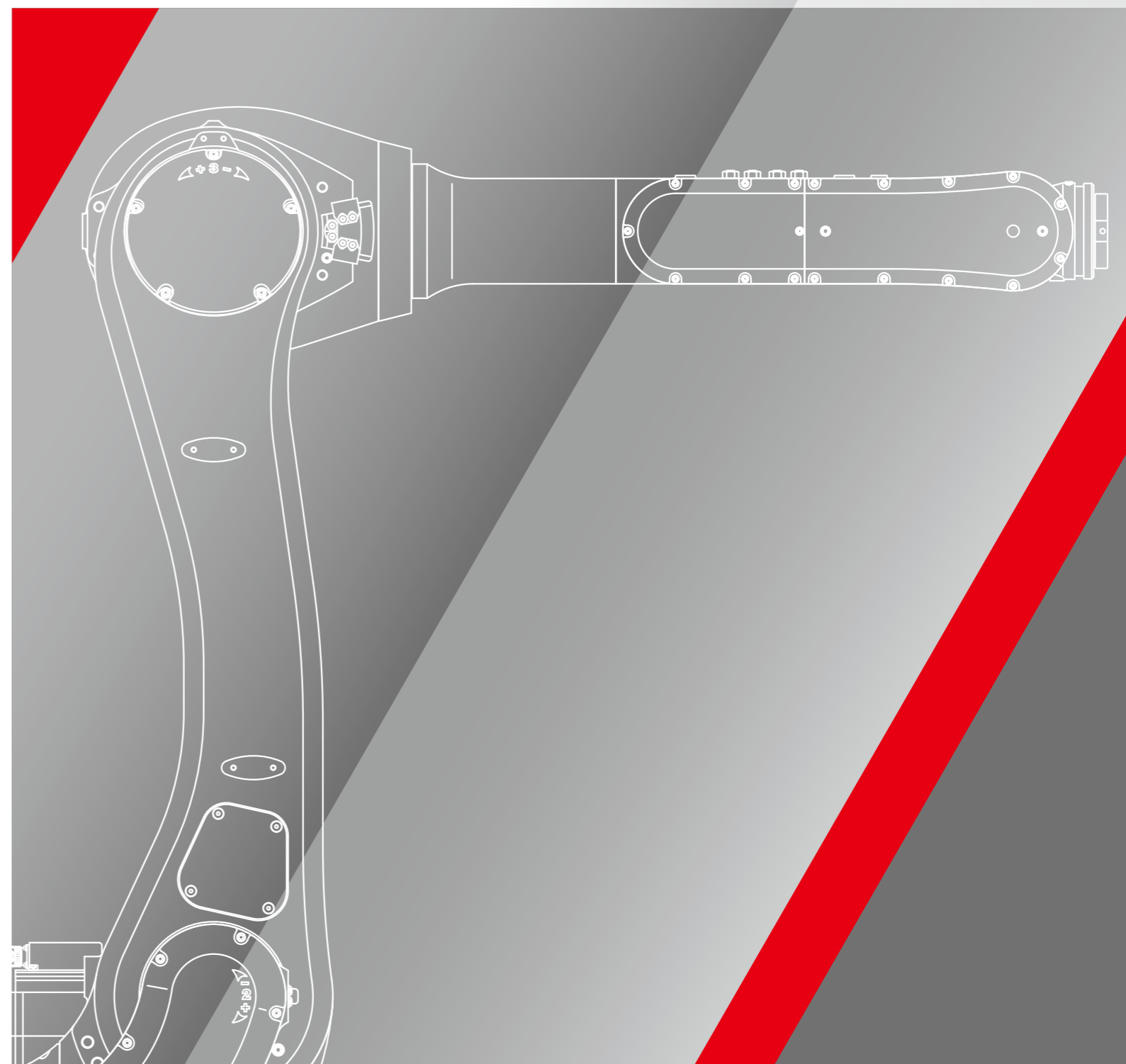


Kawasaki Robot

R series

Small-to-medium payload robots up to 80 kg



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* Materials and specifications are subject to change without notice.

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.



ISO certified in Akashi Works and Nishi-Kobe Works.

High-speed, high-performance industrial robots that raise the bar

Kawasaki's R series robots are setting the benchmark for all small to medium duty industrial robots. The compact design along with industry leading speed, reach, and work range make the R series robots ideal for a wide range of applications throughout diverse industries.

Features

High-speed operation

The light weight of the R series arm together with high output, high revolution motors provide industry leading acceleration and high-speed operation. The acceleration rate automatically adjusts to suit the payload and robot posture to deliver optimum performance and the shortest cycle times.

High torque

High output motors combined with a rigid arm construction deliver superior wrist torque and load capacity. This high torque rating lets system designers select from a broad range of end-of-arm tooling, as well as provides more flexibility when working with complex workpieces.

Wide work range

In addition to extending the robot's maximum reach, the rotation range of each axis has also been increased. The extended motion range translates to a larger usable work area with minimal dead space and greater flexibility.

Environmental protection

The R series incorporates a double seal construction on all axes and water-resistant electrical connections, offering an IP67 classification for the wrist and IP65 for the remaining axes. If a washdown arm is required, the entire robot can be provided as IP67. (Except for the RS003N)

Integrated features

Built-in pneumatic lines and internal wiring for sensors and solenoid valves are standard. Mounting pads and taps are provided to allow the easy installation of additional cabling, tubing or equipment.

Typical applications : Assembly / Dispensing / Machine tending / Material handling/Material removal



