

ARC WELDING ROBOTS

BA/RA Series

Kawasaki Heavy Industries, Ltd.

Robot Business Division

Tokyo Head Office/Robot Division

1-14-5, Kaigan, Minato-ku, Tokyo 105-8315, Japan
Phone: +81-3-3435-2501 Fax: +81-3-3437-9880

Akashi Works/Robot Division

1-1, Kawasaki-cho, Akashi, Hyogo 673-8666, Japan
Phone: +81-78-921-2946 Fax: +81-78-923-6548

Nishi-Kobe Works/Robot Division

234, Matsumoto, Hasetani-cho, Nishi-ku, Kobe, Hyogo 651-2239, Japan
Phone: +81-78-915-8136 Fax: +81-78-915-8274

Kawasaki Robotics website
<https://kawasakirobotics.com/>



Kawasaki Robostage (showroom)
<https://kawasakirobotics.com/jp-sp/robostage/en/>



Global Network

Kawasaki Robotics (USA), Inc.

28140 Lakeview Drive, Wixom, MI 48393, U.S.A.
Phone: +1-248-446-4100 Fax: +1-248-446-4200

Kawasaki Robotics (UK) Ltd.

Unit 4 Easter Court, Europa Boulevard, Westbrook
Warrington Cheshire, WA5 7ZB, United Kingdom
Phone: +44-1925-71-3000 Fax: +44-1925-71-3001

Kawasaki Robotics GmbH

Im Taubental 32, 41468 Neuss, Germany
Phone: +49-2131-34260 Fax: +49-2131-3426-22

Kawasaki Robotics Korea, Ltd.

Room 1408, 135, Gasan digital 2-ro, Geumcheon-gu, Seoul,
Republic of Korea
Phone: +82-32-821-6941 Fax: +82-32-821-6947

Kawasaki Robotics (Tianjin) Co., Ltd.

1-2/F, Building 6, No.19 Xinhuan Road, TEDA, China
Phone: +86-22-5983-1888 Fax: +86-22-5983-1889

Taiwan Kawasaki Robot Center

3F, No.31, Ln.216, Gongyuan Rd., Hsinchu City
30069, Taiwan(R.O.C)
Phone: +886-3-562-0518

Kawasaki Robotics (Thailand) Co., Ltd.

(Rayong Robot Center)
119/9 Moo 4 T.Pluak Daeng, A.Pluak Daeng, Rayong 21140
Thailand
Phone: +66-38-955-040-58 Fax: +66-38-955-145

Singapore Kawasaki Robot Center

100G Pasir Panjang Road #06-10
Singapore 118523
Phone: +65-6513-3145

Kawasaki Robotics India Pvt. Ltd.

1/5, Village-Khandsa, Khasra No. 1364,599/2/2/1,
Hero Honda Chowk,Gurgaon-122001, Haryana
Phone: +91-124-608-5500



CAUTIONS TO BE TAKEN TO ENSURE SAFETY

- For any persons involved with the operation / servicing of your system, including Kawasaki Robot, they must strictly observe all safety regulations at all times. Please carefully read the Manuals and other related safety documents.
- Products described in this catalogue are general industrial robots. Therefore, if a customer wishes to use the Robot for special purposes, which might endanger operators, or if the Robot has any problems, please contact us. We will be happy to help you.
- Please be careful as Photographs illustrated in this catalogue are frequently taken after the removal of safety fences and other safety devices stipulated in the safety regulations from the Robot operation system.

Arc Welding Robots

Kawasaki arc welding robots offer simple and friendly operations. They can be installed with ease thanks to one-cable connection between the robot and the welding equipment. Many hardware and software options are available, which support high quality arc welding.

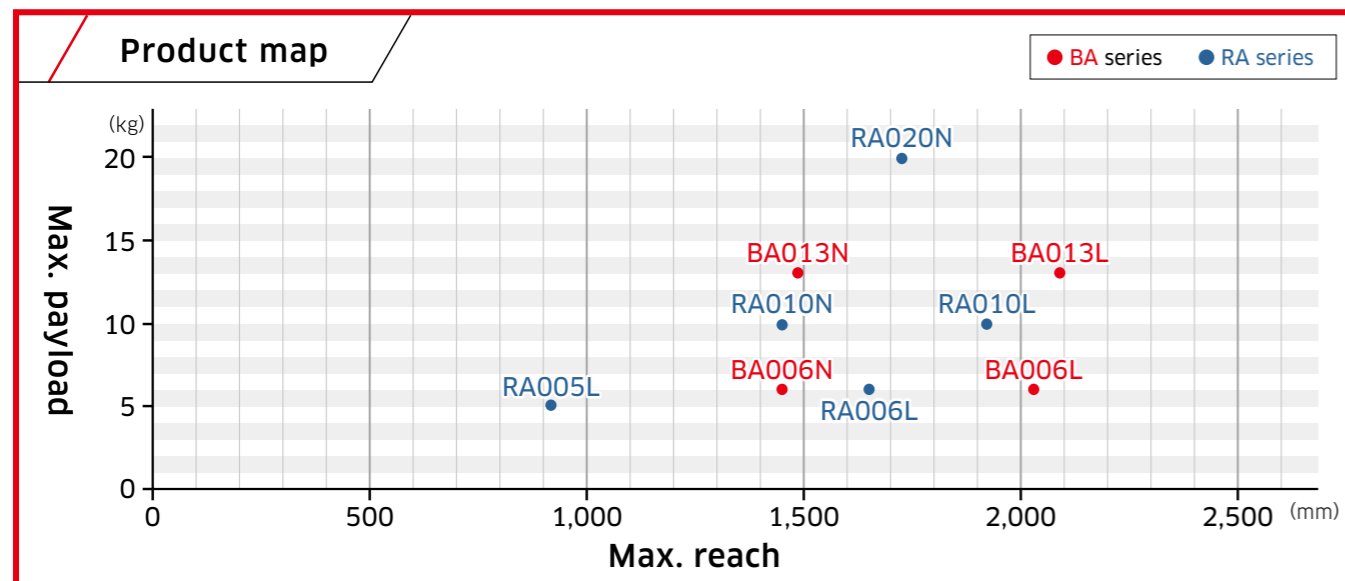
BA series

The hollow arm enables hoses and cables to be installed inside the arm. It prevents interference with peripheral equipment and shortens off-line teaching time.



