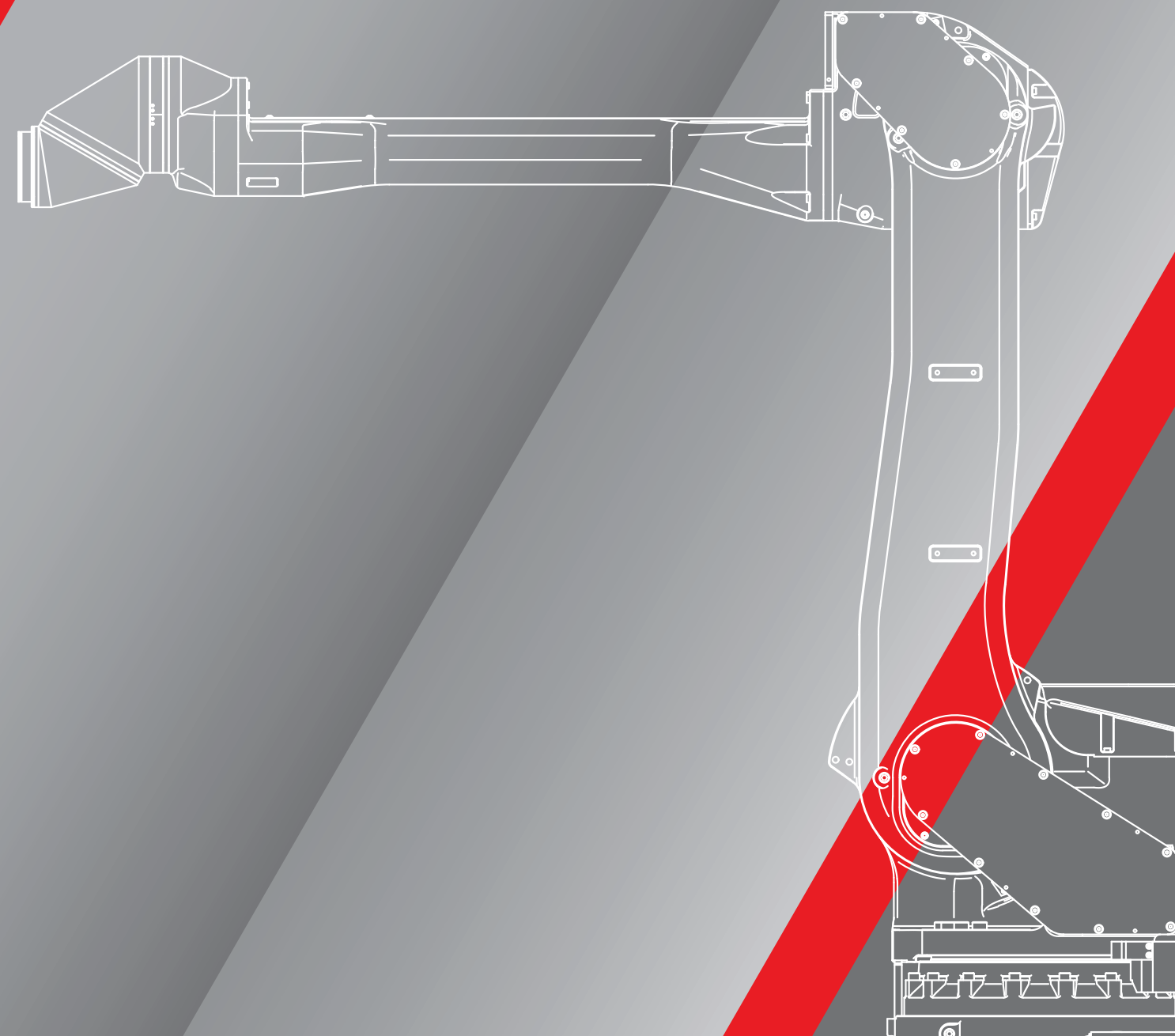


Kawasaki Robot

K series

Explosion-proof painting robots and pre-configured paint packages



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KawasakiRobotics.com

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 Wixom, Michigan U.S.A.

High performance robots for any painting application.

The K series line of painting robots combines high operational performance with powerful programming flexibility. With four types, or seven models, of explosion-proof robots available, Kawasaki has a robot for any painting application - from a one-robot paint cell to a fully integrated, pre-configured paint package.

Features

A broad range of robots

Kawasaki offers four types of painting robots, ranging from the KF121 for small workpieces to the KJ314 for large workpieces like automobile bodies.

Built-in hoses

The hollow wrist (3R) prevents paint mist from adhering on tubes and cables and can minimize the chance of painting defects. The inner diameter of the hollow wrist is 70 mm.

Enhanced peripheral units

A control panel is provided to enhance the ease of system development and to interface with the robot traveling unit, workpiece transfer unit, rotation unit, and other devices.

Significant painting experience

Years of robotic painting experience gives Kawasaki the necessary background to provide a paint robot or pre-configured paint package that meets your exact needs. K series robots are equipped with advanced functionality and top of the line peripheral equipment, resulting in high quality painting for all applications.

Customer support

Our professional staff is available to assist at any time, whether it's during the initial planning and startup stages, or well into production.

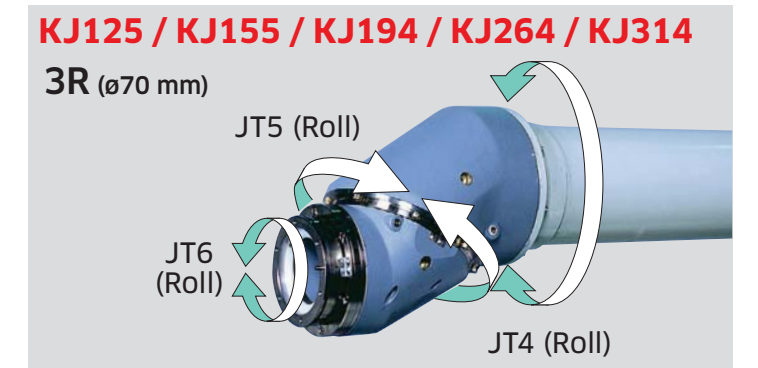
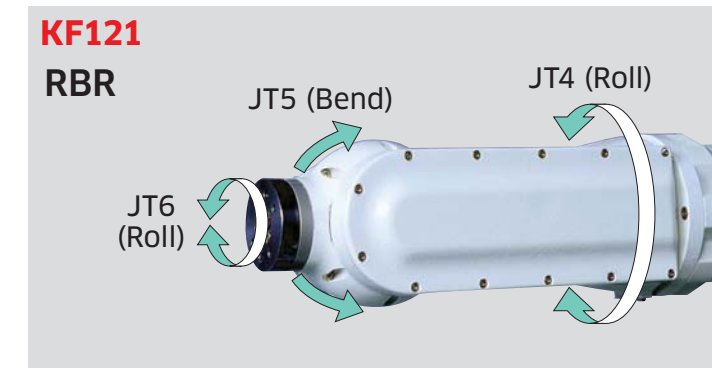


