

Spot Welding Application

- YASKAWA

VASKAWA

MOTOMAN-SP Series

ASKAN

Compatible with YRC1000 Robot Controller

Robot System Solutions MOTOMAN-SP Series

Find smart solutions for your production site with YASKAWA's cutting-edge robot systems.



YASKAWA has the answer

We can meet our customers' diverse needs with a wide range of functions and components.



An extensive lineup to smartly solve problems at production sites

MOTOMAN-SP Series

Yaskawa has an extensive lineup of models in the MOTOMAN-SP series to support the diverse needs of customers.

Product Lineup



*: When a standard flange for cabling by Yaskawa is equipped to the tip of the wrist (excluding hollow-arm models)



Floor-mounted models MOTOMAN-SP80, -SP100, -SP130, -SP165, -SP165-105, -SP210, -SP235

Shelf-mounted models **MOTOMAN-SP150R, -SP185R**

6 axes Hollow-arm



Floor-mounted models

MOTOMAN-SP110H, -SP180H, -SP180H-110, -SP225H, -SP225H-135

A hollow-arm structure that can internally store cables for spot welding eliminates peripheral interference with cables and simplifies off-line simulation and teaching.





E-axis added at the midpoint of the L arm

ston

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Floor-mounted model **MOTOMAN-SP100B**

In addition to the traditional six axes, an E-axis is added between the L-axis and U-axis, which can change the length of the L arm and expand the welding motion range.

Make equipment compact

SP100B robot with 7 axes

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Offers additional value with its expanded effective motion range!

Within the extensive lineup of SP series, SP100B has a seventh E-axis at the midpoint of the L arm which expands the effective motion range and makes it suitable for actual applications.

Reduced system installation width

· Expanded effective motion range enables the construction of system layouts with shorter widths.

High-density installation layout

· Reduces the length of production lines, cycle times, and energy consumption.

Higher flexibility in line layouts

· Reduces the number of man-hours required to design line layouts and better meets the requirements of high-mix production.



Improve equipment installation, operation, and maintenance

Easy maintenance

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- \cdot Zero position data can be saved without the need to connect to a battery when replacing wire harness.
- · Number of cables and connectors have been reduced for better work efficiency.

Reduced wiring time

· Power cable is reduced to one cable, which reduces wiring time.



Significantly improves equipment installation, operation, and maintenance



Reduces the number of man-hours



SP80



Dimensions Units: mm

Note: Refer to individual dimension diagrams for detailed dimensions and specifications of the following models.



Model		MOTOMAN-SP80		
Flange for cabling		Not-equipped	Equipped	
Туре		YR-1-06VX88-A00		
Controlled Axis		6 (vertically articulated)		
Payload	Wrist	88 kg	80 kg	
	U -arm	10 kg		
Maximum Reach		2236 mm		
Repeatability*1		0.03 mm		
Range of Motion	S -axis (turning)	- 180° - +180°		
-	L -axis (lower arm)	- 90° - +155°		
	U -axis (upper arm)	- 80°-+ 90°		
	R -axis (wrist roll)	- 360° - +360°	-205° -+205°	
	B -axis (wrist pitch/yaw)	- 125° - +125°	- 120° - +120°	
	T -axis (wrist twist)	-360° -+360°	- 180° - +180°	
Maximum Speed*2	S -axis (turning)	2.97 rad/s, 170°/s		
	L -axis (lower arm)	2.44 rad/s, 140°/s		
	U -axis (upper arm)	2.79 rad/s, 160°/s		
	R -axis (wrist roll)	4.01 rad/s, 230°/s		
	B -axis (wrist pitch/yaw)	4.01 rad/s, 230°/s		
	T -axis (wrist twist)	6.11 rad/s, 350°/s		
Allowable Moment	R -axis (wrist roll)	408 N·m	389 N·m	
	B -axis (wrist pitch/yaw)	408 N·m	389 N·m	
	T -axis (wrist twist)	206 N·m		
Allowable Inertia (GD ² /4)	R -axis (wrist roll)	30 kg⋅m ²	28 kg ⋅ m²	
	B -axis (wrist pitch/yaw)	30 kg⋅m ²	28 kg ⋅ m²	
	T -axis (wrist twist)	11 kg⋅m ²	10.3 kg · m²	
Approx. Mass		630 kg		
IEC Protection Class		Body: IP54, Wrist: IP67		
Ambient Conditions	Temperature	0 °C to +45 °C		
	Humidity	20% to 80%RH (non-condensing)		
	Vibration	4.9 m/s ² (0.5 G) or less		
	Altitude	1000 m or less		
Power Requirements*3		4.0 kVA		
Mounting*4		Floor, ceiling, wall, tilt		

*****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 pottern or evide time.

pattern, or cycle time. *4: When wall- or tilt-mounted, the S-axis motion range is limited.