RA series

The RA series covers a wide range of payload from 5 to 20 kg, thus allowing diverse arc welding workpieces.



BA series

[Applications] Arc welding

Features

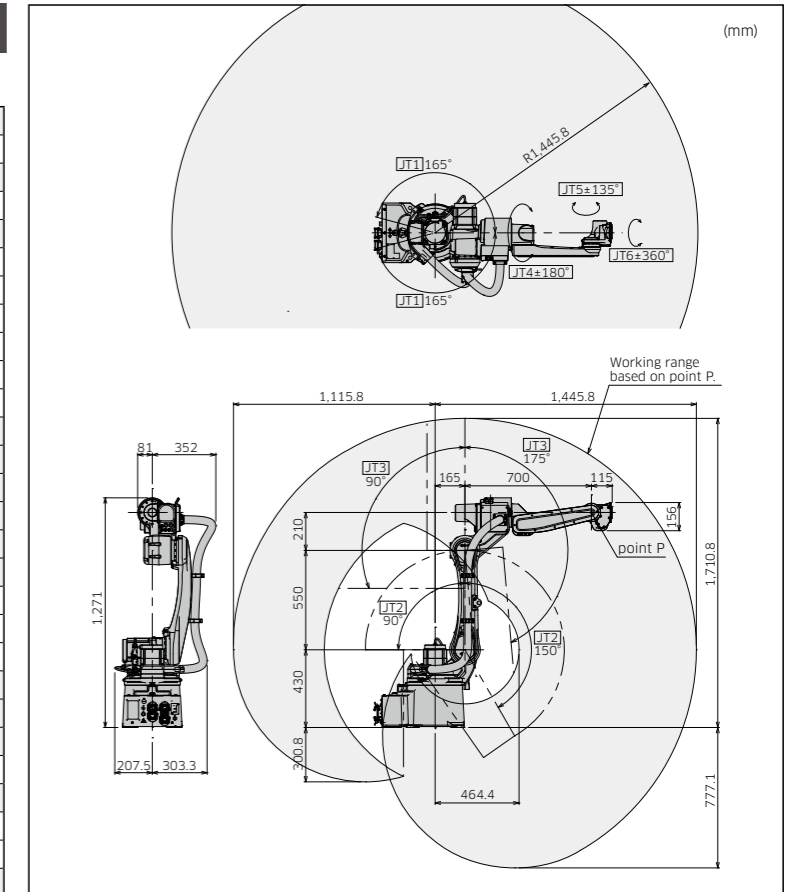
- Built-in cables
- Connection with a single cable between robot and welder.

BA006N

Standard Specifications

Type	Articulated robot	
Degree of freedom (axes)	6	
Payload (kg)	6	
Max. reach (mm)	1,445	
Position repeatability*1 (mm)	±0.06	
Motion range (°)	Arm rotation (JT1)	±165
	Arm out-in (JT2)	+150 - -90
	Arm up-down (JT3)	+90 - -175
	Wrist swivel (JT4)	±180
	Wrist bend (JT5)	±135
	Wrist twist (JT6)	±360
Max. speed (°/s)	Arm rotation (JT1)	240
	Arm out-in (JT2)	240
	Arm up-down (JT3)	220
	Wrist swivel (JT4)	430
	Wrist bend (JT5)	430
	Wrist twist (JT6)	650
Allowable moment (N·m)	Wrist swivel (JT4)	12
	Wrist bend (JT5)	12
	Wrist twist (JT6)	3.75
Allowable moment of inertia (kg·m ²)	Wrist swivel (JT4)	0.4
	Wrist bend (JT5)	0.4
	Wrist twist (JT6)	0.07
Mass (kg)	150	
Mounting	Floor, Ceiling	
Installation environment	Ambient temperature (°C)	0 - 45
	Relative humidity (%)	35 - 85 (No dew, nor frost allowed)
Controller/Power requirements	F60/2.0kVA, F01/5.6kVA	