Standard specifications

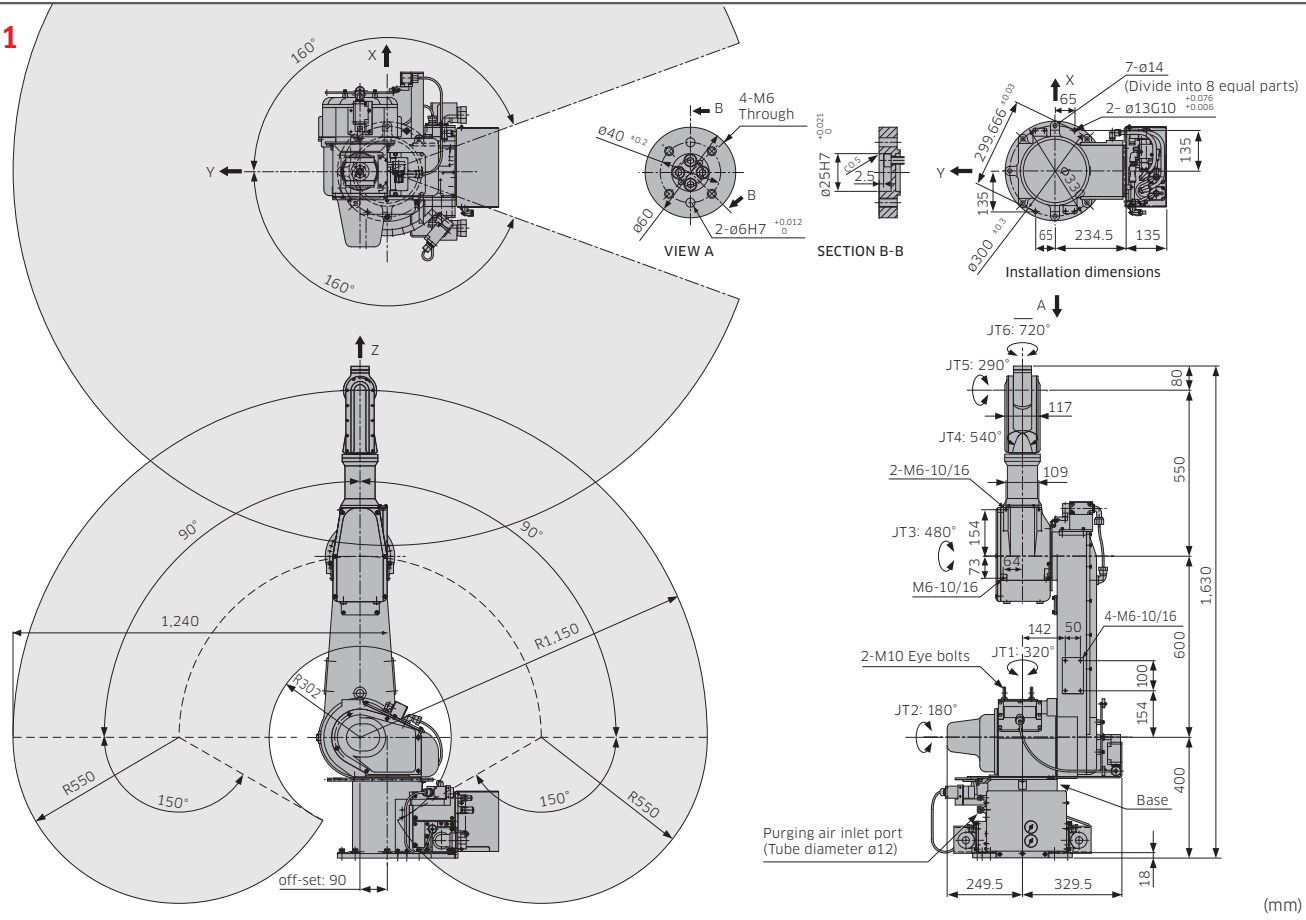
		KF121	KJ125 Floor	KJ125 Wall	KJ155 Floor	KJ155 Wall		KJ194 Floor/Shelf/Wall	KJ244 Floor/Shelf/Wall	KJ264 Floor/Shelf/Wall	KJ314	
Degrees of freedom (axes)		6							6			7
Max. payload (kg)		5	Wrist: 8 Arm: 5	Wrist: 8 Arm: 5	Wrist: 8 Arm: 5	Wrist: 8 Arm: 5		Wrist: 15 Arm: 25	Wrist: 15 Arm: 25	Wrist: 15 Arm: 25	Wrist: 15 Arm: 25	
Wrist type		RBR	3Rø70 *5	3Rø70 *5	3Rø70 *5	3Rø70 *5		3Rø70 *5	3Rø70 *5	3Rø70 *5	3Rø70 *5	
Motion range (°)	Arm rotation (JT1)	±160	±160	±160	±160	±160		±120 / ±120 / +30 - -120 *6	±120/±120 /+30 - -120 *4	120 / 120 / +30 - -120 *6	±120	
	Arm out-in (JT2)	±90	+130 - -80	+130 - -80	+130 - -80	+130 - -80		+130 - -80	+130 - -80	+130 - -80	+130 - -80	
	Arm up-down (JT3)	+150	+90 - -75	+90 - -75	+90 - -75	+90 - -75		+90 - -65	+90 - -65	+90 - -65	+90 - -65	
	Wrist swivel (JT4)	±270	±720	±720	±720	±720		±720	±720	±720	±720	
	Wrist bend (JT5)	±145	±720	±720	±720	±720		±720	±720	±720	±720	
	Wrist twist (JT6)	±360	±410	±410	±410	±410		±410	±410	±410	±410	
	Arm swing (JT7)	-	-	-	-	-		-	-	-	-	±90
Max. Torque (N-m)	Wrist swivel (JT4)	7.8	21.8	21.8	21.8	21.8		56.2	56.2	56.2	56.2	
	Wrist bend (JT5)	7.8	17	17	17	17		43.4	43.4	43.4	43.4	
	Wrist twist (JT6)	2.9	8	8	8	8		22.0	22.0	22.0	22.0	
Moment of Inertia (kg·m ²)	Wrist swivel (JT4)	0.17	0.9	0.9	0.9	0.9		2.19	2.19	2.19	2.19	
	Wrist bend (JT5)	0.17	0.54	0.54	0.54	0.54		1.31	1.31	1.31	1.31	
	Wrist twist (JT6)	0.06	0.12	0.12	0.12	0.12		0.33	0.33	0.33	0.33	
Positional repeatability (mm) *1		±0.2	±0.15	±0.15	±0.15	±0.15		±0.5	±0.5	±0.5	±0.5	
Max. reach (mm) *2		1,240	1,299	1,299	1,545	1,545		1,940	2,640	2,640	3,100	
Max. speed (m/s)		1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5	
Mass (kg)		140	190	190	195	195		530 / 520 / 520	540/530/530	540 / 530 / 530	720	
Body color		Munsell 10GY9/1 equivalent						Munsell 10GY9/1 equivalent				
Installation		Floor, Wall	Floor	Wall	Floor	Wall		Floor/Shelf/Wall	Floor/Shelf/Wall	Floor/Shelf/Wall	Wall	
Explosion protection	America	Pressurized and intrinsically safe (CLI ZN1 AExpIIB T4 / AExpIIB T4)						Pressurized and intrinsically safe (CLI ZN1 AExpIIB T4 / AExpIIB T4)				
	Canada	Pressurized and intrinsically safe (CLI ZN1 ExpIIB T4 / Exib IIB T4)						Pressurized and intrinsically safe (CLI ZN1 ExpIIB T4 / Exib IIB T4)				
	Europe, China, Korea	Pressurized and intrinsically safe (II2G ExpIIB T4 / Exib IIB T4)						Pressurized and intrinsically safe (II2G ExpIIB T4 / Exib IIB T4)				
	Japan & Asia *3	Pressurized and intrinsically safe (ExpIIB T4 / Exib IIB T4)						Pressurized and intrinsically safe (f2G4 / Exib IIB T4)				
Environmental conditions	Ambient temperature (°C)	0 - 40						0 - 40				
	Relative humidity (%)	35 - 85 (no dew, nor frost allowed)						35 - 85 (no dew, nor frost allowed)				
Power requirements (kVA) *4		1.5						5				
Controller	America	E37	E25	E25	E27	E27		E35				
	Europe	E47	E25	E25	E27	E27		E45				
	Japan & Asia	E27	E25	E25	E27	E27		E25				

