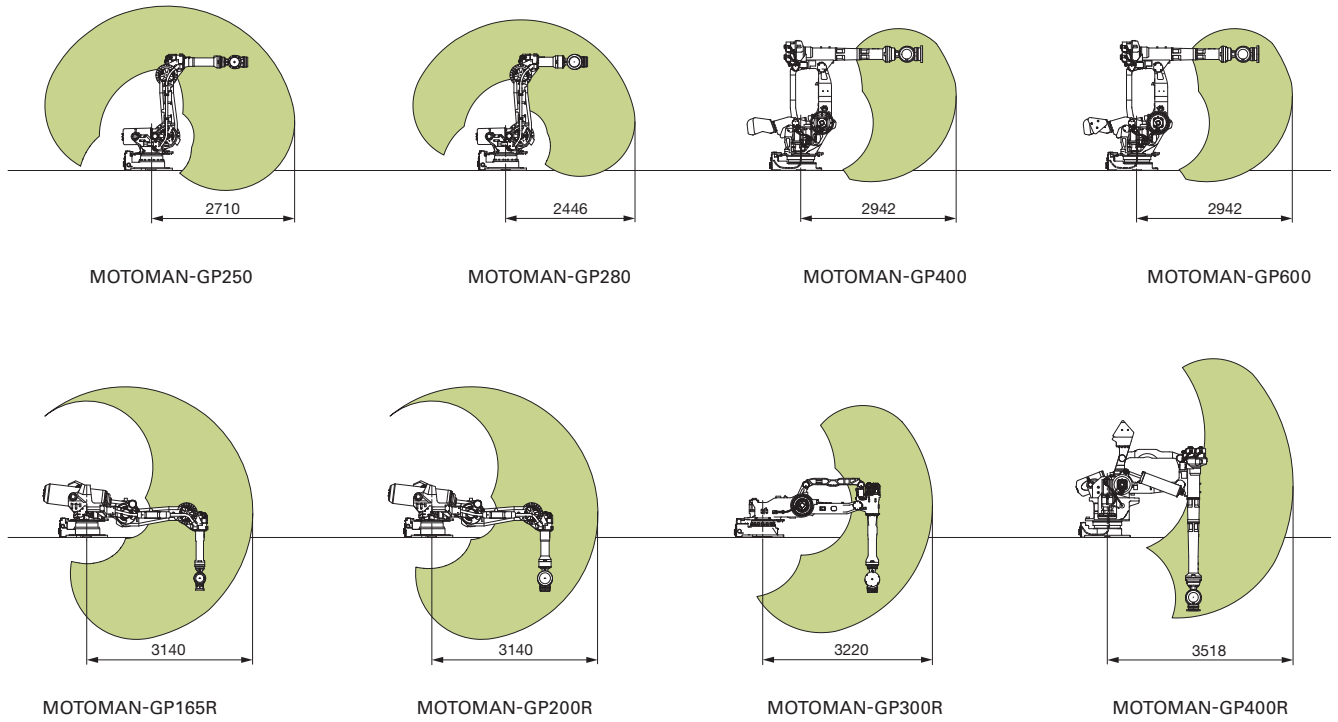
Medium- and Large-sized									
Model	GP50	GP88	GP110	GP110B (7-axis model)	GP180	GP180-120	GP215	GP225	
Controlled Axis	6	6	6	7	6	6	6	6	
Payload	50 kg	88 kg	110 kg	110 kg	180 kg	120 kg	215 kg	225 kg	
Maximum Reach	2061 mm	2236 mm	2236 mm	2236 mm	2702 mm	3058 mm	2912 mm	2702 mm	
Repeatability*1	0.03 mm	0.03 mm	0.03 mm	0.04 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	
Range of Motion	S-axis	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	
	L-axis	- 90° - +135°	- 90° - +155°	- 90° - +155°	- 45° - +155°	- 60° - + 76°	- 60° - + 76°	- 60° - + 76°	
	E-axis	-	-	-	- 45° - +120°	-	-	-	
	U-axis	- 80° - +206°	- 80° - + 90°	- 80° - + 90°	- 70° - + 90°	- 86° - + 90°	- 86° - + 90°	-77.8° - +197°	- 86° - + 90°
	R-axis	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	- 360° - +360°	-360° - +360°
	B-axis	-125° - +125°	-125° - +125°	-125° - +125°	-125° - +125°	-130° - +130°	-130° - +130°	- 125° - +125°	-125° - +125°
	T-axis	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	- 360° - +360°	-360° - +360°
Maximum Speed*2	S-axis	180°/s	170°/s	140°/s	140°/s	125°/s	125°/s	100°/s	120°/s
	L-axis	178°/s	140°/s	110°/s	110°/s	115°/s	115°/s	90°/s	97°/s
	E-axis	-	-	-	110°/s	-	-	-	-
	U-axis	178°/s	160°/s	130°/s	130°/s	125°/s	125°/s	97°/s	115°/s
	R-axis	250°/s	230°/s	175°/s	175°/s	182°/s	182°/s	120°/s	145°/s
	B-axis	250°/s	230°/s	175°/s	175°/s	175°/s	175°/s	120°/s	145°/s
	T-axis	360°/s	350°/s	255°/s	255°/s	265°/s	265°/s	190°/s	220°/s
Allowable Moment	R-axis	216 N·m	408 N·m	721 N·m	721 N·m	1000 N·m	883 N·m	1176 N·m	1372 N·m
	B-axis	216 N·m	408 N·m	721 N·m	721 N·m	1000 N·m	883 N·m	1176 N·m	1372 N·m
	T-axis	147 N·m	206 N·m	294 N·m	294 N·m	618 N·m	520 N·m	710 N·m	735 N·m
Allowable Inertia (GD ² /4)	R-axis	28 kg·m ²	30 kg·m ²	60 kg·m ²	60 kg·m ²	90 kg·m ²	79 kg·m ²	317 kg·m ²	145 kg·m ²
	B-axis	28 kg·m ²	30 kg·m ²	60 kg·m ²	60 kg·m ²	90 kg·m ²	79 kg·m ²	317 kg·m ²	145 kg·m ²
	T-axis	11 kg·m ²	11 kg·m ²	33.7 kg·m ²	33.7 kg·m ²	46.3 kg·m ²	40 kg·m ²	200 kg·m ²	84 kg·m ²
Approx. Mass	570 kg	630 kg	660 kg	790 kg	1020 kg	1090 kg	1340 kg	1080 kg	
Power Requirements*3	4.5 kVA	4.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	
Mounting*4	F,C,W,T	F,C,W,T	F	F	F	F	F	F	
Compatible Controller	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	

*1: Repeatability conforms to ISO 9283.

*2: The maximum speed in this table is the available maximum value and will vary depending on the load, posture, or range of motion.

*3: The power requirement value is obtained using Yaskawa's in-house measurement conditions and will vary depending on the load, motion pattern, or cycle time.

*4: F=Floor, C=Ceiling, W=Wall, S=Shelf, T=Tilt (When wall- or tilt-mounted, the S-axis motion range may be limited.)