RS003N

RS005N



RS005L

RS006L

RS007N

RS007L

RS010N



RS010L



RS013N

RS015X

RS020N

RS030N/RS050N/RS080N

		RS003N	RS005N	RS005L	RS006L	RS007N	RS007L		RS010N	RS010L	RS013N	RS015X	RS020N	RS030N	RS050N	RS080N	
Type	Articulated robot								Articulated robot								
Degree of freedom (axes)	6								6								
Payload (kg)	3	5	5	6	7	7		10	10	13	15	20	30	50	80		
Max. reach (mm)	620	705	903	1,650	730	930		1,450	1,925	1,460	3,150	1,725	2,100	2,100	2,100		
Position repeatability (mm) *1	±0.02	±0.02	±0.03	±0.03	±0.02	±0.03		±0.03	±0.05	±0.03	±0.06	±0.04	±0.06	±0.06	±0.06		
Motion range (°)	Arm rotation (JT1)	±160	±180	±180	±180	±180	±180		±180	±180	±180	±180	±180	±180	±180	±180	
	Arm out-in (JT2)	+150 - -60	+135 - -80	+135 - -80	+145 - -105	±135	±135		+145 - -105	+155 - -105	+138 - -105	+140 - -105	+155 - -105	+140 - -105	+140 - -105	+140 - -105	
	Arm up-down (JT3)	+120 - -150	+118 - -172	+118 - -172	+150 - -163	±155	±157		+150 - -163	+150 - -163	+135 - -159	+135 - -155	+150 - -163	+135 - -155	+135 - -155	+135 - -155	
	Wrist swivel (JT4)	±360	±360	±360	±270	±200	±200		±270	±270	±200	±360	±270	±360	±360	±360	
	Wrist bend (JT5)	±135	±145	±145	±145	±125	±125		±145	±145	±125	±145	±145	±145	±145	±145	
	Wrist twist (JT6)	±360	±360	±360	±360	±360	±360		±360	±360	±360	±360	±360	±360	±360	±360	±360
Max. speed (°/s)	Arm rotation (JT1)	360	360	300	250	470	370		250	190	265	180	190	180	180	180	
	Arm out-in (JT2)	250	360	300	250	380	310		250	205	250	180	205	180	180	180	
	Arm up-down (JT3)	225	410	300	215	520	410		215	210	265	200	210	185	185	160	
	Wrist swivel (JT4)	540	460	460	365	550	550		365	400	475	410	400	260	260	185	
	Wrist bend (JT5)	225	460	460	380	550	550		380	360	475	360	360	260	260	165	
	Wrist twist (JT6)	540	740	740	700	1,000	1,000		700	610	730	610	610	360	360	280	
Allowable moment (N·m)	Wrist swivel (JT4)	5.8	12.3	12.3	13	17	17		22	22	26	34	45	210	210	336	
	Wrist bend (JT5)	5.8	12.3	12.3	13	17	17		22	22	26	34	45	210	210	336	
	Wrist twist (JT6)	2.9	7	7	7.5	10	10		10	10	10	22	29	130	130	194	
Allowable moment of inertia (kg·m ²)	Wrist swivel (JT4)	0.12	0.4	0.4	0.45	0.5	0.5		0.7	0.7	0.9	0.8	0.9	16.8	28	34	
	Wrist bend (JT5)	0.12	0.4	0.4	0.45	0.5	0.5		0.7	0.7	0.9	0.8	0.9	16.8	28	34	
	Wrist twist (JT6)	0.03	0.12	0.12	0.14	0.2	0.2		0.2	0.2	0.3	0.25	0.3	6.6	11	13.7	
Mass (kg)	20	34	37	150	35	36		150	230	170	545	230	555	555	555		
Mounting	Floor, Ceiling								Floor, Ceiling								
Installation environment	Ambient temperature (°C)	0 - 45								0 - 45							
	Relative humidity (%)	35 - 85 (No dew, nor frost allowed)								35 - 85 (No dew, nor frost allowed)							
Protection	IP54 or equivalent	Wrist : IP67 or equivalent Base axes : IP65 or equivalent						Wrist : IP67 or equivalent Base axes : IP65 or equivalent		IP67 or equivalent	Wrist : IP67 or equivalent Base axes : IP65 or equivalent						
Controller/Power requirements	F60/2.0kVA			F60/2.0kVA, E01/5.6kVA		F60/2.0kVA			F60/2.0kVA, E01/5.6kVA		E01/5.6kVA	F60/2.0kVA	E02/7.5kVA	E01/5.6kVA	E02/7.5kVA		