*1: Conforms to ISO9283
 *2: Maximum reach: The RBR (Roll Bend Roll) wrist refers to the distance from the center of JT1 to the center of JT5. The BBR (Bend Bend Roll) wrist is the distance from the top arm center line to the JT4 axis. The 3R (Roll Roll Roll) wrist is the distance from JT1 to the axis cross-point between JT4 and JT5.
 *3: Other than China and Korea
 *4: Depends on the payload and motion patterns
 *5: Hose built-in
 *6: Operating range of JT1 is dependent on the side of mounting surface. The range is "+120--30" in the case of the left side. The range is "+30--120" in the case of the right side.

Wrist types

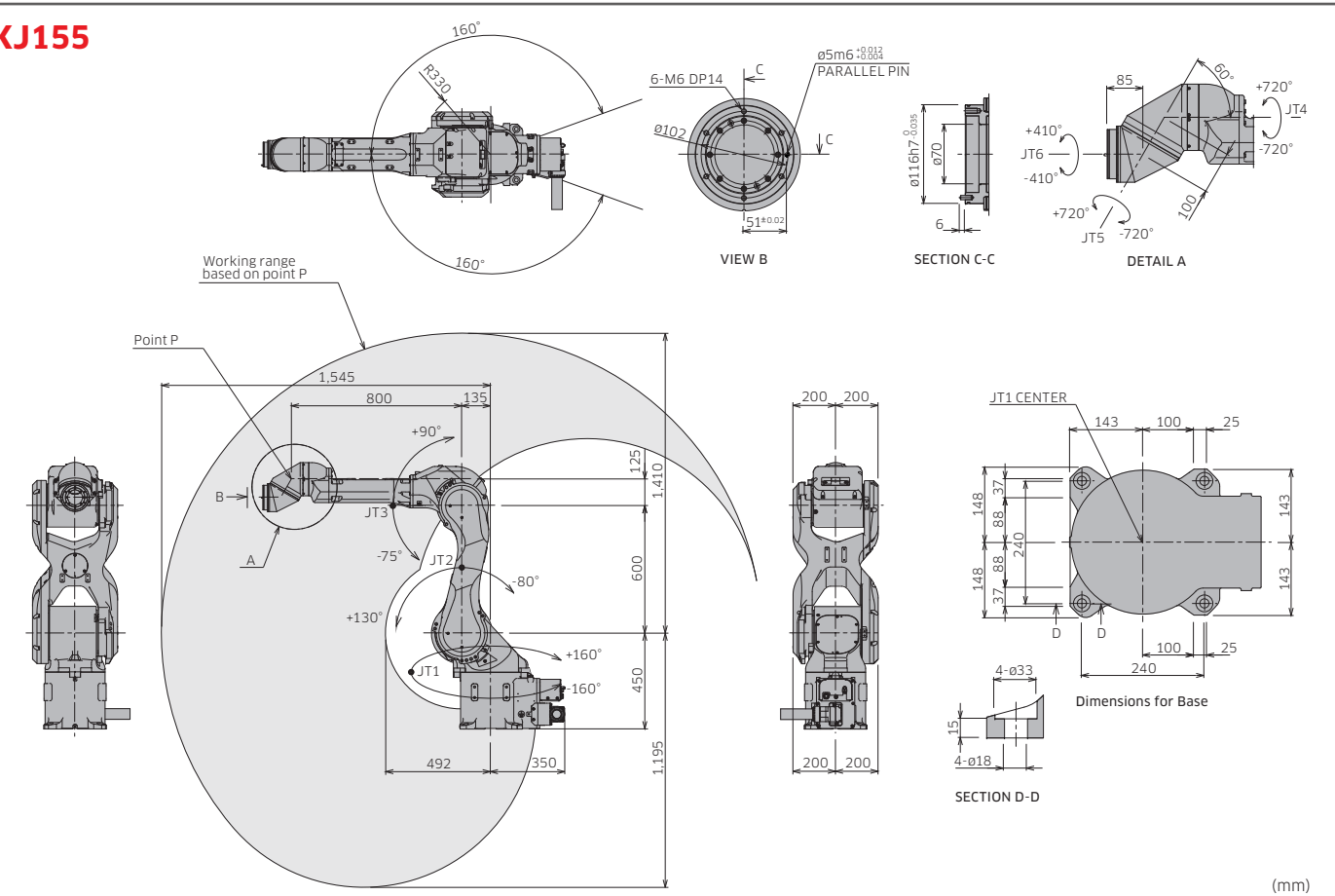


KF121



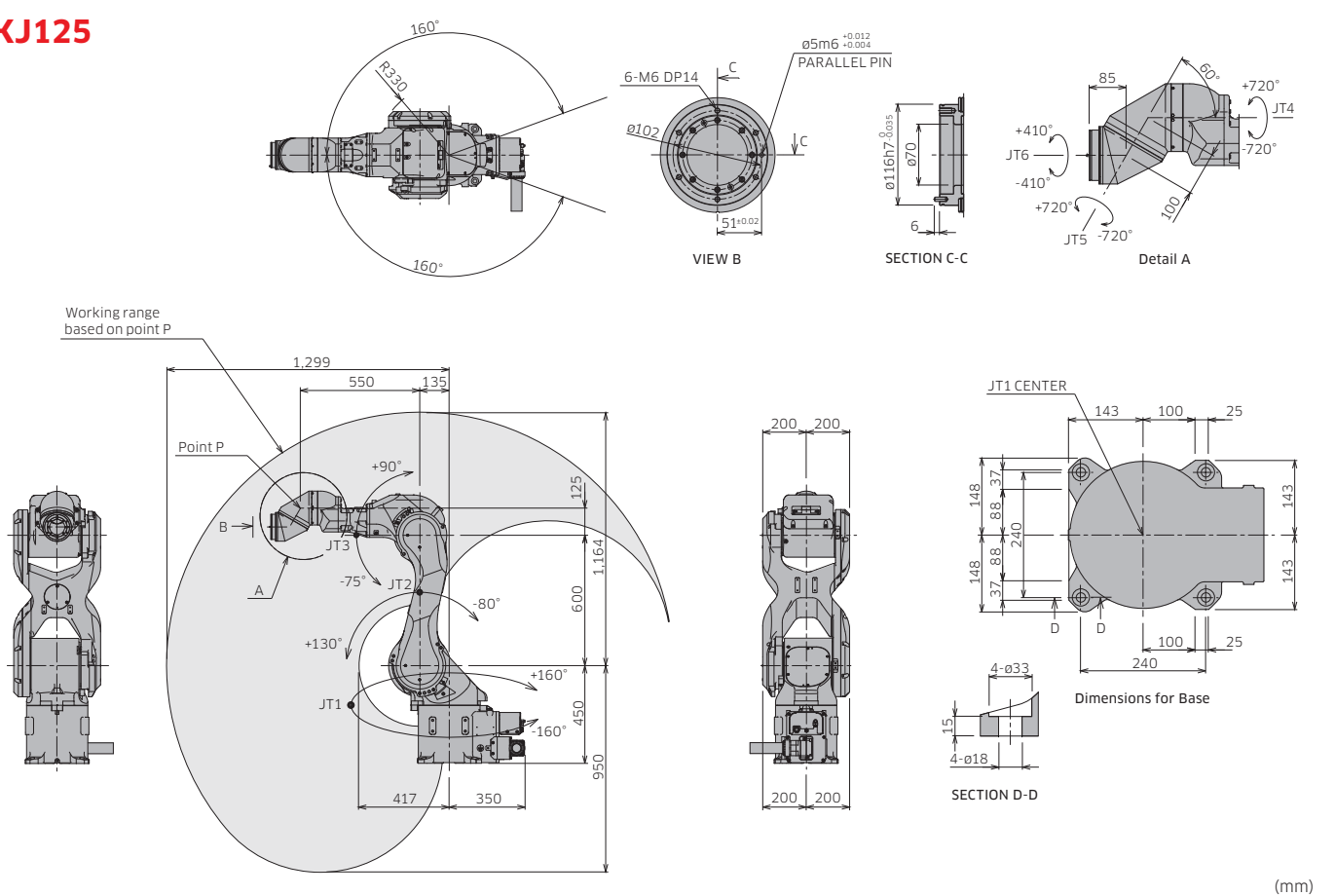
(mm)

