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* Materials and specifications are subject to change without notice.

Simple and friendly
Kawasaki Robot

CAUTIONS TO BE TAKEN TO ENSURE SAFETY

- For those persons involved with the operation / service of your system, including Kawasaki Robot, they must strictly observe all safety regulations at all times. They should 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 pleased to help you.
- Be careful as Photographs illustrated in this catalogue are frequently taken after removing safety fences and other safety devices stipulated in the safety regulations from the Robot operation system.

QUALITY SYSTEM CERTIFICATION ISO 9001 DNV MGMT.SYS. RvA C 024

ENVIRONMENTAL SYSTEM CERTIFICATION ISO 14001 DNV MGMT.SYS. RvA C 024

ISO certified in Akashi Works.

Cat. No. 3L2891 Mar. '13 Ⓜ
Printed in Japan

Kawasaki Robot

Kawasaki Robot R series

Small-to-medium size general purpose robots

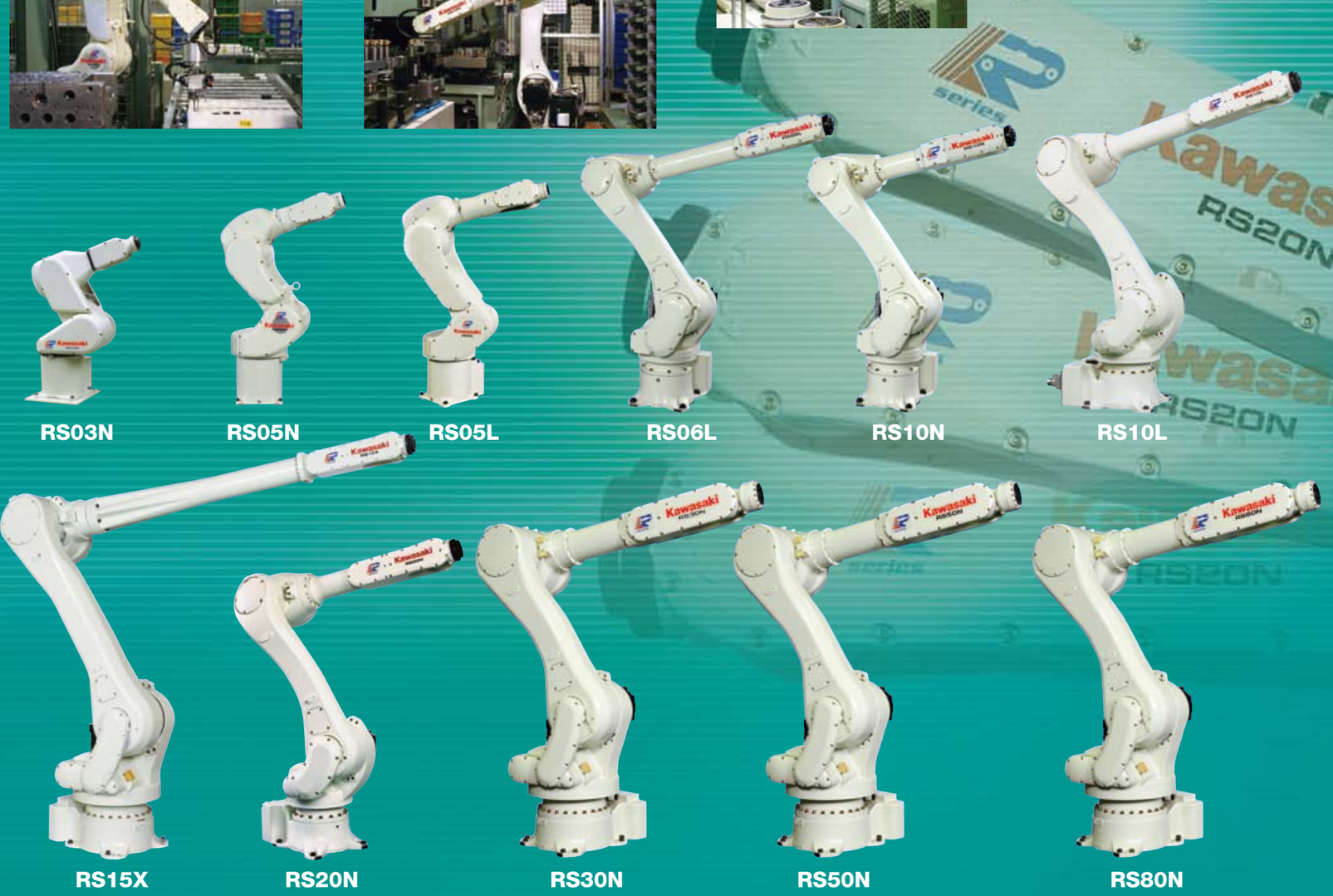
R series

Japan & Asia

"Simple and friendly" **has evolved.**

Kawasaki has reinvented the industrial robot providing new innovations and features to meet the increasing demands of today's customers.

Higher-speeds, longer reach, in an ultra compact design has been achieved through the consolidation of Kawasaki's vast technologies and years of automation experience.
Flexibility and intelligence have been combined to create the highest performance robot with the most advanced controller in the industry, the E-controller.
Kawasaki achieved their goal to exceed industry requirements across a wide range of applications.



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1. High speed

The new light-weight arm of the R series robot combined with high-output, high-revolution, small motors and other design innovations provides industry leading acceleration and high-speed operation. In addition, the acceleration rate automatically adjusts to suit the payload and robot posture to deliver optimum performance and the shortest cycle times.

2. High torque

High-output servo motors combined with high arm rigidity allows for superior wrist load capacity. This high torque rating offers system designers a broad selection of end-of-arm tooling, as well as allows for more flexibility when working with complex workpieces.