*1: Conforms to ISO9283

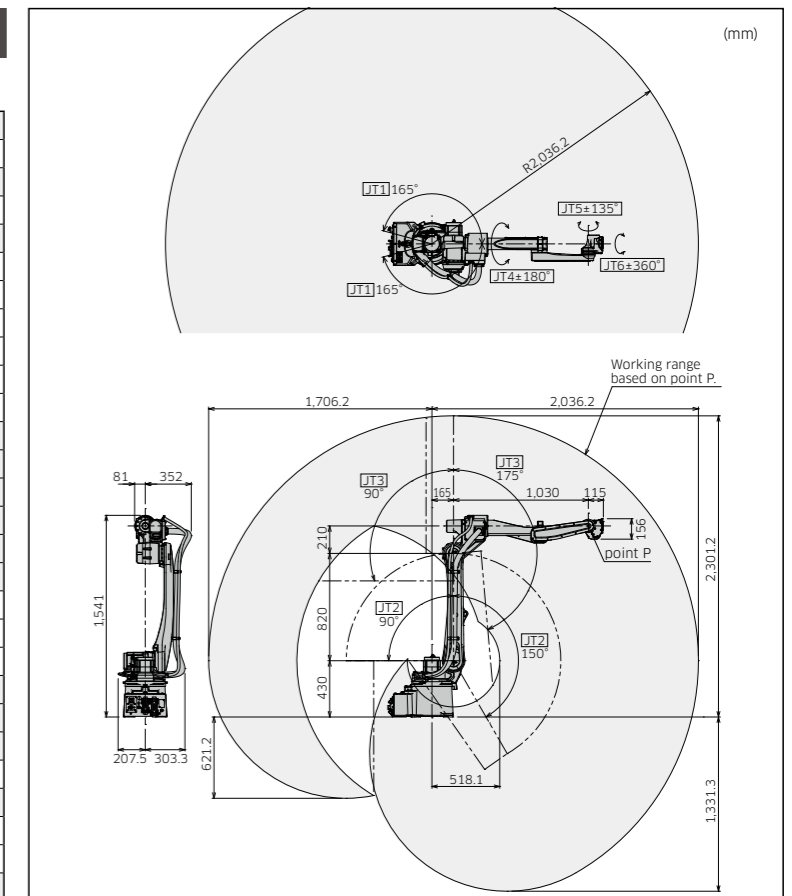


BA006L

Standard Specifications

Type	Articulated robot	
Degree of freedom (axes)	6	
Payload (kg)	6	
Max. reach (mm)	2,036	
Position repeatability*1 (mm)	±0.08	
Motion range (°)	Arm rotation (JT1)	±165
	Arm out-in (JT2)	+150 - -90
	Arm up-down (JT3)	+90 - -175
	Wrist swivel (JT4)	±180
	Wrist bend (JT5)	±135
	Wrist twist (JT6)	±360
Max. speed (°/s)	Arm rotation (JT1)	210
	Arm out-in (JT2)	210
	Arm up-down (JT3)	220
	Wrist swivel (JT4)	430
	Wrist bend (JT5)	430
	Wrist twist (JT6)	650
Allowable moment (N·m)	Wrist swivel (JT4)	12
	Wrist bend (JT5)	12
	Wrist twist (JT6)	3.75
Allowable moment of inertia (kg·m ²)	Wrist swivel (JT4)	0.4
	Wrist bend (JT5)	0.4
	Wrist twist (JT6)	0.07
Mass (kg)	160	
Mounting	Floor, Ceiling	
Installation environment	Ambient temperature (°C)	0 - 45
	Relative humidity (%)	35 - 85 (No dew, nor frost allowed)
Controller/Power requirements	F60/2.0kVA, F01/5.6kVA	

*1: Conforms to ISO9283



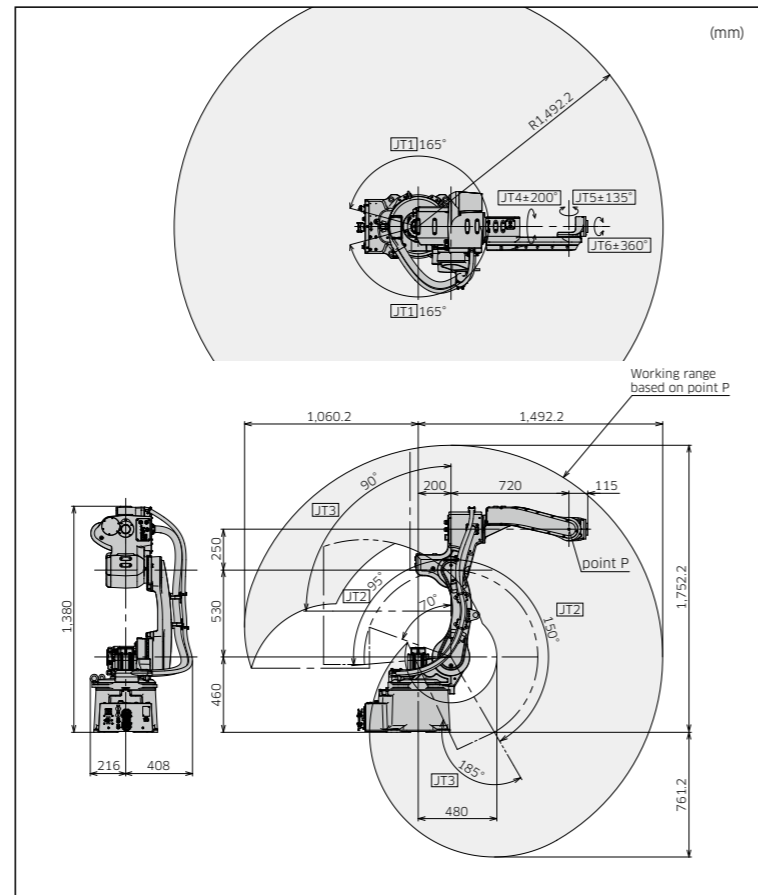
- Wide range of lineup to cover diverse size of parts.
- Connection with a single cable between the robot and the welder.

[Applications]  Arc welding

BA013N

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		13
Max. reach (mm)		1,492
Position repeatability*1 (mm)		±0.04
Motion range (°)	Arm rotation (JT1)	±165
	Arm out-in (JT2)	+150 - -95
	Arm up-down (JT3)	+90 - -185
	Wrist swivel (JT4)	±200
	Wrist bend (JT5)	±135
	Wrist twist (JT6)	±360
Max. speed (°/s)	Arm rotation (JT1)	265
	Arm out-in (JT2)	250
	Arm up-down (JT3)	265
	Wrist swivel (JT4)	470
	Wrist bend (JT5)	475
	Wrist twist (JT6)	730
Allowable moment (N·m)	Wrist swivel (JT4)	26
	Wrist bend (JT5)	26
	Wrist twist (JT6)	10
Allowable moment of inertia (kg·m ²)	Wrist swivel (JT4)	0.9
	Wrist bend (JT5)	0.9
	Wrist twist (JT6)	0.3
Mass (kg)		260
Mounting		Floor, Ceiling
Installation environment	Ambient temperature (°C)	0 - 45
	Relative humidity (%)	25 - 85 (No dew, nor frost allowed)
Controller/Power requirements		F01/5.6kVA