KJ155



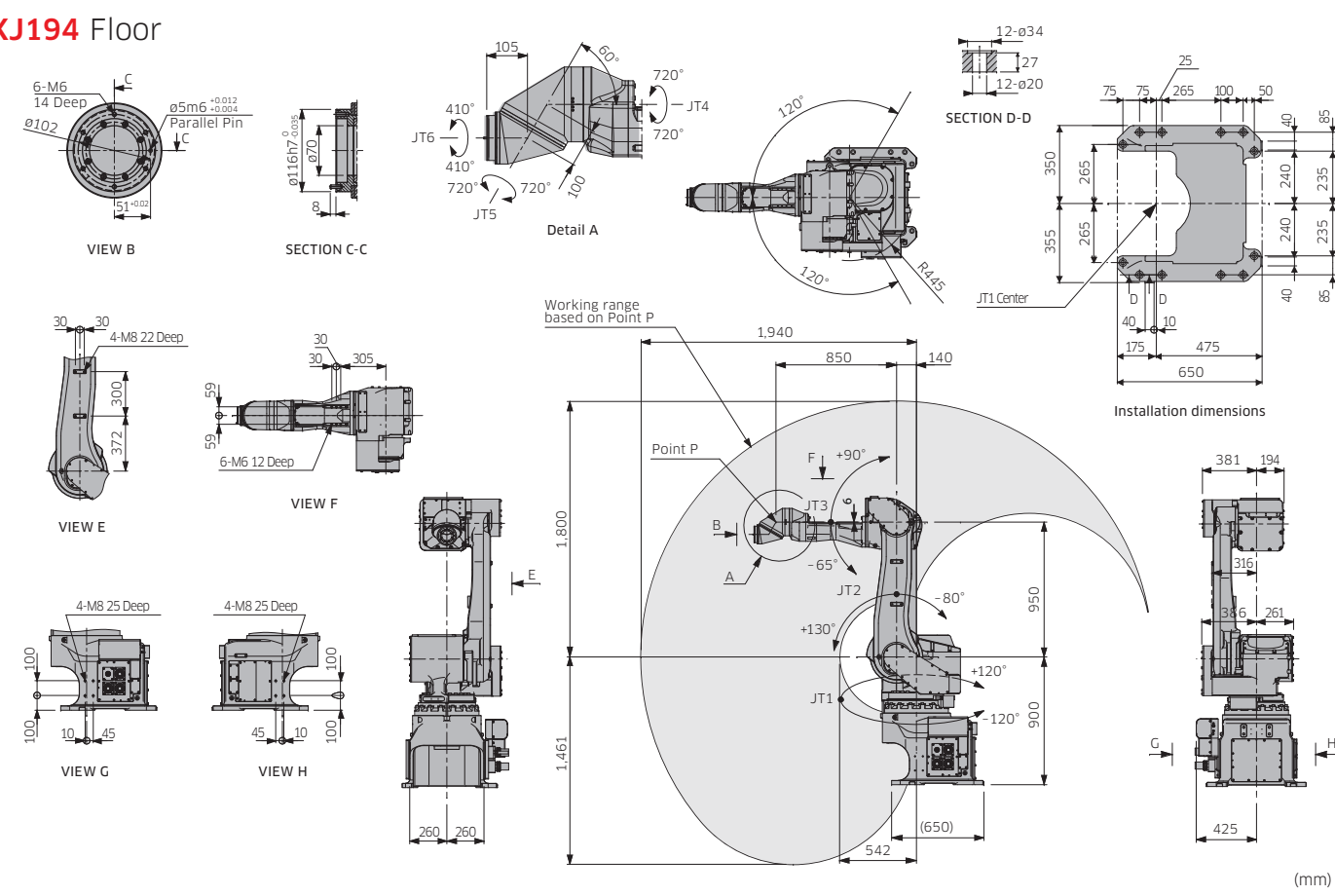
(mm)