3. Wide working range

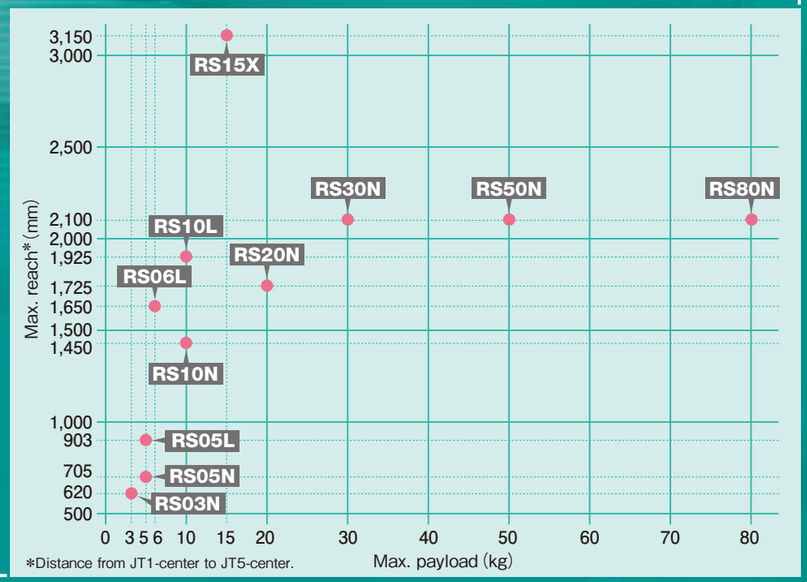
In addition to extending the robot's maximum reach, the range of each axis has also been increased. With more range of motion, the working area of the robot is expanded, resulting in a greater flexibility throughout the work envelope.

4. Environmental adaptability

Each joint axis has a double seal construction and the electrical connectors are waterproof, thus achieving IP67 for the wrist and IP65 for the remaining axes. If required, IP67 can be provided as an option for these remaining axes.

5. Integrated features

Built-in pneumatic equipment and signal lines are available as options to enable the system to be used for a wide range of applications. Furthermore, the arm is equipped with standard service taps in different sections to allow easy installation of additional cable and tube.



*Distance from JT1-center to JT5-center.

● Standard specifications

Model		RS03N	RS05N	RS05L	RS06L	RS10N	RS10L
Type		Articulated robot					
Degree of freedom (axes)		6					
Max. payload (kg)		3	5	5	6	10	10
Motion range (°)	Arm rotation (JT1)	±160	±180	±180	±180	±180	±180
	Arm out-in (JT2)	+150 ～−60	+135 ～−80	+135 ～−80	+145 ～−105	+145 ～−105	+155 ～−105
	Arm up-down (JT3)	+120 ～−150	+118 ～−172	+118 ～−172	+150 ～−163	+150 ～−163	+150 ～−163
	Wrist swivel (JT4)	±360	±360	±360	±270	±270	±270
	Wrist bend (JT5)	±135	±145	±145	±145	±145	±145
	Wrist twist (JT6)	±360	±360	±360	±360	±360	±360
Max. speed (°/s)	Arm rotation (JT1)	360	360	300	250	250	190
	Arm out-in (JT2)	250	360	300	250	250	205
	Arm up-down (JT3)	225	410	300	215	215	210
	Wrist swivel (JT4)	540	460	460	365	365	400
	Wrist bend (JT5)	225	460	460	380	380	360
	Wrist twist (JT6)	540	740	740	700	700	610
Moment (N·m)	Wrist swivel (JT4)	5.8	12.3	12.3	13	22	22
	Wrist bend (JT5)	5.8	12.3	12.3	13	22	22
	Wrist twist (JT6)	2.9	7	7	7.5	10	10
Moment of Inertia (kg·m²)	Wrist swivel (JT4)	0.12	0.4	0.4	0.45	0.7	0.7
	Wrist bend (JT5)	0.12	0.4	0.4	0.45	0.7	0.7
	Wrist twist (JT6)	0.03	0.12	0.12	0.14	0.2	0.2
Positional repeatability (mm)※1		±0.05	±0.02	±0.03	±0.05	±0.04	±0.06
Max. reach (mm)		620	705	903	1,650	1,450	1,925
Max. speed (mm/s)		6,000	9,100	9,300	13,700	11,800	13,100
Mass (kg)		20	34	37	150	150	230
Body color		Munsell 10GY9/1 equivalent					
Installation		Floor, Ceiling					
Environmental condition	Temperature (℃)	0 ～ 45					
	Humidity (%)	35 ～ 85 (No dew, nor frost allowed)					
Power requirements (kVA) ※2		1.0	1.5	1.5	2.0	2.0	3.0
Degree of protection		IP54	Wrist : IP67 Base axis : IP65				
Matching controller		E73	E74		E20/E74		E20/E94

※1 : conforms to ISO9283 ※2 : depends on the payload and motion patterns

● Options

● Option available – Option not available

	RS03N	RS05N	RS05L	RS06L	RS10N	RS10L
IP67 (JT1-3)	–	–	–	●	●	●
Wall mount	●	●	●	●	●	●
Traverse unit	–	–	–	●	●	●
Riser (300/600mm)	–	●	●	●	●	●
Base plate	–	●	●	●	●	●
Mechanical stopper JT1	●	●	●	●	●	●
Mechanical stopper JT2/JT3	–	–	–	●	●	●
Solenoid valve (1 circuit)	●	●	●	●	●	●
Solenoid valve (2 circuits)	●	●	●	●	●	●
Solenoid valve (3 circuits)	–	●	●	●	●	●
Solenoid valve (4 circuits)	–	–	–	●	●	●
Sensor harness (4 circuits)	●	–	–	–	–	–
Sensor harness (12 circuits)	–	●	●	●	●	●
Op. machine harness (7 pairs)	–	–	–	–	–	–
Servo-on lamp	●	●	●	●	●	●
Limit switch (JT1)	–	–	–	●	●	●