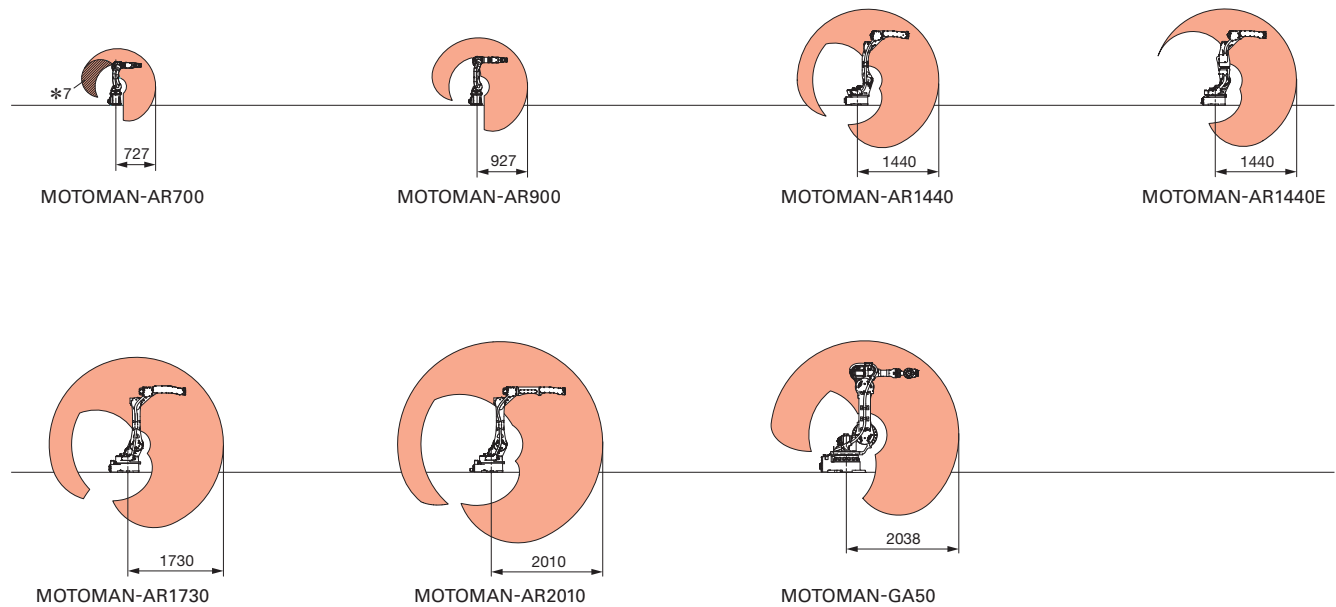
Medium- and Large-sized									
Model	GP250	GP280	GP400	GP600	GP165R	GP200R	GP300R	GP400R	
Controlled Axis	6	6	6	6	6	6	6	6	
Payload	250 kg	280 kg	400 kg	600 kg	165 kg	200 kg	300 kg	400 kg	
Maximum Reach	2710 mm	2446 mm	2942 mm	2942 mm	3140 mm	3140 mm	3220 mm	3518 mm	
Repeatability*1	0.05 mm	0.05 mm	0.1 mm	0.1 mm	0.05 mm	0.05 mm	0.05 mm	0.1 mm	
Range of Motion	S-axis	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-150° - +150°
	L-axis	-60° - +76°	-60° - +76°	-55° - +61°	-55° - +61°	-130° - +80°	-130° - +80°	-140° - +70°	-122° - +20°
	U-axis	-77.8° - +197°	-77.8° - +197°	-113° - +18°	-113° - +18°	-79.4° - +78°	-78.4° - +78°	-70° - +115°	-9° - +120°
	R-axis	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°
	B-axis	-125° - +125°	-125° - +125°	-115° - +115°	-115° - +115°	-130° - +130°	-125° - +125°	-125° - +125°	-120° - +120°
	T-axis	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°	-360° - +360°
Maximum Speed*2	S-axis	100°/s	90°/s	102°/s	82°/s	105°/s	90°/s	110°/s	80°/s
	L-axis	90°/s	80°/s	97°/s	82°/s	105°/s	85°/s	95°/s	80°/s
	U-axis	97°/s	90°/s	97°/s	82°/s	105°/s	85°/s	95°/s	80°/s
	R-axis	120°/s	115°/s	80°/s	80°/s	175°/s	120°/s	120°/s	80°/s
	B-axis	120°/s	110°/s	80°/s	80°/s	150°/s	120°/s	120°/s	80°/s
	T-axis	190°/s	190°/s	172°/s	162°/s	240°/s	190°/s	190°/s	160°/s
Allowable Moment	R-axis	1385 N·m	1333 N·m	2989 N·m	3430 N·m	921 N·m	1344 N·m	1962 N·m	1960 N·m
	B-axis	1385 N·m	1333 N·m	2989 N·m	3430 N·m	921 N·m	1344 N·m	1962 N·m	1960 N·m
	T-axis	735 N·m	706 N·m	1343 N·m	1764 N·m	490 N·m	715 N·m	834 N·m	833 N·m
Allowable Inertia (GD ² /4)	R-axis	317 kg·m ²	142 kg·m ²	500 kg·m ²	520 kg·m ²	85 kg·m ²	143 kg·m ²	320 kg·m ²	150 kg·m ²
	B-axis	317 kg·m ²	142 kg·m ²	500 kg·m ²	520 kg·m ²	85 kg·m ²	143 kg·m ²	320 kg·m ²	150 kg·m ²
	T-axis	200 kg·m ²	79 kg·m ²	315 kg·m ²	350 kg·m ²	45 kg·m ²	80 kg·m ²	200 kg·m ²	50 kg·m ²
Approx. Mass	1345 kg	1300 kg	2840 kg	3035 kg	1760 kg	1830 kg	1530 kg	3560 kg	
Power Requirements*3	5.0 kVA	5.0 kVA	7.0 kVA	7.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	7.0 kVA	
Mounting*4	F	F	F	F	S	S	S	S	
Compatible Controller	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	

*1: Repeatability conforms to ISO 9283.

*2: The maximum speed in this table is the available maximum value and will vary depending on the load, posture, or range of motion.

*3: The power requirement value is obtained using Yaskawa's in-house measurement conditions and will vary depending on the load, motion pattern, or cycle time.

*4: F=Floor, C=Ceiling, W=Wall, S=Shelf, T=Tilt (When wall- or tilt-mounted, the S-axis motion range may be limited.)



Model	Arc Welding							High Path Accuracy
	AR700	AR900	AR1440	AR1440E (7-axis model)	AR1730	AR2010	GA50	
Controlled Axis	6	6	6	7	6	6	6	
Payload	8 kg	7 kg	12 kg	6 kg	25 kg	12 kg	50 kg*6	
Maximum Reach	727 mm	927 mm	1440 mm	1440 mm	1730 mm	2010 mm	2038 mm	
Repeatability*1	0.01 mm	0.01 mm	0.02 mm	0.06 mm	0.02 mm	0.03 mm	0.015 mm	
Range of Motion	S-axis	-170° - +170°	-170° - +170°	-170° - +170°	-170° - +170°	-180° - +180°	-180° - +180°	-180° - +180°
	L-axis	- 65° - +145°	- 65° - +145°	- 90° - +155°	- 70° - +148°	-105° - +155°	-105° - +155°	- 90° - +135°
	E-axis	-	-	-	- 90° - + 90°	-	-	-
	U-axis	- 70° - +190°	- 70° - +190°	- 85° - +150°*5	- 80° - + 80°	- 86° - +160°	- 86° - +160°	- 80° - +180°
	R-axis	-190° - +190°	-190° - +190°	-200° - +200°*5	-200° - +200°*5	-200° - +200°*5	-200° - +200°*5	-360° - +360°
	B-axis	-135° - +135°	-135° - +135°	-150° - +150°*5	-150° - +150°*5	-150° - +150°*5	-150° - +150°*5	-125° - +125°
	T-axis	-360° - +360°	-360° - +360°	-455° - +455°*5	-455° - +455°*5	-455° - +455°*5	-455° - +455°*5	-360° - +360°
Maximum Speed*2	S-axis	455°/s	375°/s	260°/s	260°/s	210°/s	210°/s	150°/s
	L-axis	385°/s	315°/s	230°/s	230°/s	210°/s	210°/s	150°/s
	E-axis	-	-	-	260°/s	-	-	-
	U-axis	520°/s	410°/s	260°/s	260°/s	265°/s	220°/s	150°/s
	R-axis	550°/s	550°/s	470°/s	470°/s	420°/s	435°/s	250°/s
	B-axis	550°/s	550°/s	470°/s	470°/s	420°/s	435°/s	250°/s
	T-axis	1000°/s	1000°/s	700°/s	700°/s	885°/s	700°/s	250°/s
Allowable Moment	R-axis	17 N·m	17 N·m	22 N·m	12.5 N·m	52 N·m	22 N·m	110 N·m
	B-axis	17 N·m	17 N·m	22 N·m	12.5 N·m	52 N·m	22 N·m	110 N·m
	T-axis	10 N·m	10 N·m	9.8 N·m	6 N·m	32 N·m	9.8 N·m	55 N·m
Allowable Inertia (GD ² /4)	R-axis	0.5 kg·m ²	0.5 kg·m ²	0.65 kg·m ²	0.4 kg·m ²	2.3 kg·m ²	0.65 kg·m ²	7 kg·m ²
	B-axis	0.5 kg·m ²	0.5 kg·m ²	0.65 kg·m ²	0.4 kg·m ²	2.3 kg·m ²	0.65 kg·m ²	7 kg·m ²
	T-axis	0.2 kg·m ²	0.2 kg·m ²	0.17 kg·m ²	0.08 kg·m ²	1.2 kg·m ²	0.17 kg·m ²	1 kg·m ²
Approx. Mass	35 kg	37 kg	150 kg	190 kg	250 kg	260 kg	855 kg	
Power Requirements*3	1.0 kVA	1.0 kVA	1.5 kVA	1.5 kVA	2.0 kVA	2.0 kVA	3.5 kVA	
Mounting*4	F,C,W,T	F,C,W,T	F,C,W,T	F	F,C,W,T	F,C,W,T	F	
Compatible Controller	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	