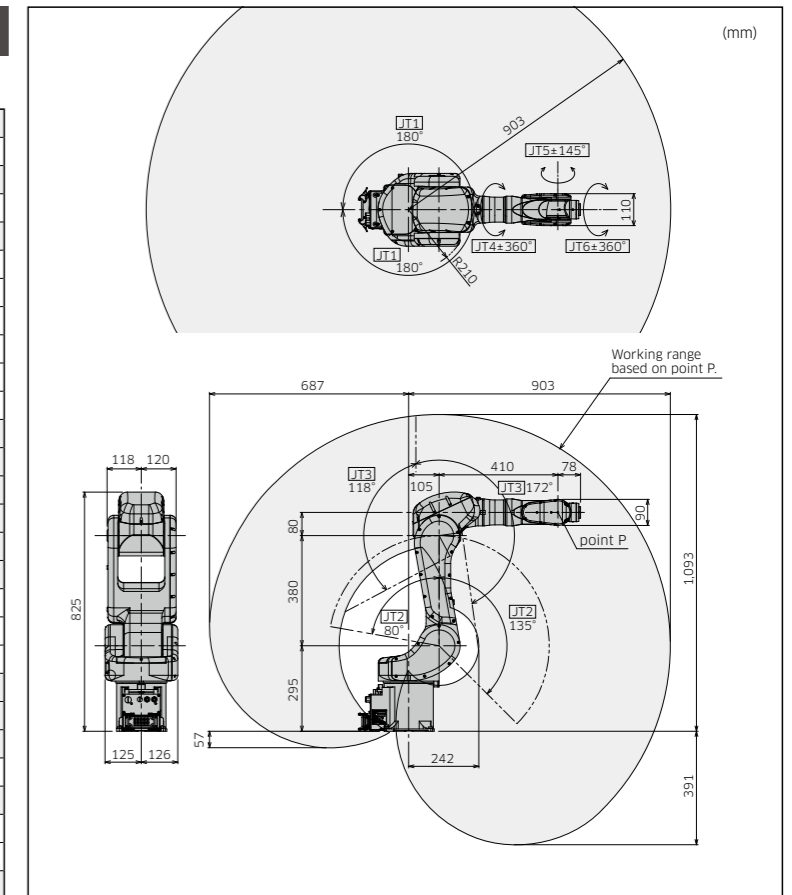


*1: Conforms to ISO9283

RA005L

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		5
Max. reach (mm)		903
Position repeatability*1 (mm)		±0.03
Motion range (°)	Arm rotation (JT1)	±180
	Arm out-in (JT2)	+135 - -80
	Arm up-down (JT3)	+118 - -172
	Wrist swivel (JT4)	±360
	Wrist bend (JT5)	±145
	Wrist twist (JT6)	±360
Max. speed (°/s)	Arm rotation (JT1)	300
	Arm out-in (JT2)	300
	Arm up-down (JT3)	300
	Wrist swivel (JT4)	460
	Wrist bend (JT5)	460
	Wrist twist (JT6)	740
Allowable moment (N·m)	Wrist swivel (JT4)	12.3
	Wrist bend (JT5)	12.3
	Wrist twist (JT6)	7
Allowable moment of inertia (kg·m ²)	Wrist swivel (JT4)	0.4
	Wrist bend (JT5)	0.4
	Wrist twist (JT6)	0.12
Mass (kg)		37
Mounting		Floor, Ceiling
Installation environment	Ambient temperature (°C)	0 - 45
	Relative humidity (%)	35 - 85 (No dew, nor frost allowed)
Controller/Power requirements		F60/2.0kVA