● Standard specifications

Model		RS15X	RS20N	RS30N	RS50N	RS80N
Type		Articulated robot				
Degree of freedom (axes)		6				
Max. payload (kg)		15	20	30	50	80
Motion range (°)	Arm rotation (JT1)	±180	±180	±180	±180	±180
	Arm out-in (JT2)	+140 ～−105	+155 ～−105	+140 ～−105	+140 ～−105	+140 ～−105
	Arm up-down (JT3)	+135 ～−155	+150 ～−163	+135 ～−155	+135 ～−155	+135 ～−155
	Wrist swivel (JT4)	±360	±270	±360	±360	±360
	Wrist bend (JT5)	±145	±145	±145	±145	±145
	Wrist twist (JT6)	±360	±360	±360	±360	±360
Max. speed (°/s)	Arm rotation (JT1)	180	190	180	180	180
	Arm out-in (JT2)	180	205	180	180	180
	Arm up-down (JT3)	200	210	185	185	160
	Wrist swivel (JT4)	410	400	260	260	185
	Wrist bend (JT5)	360	360	260	260	165
	Wrist twist (JT6)	610	610	360	360	280
Moment (N·m)	Wrist swivel (JT4)	34	45	210	210	336
	Wrist bend (JT5)	34	45	210	210	336
	Wrist twist (JT6)	22	29	130	130	194
Moment of Inertia (kg·m²)	Wrist swivel (JT4)	0.8	0.9	16.8	28	34
	Wrist bend (JT5)	0.8	0.9	16.8	28	34
	Wrist twist (JT6)	0.25	0.3	6.6	11	13.7
Positional repeatability (mm)※1		±0.15	±0.05	±0.07	±0.07	±0.07
Max. reach (mm)		3,150	1,725	2,100	2,100	2,100
Max. speed (mm/s)		19,900	11,500	13,400	13,400	12,700
Mass (kg)		545	230	555	555	555
Body color		Munsell 10GY9/1 equivalent				
Installation		Floor, Ceiling				
Environmental condition	Temperature (℃)	0 ～ 45				
	Humidity (%)	35 ～ 85 (No dew, nor frost allowed)				
Power requirements (kVA) ※2		4.0	3.0	4.5	4.5	4.5
Degree of protection		Wrist : IP67 Base axis : IP65				
Matching controller		E22	E20/E94	E22		