*1: Repeatability conforms to ISO 9283.

*2: The maximum speed in this table is the available maximum value and will vary depending on the load, posture, or range of motion.

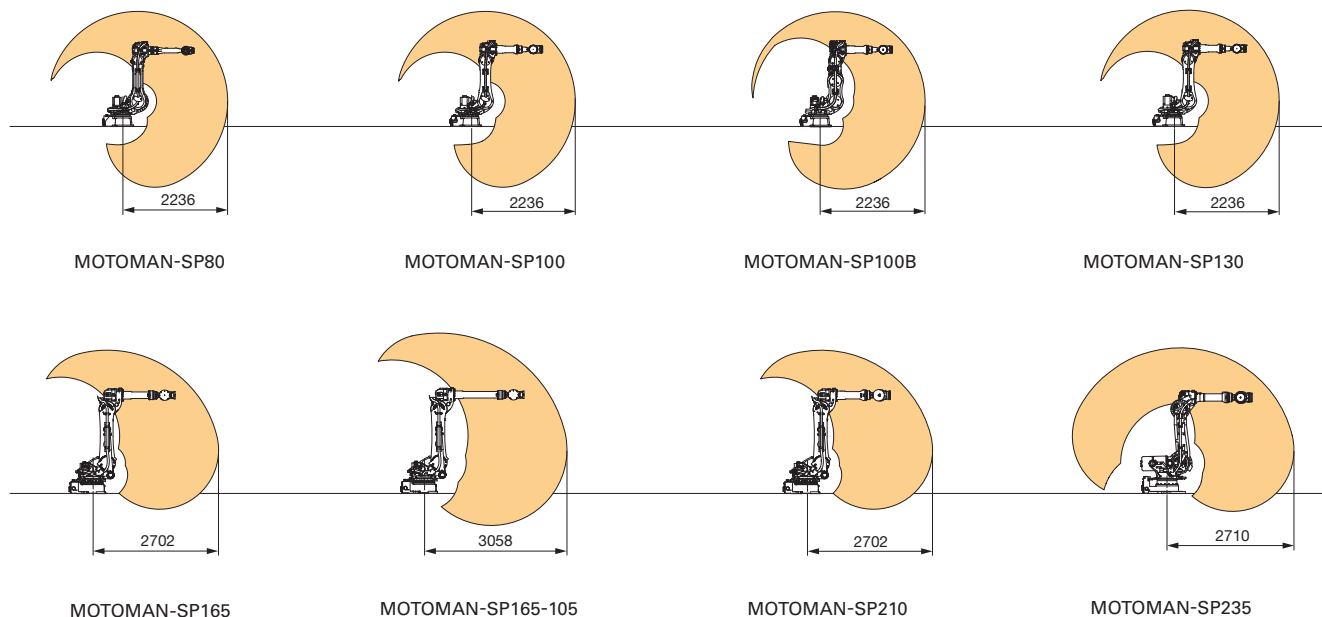
*3: The power requirement value is obtained using Yaskawa's in-house measurement conditions and will vary depending on the load, motion pattern, or cycle time.

*4: F=Floor, C=Ceiling, W=Wall, S=Shelf, T=Tilt
(When wall- or tilt-mounted, the S-axis motion range may be limited.)

*5: The range of motion will be limited when the robot is used together with MOTOPAC.

*6: A load of 30 kg or less is recommended for applications that require high accuracy.

*7: When using air, an optional solenoid valve, or a mating connector, the arm cannot be moved in the shaded area because it interferes with the connector.



Spot Welding								
Model	SP80	SP100	SP100B (7-axis model)	SP130	SP165	SP165-105	SP210	SP235
Controlled Axis	6	6	7	6	6	6	6	6
Payload	80 kg*5	100 kg*5	100 kg*5	130 kg*5	165 kg*5	105 kg*5	210 kg*5	235 kg*5
Maximum Reach	2236 mm	2236 mm	2236 mm	2236 mm	2702 mm	3058 mm	2702 mm	2710 mm
Repeatability*1	0.03 mm	0.03 mm	0.04 mm	0.03 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm
Range of Motion	S-axis	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°	-180° - +180°
	L-axis	- 90° - +155°	- 90° - +155°	- 45° - +155°	- 90° - +155°	- 60° - + 76°	- 60° - + 76°	- 60° - + 76°
	E-axis	-	-	- 45° - +120°	-	-	-	-
	U-axis	- 80° - + 90°	- 80° - + 90°	- 70° - + 90°	- 80° - + 90°	- 86° - + 90°	- 86° - + 90°	- 86° - + 90°
	R-axis	-205° - +205°*5	-205° - +205°*5	-205° - +205°*5	-205° - +205°*5	-210° - +210°*5	-210° - +210°*5	-210° - +210°*5
	B-axis	-120° - +120°*5	-120° - +120°*5	-120° - +120°*5	-120° - +120°*5	-125° - +125°*5	-125° - +125°*5	-125° - +125°
	T-axis	-180° - +180°*5	-205° - +205°*5	-205° - +205°*5	-205° - +205°*5	-210° - +210°*5	-210° - +210°*5	-210° - +210°*5
Maximum Speed*2	S-axis	170°/s	140°/s	140°/s	140°/s	125°/s	125°/s	120°/s
	L-axis	140°/s	110°/s	110°/s	110°/s	115°/s	115°/s	97°/s
	E-axis	-	-	110°/s	-	-	-	-
	U-axis	160°/s	130°/s	130°/s	130°/s	125°/s	125°/s	115°/s
	R-axis	230°/s	175°/s	175°/s	175°/s	182°/s	182°/s	145°/s
	B-axis	230°/s	175°/s	175°/s	175°/s	175°/s	175°/s	145°/s
	T-axis	350°/s	255°/s	255°/s	255°/s	265°/s	265°/s	220°/s
Allowable Moment	R-axis	389 N·m*5	696 N·m*5	696 N·m*5	820 N·m*5	951 N·m*5	834 N·m*5	1323 N·m*5
	B-axis	389 N·m*5	696 N·m*5	696 N·m*5	820 N·m*5	951 N·m*5	834 N·m*5	1323 N·m*5
	T-axis	206 N·m	294 N·m	294 N·m	360 N·m	618 N·m	520 N·m	735 N·m
Allowable Inertia (GD ² /4)	R-axis	28 kg·m ² *5	58 kg·m ² *5	58 kg·m ² *5	71 kg·m ² *5	88 kg·m ² *5	77 kg·m ² *5	143 kg·m ² *5
	B-axis	28 kg·m ² *5	58 kg·m ² *5	58 kg·m ² *5	71 kg·m ² *5	88 kg·m ² *5	77 kg·m ² *5	143 kg·m ² *5
	T-axis	10.3 kg·m ² *5	33 kg·m ² *5	33 kg·m ² *5	38 kg·m ² *5	46.3 kg·m ²	40 kg·m ²	84 kg·m ²
Approx. Mass	630 kg	660 kg	790 kg	660 kg	1020 kg	1090 kg	1080 kg	1345 kg
Power Requirements*3	4.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA
Mounting*4	F,C,W,T	F	F	F	F	F	F	F
Compatible Controller	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000