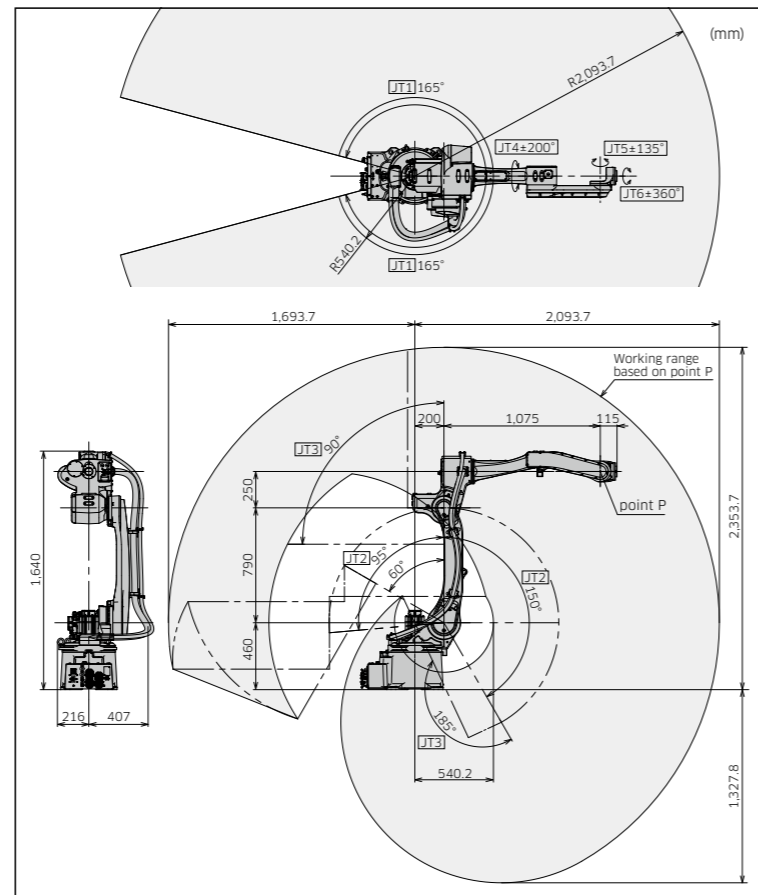


*1: Conforms to ISO9283

BA013L

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		13
Max. reach (mm)		2,093
Position repeatability*1 (mm)		±0.06
Motion range (°)	Arm rotation (JT1)	±165
	Arm out-in (JT2)	+150 - -95
	Arm up-down (JT3)	+90 - -185
	Wrist swivel (JT4)	±200
	Wrist bend (JT5)	±135
	Wrist twist (JT6)	±360
Max. speed (°/s)	Arm rotation (JT1)	215
	Arm out-in (JT2)	215
	Arm up-down (JT3)	270
	Wrist swivel (JT4)	440
	Wrist bend (JT5)	475
	Wrist twist (JT6)	730
Allowable moment (N·m)	Wrist swivel (JT4)	26
	Wrist bend (JT5)	26
	Wrist twist (JT6)	10
Allowable moment of inertia (kg·m ²)	Wrist swivel (JT4)	0.9
	Wrist bend (JT5)	0.9
	Wrist twist (JT6)	0.3
Mass (kg)		280
Mounting		Floor, Ceiling
Installation environment	Ambient temperature (°C)	0 - 45
	Relative humidity (%)	25 - 85 (No dew, nor frost allowed)
Controller/Power requirements		F02/7.5kVA

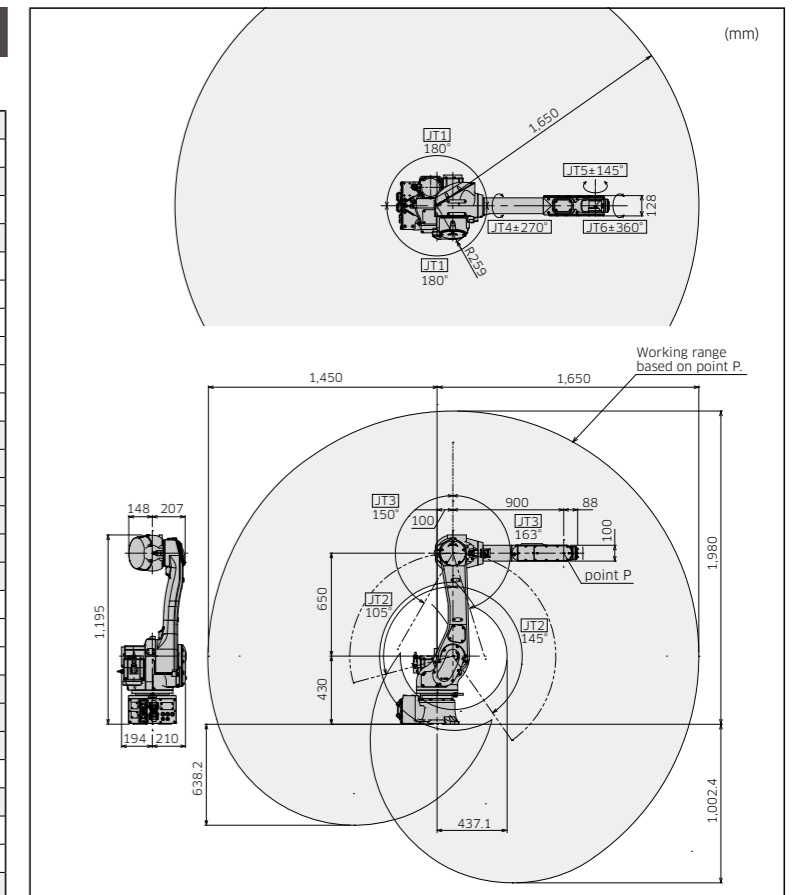


*1: Conforms to ISO9283

RA006L

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		6
Max. reach (mm)		1,650
Position repeatability*1 (mm)		±0.03
Motion range (°)	Arm rotation (JT1)	±180
	Arm out-in (JT2)	+145 - -105
	Arm up-down (JT3)	+150 - -163
	Wrist swivel (JT4)	±270
	Wrist bend (JT5)	±145
	Wrist twist (JT6)	±360
Max. speed (°/s)	Arm rotation (JT1)	250
	Arm out-in (JT2)	250
	Arm up-down (JT3)	215
	Wrist swivel (JT4)	365
	Wrist bend (JT5)	380
	Wrist twist (JT6)	700
Allowable moment (N·m)	Wrist swivel (JT4)	13
	Wrist bend (JT5)	13
	Wrist twist (JT6)	7.5
Allowable moment of inertia (kg·m ²)	Wrist swivel (JT4)	0.45
	Wrist bend (JT5)	0.45
	Wrist twist (JT6)	0.14
Mass (kg)		150
Mounting		Floor, Ceiling
Installation environment	Ambient temperature (°C)	0 - 45
	Relative humidity (%)	35 - 85 (No dew, nor frost allowed)
Controller/Power requirements		F60/2.0kVA, F01/5.6kVA