※1 : conforms to ISO9283 ※2 : depends on the payload and motion patterns

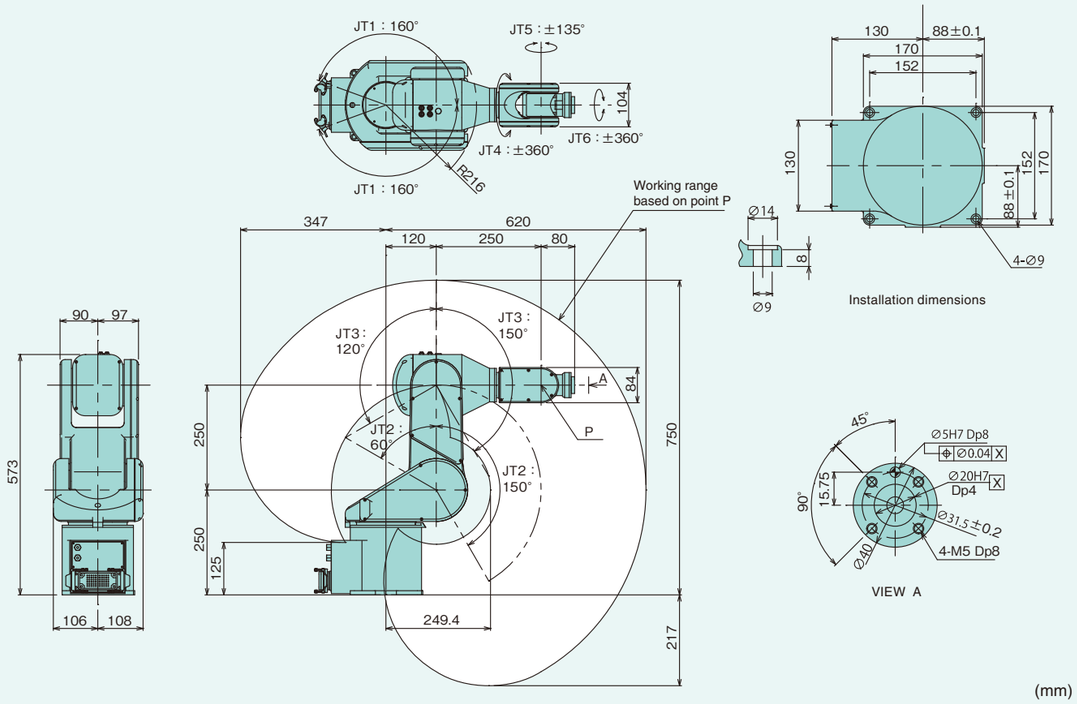
● Options

● Option available – Option not available

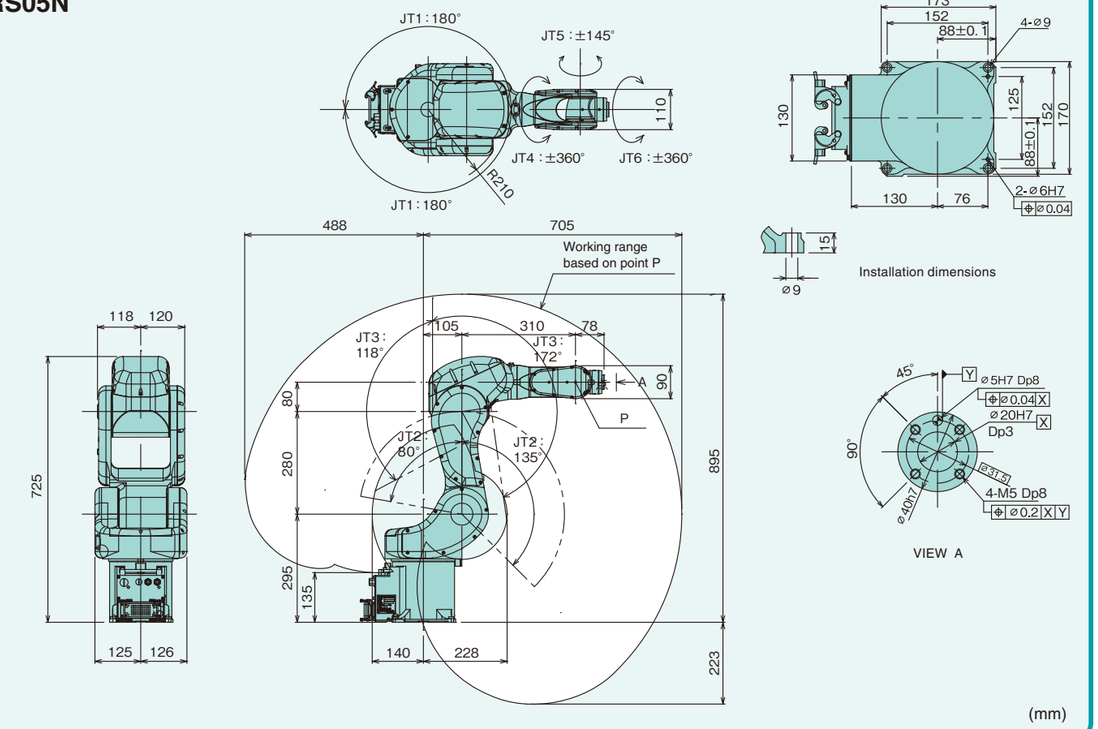
	RS15X	RS20N	RS30N	RS50N	RS80N
IP67 (JT1-3)	●	●	●	●	●
Wall mount	●	●	●	●	●
Traverse unit	●	●	●	●	●
Riser (300/600mm)	●	●	●	●	●
Base plate	●	●	●	●	●
Mechanical stopper JT1	●	●	●	●	●
Mechanical stopper JT2/JT3	●	●	●	●	●
Solenoid valve (1 circuit)	●	●	●	●	●
Solenoid valve (2 circuits)	●	●	●	●	●
Solenoid valve (3 circuits)	●	●	●	●	●
Solenoid valve (4 circuits)	●	●	●	●	●
Sensor harness (4 circuits)	–	–	–	–	–
Sensor harness (12 circuits)	●	●	●	●	●
Op. machine harness (7 pairs)	●	–	●	●	●
Servo-on lamp	●	●	●	●	●
Limit switch (JT1)	●	●	●	●	●