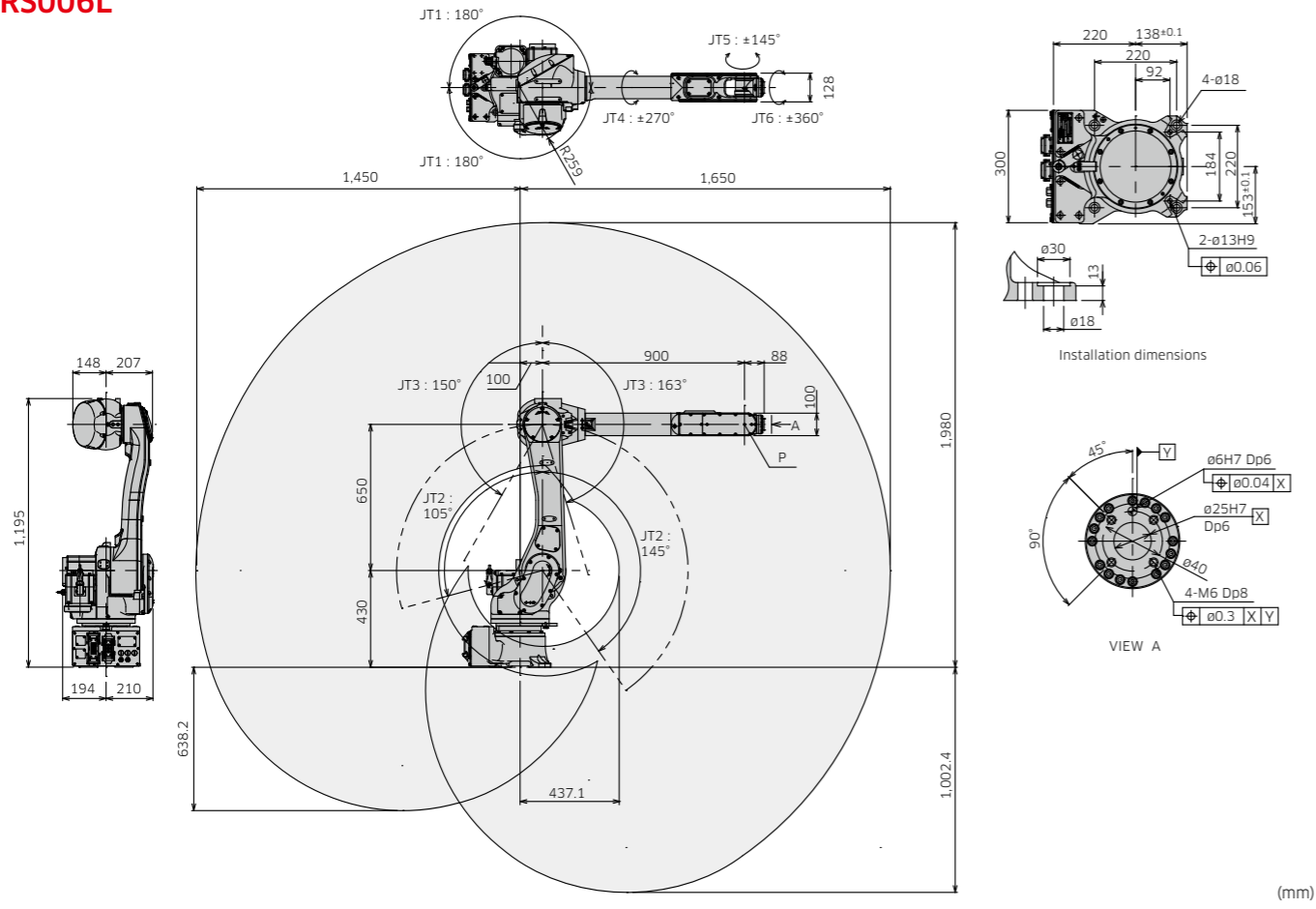
*1: conforms to ISO9283

Options

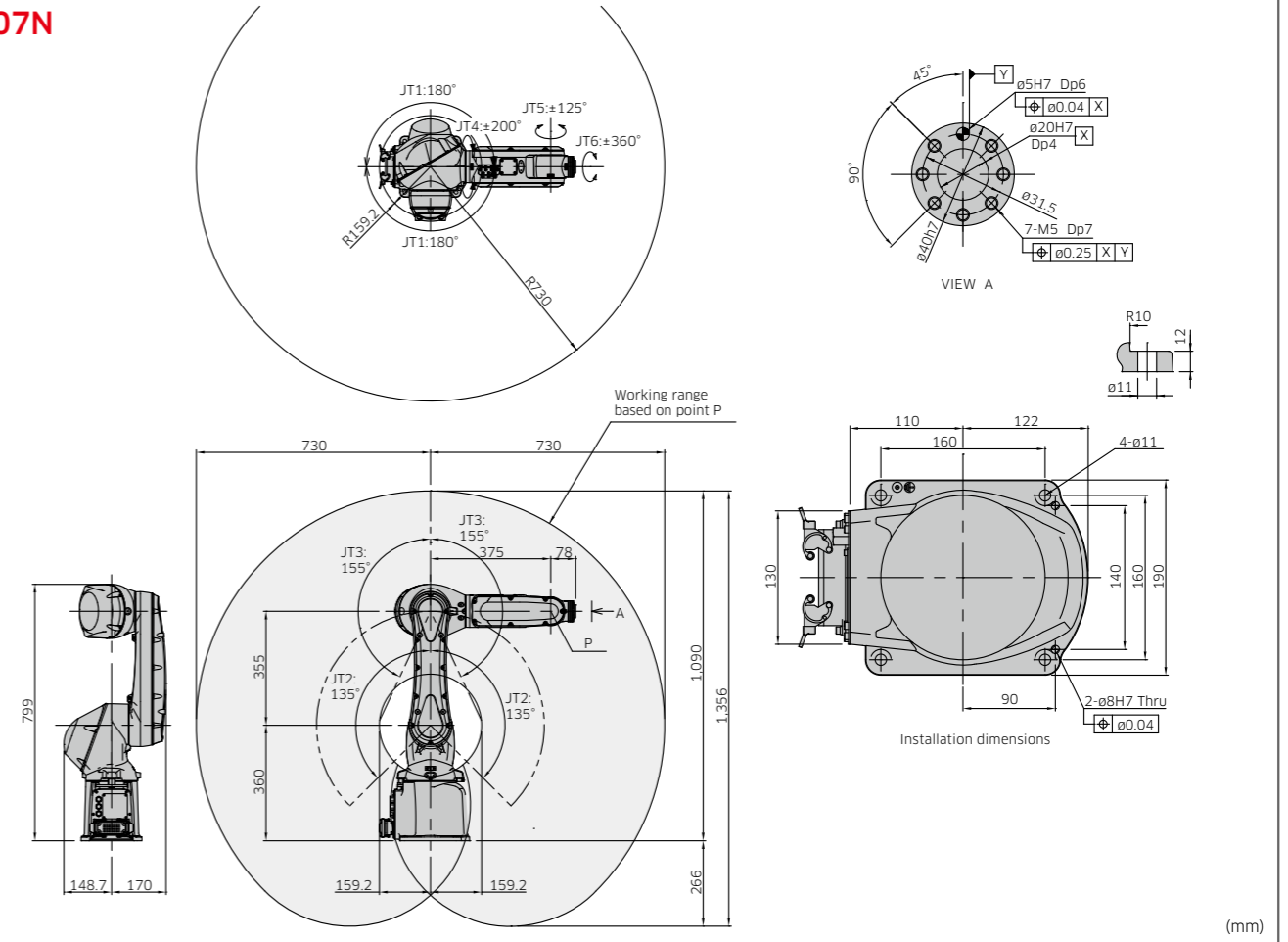
● : Option available - : Option not available ○ : as standard

	RS003N	RS005N	RS005L	RS006L	RS007N	RS007L		RS010N	RS010L	RS013N	RS015X	RS020N	RS030N	RS050N	RS080N
IP67 or equivalent (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 (8 circuits)	-	-	-	-	●	●		-	-	-	-	-	-	-	-
Sensor harness (12 circuits)	-	●	●	●	-	-		●	●	●	●	●	●	●	●
Op. machine harness (7 pairs)	-	-	-	-	-	-		-	-	-	●	-	●	●	●
Servo-on lamp	●	●	●	●	-	-		●	●	-	●	●	●	●	●
Limit switch (JT1)	-	-	-	●	-	-		●	●	-	●	●	●	●	●