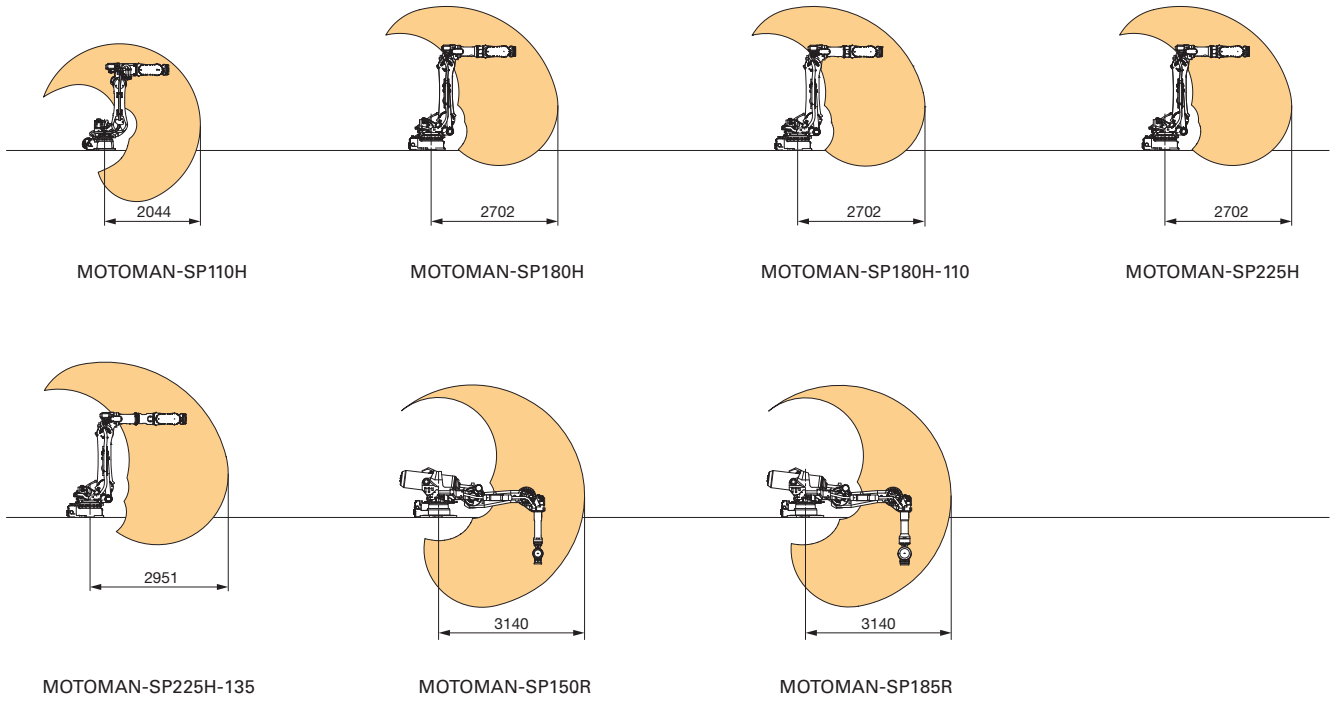
*1: Repeatability conforms to ISO 9283.

*2: The maximum speed in this table is the available maximum value and will vary depending on the load, posture, or range of motion.

*3: The power requirement value is obtained using Yaskawa's in-house measurement conditions and will vary depending on the load, motion pattern, or cycle time.

*4: F=Floor, C=Ceiling, W=Wall, S=Shelf, T=Tilt (When wall- or tilt-mounted, the S-axis motion range may be limited.)

*5: When a standard flange for cabling by Yaskawa is equipped to the tip of the wrist.



		Spot Welding						
Model		SP110H (Hollow-arm model)	SP180H (Hollow-arm model)	SP180H-110 (Hollow-arm model)	SP225H (Hollow-arm model)	SP225H-135 (Hollow-arm model)	SP150R	SP185R
Controlled Axis		6	6	6	6	6	6	6
Payload		110 kg	180 kg	110 kg	225 kg	135 kg	150 kg*6	185 kg*6
Maximum Reach		2044 mm	2702 mm	2702 mm	2702 mm	2951 mm	3140 mm	3140 mm
Repeatability*1		0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm
Range of Motion	S-axis	-180° – +180°	-180° – +180°	-180° – +180°	-180° – +180°	-180° – +180°	-180° – +180°	-180° – +180°
	L-axis	- 90° – +155°	- 60° – + 76°	- 60° – + 76°	- 60° – + 76°	- 60° – + 76°	-130° – + 80°	-130° – + 80°
	U-axis	- 86° – + 90°	- 86° – + 90°	- 86° – + 90°	- 86° – + 90°	- 86° – + 90°	-79.4° – + 78°	-78.4° – + 78°
	R-axis	-210° – +210°	-210° – +210°	-210° – +210°	-210° – +210°	-210° – +210°	-205° – +205°*6	-205° – +205°*6
	B-axis	-130° – +130°	-130° – +130°	-130° – +130°	-130° – +130°	-130° – +130°	-120° – +120°*6	-120° – +120°*6
	T-axis	-360° – +360°*5	-360° – +360°*5	-360° – +360°*5	-360° – +360°*5	-360° – +360°*5	-180° – +180°*6	-180° – +180°*6
Maximum Speed*2	S-axis	140°/s	120°/s	140°/s	120°/s	125°/s	105°/s	90°/s
	L-axis	115°/s	97°/s	97°/s	97°/s	115°/s	105°/s	85°/s
	U-axis	161°/s	115°/s	115°/s	115°/s	115°/s	105°/s	85°/s
	R-axis	225°/s	150°/s	210°/s	150°/s	182°/s	175°/s	120°/s
	B-axis	200°/s	150°/s	200°/s	150°/s	175°/s	150°/s	120°/s
	T-axis	315°/s	230°/s	310°/s	230°/s	265°/s	240°/s	190°/s
Allowable Moment	R-axis	721 N·m	1000 N·m	883 N·m	1372 N·m	883 N·m	868 N·m*6	1291 N·m*6
	B-axis	721 N·m	1000 N·m	883 N·m	1372 N·m	883 N·m	868 N·m*6	1291 N·m*6
	T-axis	315 N·m	618 N·m	520 N·m	735 N·m	520 N·m	490 N·m	715 N·m
Allowable Inertia (GD ² /4)	R-axis	85 kg·m ²	104 kg·m ²	85 kg·m ²	209.8 kg·m ²	85 kg·m ²	83 kg·m ² *6	141 kg·m ² *6
	B-axis	85 kg·m ²	104 kg·m ²	85 kg·m ²	209.8 kg·m ²	85 kg·m ²	83 kg·m ² *6	141 kg·m ² *6
	T-axis	45 kg·m ²	52 kg·m ²	40 kg·m ²	162.1 kg·m ²	40 kg·m ²	45 kg·m ²	80 kg·m ²
Approx. Mass		730 kg	1090 kg	1090 kg	1090 kg	1110 kg	1760 kg	1830 kg
Power Requirements*3		5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA	5.0 kVA
Mounting*4		F	F	F	F	F	S	S
Compatible Controller		YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000

*1: Repeatability conforms to ISO 9283.