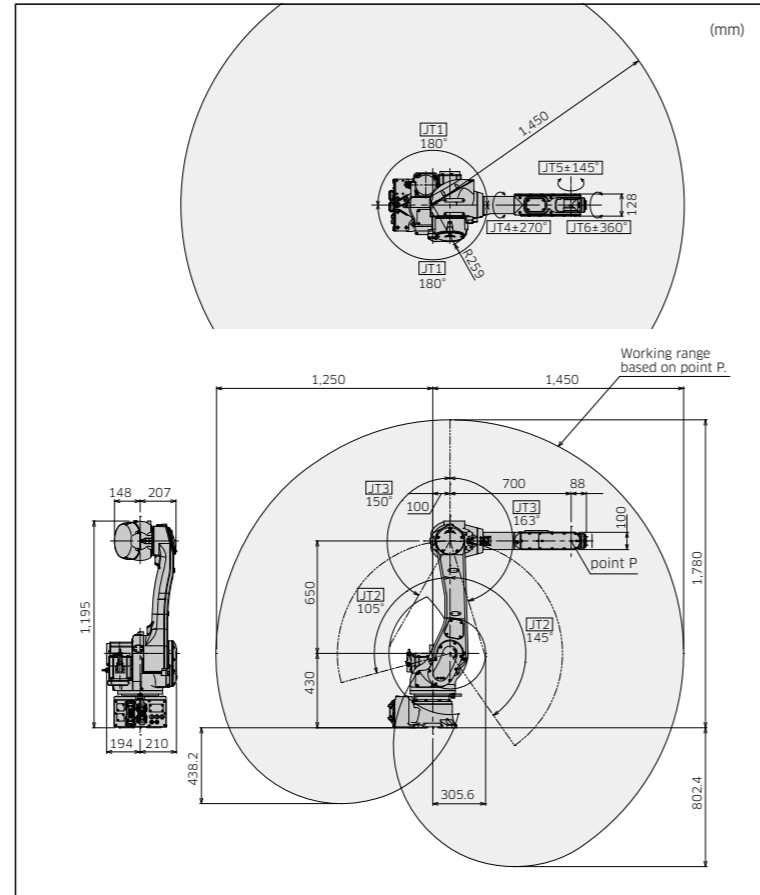


*1: Conforms to ISO9283

RA010N

Standard Specifications

Type	Articulated robot	
Degree of freedom (axes)	6	
Payload (kg)	10	
Max. reach (mm)	1,450	
Position repeatability*1 (mm)	±0.03	
Motion range (°)	Arm rotation (JT1)	±180
	Arm out-in (JT2)	+145 - -105
	Arm up-down (JT3)	+150 - -163
	Wrist swivel (JT4)	±270
	Wrist bend (JT5)	±145
	Wrist twist (JT6)	±360
Max. speed (°/s)	Arm rotation (JT1)	250
	Arm out-in (JT2)	250
	Arm up-down (JT3)	215
	Wrist swivel (JT4)	365
	Wrist bend (JT5)	380
	Wrist twist (JT6)	700
Allowable moment (N·m)	Wrist swivel (JT4)	22
	Wrist bend (JT5)	22
	Wrist twist (JT6)	10
Allowable moment of inertia (kg·m²)	Wrist swivel (JT4)	0.7
	Wrist bend (JT5)	0.7
	Wrist twist (JT6)	0.2
Mass (kg)	150	
Mounting	Floor, Ceiling	
Installation environment	Ambient temperature (°C)	0 - 45
	Relative humidity (%)	35 - 85 (No dew, nor frost allowed)
Controller/Power requirements	F60/2.0kVA, F01/5.6kVA	