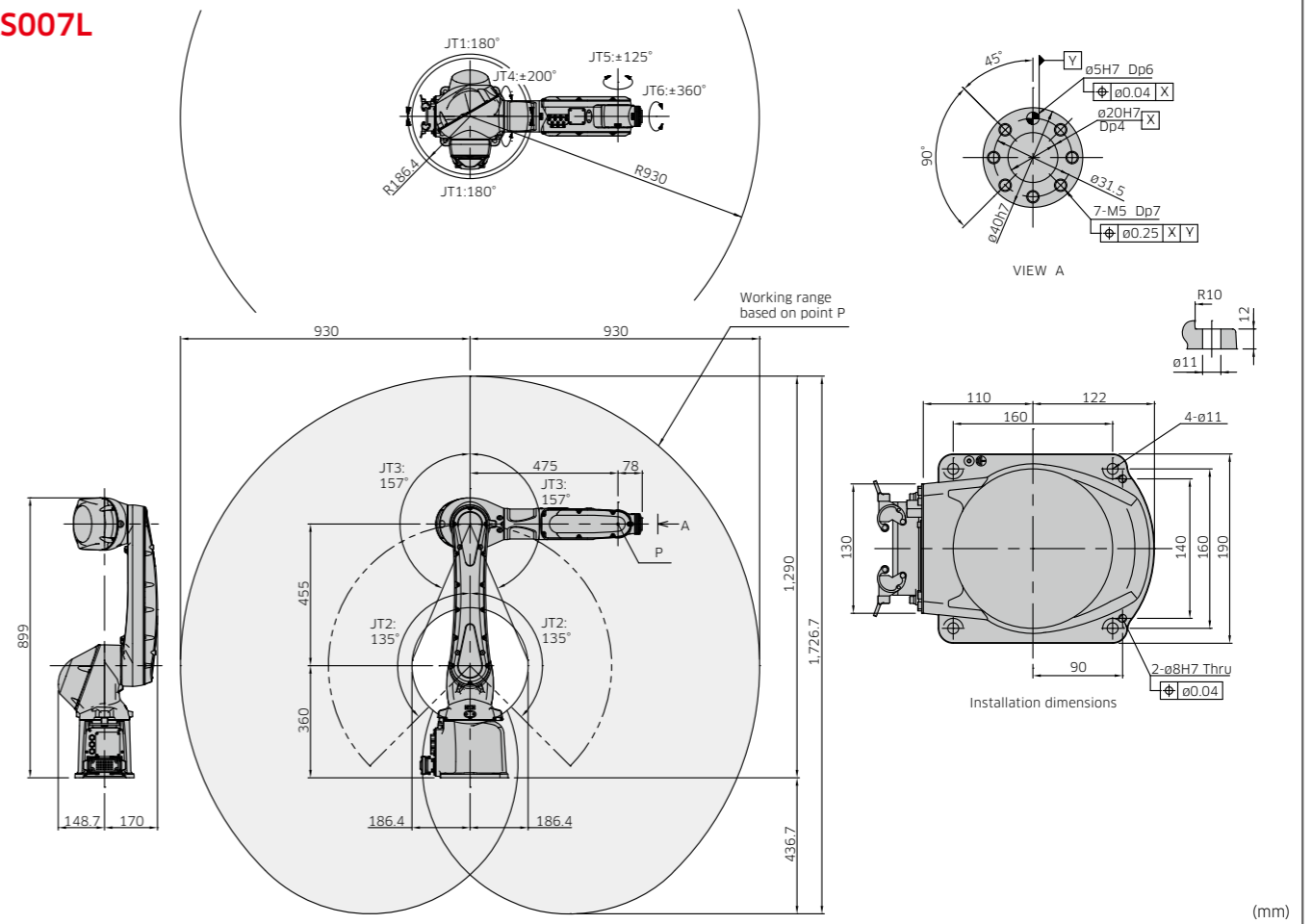
RS006L



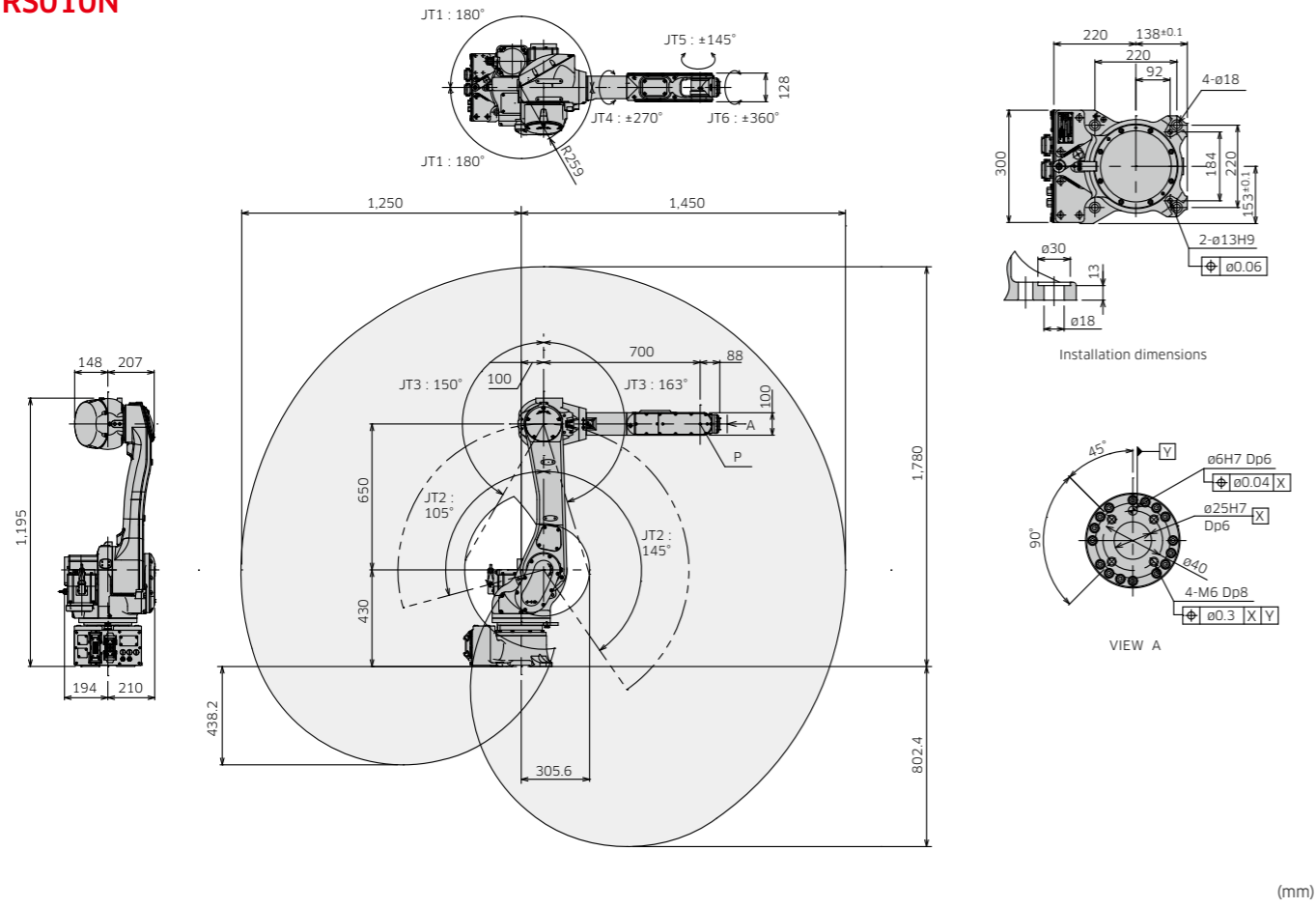
RS007N



RS007L

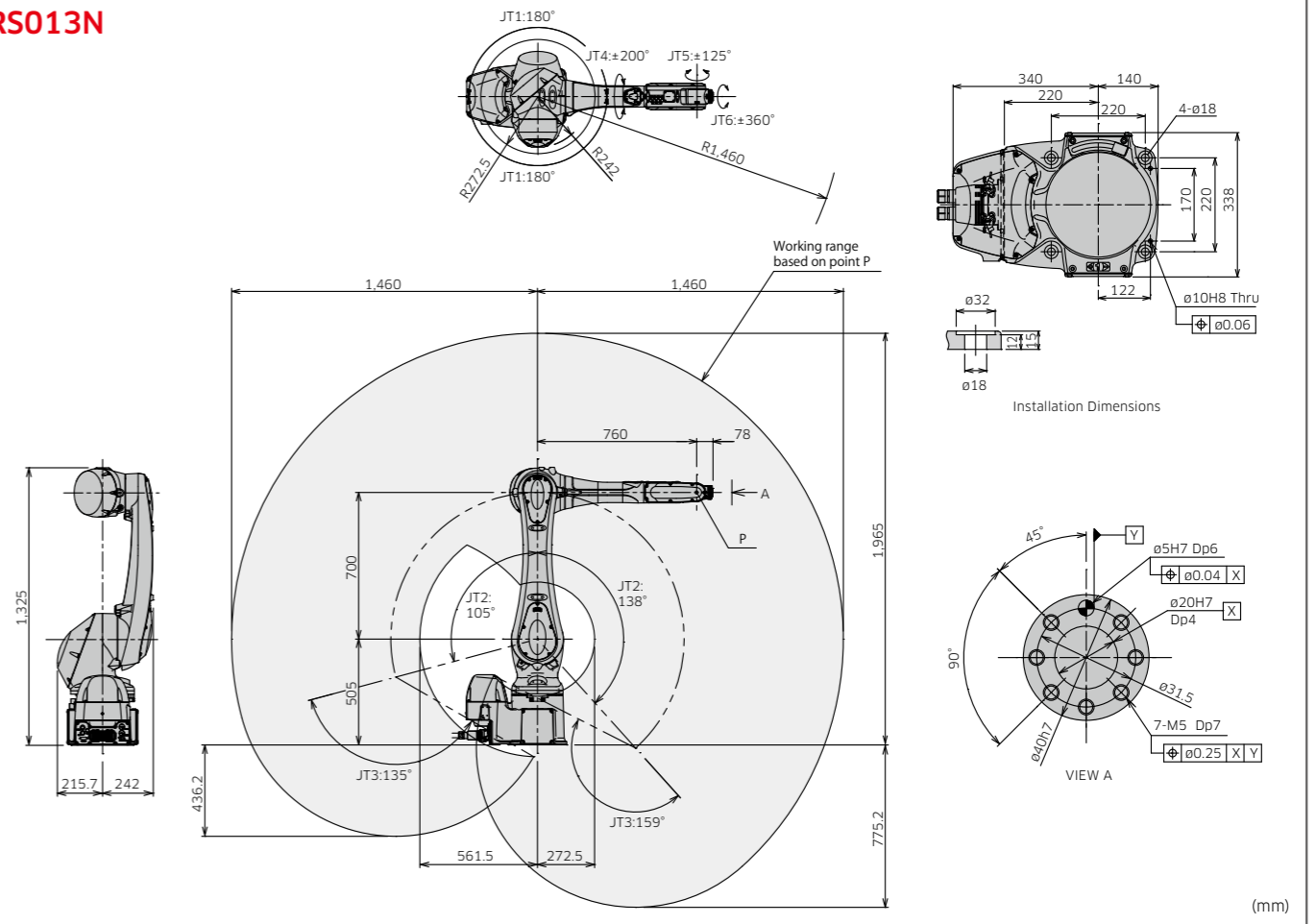