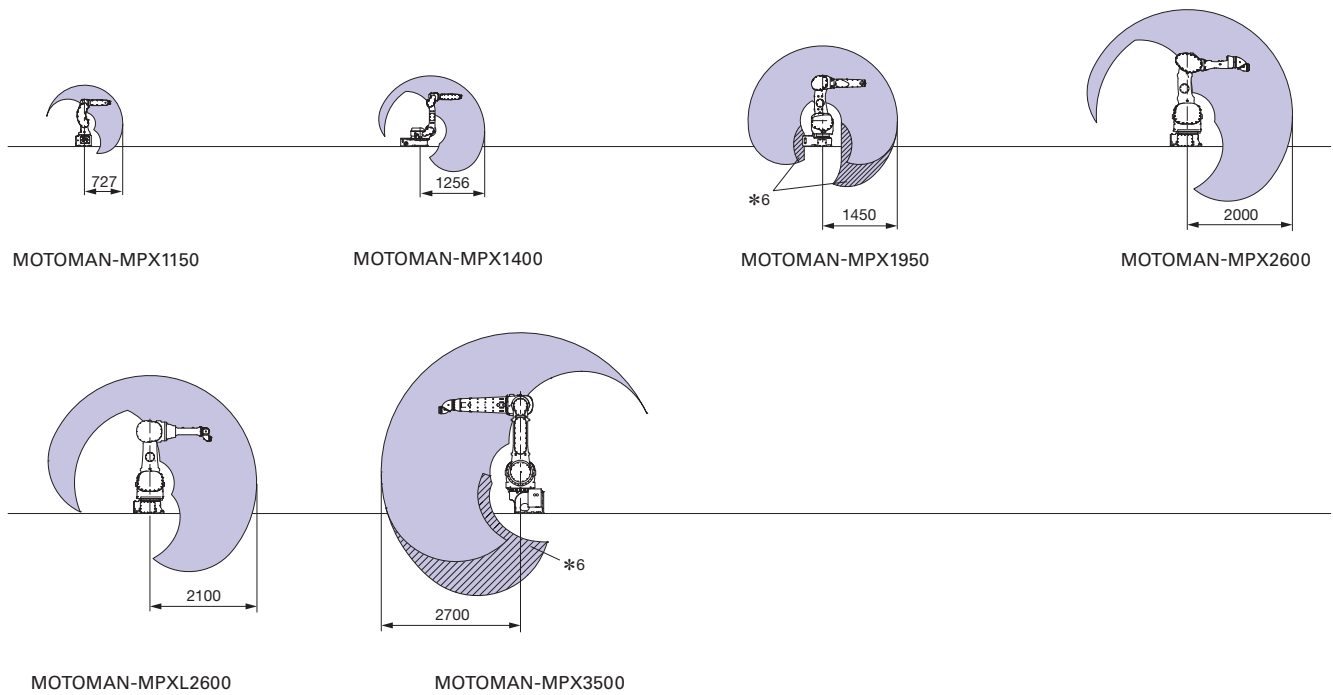
*2: The maximum speed in this table is the available maximum value and will vary depending on the load, posture, or range of motion.

*3: The power requirement value is obtained using Yaskawa's in-house measurement conditions and will vary depending on the load, motion pattern, or cycle time.

*4: F=Floor, C=Ceiling, W=Wall, S=Shelf, T=Tilt (When wall- or tilt-mounted, the S-axis motion range may be limited.)

*5: The range of motion will be limited when standard external cablings by Yaskawa is mounted to the manipulator.

*6: When a standard flange for cabling by Yaskawa is equipped to the tip of the wrist.



		Painting					
Model		MPX1150	MPX1400	MPX1950	MPX2600	MPXL2600	MPX3500
Controlled Axis		6	6	6	6	6	6
Payload		5 kg	5 kg	7 kg	15 kg	10 kg	15 kg
Maximum Reach		727 mm	1256 mm	1450 mm	2000 mm	2100 mm	2700 mm
Repeatability*1		0.02 mm	0.1 mm	0.15 mm	0.2 mm	0.5 mm	0.15 mm
Range of Motion	S-axis	-170° – +170°	-170° – +170°	-170° – +170°	-150° – +150°	-150° – +150°	-150° – +150°
	L-axis	- 80° – +120°	- 65° – +120°	-100° – +140°	- 65° – +130°	- 65° – +130°	- 65° – +140°
	U-axis	- 70° – + 90°	- 70° – +140°	- 62° – +235°	- 65° – +150°	- 65° – +180°	- 65° – + 90°
	R-axis	-190° – +190°	-190° – +190°	-200° – +200°	-720° – +720°	-260° – +260°	-720° – +720°
	B-axis	-135° – +135°	-145° – +145°	-150° – +150°	-720° – +720°	-270° – +270°*5	-720° – +720°
	T-axis	-360° – +360°	-360° – +360°	-400° – +400°	-720° – +720°	-260° – +260°	-720° – +720°
Maximum Speed*2	S-axis	350°/s	220°/s	180°/s	120°/s	120°/s	100°/s
	L-axis	350°/s	190°/s	180°/s	120°/s	120°/s	100°/s
	U-axis	400°/s	240°/s	180°/s	125°/s	125°/s	110°/s
	R-axis	450°/s	450°/s	360°/s	300°/s	360°/s	300°/s
	B-axis	450°/s	450°/s	400°/s	360°/s	360°/s	360°/s
	T-axis	720°/s	720°/s	500°/s	360°/s	360°/s	360°/s
Allowable Moment	R-axis	12 N·m	12 N·m	19.6 N·m	93.2 N·m	30.4 N·m	93.2 N·m
	B-axis	12 N·m	12 N·m	19.6 N·m	58.8 N·m	19.6 N·m	58.8 N·m
	T-axis	7 N·m	7 N·m	9.8 N·m	19.6 N·m	9.8 N·m	19.6 N·m
Allowable Inertia (GD ² /4)	R-axis	0.3 kg·m ²	0.3 kg·m ²	0.6 kg·m ²	3.75 kg·m ²	0.97 kg·m ²	3.75 kg·m ²
	B-axis	0.3 kg·m ²	0.3 kg·m ²	0.6 kg·m ²	2.225 kg·m ²	0.4 kg·m ²	2.225 kg·m ²
	T-axis	0.1 kg·m ²	0.1 kg·m ²	0.16 kg·m ²	0.2 kg·m ²	0.1 kg·m ²	0.2 kg·m ²
Approx. Mass		57 kg	120 kg	265 kg	485 kg	520 kg	590 kg
Power Requirements*3		1.0 kVA	1.5 kVA	2.5 kVA	3.0 kVA	3.0 kVA	3.0 kVA
Mounting*4		F,C,W	F,C,W	F,C,W	F,C,W	F,C,W	F,C,W
Compatible Controller		DX200	DX200	DX200	DX200	DX200	DX200

*1: Repeatability conforms to ISO 9283.