*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.

SP130



Note: Refer to individual dimension diagrams for detailed dimensions and specifications of the following models.



Model		MOTOMAN-SP130		
Flange for cabling		Not-equipped	Equipped	
Туре		YR-1-06VX140-A00		
Controlled Axis		6 (vertically articulated)		
Payload	Wrist	140 kg	130 kg	
-	U -arm	10 kg		
Maximum Reach		2236 mm		
Repeatability*1		0.03 mm		
Range of Motion	S -axis (turning)	- 180° - +180°		
	L -axis (lower arm)	- 90° - +155°		
	U -axis (upper arm)	- 80°-+ 90°		
	R -axis (wrist roll)	- 360° - +360°	- 205° - +205°	
	B -axis (wrist pitch/yaw)	- 125° - +125°	- 120° - +120°	
	T -axis (wrist twist)	- 360° - +360°	-205°-+205°	
Maximum Speed*2	S -axis (turning)	2.45 rad/s, 140°/s		
	L -axis (lower arm)	1.92 rad/s, 110°/s		
	U -axis (upper arm)	2.27 rad/s, 130°/s		
	R -axis (wrist roll)	3.05 rad/s, 175°/s		
	B -axis (wrist pitch/yaw)	3.05 rad/s, 175°/s		
	T -axis (wrist twist)	4.44 rad/s, 255°/s		
Allowable Moment	R -axis (wrist roll)	845 N·m	820 N·m	
	B -axis (wrist pitch/yaw)	845 N·m	820 N·m	
	T -axis (wrist twist)	360 N·m		
Allowable Inertia (GD ² /4)	R -axis (wrist roll)	73 kg⋅m²	71 kg⋅m²	
	B -axis (wrist pitch/yaw)	73 kg⋅m²	71 kg⋅m²	
	T -axis (wrist twist)	38.7 kg⋅m²	38 kg · m²	
Approx. Mass		660 kg		
IEC Protection Class		Body: IP54, Wrist: IP67		
Ambient Conditions	Temperature	0 °C to +45 °C		
	Humidity	20% to 80%RH (non-condensing)		
	Vibration	4.9 m/s ² (0.5 G) or less		
	Altitude	1000 m or less		
Power Requirements*3		5.0 kVA		
Mounting		Floor		

*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.



T -axis (wrist twist) 46.3 kg · m² 40 kg·m² Approx. Mass 1020 kg 1090 kg IEC Protection Class Body: IP54, Wrist: IP67 Temperature 0 °C to +45 °C Ambient Conditions Humidity 20% to 80%RH (non-condensing) 4.9 m/s² (0.5 G) or less Vibration Altitude 1000 m or less Power Requirements*3 5.0 kVA Mounting Floor

*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.



Dimensions Units: mm : P-point Maximum Envelope

Note: Refer to individual dimension diagrams for detailed dimensions and specifications of the following models.