RS010N



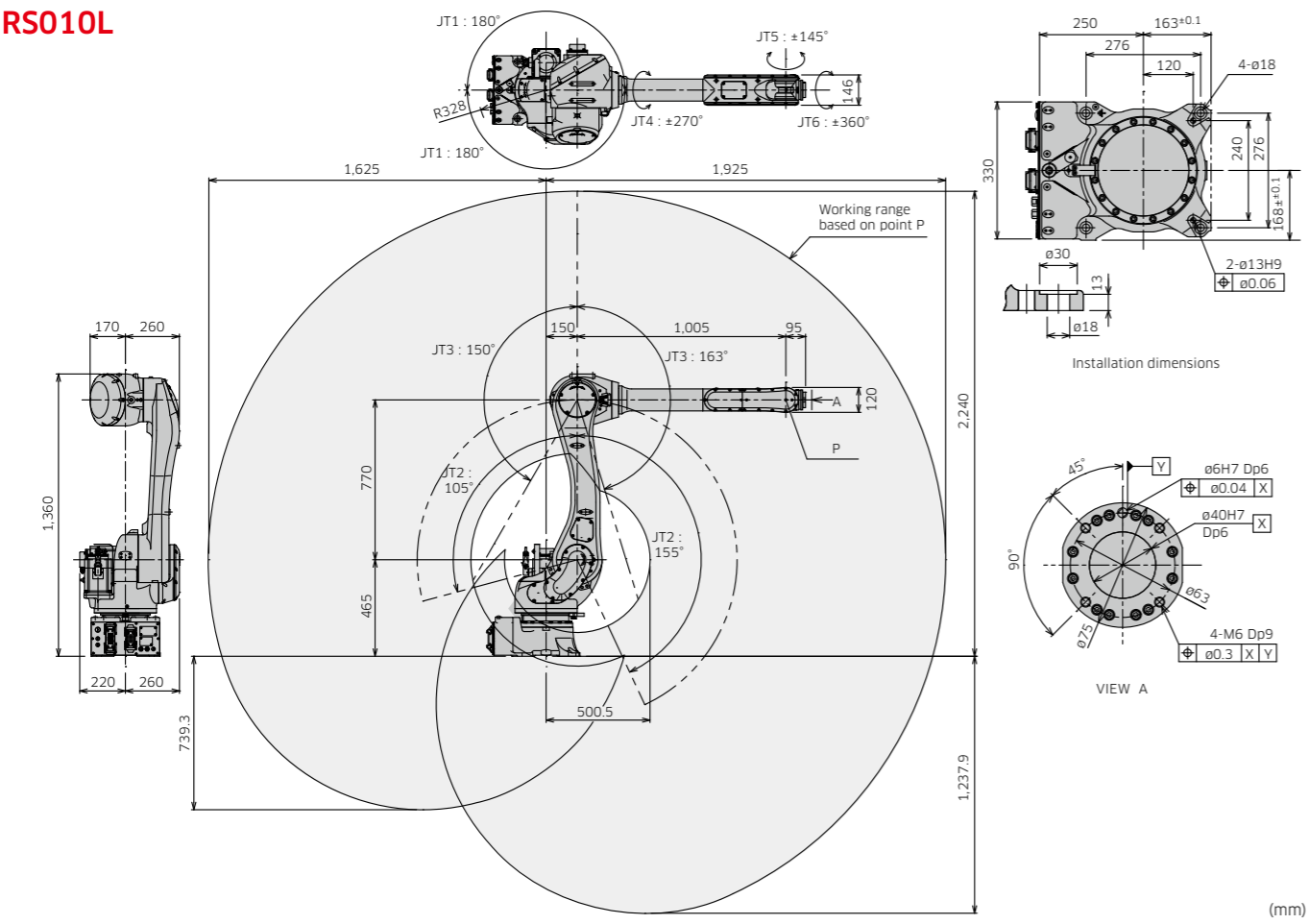
(mm)

RS013N



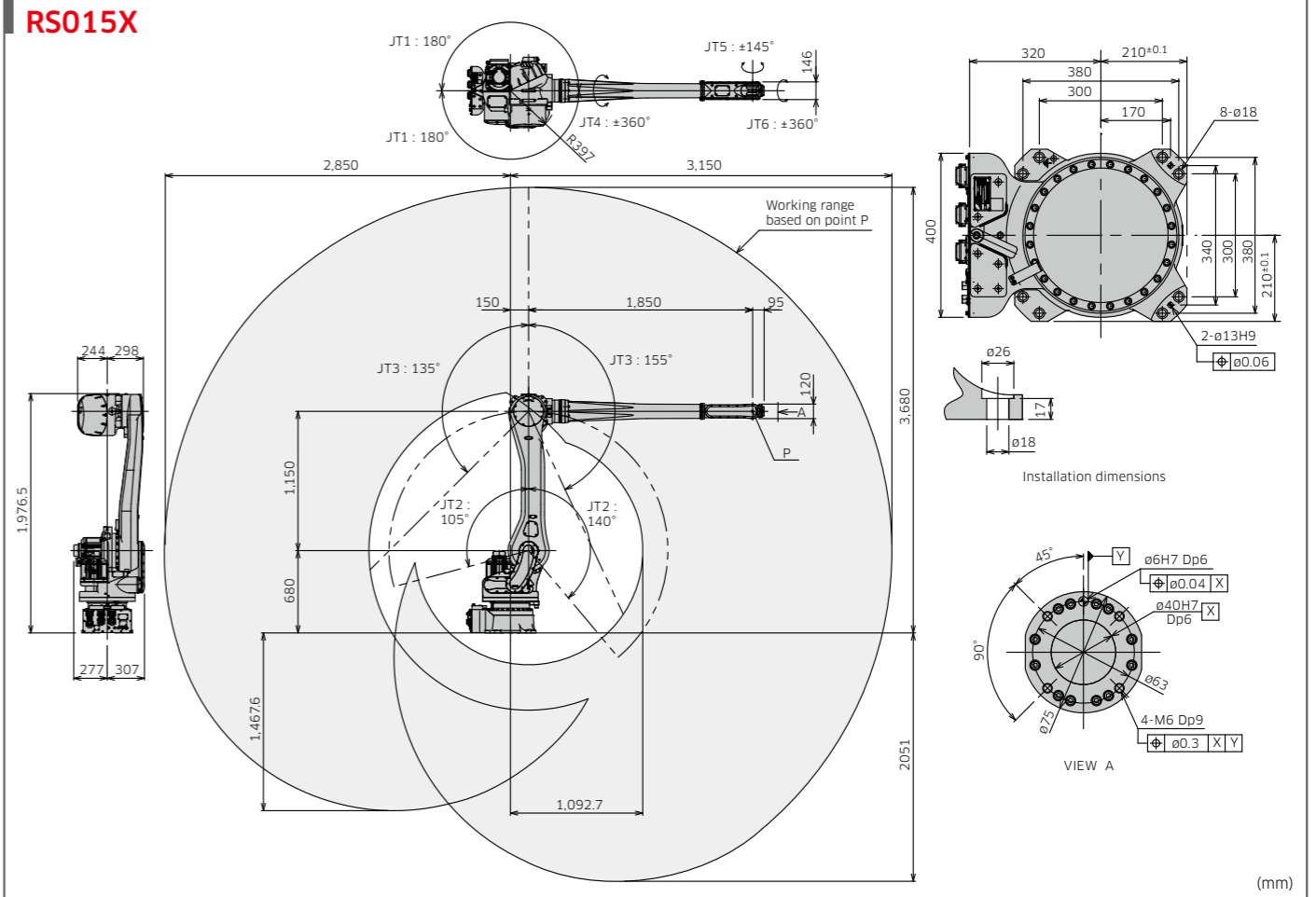
(mm)