● Motion range & dimensions

RS03N

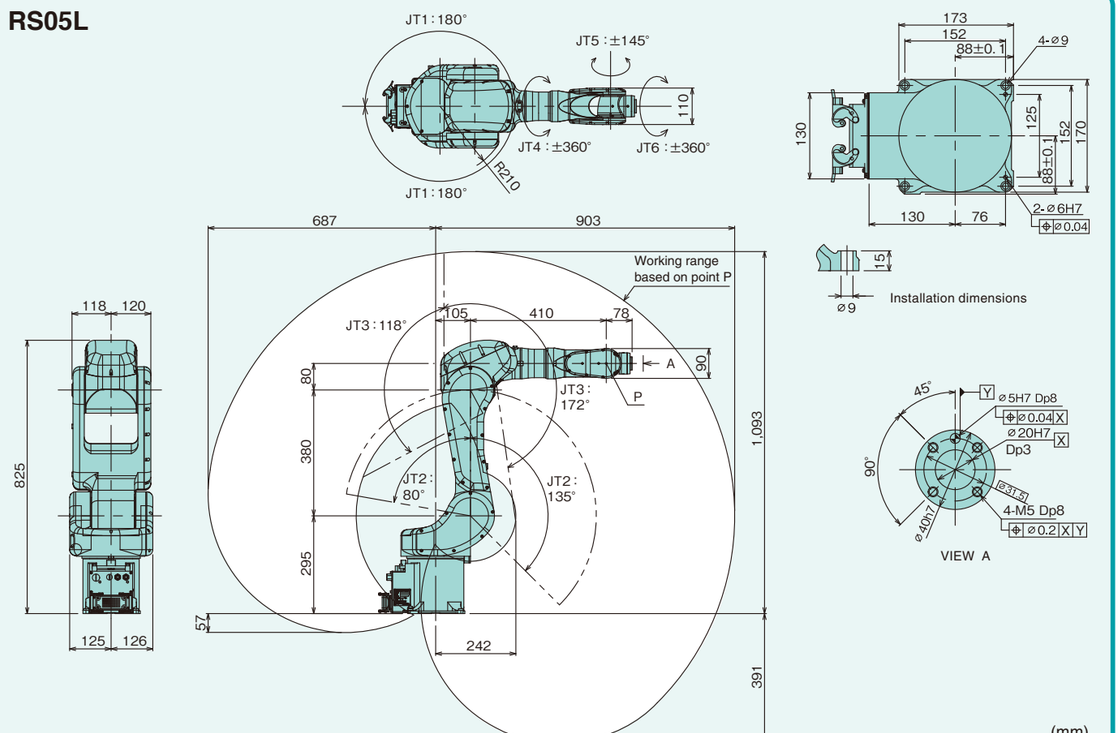


RS05N

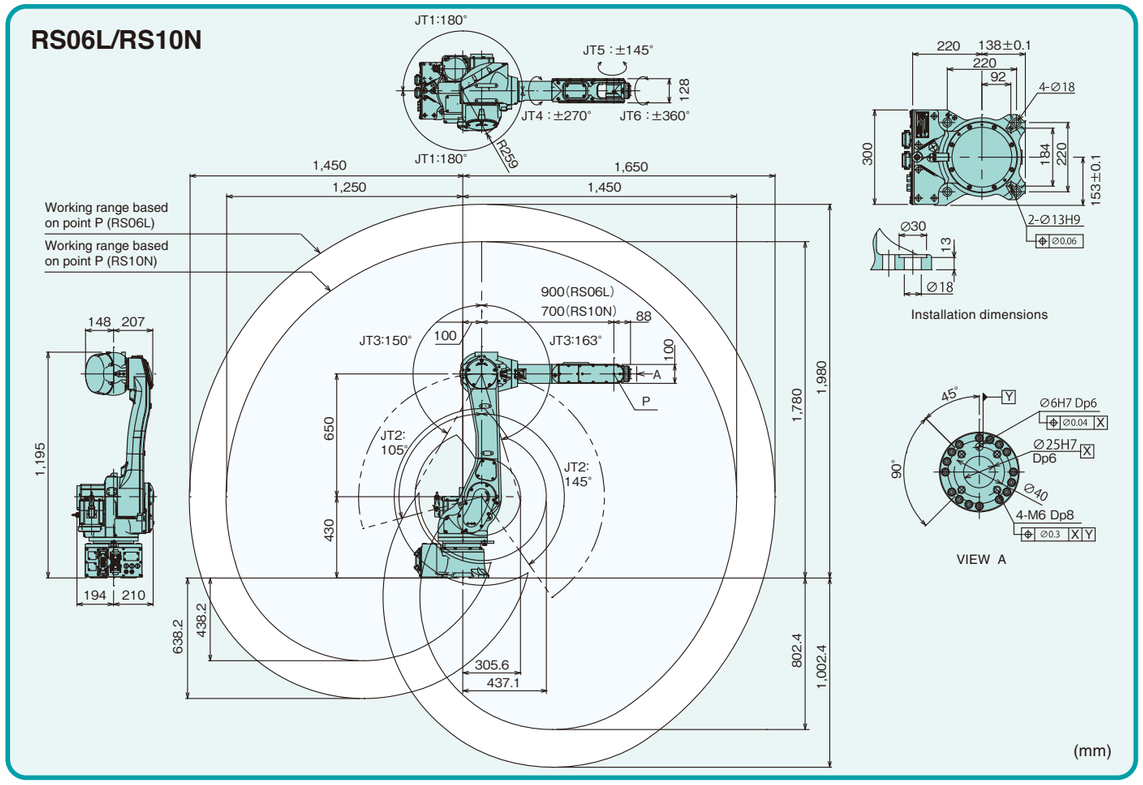


● Motion range & dimensions

RS05L

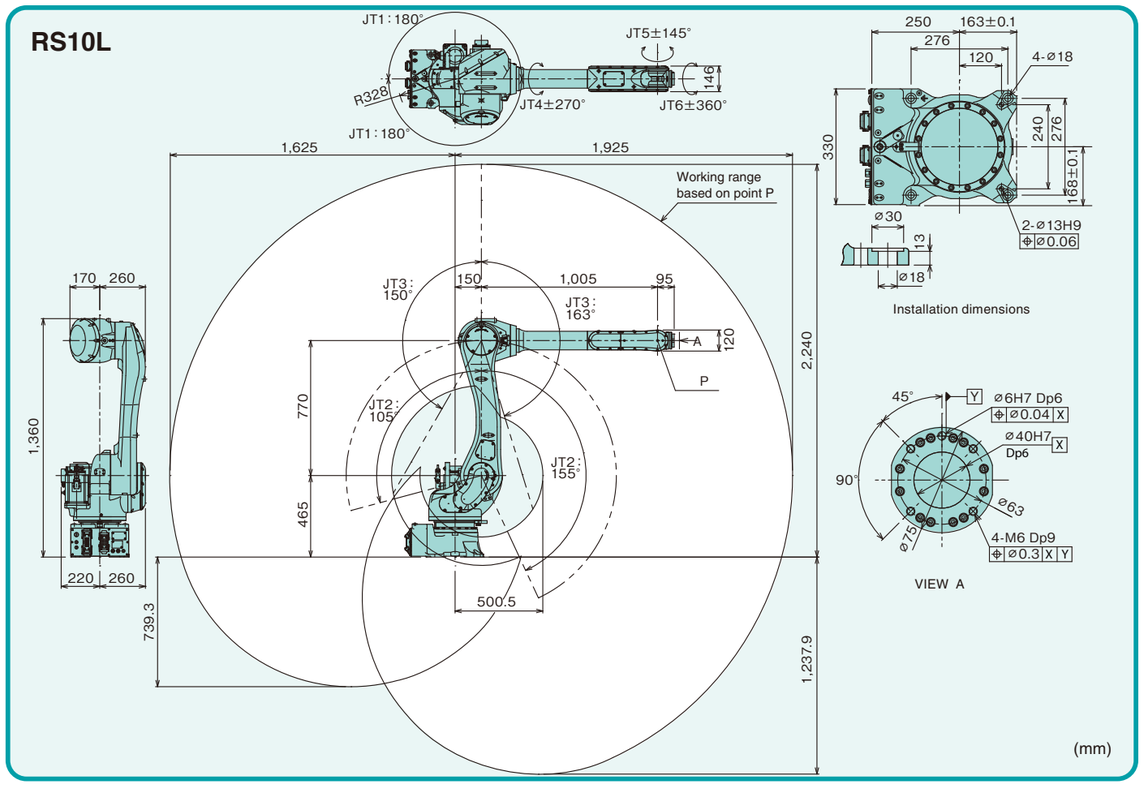


RS06L/RS10N

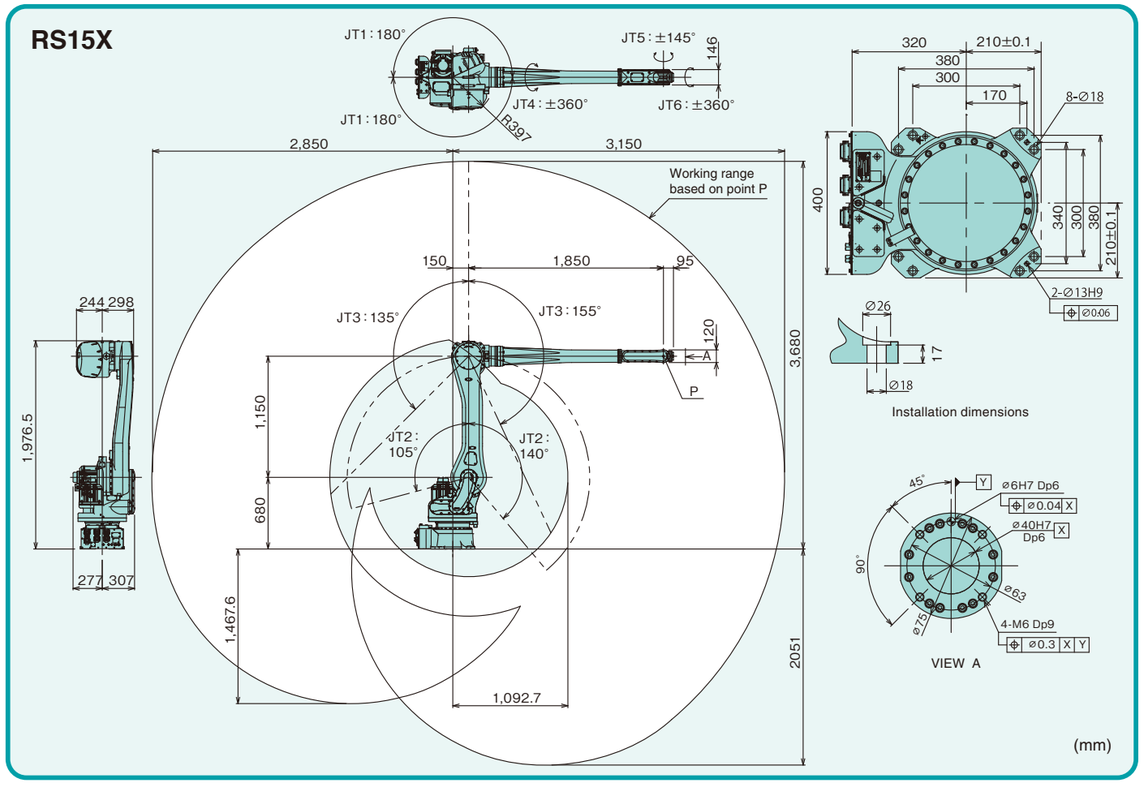


● Motion range & dimensions

RS10L

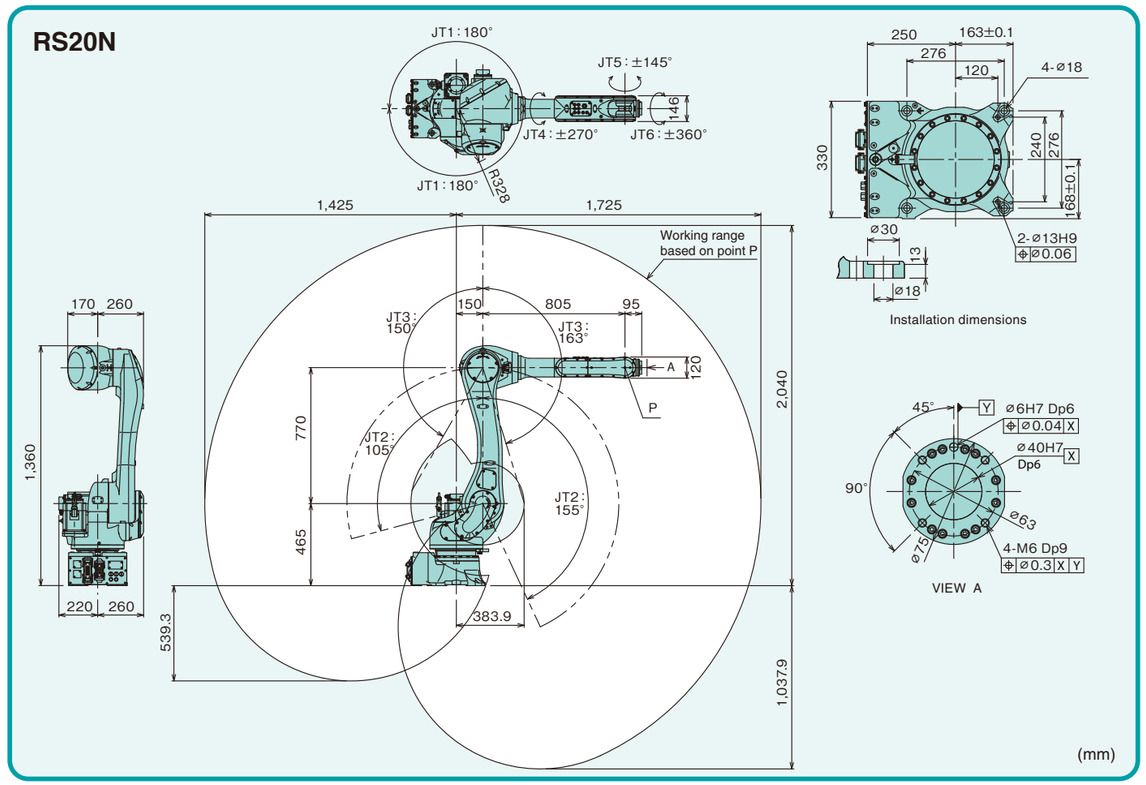


RS15X

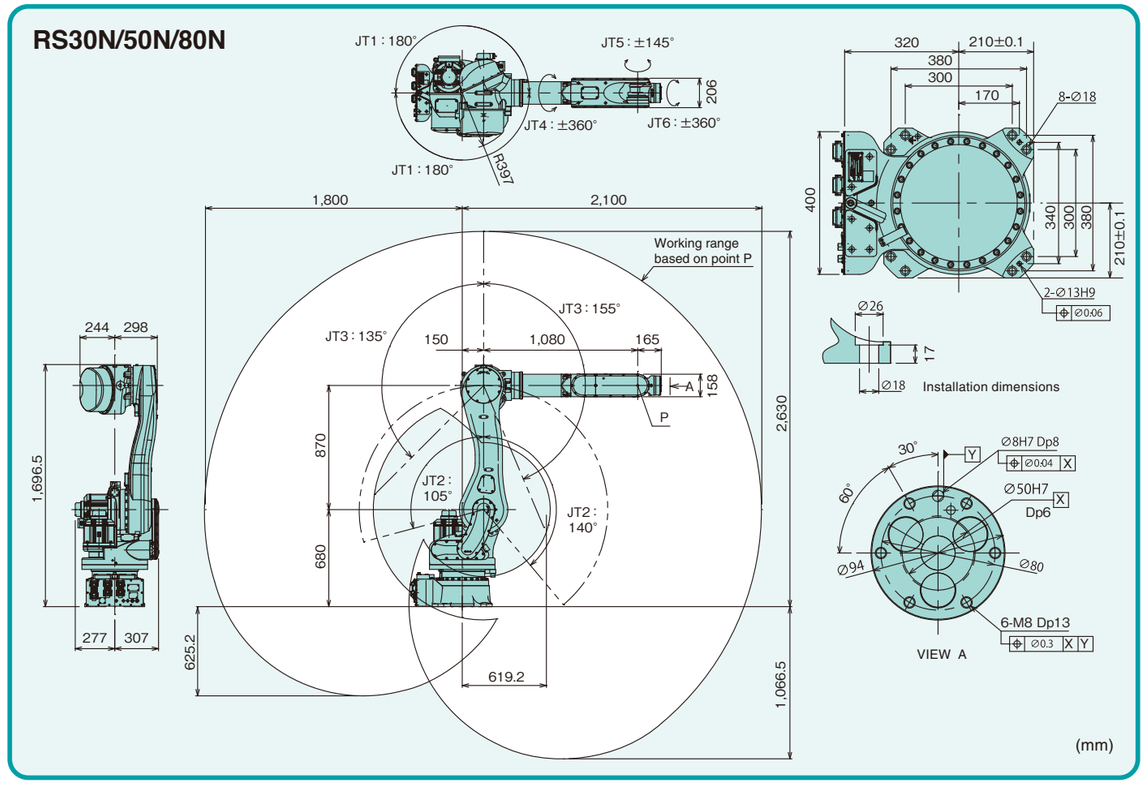


● Motion range & dimensions

RS20N



RS30N/50N/80N



CONTROLLER

Controller

E94/E73/E74/E20/E22

The E-Controller, with unprecedented quality and compact size, was created in response to customer demand. Kawasaki's collaboration of past achievements and experience has lead to the development of the most technically advanced controller available. This industry leading design provides increased performance and easy operation that exceeds expectations.

E94

E73/E74

E20/E22

● Features

1. Compact

Small footprint of the E2X controller makes it easy to achieve high-density layouts.
And overall volume has been reduced greatly compared with the previous model.
E7X/E94 controller is not only compact, has high performance and expandability.

2. User-friendly operation system

The operation system has now fully developed into a more user-friendly design. The operator can turn on the motors and activate the cycle start all from the teach pendant, thereby realizing a more convenient system control. The two information screens can be displayed simultaneously, enabling the operator to view different types of information easily (for example, positional and signal information).

3. Abundance of functions

The large variety of unique functions makes it possible to support a wide range of applications. These functions can be combined and easily configured within a system to suit a particular application. Likewise, the built-in Kawasaki "AS Language" provides sophisticated robot motion and sequence controls.

4. Incorporating the latest technologies

The enhanced CPU capacity allows for more accurate trajectory control, faster program execution, and quicker saving and loading of files, and countless other advantages. In addition, the memory has been expanded to answer the need for higher program storage capacity. A USB port is equipped as a standard external storage conduit.