Model		MOTOMAN-SP210		MOTOMAN-SP235		
Flange for cabling		Not-equipped	Equipped	Not-equipped	Equipped	
Туре		YR-1-06VX225-A00		YR-1-06VX250-A20	YR-1-06VX250-A20	
Controlled Axis		6 (vertically articulated)		6 (vertically articulated)	6 (vertically articulated)	
Payload	Wrist	225 kg	210 kg	250 kg	235 kg	
	U -arm	30 kg		50 kg		
Maximum Reach		2702 mm		2710 mm		
Repeatability*1		0.05 mm		0.05 mm		
Range of Motion	S -axis (turning)	- 180° - +180°		- 180° - +180°		
	L -axis (lower arm)	- 60°-+ 76°		- 60°-+ 76°	- 60°-+ 76°	
	U -axis (upper arm)	- 86°-+ 90°		-77.8°-+197°		
	R -axis (wrist roll)	- 360° - +360°	-210°-+210°	- 360° - +360°	- 205° - +205°	
	B -axis (wrist pitch/yaw)	- 125° - +125°		- 125° - +125°	- 120° - +120°	
	T -axis (wrist twist)	- 360° - +360°	-210°-+210°	- 360° - +360°	- 180° - +180°	
Maximum Speed*2	S -axis (turning)	2.09 rad/s, 120°/s		1.75 rad/s, 100°/s		
·	L -axis (lower arm)	1.69 rad/s, 97°/s		1.57 rad/s, 90°/s		
	U -axis (upper arm)	2.01 rad/s, 115°/s		1.69 rad/s, 97°/s		
	R -axis (wrist roll)	2.53 rad/s, 145°/s		2.09 rad/s, 120°/s		
	B -axis (wrist pitch/yaw)	2.53 rad/s, 145°/s		2.09 rad/s, 120°/s		
	T -axis (wrist twist)	3.84 rad/s, 220°/s		3.32 rad/s, 190°/s		
Allowable Moment	R -axis (wrist roll)	1372 N·m	1323 N·m	1385 N·m	1333 N·m	
	B -axis (wrist pitch/yaw)	1372 N·m	1323 N·m	1385 N·m	1333 N·m	
	T -axis (wrist twist)	735 N·m		735 N·m		
Allowable Inertia (GD ² /4)	R -axis (wrist roll)	145 kg · m²	143 kg · m²	317 kg ⋅ m²	315 kg · m²	
	B -axis (wrist pitch/yaw)	145 kg · m²	143 kg · m²	317 kg ⋅ m²	315 kg · m²	
	T -axis (wrist twist)	84 kg·m²		200 kg·m ²		
Approx. Mass		1080 kg		1345 kg		
IEC Protection Class		Body: IP54, Wrist: IP67				
Ambient Conditions	Temperature	0 °C to +45 °C				
	Humidity	20% to 80%RH (non-condensing)				
	Vibration	4.9 m/s² (0.5 G) or less				
	Altitude	1000 m or less				
Power Requirements*3		5.0 kVA				
Mounting		Floor				

*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.





Model		MOTOMAN-SP110H
Flange for cabling		Not-equipped
Туре		YR-1-06VXH110-A00
Controlled Axis		6 (vertically articulated)
Pavload	Wrist	110 kg
2	U -arm	30 kg
Maximum Reach		2044 mm
Repeatability*1		0.05 mm
Range of Motion	S -axis (turning)	- 180° - +180°
0	L -axis (lower arm)	- 90° - +155°
	U -axis (upper arm)	- 86°-+ 90°
	R -axis (wrist roll)	-210° -+210°
	B -axis (wrist pitch/yaw)	- 130° -+130°
	T -axis (wrist twist)	- 360° - +360° (- 210° - +210°)*4
Maximum Speed*2	S -axis (turning)	2.44 rad/s, 140°/s
·	L -axis (lower arm)	2.00 rad/s, 115°/s
	U -axis (upper arm)	2.80 rad/s, 161°/s
	R -axis (wrist roll)	3.92 rad/s, 225°/s
	B -axis (wrist pitch/yaw)	3.49 rad/s, 200°/s
	T -axis (wrist twist)	5.49 rad/s, 315°/s
Allowable Moment	R -axis (wrist roll)	721 N·m
	B -axis (wrist pitch/yaw)	721 N·m
	T -axis (wrist twist)	315 N·m
Allowable Inertia (GD ² /4)	R -axis (wrist roll)	85 kg·m²
	B -axis (wrist pitch/yaw)	85 kg·m²
	T -axis (wrist twist)	45 kg·m²
Approx. Mass		730 kg
IEC Protection Class		Body: IP54, Wrist: IP65
Ambient Conditions	Temperature	0 °C to +45 °C
	Humidity	20% to 80%RH (non-condensing)
	Vibration	4.9 m/s² (0.5 G) or less
	Altitude	1000 m or less
Power Requirements*3		5.0 kVA
Mounting		Floor

*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: The value in parenthesis is the motion range when standard external cablings by Yaskawa is mounted to the manipulator.