KJ125



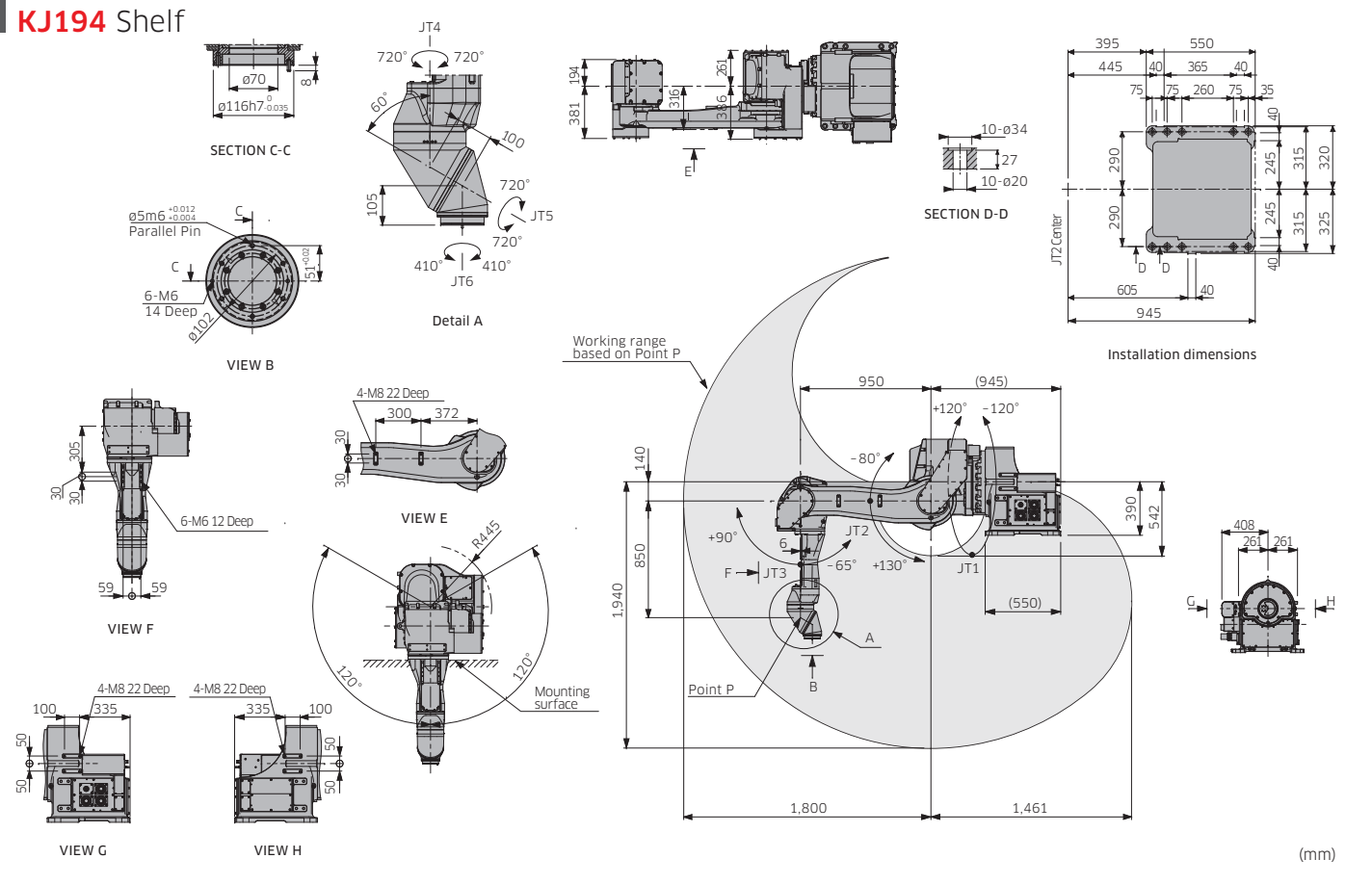
(mm)

KJ194 Floor

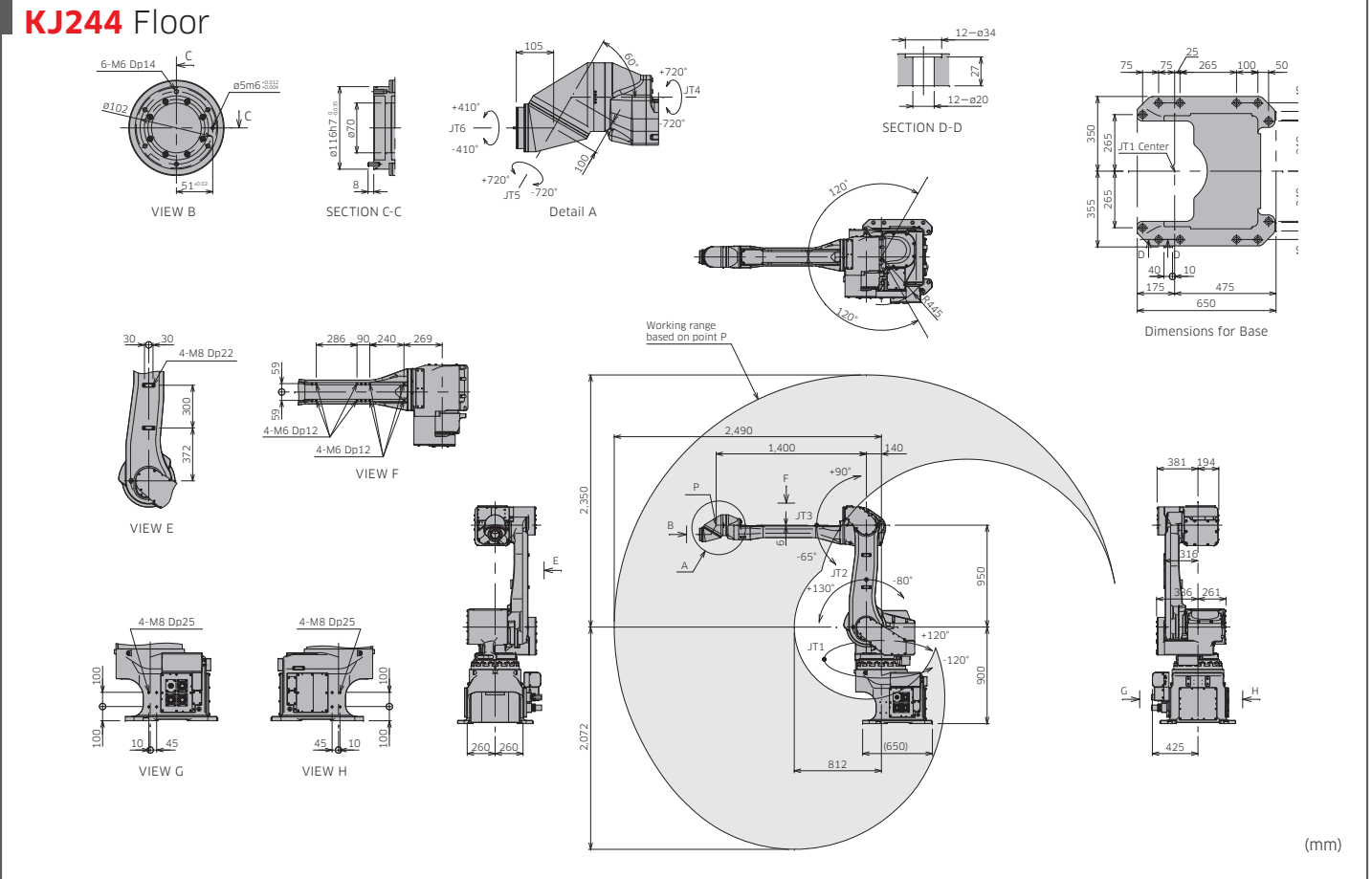


(mm)