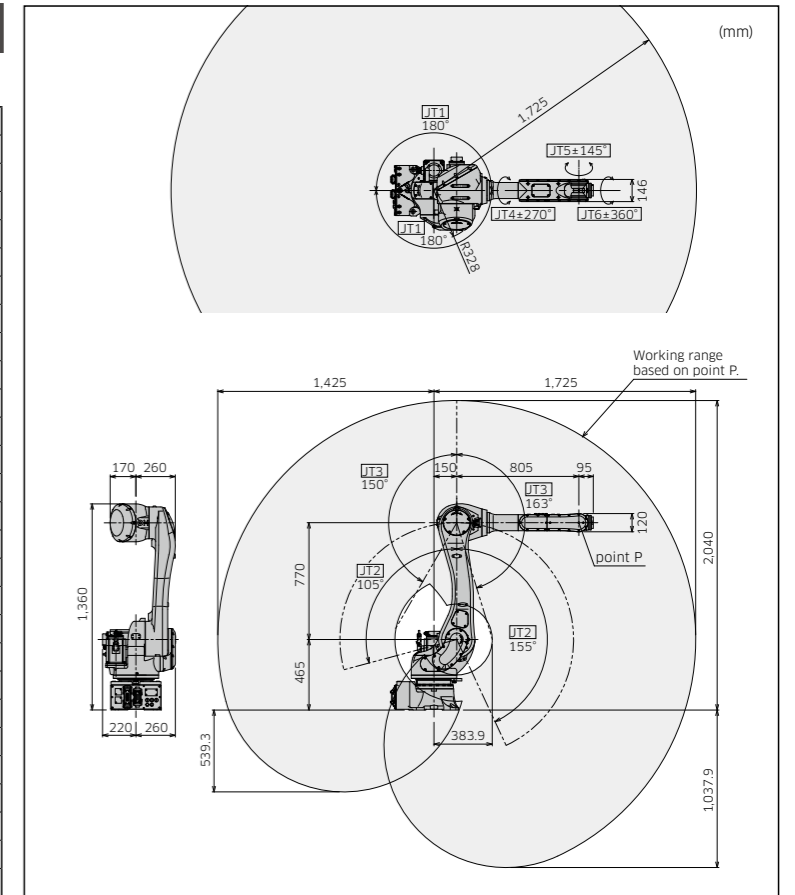


*1: Conforms to ISO9283

RA020N

Standard Specifications

Type	Articulated robot	
Degree of freedom (axes)	6	
Payload (kg)	20	
Max. reach (mm)	1,725	
Position repeatability*1 (mm)	±0.04	
Motion range (°)	Arm rotation (JT1)	±180
	Arm out-in (JT2)	+155 - -105
	Arm up-down (JT3)	+150 - -163
	Wrist swivel (JT4)	±270
	Wrist bend (JT5)	±145
	Wrist twist (JT6)	±360
Max. speed (°/s)	Arm rotation (JT1)	190
	Arm out-in (JT2)	205
	Arm up-down (JT3)	210
	Wrist swivel (JT4)	400
	Wrist bend (JT5)	360
	Wrist twist (JT6)	610
Allowable moment (N·m)	Wrist swivel (JT4)	45
	Wrist bend (JT5)	45
	Wrist twist (JT6)	29
Allowable moment of inertia (kg·m²)	Wrist swivel (JT4)	0.9
	Wrist bend (JT5)	0.9
	Wrist twist (JT6)	0.3
Mass (kg)	230	
Mounting	Floor, Ceiling	
Installation environment	Ambient temperature (°C)	0 - 45
	Relative humidity (%)	35 - 85 (No dew, nor frost allowed)
Controller/Power requirements	F01/5.6kVA	

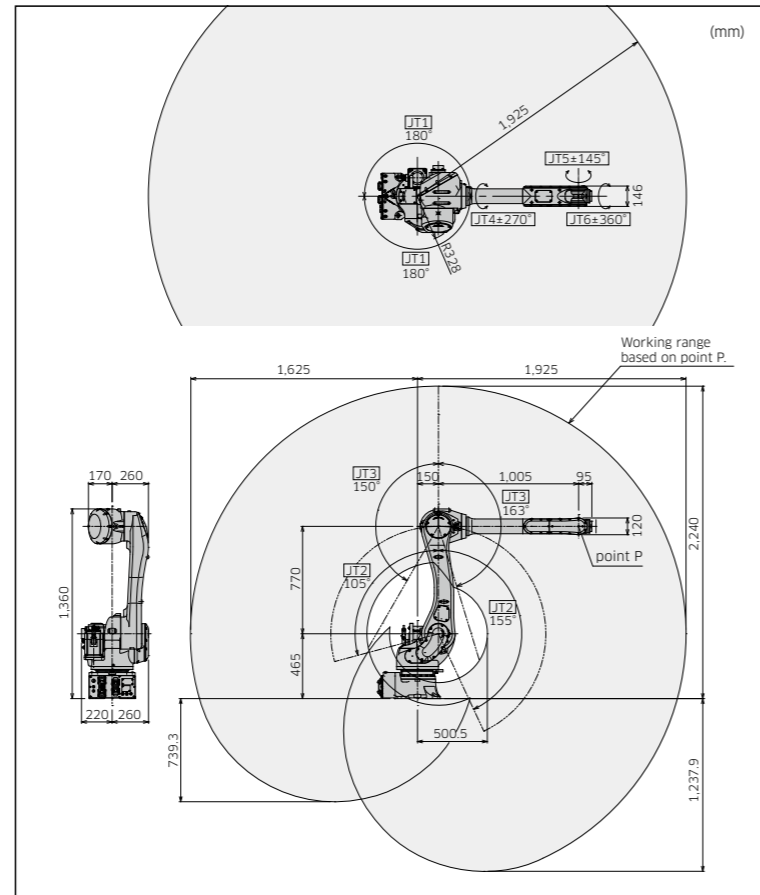


*1: conforms to ISO9283

RA010L

Standard Specifications

Type	Articulated robot	
Degree of freedom (axes)	6	
Payload (kg)	10	
Max. reach (mm)	1,925	
Position repeatability*1 (mm)	±0.05	
Motion range (°)	Arm rotation (JT1)	±180
	Arm out-in (JT2)	+155 - -105
	Arm up-down (JT3)	+150 - -163
	Wrist swivel (JT4)	±270
	Wrist bend (JT5)	±145
	Wrist twist (JT6)	±360
Max. speed (°/s)	Arm rotation (JT1)	190
	Arm out-in (JT2)	205
	Arm up-down (JT3)	210
	Wrist swivel (JT4)	400
	Wrist bend (JT5)	360
	Wrist twist (JT6)	610
Allowable moment (N·m)	Wrist swivel (JT4)	22
	Wrist bend (JT5)	22
	Wrist twist (JT6)	10
Allowable moment of inertia (kg·m²)	Wrist swivel (JT4)	0.7
	Wrist bend (JT5)	0.7
	Wrist twist (JT6)	0.2
Mass (kg)	230	
Mounting	Floor, Ceiling	
Installation environment	Ambient temperature (°C)	0 - 45
	Relative humidity (%)	35 - 85 (No dew, nor frost allowed)
Controller/Power requirements	F01/5.6kVA	



*1: Conforms to ISO9283

F60

Features

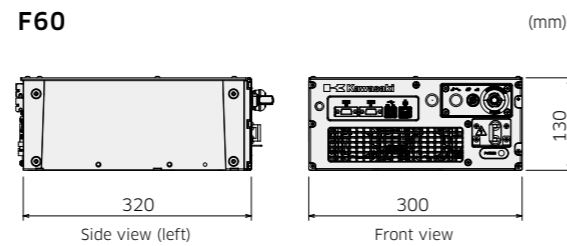
- This universal controller has common specifications to be used worldwide.
- Drastic downsizing has achieved very compact dimensions and light weight (8.3kg). It is easy for a person to carry the controller.