Dimensions Units: mm : P-point Maximum Envelope

Note: Refer to individual dimension diagrams for detailed dimensions and specifications of the following models.











650

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2702

Model		MOTOMAN-SP180H	MOTOMAN-SP180H-110	
Flange for cabling		Not-equipped	Not-equipped	
Туре		YR-1-06VXH180-A00	YR-1-06VXH180-A10	
Controlled Axis		6 (vertically articulated)	6 (vertically articulated)	
Pavload	Wrist	180 kg	110 kg	
	U -arm	30 kg	30 kg	
Maximum Reach		2702 mm	2702 mm	
Repeatability*1		0.05 mm	0.05 mm	
Bange of Motion	S -axis (turning)	- 180° - +180°	- 180° - +180°	
	L -axis (lower arm)	- 60°-+ 76°	- 60°-+ 76°	
	U -axis (upper arm)	- 86°-+ 90°	- 86°-+ 90°	
	R -axis (wrist roll)	-210°-+210°	-210°-+210°	
	B -axis (wrist pitch/yaw)	- 130° - +130°	-130°-+130°	
	T -axis (wrist twist)	- 360° - +360° (-210° - +210°)*4	-360°-+360° (-210°-+210°)*4	
Maximum Speed*2	S -axis (turning)	2.09 rad/s, 120°/s	2.44 rad/s, 140°/s	
	L -axis (lower arm)	1.69 rad/s, 97°/s	1.69 rad/s, 97°/s	
	U -axis (upper arm)	2.01 rad/s, 115°/s	2.01 rad/s, 115°/s	
	R -axis (wrist roll)	2.62 rad/s, 150°/s	3.67 rad/s, 210°/s	
	B -axis (wrist pitch/yaw)	2.62 rad/s, 150°/s	3.49 rad/s, 200°/s	
	T -axis (wrist twist)	4.01 rad/s, 230°/s	5.41 rad/s, 310°/s	
Allowable Moment	R -axis (wrist roll)	1000 N·m	883 N·m	
	B -axis (wrist pitch/yaw)	1000 N·m	883 N·m	
	T -axis (wrist twist)	618 N·m	520 N·m	
Allowable Inertia (GD ² /4)	R -axis (wrist roll)	104 kg ⋅ m²	85 kg⋅m²	
	B -axis (wrist pitch/yaw)	104 kg·m ²	85 kg⋅m²	
	T -axis (wrist twist)	52 kg·m ²	40 kg·m ²	
Approx. Mass		1090 kg	1090 kg	
IEC Protection Class		Body: IP54, Wrist: IP65		
Ambient Conditions	Temperature	0 °C to +45 °C		
	Humidity	20% to 80%RH (non-condensing)		
	Vibration	4.9 m/s ² (0.5 G) or less		
	Altitude	1000 m or less		
Power Requirements*3		5.0 kVA		
Mounting		Floor		

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*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: The value in parenthesis is the motion range when standard external cablings by Yaskawa is mounted to the manipulator.







Hollow-arm model

SP225H



10^{+0.015}₀ dia. (2 holes)(depth 8) 10^{+0.015}dia. (2 holes)(depth 8) View A









M10 tapped holes (6 holes)(pitch 1.5) (depth 17) (depth 17) (depth 17) <?> 8 <u>160 d</u> 0023 dia.

200 75 10^{+0.015}₀dia. 10^{+0.015}₀dia. (2 holes)(depth 8) (2 holes)(depth 8)