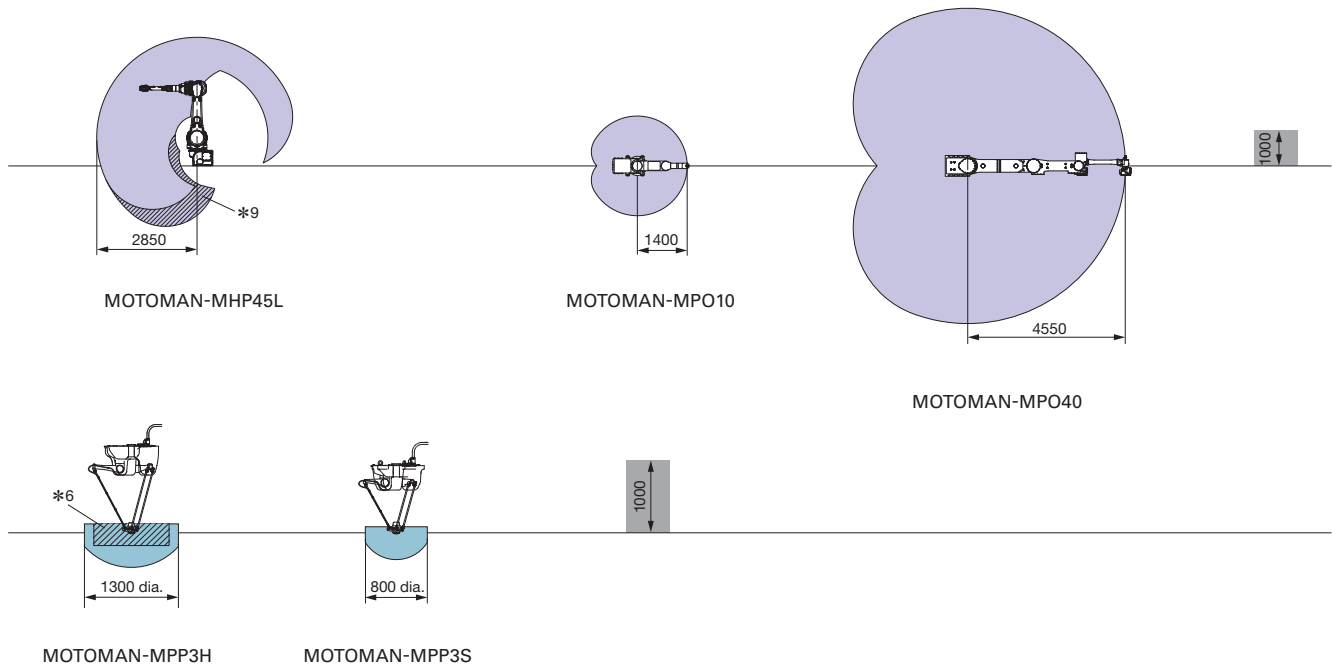
*2: The maximum speed in this table is the available maximum value and will vary depending on the load, posture, or range of motion.

*3: The power requirement value is obtained using Yaskawa's in-house measurement conditions and will vary depending on the load, motion pattern, or cycle time.

*4: F=Floor, C=Ceiling, W=Wall, S=Shelf, T=Tilt
(When wall- or tilt-mounted, the S-axis motion range may be limited.)

*5: The range of motion may be limited depending on the operating conditions. Contact your Yaskawa representative for details.

*6: The range of motion (indicated by the shaded area) may be limited depending on the operating conditions. Contact your Yaskawa representative for details.



Model	Intrinsically Safe Handling		Intrinsically Safe Opener		Picking and Packing	
	MHP45L	MPO10	MPO40	MPP3H	MPP3S	
Controlled Axis	6	3	5	4	4	
Payload	45 kg	10 kg	40 kg	3 kg	3 kg	
Maximum Reach	2850 mm	1400 mm	4550 mm	1300-mm dia.*6	800-mm dia.	
Repeatability*1	0.07 mm	0.15 mm	1.0 mm	0.1 mm	0.1 mm	
Range of Motion	S-axis	-150° – +150°	-150° – +150°*5	-110° – +110°	–	–
	L-axis	- 65° – +140°	-165° – +165°	-144° – +144°	–	–
	U-axis	- 65° – +180°	0 mm – 350 mm	-120° – +120°	–	–
	R-axis	-360° – +360°	–	-150° – +150°	–	–
	B-axis	-125° – +125°	–	Always horizontal (moves together with U-axis by parallel link)	–	–
	T-axis	-360° – +360°	–	- 90° – + 90°	-360° – +360°	-360° – +360°
Maximum Speed*2	S-axis	100°/s	130°/s	80°/s	Cycle time for 25 × 305 × 25 mm motion pattern 1 kg: 230 cpm*7 3 kg: 150 cpm	Cycle time for 25 × 305 × 25 mm motion pattern 1 kg: 230 cpm*7 3 kg: 150 cpm
	L-axis	100°/s	130°/s	80°/s		
	U-axis	110°/s	500 mm/s	80°/s		
	R-axis	110°/s	–	80°/s		
	B-axis	90°/s	–	80°/s		
Allowable Moment	R-axis	252.8 N·m	Opener tool (at flange) 27 N·m	–	–	–
	B-axis	252.8 N·m		352.8 N·m	–	–
	T-axis	117.6 N·m		235.2 N·m	–	–
Allowable Inertia (GD ² /4)	R-axis	13.9 kg·m ²	Opener tool (at flange) 1 kg·m ²	–	–	–
	B-axis	13.9 kg·m ²		32.4 kg·m ²	–	–
	T-axis	3.2 kg·m ²		14.4 kg·m ²	*8	*8
Approx. Mass	650 kg	350 kg	820 kg	115 kg	95 kg	
Power Requirements*3	3.0 kVA	1.25 kVA	2.5 kVA	1.5 kVA	1.5 kVA	
Mounting*4	F,C,W	F	W	C	C	
Compatible Controller	DX200	DX200	DX200	FS100	FS100	

*1: Repeatability conforms to ISO 9283.

*2: The maximum speed in this table is the available maximum value and will vary depending on the load, posture, or range of motion.

*3: The power requirement value is obtained using Yaskawa's in-house measurement conditions and will vary depending on the load, motion pattern, or cycle time.

*4: F=Floor, C=Ceiling, W=Wall, S=Shelf, T=Tilt
(When wall- or tilt-mounted, the S-axis motion range may be limited.)

*5: The motion range for the L type is -200° to +60°, and the motion range for the R type is -60° to +200°.

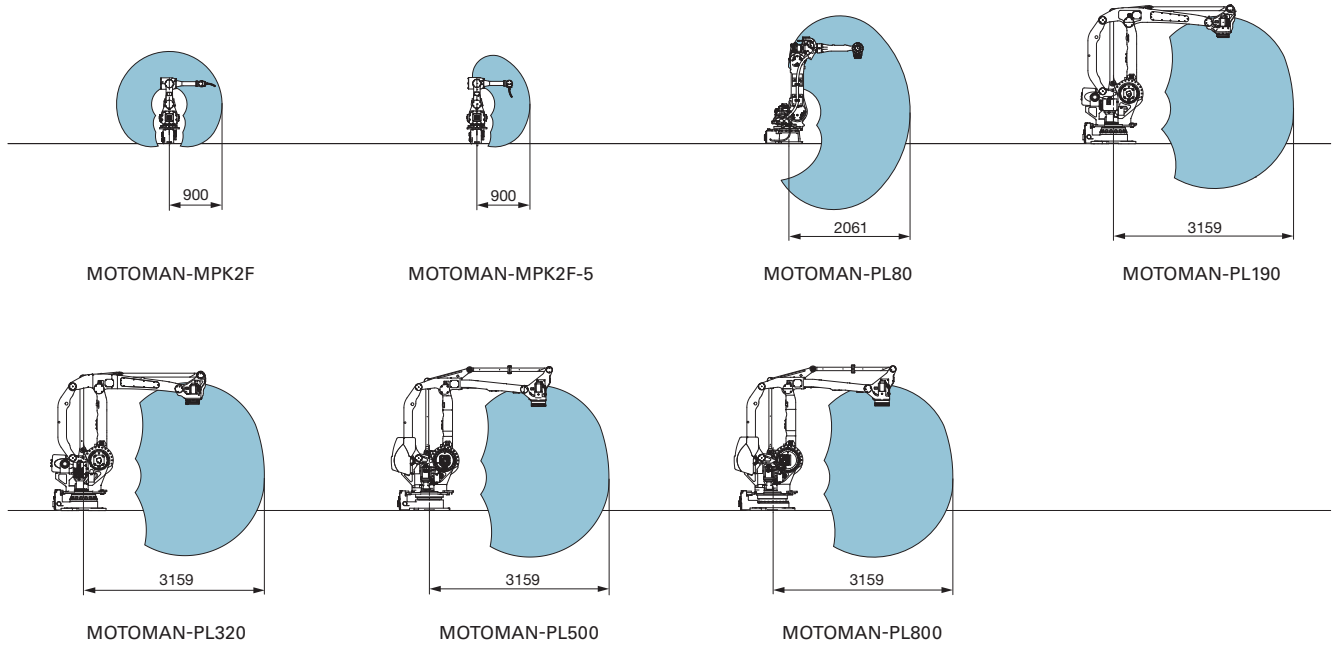
*6: The recommended range of motion (indicated by the shaded area) is 1040 mm (dia.) × 300 mm (H).
T-axis unit may vibrate when it moves outside the recommended range of motion.