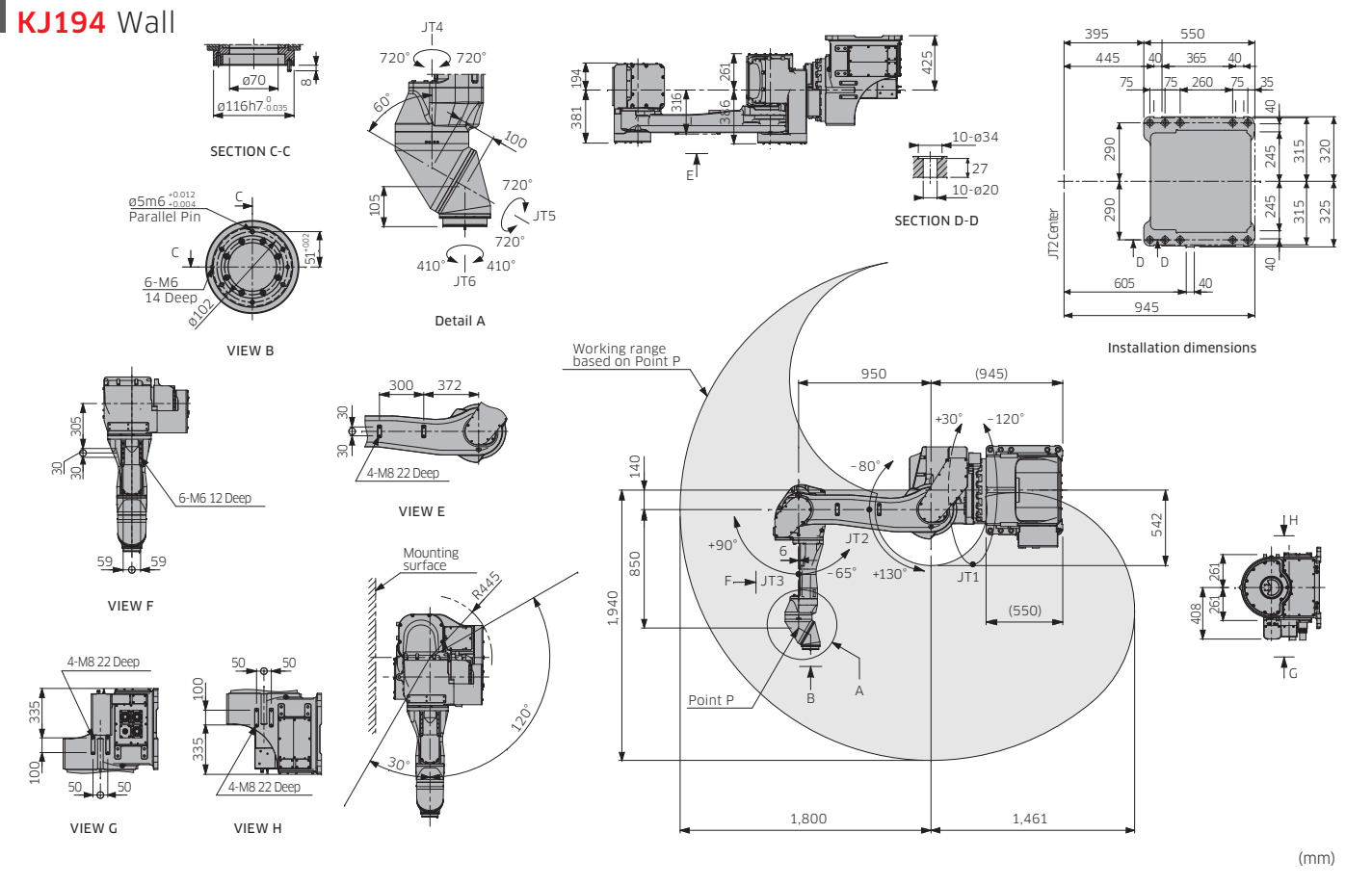
KJ194 Shelf



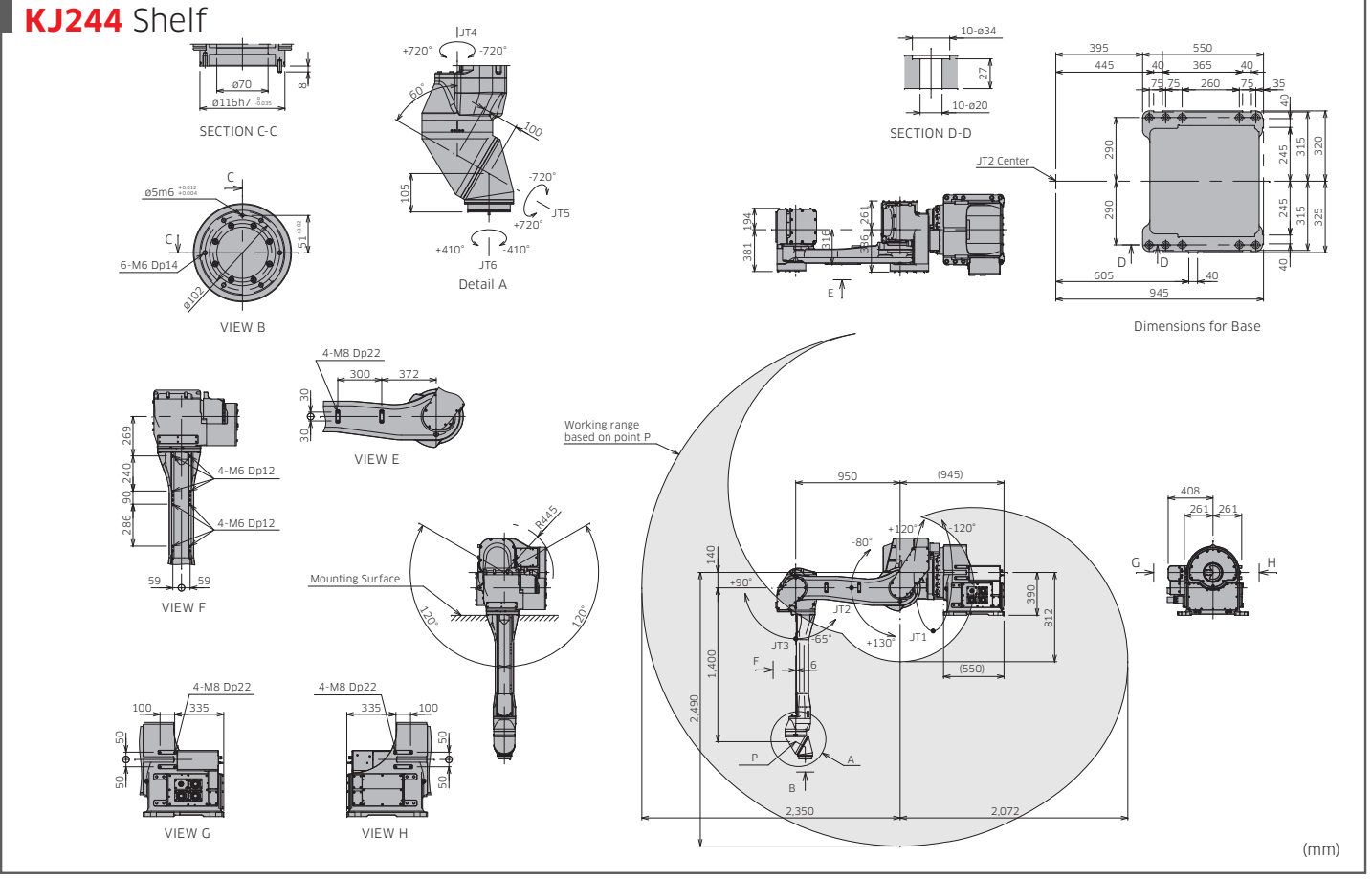
KJ244 Floor