5. Easier maintenance

With modular components and fewer cables, Kawasaki has developed a controller that is compact and easy to maintain. A host of maintenance functions are available, including the DIAG function for self-diagnostics, a maintenance support function that can handle not only hardware errors but also application errors. In addition to the DIAG function, there are other additional functions, such as a Web server that enables engineers to perform remote diagnostics.

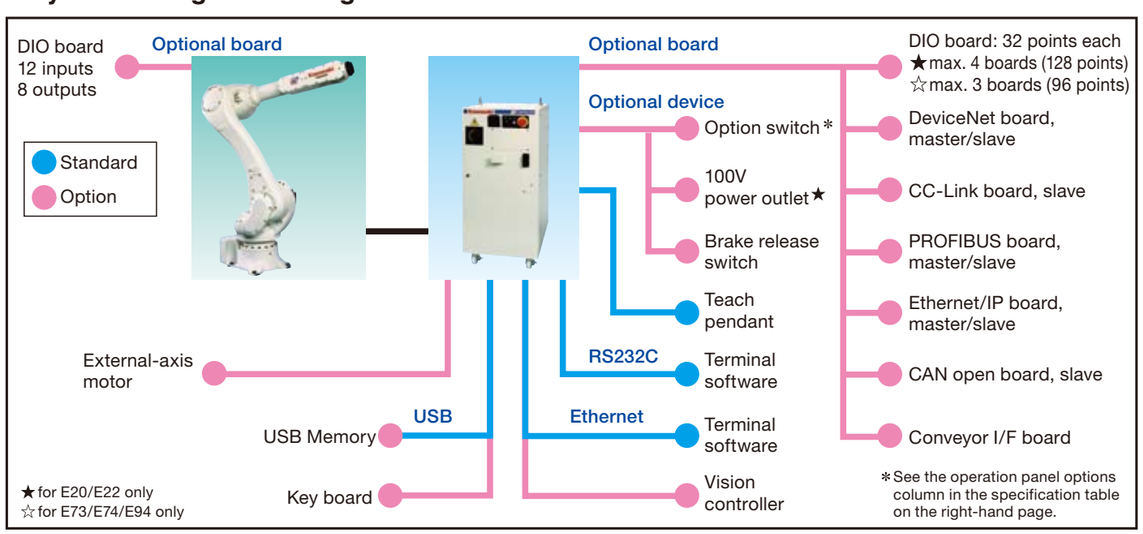
6. Highly expandable

The controller can accommodate 2 external axes inside the cabinet (E2X/E7X controller only). In addition, by adding an expansion board, the controller can control up to 16 external axes (E2x controller only). The system is compatible with a large number of field buses that are used for controlling peripheral devices. Users can combine the Kawasaki KLogic software sequencer function, which can be edited on the teach pendant, with the user-customizable interface panels to create a highly sophisticated system.

● Specifications

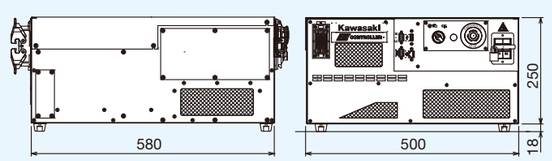
Model		Standard E94	Standard E73/E74	Standard E20/E22	Option
Dimensions (mm)		W500 x D580 x H268	W500 x D420 x H259	W450 x D550 x H950	
Structure		Open structure/Direct cooling system	Enclosed structure / Indirect cooling system		Enclosed structure (E94)
Number of controlled axes		6			Max. 8 (E73/74). Max 16 (E20/22). (expandable inside cabinet up to 8. Externally expandable beyond 9.)
Drive system		Full digital servo system			
Coordinate systems		Joint, Base, Tool			Fixed tool point
Types of motion control		Joint/Linear/Circular Interpolated motion			
Programming		Point to point teaching or language based programming			
Memory capacity (MB)		8			
General purpose signals	External operation	Motor power off, Hold			
	Input (Channels)	32			Max. 96 (E73/E74/E94), Max. 128 (E20/E22)
	Output (Channels)	32			Max. 96 (E73/E74/E94), Max. 128 (E20/E22)
Operation panel		E-Stop switch, teach/repeat switch, control power light (Cycle start, motor-on, hold/run, and error reset are activated from the teach pendant.)			Cycle start switch, motor-on switch, hold/run switch, error light, error reset switch (E73/E74/E20/E22)
Cable length	Teach pendant (m)	5			10, 15
	Robot-controller (m)	5			10, 15
Mass (kg)		40	30	95	
Power requirements		AC200-220V ±10%, 50/60Hz, 1Φ	AC200-240V ±10%, 50/60Hz, 1Φ	AC200-220V ±10%, 50/60Hz, 3Φ	
		Class-D earth connection (Earth connection dedicated to robots), leakage current: Maximum 100mA			
Environmental condition	Ambient temperature (°C)	0~45 (0~40 in enclosed structure)	0~45 (0~40 for E7x in vertical use)		
	Relative humidity (%)	35~85 (no dew, nor frost allowed)			
Body color		Munsell 10GY9/1 equivalent	—	Munsell 10GY9/1 equivalent	
Teach pendant		TFT color LCD display with touch-panel, E-Stop switch, teach lock switch, Dead man's switch			
Auxiliary storage unit		—			USB Memory
Interface		USB, Ethernet (100BASE-TX), RS232C			

● System configuration diagram

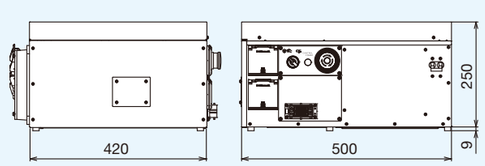


● External view & dimensions

E94 (mm)



E73/E74 (mm)



E20/E22 (mm)