*7: With a limit in continuous operations (No continuous operation limit: 185 cpm or less)

*8: Allowable Inertia of T-axis is as follows.

1 kg: 0.0013 kg/m² or less, 2 kg: 0.009 kg/m² or less, 3 kg: 0.017 kg/m² or less

*9: The range of motion (indicated by the shaded area) may be limited depending on the operating conditions. Contact your Yaskawa representative for details.



Model	Picking and Packing		Palletizing					
	MPK2F	MPK2F-5	PL80	PL190	PL320	PL500	PL800	
Controlled Axis	5	5	5	4	4	4	4	
Payload	2 kg	5 kg	80 kg	190 kg	320 kg	500 kg	800 kg	
Maximum Reach	900 mm	900 mm	2061 mm	3159 mm	3159 mm	3159 mm	3159 mm	
Repeatability*1	0.5 mm	0.5 mm	0.03 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	
Range of Motion	S-axis	-170° – +170°	-170° – +170°	-180° – +180°	-180° – +180°	-180° – +180°	-180° – +180°	-180° – +180°
	L-axis	-120° – +120°	-120° – +120°	- 90° – +135°	- 45° – + 90°	- 45° – + 90°	- 45° – + 90°	- 45° – + 90°
	U-axis	-102° – +282°	-102° – + 60°	-160° – + 35°	-120° – +15.5°	-120° – +15.5°	-120° – +15.5°	-120° – +15.5°
	R-axis	–	–	–	–	–	–	–
	B-axis	-150° – +150°	- 15° – + 15°*5	- 15° – + 15°*5	–	–	–	–
	T-axis	-270° – +270°	-270° – +270°	-360° – +360°	-360° – +360°	-360° – +360°	-360° – +360°	-360° – +360°
Maximum Speed*2	S-axis	320°/s	320°/s	180°/s	140°/s	120°/s	85°/s	65°/s
	L-axis	330°/s	330°/s	180°/s	145°/s	110°/s	85°/s	65°/s
	U-axis	330°/s	330°/s	180°/s	145°/s	110°/s	85°/s	65°/s
	R-axis	–	–	–	–	–	–	–
	B-axis	380°/s	380°/s	180°/s	–	–	–	–
	T-axis	2000°/s	2000°/s	500°/s	420°/s	300°/s	195°/s	125°/s
Allowable Moment	R-axis	–	–	–	–	–	–	–
	B-axis	3.5 N·m	2.26 N·m	78.4 N·m	–	–	–	–
	T-axis	1.5 N·m	0 N·m	20.5 N·m	–	–	–	–
Allowable Inertia (GD ² /4)	R-axis	–	–	–	–	–	–	–
	B-axis	0.065 kg·m ²	0.065 kg·m ²	48 kg·m ²	–	–	–	–
	T-axis	0.012 kg·m ²	0.012 kg·m ²	25 kg·m ²	90 kg·m ²	160 kg·m ²	200 kg·m ²	550 kg·m ²
Approx. Mass	72 kg	72 kg	565 kg	1680 kg	1680 kg	2390 kg	2560 kg	
Power Requirements*3	2.0 kVA	2.0 kVA	4.5 kVA	9.5 kVA	9.5 kVA	8.0 kVA	8.0 kVA	
Mounting*4	F,C,W	F,C	F	F	F	F	F	
Compatible Controller	FS100	FS100	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	

*1: Repeatability conforms to ISO 9283.

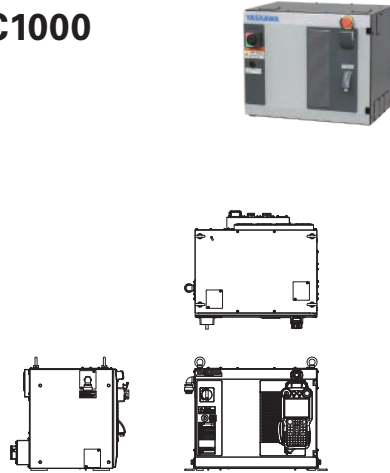
*2: The maximum speed in this table is the available maximum value and will vary depending on the load, posture, or range of motion.

*3: The power requirement value is obtained using Yaskawa's in-house measurement conditions and will vary depending on the load, motion pattern, or cycle time.

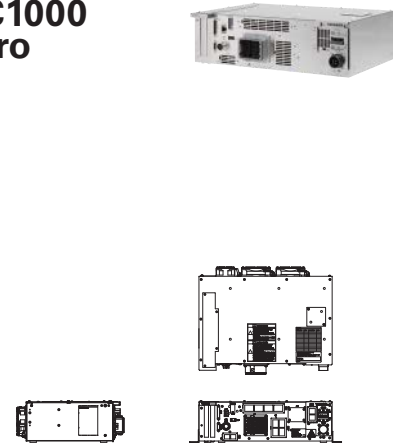
*4: F=Floor, C=Ceiling, W=Wall, S=Shelf, T=Tilt (When wall- or tilt-mounted, the S-axis motion range may be limited.)

*5: The range of motion of the B-axis is an angle in the downward vertical direction. In some postures, however, the motion of the B-axis may be restricted depending on the angle with respect to the upper arm.

YRC1000



YRC1000 micro



Controller Specifications*1

IEC Protection Class	IP54	IP20*2	
Dimensions (W×D×H)	598×427×490 mm	425×280×125 mm	
Approx. Mass	85 kg max.	10.5 kg	
Power Supply	Japan: three-phase 200 VAC to 240 VAC (+10% to -15%), 50/60 Hz (±2%) Asia and Europe: three-phase 380 VAC to 440 VAC (+10% to -15%), 50/60 Hz (±2%) (neutral grounding) North America: three-phase 380 VAC to 480 VAC (+10% to -15%), 50/60 Hz (±2%) (neutral grounding)	Single-phase 200/230 VAC (+10% to -15%), 50/60 Hz (±2%) Three-phase 200/220 VAC (+10% to -15%), 50/60 Hz (±2%)	
Digital I/Os	Specialized signals: 19 inputs and 6 outputs General signals: 40 inputs and 40 outputs (32 transistor outputs, 8 relay outputs)	Specialized signals: 7 inputs and 1 output General signals: 8 inputs and 8 outputs (8 transistor outputs)	
Expansion Slots	PCI express: 2 slots	PCI express: 2 slots	
Inter- face	Ethernet (Connection to Host)	2 ch (10BASE-T/100BASE-TX)	1 ch (10BASE-T/100BASE-TX)
	RS-232C	1 port	-
Safety Performance	Emergency Stop Function	PL e, Cat.3, SIL3	PL e, Cat.3, SIL3
	Robot Range Limit Function, Position/Speed Monitoring Function	PL d, Cat.3, SIL2	PL d, Cat.3, SIL2
Number of Controlled Manipulators/Axes (max.)	8 manipulators / 72 axes	1 manipulator / 8 axes	

*1: These specifications and dimensions are for standard specifications and they are subject to change due to the optional installation. Contact your Yaskawa representative for details.

*2: The YRC1000micro and FS100 have an open structure (IP20) and must be used in a clean environment (free from electrically-conductive dirt and dust) that meets the standard of pollution degree 2 specified in IEC 60664-1.