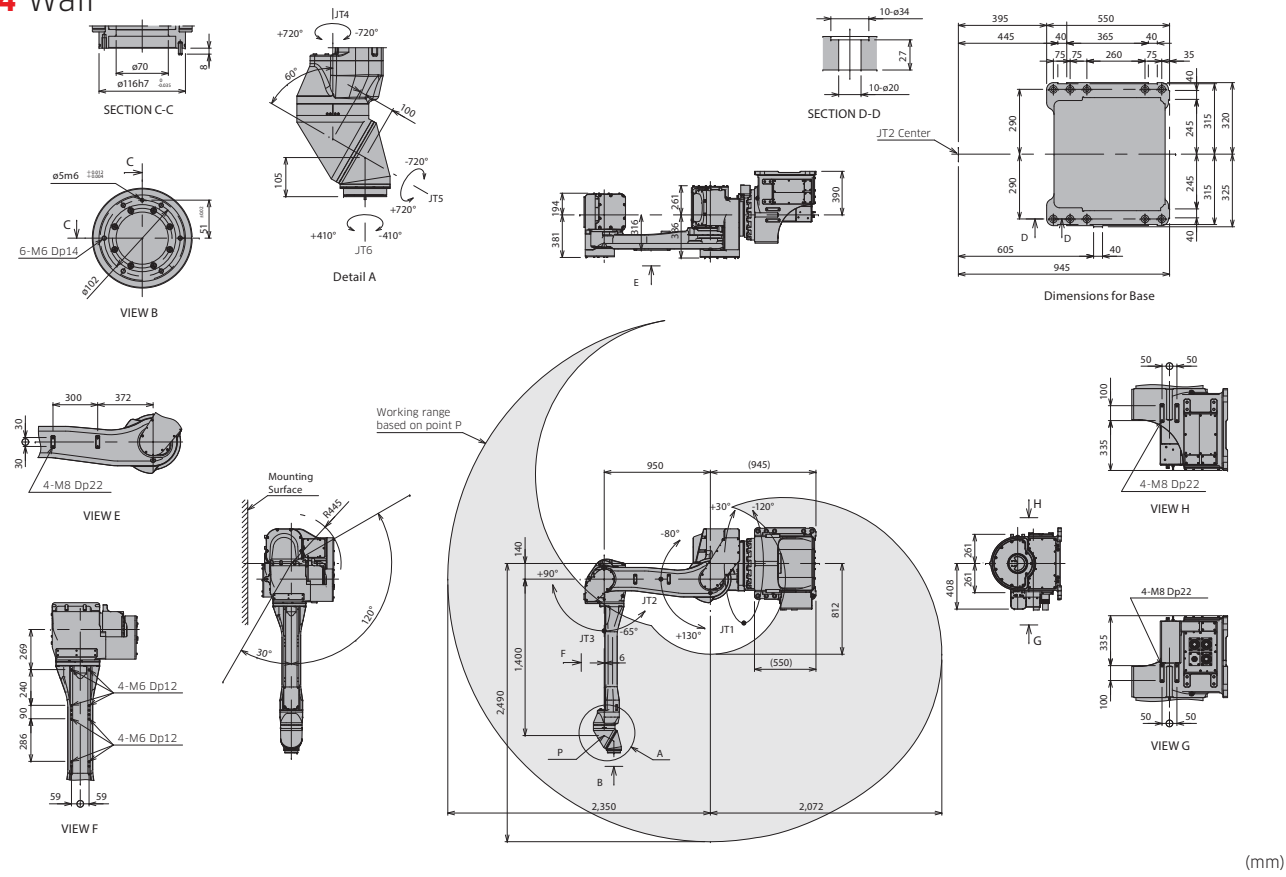
KJ194 Wall



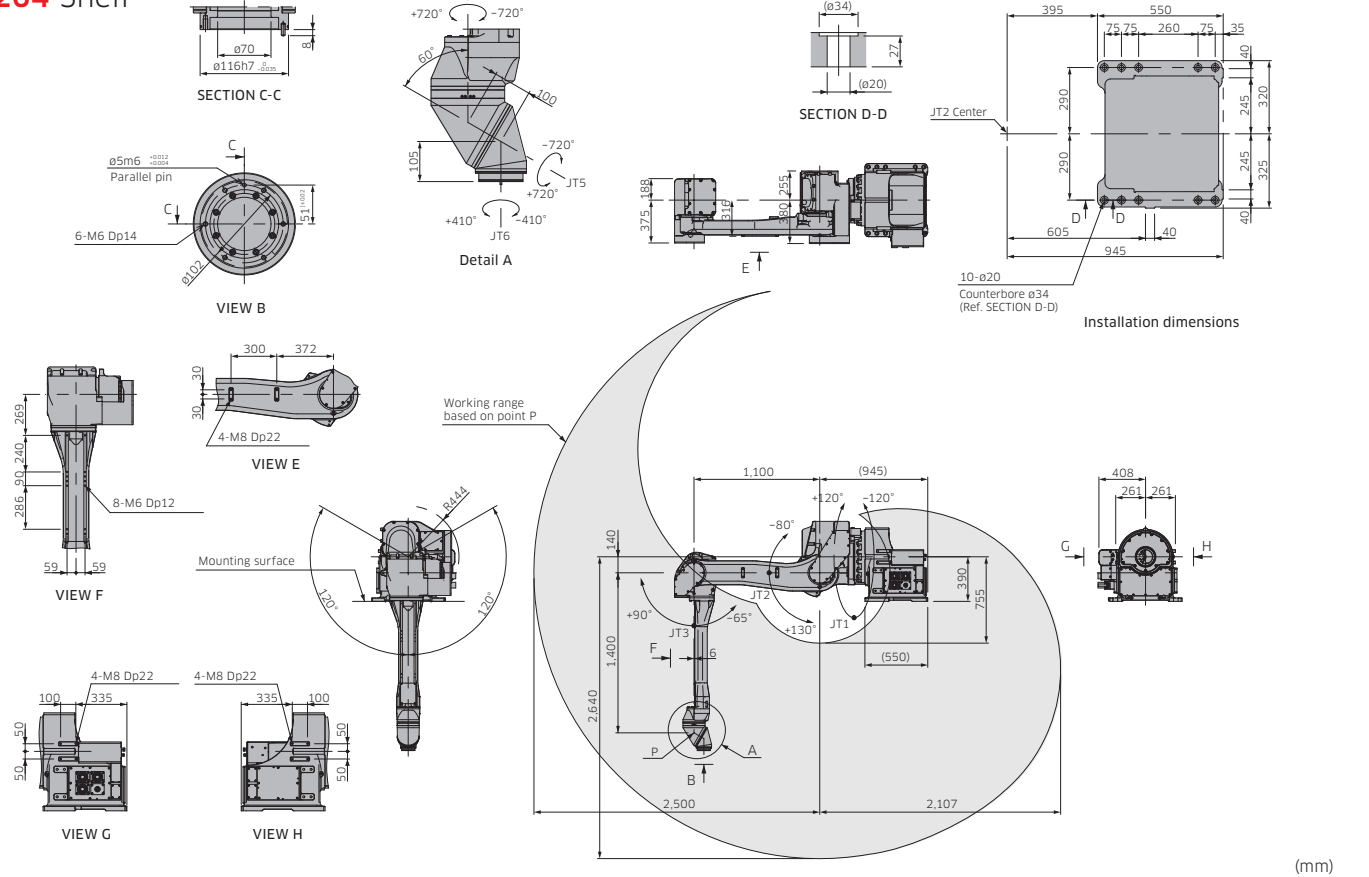
KJ244 Shelf