RS010L



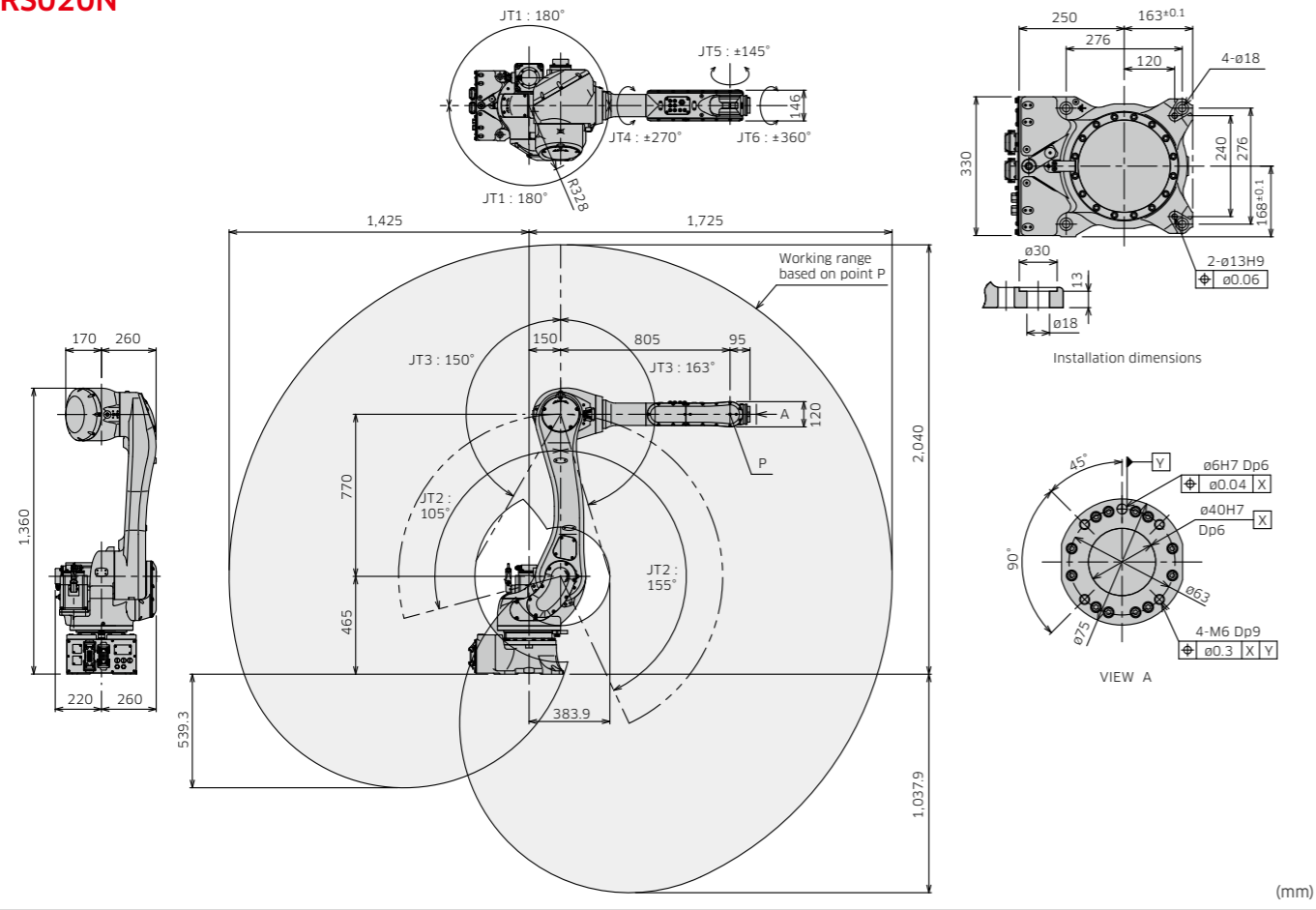
(mm)

RS015X

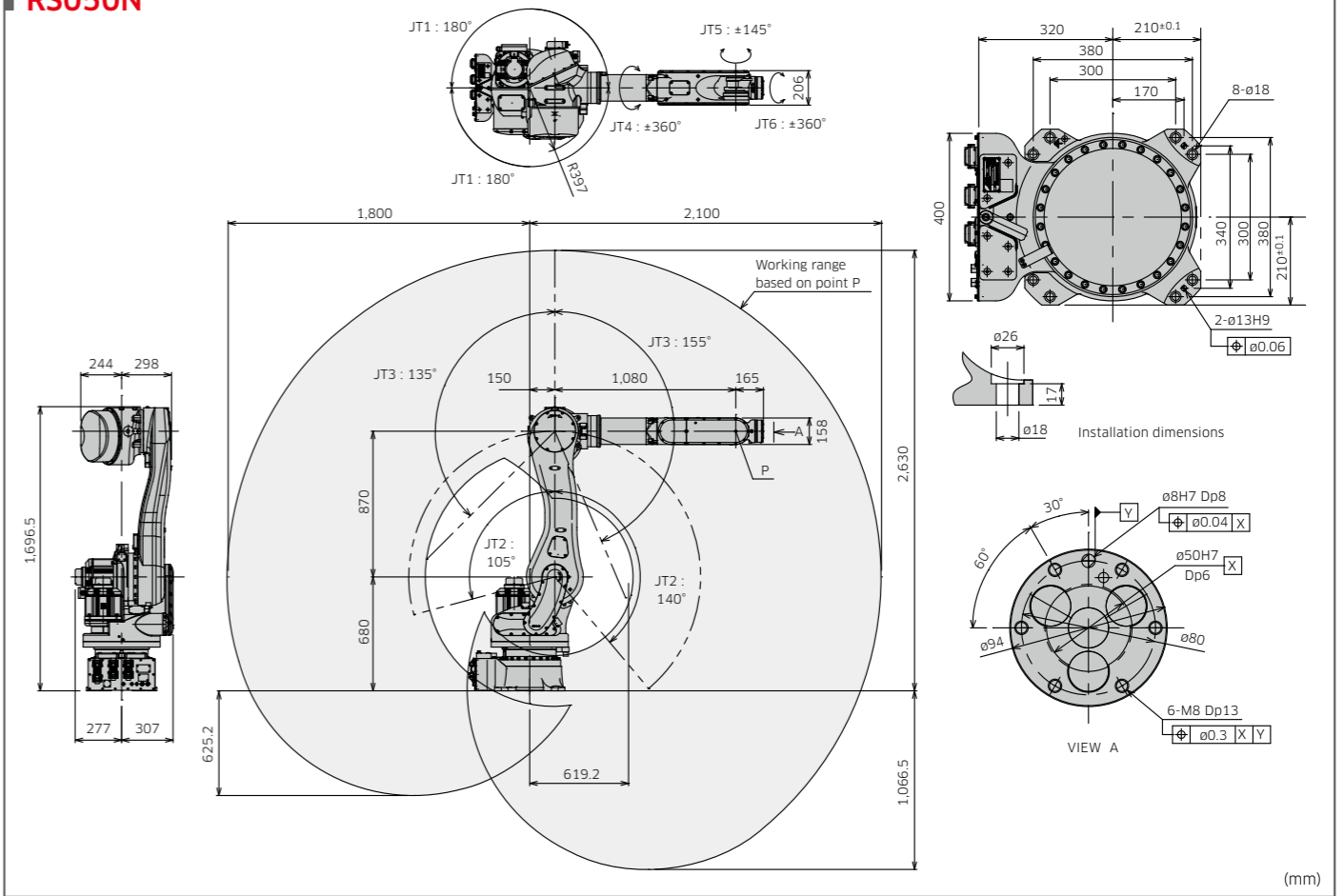


(mm)