For YRC1000/YRC1000micro

Programming pendant



For YRC1000/YRC1000micro

Smart Pendant



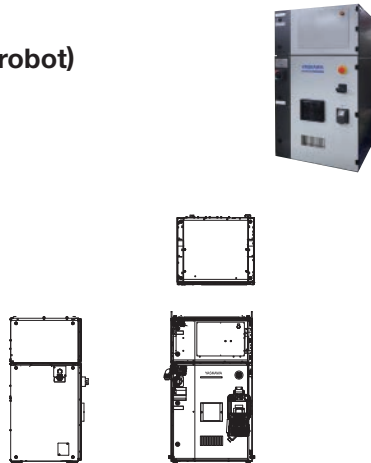
Target models

- Collaborative robots MOTOMAN-HC series
- MOTOMAN Smart series

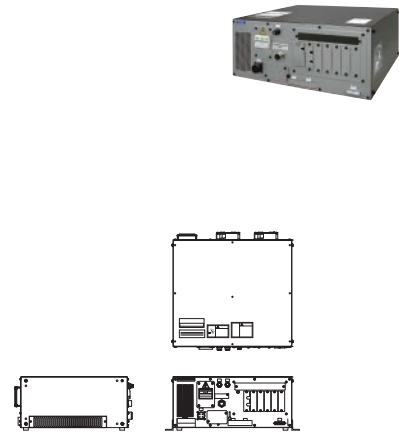
Programming Pendant Specifications

Dimensions (W×D×H)	152×49.5×300 mm	215×69×284 mm	
Approx. Mass	730 g	1120 g	
IEC Protection Class	IP54	IP54	
Display	5.7-inch TFT color LCD, VGA 640×480 pixels, touch panel	10.1-inch TFT color LCD, WXGA 1280×800 pixels, LED backlight, touch panel	
External Interface	SD slot (1 slot), USB port (USB2.0, 1 port)	USB port (USB2.0, 1 port)	

DX200 (For painting robot)



FS100



IP54	IP20*2
600×520×1060 mm	470×420×200 mm
150 kg	20 kg
Three-phase 200 VAC (+10% to -15%), 50/60 Hz (±2%) Three-phase 220 VAC (+10% to -15%), 60 Hz (±2%)	Single-phase 200/230 VAC (+10% to -15%), 50/60 Hz (±2%) Three-phase 200/220 VAC (+10% to -15%), 50/60 Hz (±2%)
Specialized signals: 28 inputs and 7 outputs General signals: 40 inputs and 40 outputs (32 transistor outputs, 8 relay outputs)	Specialized signals: 10 inputs and 1 output General signals: 28 inputs and 28 outputs (8 transistor outputs)
PCI: 2 slots	MP2000 bus: 5 slots
1 ch (10BASE-T/100BASE-TX)	1 ch (10BASE-T/100BASE-TX)
1 port	1 port
PL d, Cat.3, SIL2	PL d, Cat.3
PL d, Cat.3, SIL2	-
8 manipulators / 72 axes	2 manipulators / 16 axes

For DX200/FS100

Programming pendant



For DX200

Intrinsically safe programming pendant

Target models

· Painting robots



169×50×314.5 mm	235×78×203 mm
990 g	1300 g
IP65	IP54
5.7-inch color LCD, 640×480 pixels, touch panel	5.7-inch monochrome LCD, 320×240 pixels, touch panel
CF slot (1 slot), USB port (USB1.1, 1 port)	-

Introduction to robot controller functions

Communications

Fieldbus communications Optional

Options for major types of fieldbus communications are available.

- DeviceNet
- CC-Link
- EtherNet/IP
- EtherCAT
- PROFIBUS
- PROFINET

Safe fieldbus communications Optional

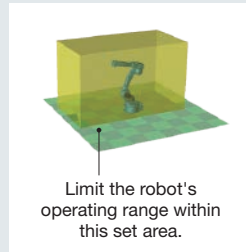
Options for major types of safe fieldbus communications are available.

- DeviceNet Safety
- EtherNet/IP Safety
- PROFIsafe

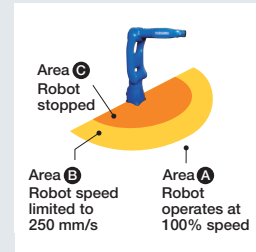
Safety

Functional safety

• **Robot range limit function**
 This function monitors the positions of robots and end effectors while limiting robot movements within a set area. The fact that a safety fence can be installed in an area narrower than the robot's operating range means that production equipment can be downsized.



• **Speed limit function**
 Used in combination with a presence detection sensor, this function features multiple speeds that can be used to limit robot speed, depending on surrounding conditions. This ensures safety and improves work efficiency.



Maintenance

Preventive maintenance function for the speed reducer Standard

This function detects speed reducer deterioration based on torque waveforms from the speed reducer and provides notifications regarding that deterioration. It can also estimate replacement times for the speed reducer by measuring the torque applied to each axis of the robot.

Logging function Standard

This function records and displays the operation history of the programming pendant, such as when it is used to edit programs or execute jobs. This ensures data traceability and facilitates troubleshooting when problems occur.

Pendant oscilloscope function Optional

This function monitors speed references, torque references, encoder temperatures, and concurrent I/O signals for each robot axis on the programming pendant. Requiring no special external devices, the pendant can be used by itself to confirm the transitions of signals and values.

Password protection function Optional

This function registers user accounts (usernames and passwords) and sets controller access rights for each user. This is useful for strengthening security when program editing and robot operation are performed by multiple users.

Enhanced operability

Interface panel function Optional

This function constructs a screen that serves as an operation panel and interlock panel on the pendant screen. Intuitive operation can be performed from the operation panel on the pendant without the need of system configuration using external devices.



Signal output timing control function Optional

This function enables the output timing of general signals for controlled peripheral devices to be precisely adjusted by specifying the time or distance.

Yaskawa also offers a lineup of functions and peripheral devices for each application. For details, see the catalogs for each series.

Extensive range of automation and labor-saving applications that utilize robots and sensors

Applications that utilize force sensors

Optional

6-axis force sensing control function - MotoFit

Precision assembly and deburring/polishing

Force is controlled by a 6-axis force sensor attached to the robot hand, enabling precision fitting during assembly processes, as well as deburring and polishing processes that require force adjustments.



MotoFit



Hand guiding function

Hand guiding function

Semi-automated transfer of heavy objects

This function allows the labor-intensive task of transferring heavy objects to be performed together with the robot. With workers providing detailed guidance, the robot automatically transfers heavy objects, which eliminates the physical strain on workers associated with manual labor.



Applications that utilize vision sensors

Optional

3D vision package - MotoSight3D

Bin picking

A 3D vision sensor is utilized to automate the bin picking of workpieces. The sensor can identify parts with complex shapes or metallic parts which oil is adhered to. The dedicated software facilitates setup.



MotoSight AI Picking

AI picking package - MotoSight AI Picking

Bin picking of various workpieces

This picking package is capable of handling various workpieces within the same process, including soft objects such as cables, as well as those with regular or irregular shapes or those made of metal/nonmetal materials. With only a small amount of data, AI can be used to help the robot learn about workpieces, allowing bin picking to be performed in a single day, which makes it ideal for high-mix, low-volume production sites.



2D vision package - MotoSight2D

Workpiece picking, position correction

A vision sensor detects the position of the workpiece, which is then picked or has its position corrected. This simple system, built with only a robot and vision sensor, can be used as an alternative to complex mechanisms for positioning.



Picking and packing software - MotoPick

Synchronized picking and packing with conveyors

MotoPick facilitates the construction of systems where picking and packing are performed in synchronization with conveyor movement. Things such as workpiece alignment patterns and robot operation patterns can be easily configured and managed using the configuration PC software.

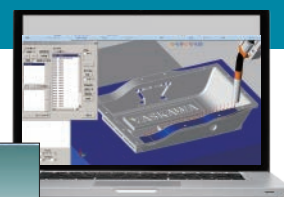


Simulation software

Optional

MotoSim EG-VRC

MotoSim EG-VRC is a simulation software for use in the construction and operation of robot systems. It provides a smarter engineering environment with a rich range of functions, such as layout planning, programming, and various simulations.



MOTOMAN Series Product Catalog

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In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply. Specifications are subject to change without notice for ongoing product modifications and improvements.

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