View A





Model		MOTOMAN-SP225H	MOTOMAN-SP225H-135	
Flange for cabling		Not-equipped	Not-equipped	
Туре		YR-1-06VXH225-A00	YR-1-06VXH225-A10	
Controlled Axis		6 (vertically articulated)	6 (vertically articulated)	
Pavload	Wrist	225 kg	135 kg	
	U -arm	30 kg	30 kg	
Maximum Reach	÷	2702 mm	2951 mm	
Repeatability*1		0.05 mm	0.05 mm	
Range of Motion	S -axis (turning)	- 180° - +180°	- 180° - +180°	
	L -axis (lower arm)	- 60° -+ 76°	- 60°-+ 76°	
	U -axis (upper arm)	- 86° -+ 90°	- 86°-+ 90°	
	R -axis (wrist roll)	-210° -+210°	-210° -+210°	
	B -axis (wrist pitch/yaw)	- 130° - +130°	- 130° - +130°	
	T -axis (wrist twist)	- 360° - +360° (- 210° - +210°)*4	- 360° - +360° (- 210° - +210°)*4	
Maximum Speed*2	S -axis (turning)	2.09 rad/s, 120°/s	2.18 rad/s, 125°/s	
	L -axis (lower arm)	1.69 rad/s, 97°/s	2.01 rad/s, 115°/s	
	U -axis (upper arm)	2.01 rad/s, 115°/s	2.01 rad/s, 115°/s	
	R -axis (wrist roll)	2.62 rad/s, 150°/s	3.18 rad/s, 182°/s	
	B -axis (wrist pitch/yaw)	2.62 rad/s, 150°/s	3.05 rad/s, 175°/s	
	T -axis (wrist twist)	4.01 rad/s, 230°/s	4.63 rad/s, 265°/s	
Allowable Moment	R -axis (wrist roll)	1372 N·m	883 N·m	
	B -axis (wrist pitch/yaw)	1372 N·m	883 N·m	
	T -axis (wrist twist)	735 N·m	520 N·m	
Allowable Inertia (GD ² /4)	R -axis (wrist roll)	209.8 kg·m ²	85 kg⋅m²	
	B -axis (wrist pitch/yaw)	209.8 kg·m ²	85 kg⋅m²	
	T -axis (wrist twist)	162.1 kg·m ²	40 kg·m ²	
Approx. Mass		1090 kg	1110 kg	
IEC Protection Class		Body: IP54, Wrist: IP65		
Ambient Conditions	Temperature	0 ℃ to +45 ℃		
	Humidity	20% to 80%RH (non-condensing)		
	Vibration	4.9 m/s² (0.5 G) or less		
	Altitude	1000 m or less		
Power Requirements*3		5.0 kVA		
Mounting		Floor		
*1: Repeatability conforms to	150 9283	*3: The power requirem	nent value is obtained using Yaskawa's in-house	

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

measurement conditions and will vary depending on the load, motion pattern, or cycle time.

*4: The value in parenthesis is the motion range when standard external cablings by Yaskawa is mounted to the manipulator.



*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.

YRC1000 Robot Controller



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Make equipment compact

Smallest size in the world reduces installation space

This 125 L compact size controller does not require a transformer and has built-in external axis amplifiers for three axes*.



Realized this size by building in three external axes* and eliminating the need for a transformer.

Standardization of equipment

Global standardization (Universal size)

 \cdot Common size for use in Japan and overseas.

■ YRC1000 Robot Controller Specifications

• Overseas models do not require a transformer to adapt to the required power supply voltage.



YRC1000 Robot Controller



Improve work efficiency

New motion control (high precision and high speed)

- Cycle time improved by max. 10% (compared with the former model) due to optimized acceleration/deceleration control (depends on conditions).
- Significantly reduces error in path accuracy caused by differences in motion speed (improved by 80% compared with the former model).

Lighter programming pendant with better operability

- Weighs only 730 g, the lightest programming pendant in its class, with improved cable installation.
- · Can confirm robot positions and postures on the 3D robot model display.
- Touch screen allows intuitive operation to easily move the cursor and scroll.

Saves energy with the power regeneration function

Energy generated during motor deceleration (regenerative power) is returned to the power supply. This reduces electric power consumption by a maximum of 30% compared with the former model (depends on applications and motion patterns).