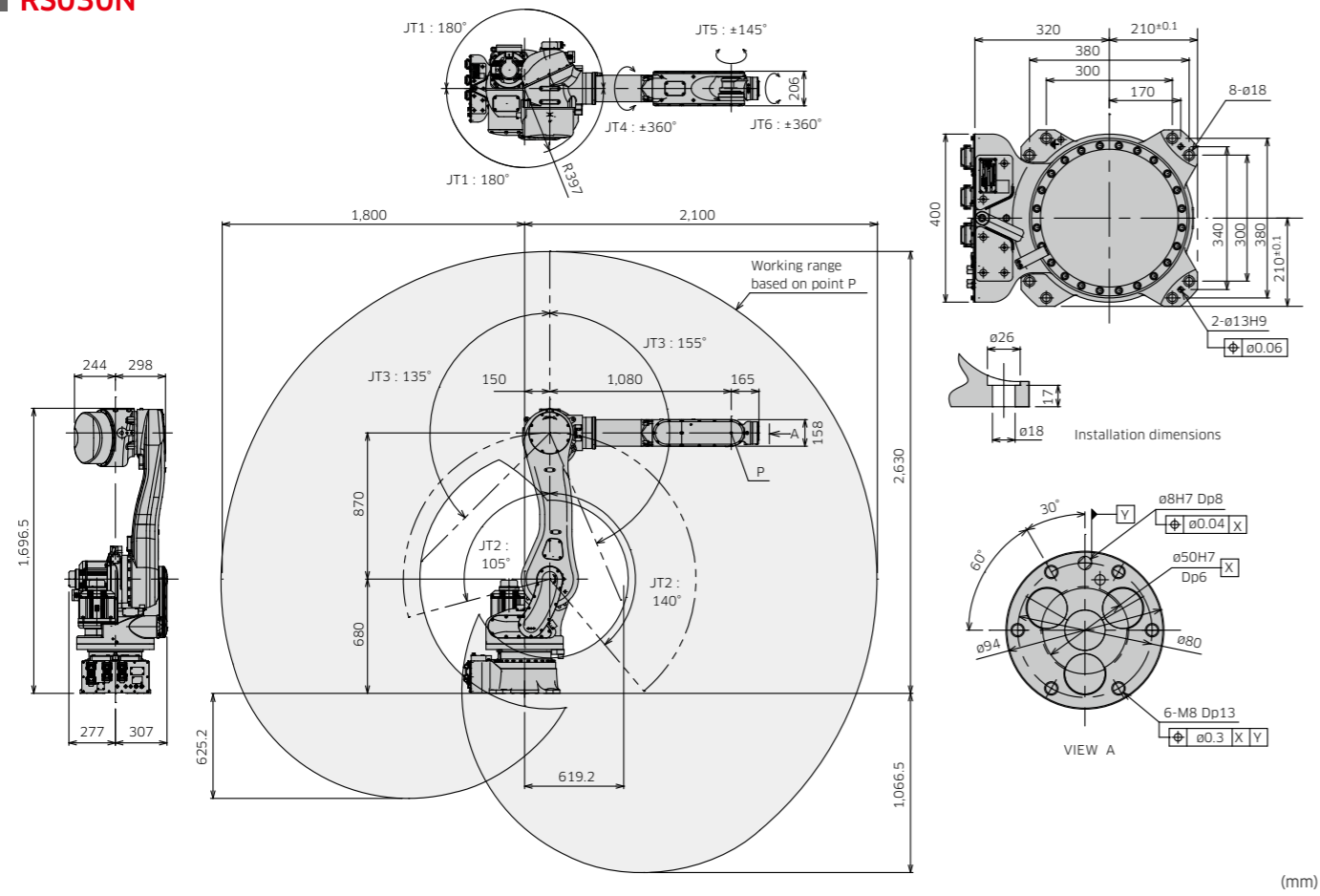
RS020N



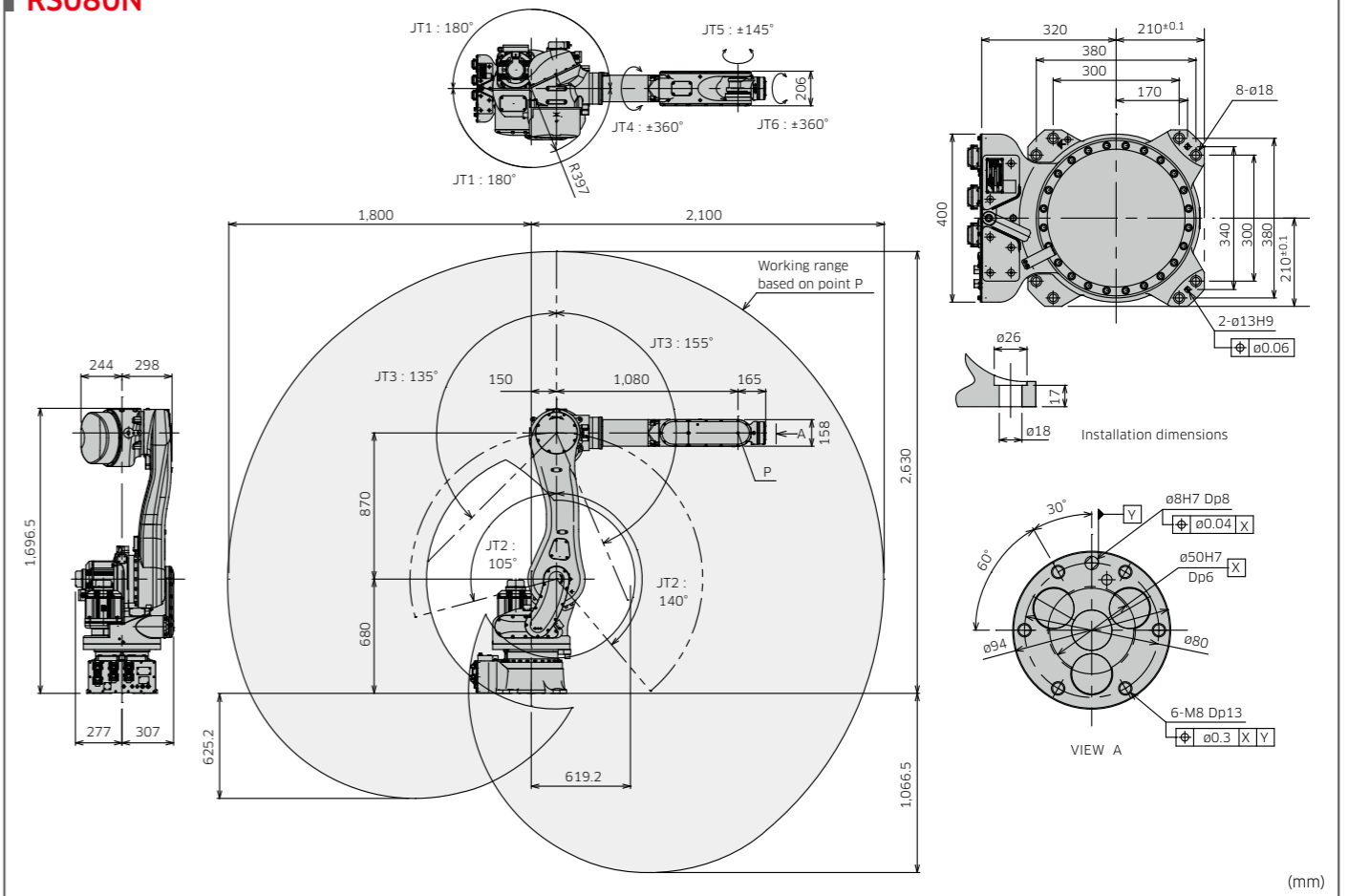
RS050N



RS030N



RS080N



F60 and E01/02 Controllers

- An evolution of engineering excellence

Kawasaki has incorporated 50 years' experience as a robot industry leader into the development of the most technically advanced controller available. The E and F Controllers combine high performance, unprecedented reliability, a host of integrated features and simple operation, all in a compact design.



Features

Compact

The overall volume of the E Controller has been reduced compared with the previous model. The small footprint of this compact controller allows for installation in "high-density" applications. For further space saving options, an upright-position or stacked installation is possible, without impeding performance.

The industry's smallest and lightest F60 controller can be installed in a 19-inch rack. Hand-carry is also possible.

User-friendly operation

The easy-to-use teach pendant now incorporates motor power and cycle start at your fingertips. Multiple information screens can be displayed simultaneously. The intuitive teaching interface is simple to use.

Programming ease & flexibility

A rich set of programming functions come standard with the E Controller to support a wide range of applications. Functions can be combined and easily configured within a system to suit a particular application. Also, the powerful Kawasaki AS Programming Language provides sophisticated robot motion and sequence controls.

Universal Support

Formerly, there were different controller specifications to support the respective standards of Japan/Asia, Europe, and the U.S. Now, functional safety technology has been employed to adopt a common safety circuit. The new controllers have common global specifications that support the standards of every country.

Easy maintenance

Modular components with limited cables translate into easy diagnostics and maintenance. A host of maintenance functions are available, including self-diagnostics on hardware and application errors to minimize troubleshooting and reduce MTTR (Mean Time To Repair). Remote diagnostics via the web server function enables service support from anywhere in the world.