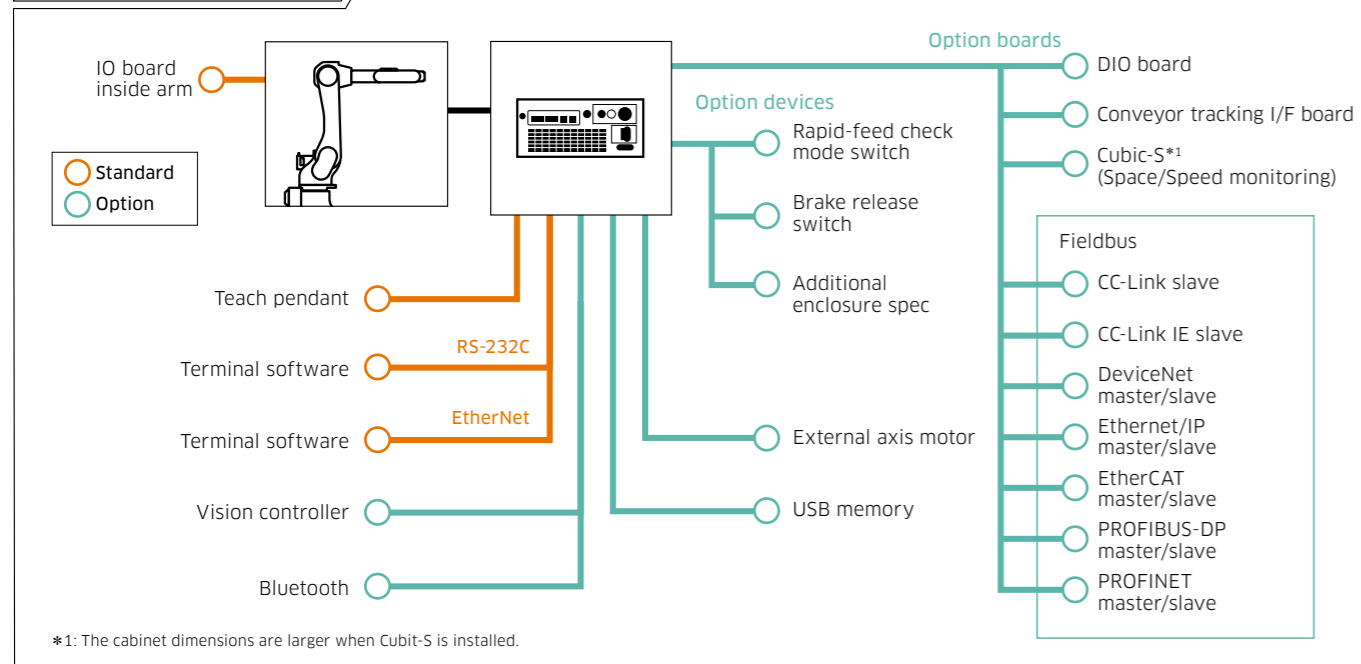
Standard Specifications

Dimensions (mm)	W300×D320×H130	
Type	Open type indirect cooling system	
Controlled (axes)	6	
Memory capacity (MB)	16	
I/O signals	External operation	Motor power off, Hold
	Input (Channels)	16
	Output (Channels)	16
Cable length	Teach pendant (m)	5
	Robot-controller (m)	5
Mass (kg)	8.3	
Power requirements	AC200 - AC230V ±10%, 50/60Hz, 1Φ Max. 2.0kVA	
Installation environment	Ambient temperature (°C)	0 - 45
	Relative humidity (%)	35 - 85 (No dew, nor frost allowed)
Teach pendant	Color LCD display with touch-panel, E-Stop switch, teach lock switch, Enable switch	
Operation panel	E-stop switch, teach/repeat switch, control power lamp	

External view and dimensions



System configuration



F01/F02

Features

- Dimensions and weight have been reduced from its previous E-controller.
- This universal controller has common specifications that can be used globally. (An optional transformer unit is necessary in the region where the power supply and safety standard differ.)

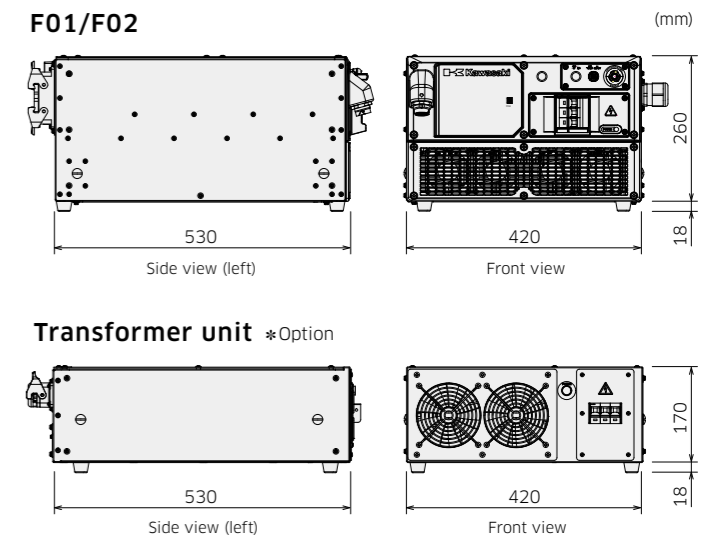


Standard Specifications

		F01	F02
Dimensions (mm)		W420×D530×H278	
Type		Enclosed type, indirect cooling system (IP54 or equivalent)	
Controlled (axes)		7	
Memory capacity (MB)		16	
I/O signals	External operation	Motor power off, Hold	
	Input (Channels)	32	
	Output (Channels)	32	
Cable length	Teach pendant (m)	5	
	Robot-controller (m)	5	
Mass (kg)	20	25	
Power requirements		AC200V - AC220V ±10%, 50/60Hz, 3Φ AC200V - AC230V ±10%, 50/60Hz, 1Φ*1	
		Max. 5.6kVA	Max. 7.5kVA
Installation environment	Ambient temperature (°C)	0 - 45	
	Relative humidity (%)	35 - 85 (No dew, nor frost allowed)	
Teach pendant	Color LCD display with touch-panel, E-Stop switch, Teach lock switch, Enable switch		
Operation panel	E-stop switch, teach/repeat switch		

*1: The 200V, single-phase power can be used for the F01 controller only.

External view and dimensions



System configuration