Items	Specifications
Configuration	Dust proof structure IP54 (area of backside duct fan: IP2X)
Dimensions	598 (W)×427 (D)×490 (H) mm, 125 L
Approx. Mass	85 kg max. (External axis amplifiers for up to three axes can be built in.)*
Cooling System	Indirect cooling
Ambient Temperature	During operation: 0° C to +45°C, During storage: -10°C to +60°C
Relative Humidity	90% max. (non-condensing)
Altitude	2000 m (with temperature derating)
	Derating condition of over 1000 m: max. ambient temperature decreases 1% per 100 m.
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)
Grounding	Grounding resistance: 100 Ω or less for 200-V class, 10 Ω or less for 400-V class
Digital I/Os	Specialized signals: 19 inputs and 6 outputs
	General signals: 40 inputs and 40 outputs (32 transistor outputs, 8 relay outputs)
Positioning System	Serial communications (absolute encoder)
Programming Capacity	JOB: 200,000 steps, 10,000 instructions
	CIO ladder: 20,000 steps max.
Expansion Slots	PCI express: 2 slots
LAN (Connection to Host)	2 (10BASE-T/100BASE-TX)
Interface	RS-232C: 1ch
Drive Units	SERVOPACK for AC servomotors

Programming Pendant Specifications

Items	Specifications
Dimensions	152 (W)×49.5 (D)×300 (H) mm
Approx. Mass	0.730 kg
Material	Reinforced plastics
Operation Device	Select keys, axis keys, numerical/application keys, mode selector switch with keys (mode: teach, play,
	and remote), emergency stop button, enable switch, compact flash card interface device (compact flash is
	optional.), USB port (USB 2.0, 1 port)
Display	5.7-inch TFT color LCD, touch panel VGA 640×480 pixels (alphanumeric characters, Chinese characters,
	Japanese letters, and others)
IEC Protection Class	IP54
Cable Length	Standard: 8 m, max.: 36 m (with optional extension cable)

*: External axis amplifiers for two axes can be built in for SP100B.

Note: The controller features and specifications on this page are for the manipulators described in this catalog.

YRC1000's Optimized Functions for Spot Welding



Spot monitoring and graphing function (optional)

Welding quality can be visualized because robot data and welding results from the welding timer can be displayed on the programming pendant in a wave form.



When to use

NEW

- · Checking welding conditions when setting up a production line
- \cdot Checking welding status when a defect is detected
- \cdot Checking wave forms when correcting welding conditions

Display items

- Robot data · Gun pressure instruction
- Gun axis movement amount
- Welding timer
- · Welding resistance
- IO signal
- Signal for welding starting conditions
 Signal for welding completion
- · Signal for welding completion

· A welding timer from NADEX CO., LTD. must be used to confirm this function. Contact your Yaskawa representative for details on welding timers.

Spot welding conditions guiding function (optional)



The YRC1000 allows the automatic calculation of recommended welding conditions just by entering the plate condition. This allows conditions for the pressure file and welding timer to be easily set. Calculation results can be saved to the robot and timer with a click of a button.



Workpiece thickness detecting function

The workpiece thickness of each point is monitored when spot welding is performed. An alarm will sound if the YRC1000 detects a faulty setting for a workpiece. Faulty settings, such as a missing workpiece or duplicate placement of workpieces, can be detected without using a sensor.



Multi-step pressure function (optional)

Welding conditions for low-spatter welding or welding of multiple layers can be easily set by combining the welding pressure



Work search function

Teaching can be performed without the need to manually check the position of the fixed-side tip and movable-side tip when using this function. Teaching time can be shortened because the fixed-side tip and the movable-side tip can start operating automatically from a position away from the workpiece and the position of the workpiece can be detected.





④ Workpiece detection

Tip dressing function

Customized instructions and designated files are available for tip dressing. Teaching time has been shortened using a one-point teaching method and the simultaneous contact of the upper and lower tip stabilizes the sharpening depth of both tips.



Integrated timer function (optional)

Welding conditions (welding current and welding time) that are usually managed in the programming pendant of the timer can be edited using the robot's programming pendant. The programming pendant of the robot can also show the welding results. A dedicated board is not required since the DeviceNet communications base supports this function.



 This function may not work depending on the timer type. Contact your Yaskawa representative to check if your timer confirms this function.

External Cables for Spot Welding



Offers simple modularized cablings (excluding some models*)

Yaskawa offers simple modularized cables and mounting devices that are easy to maintain to construct more functional and advanced cabling methods.



^{*}Compatible models: MOTOMAN-SP100, SP100B, SP165, SP210

Contact your Yaskawa representative for information on other models.

Positioner, Positioning Robot, Traverse Track



MOTOMAN-SP Series

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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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