Expandable

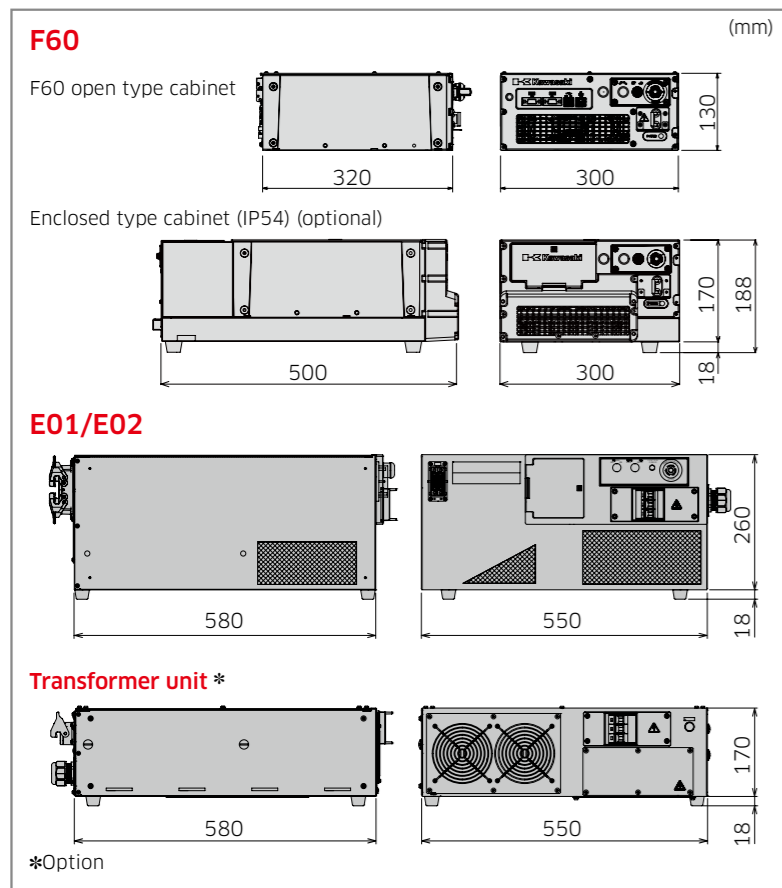
Three external axes can be added to the EOX controller for a total of nine controlled axes, while two can be added to the F60 controller for a total of eight controlled axes. Numerous communication fieldbuses are available for controlling peripheral devices. The Kawasaki K-Logic sequencer software can be combined with user customized interface panels on the teach pendant. The F60 controller also sports the following functions:

- Optional Bluetooth to connect to the controller.
- Max. four 32 I/O's as a remote I/O.

Specifications

		Standard			Option
		F60	E01	E02	
Dimensions (mm)		W300×D320×H130	W550×D580×H278		Transformer unit: W580×D580×H178 (EOX only)
Construction		Open type indirect cooling system (IP20)	Enclosed type direct cooling system (IP54)		IP54 : Enclosed type (only for F60) • Cabinet is larger
Controlled axes		6	7		Max. 9 (EOX) Max. 8 (F60)
Memory capacity (MB)		16	8		
I/O signals	External operation	Motor power off, Hold			
	Input (Channels)	16	32		EOX : Max. 96 F60 : Inside cabinet 64 (total max. 80) Including remote I/O : 128 (total max. 144)
	Output (Channels)	16	32		EOX : Max. 96 F60 : Inside cabinet 64 (total max. 80) Including remote I/O : 128 (total max. 144)
Cable length	Teach pendant (m)	5			10, 15
	Robot-controller (m)	5			10, 15
Mass (kg)		8.3	40		Transformer unit: 45 (EOX only)
Power requirements		AC200-230V ±10%, 50/60Hz, 1ø Max. 2.0kVA	AC200-220V ±10%, 50/60Hz, 3ø E01/Max. 5.6kVA, E02/Max. 7.5kVA		• Transformer unit (EOX only) AC380-415V ±10% or AC440-480V ±10% 50/60Hz, 3ø
		Class-D earth connection (Earth connection dedicated to robots), leakage current: Maximum 100mA			
Installation environment	Ambient temperature (°C)	0 - 45			
	Relative humidity (%)	35 - 85 (no dew, nor frost allowed)			
Teach pendant		TFT 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			Fast check mode switch
External memory		-			USB Memory
External interface		USB2.0 x 3/RS232C x 2, Ethernet (1000BASE-T/ 100BASE-TX/10BASE-T) x 2		USB, Ethernet (100BASE-T/ 10BASE-T), RS-232C	

External view & dimensions



System configuration diagram