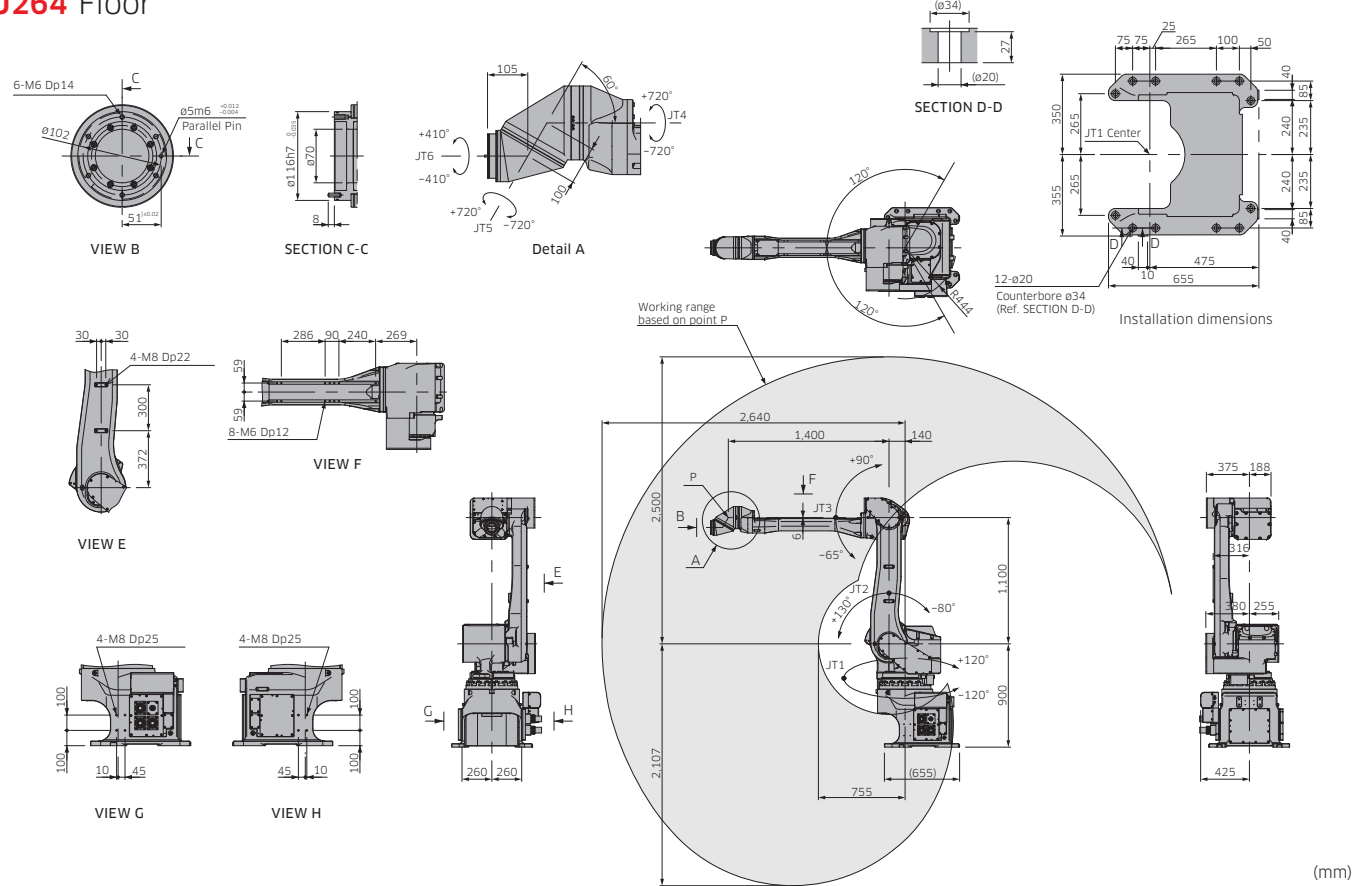
KJ244 Wall



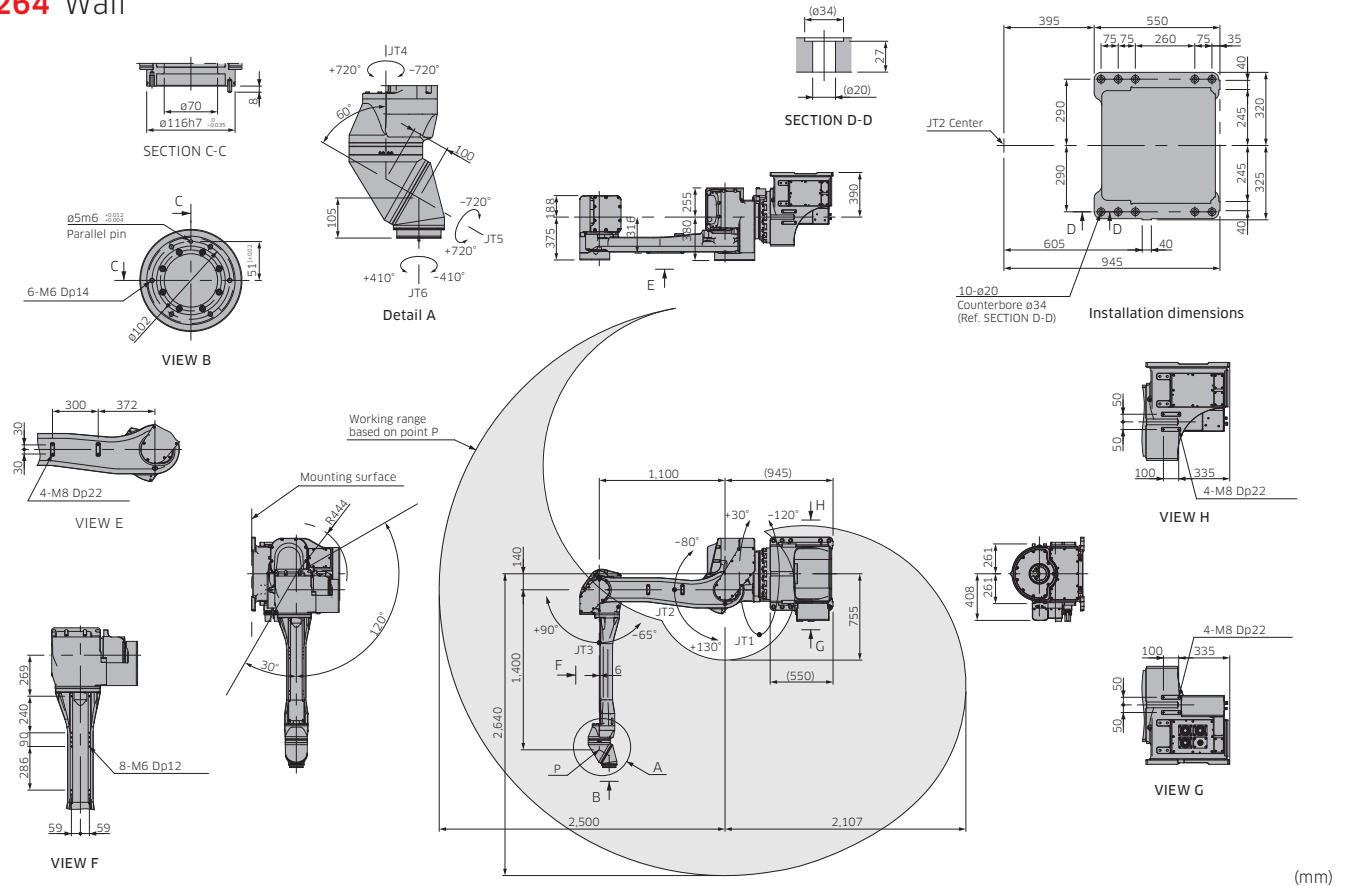
KJ264 Shelf



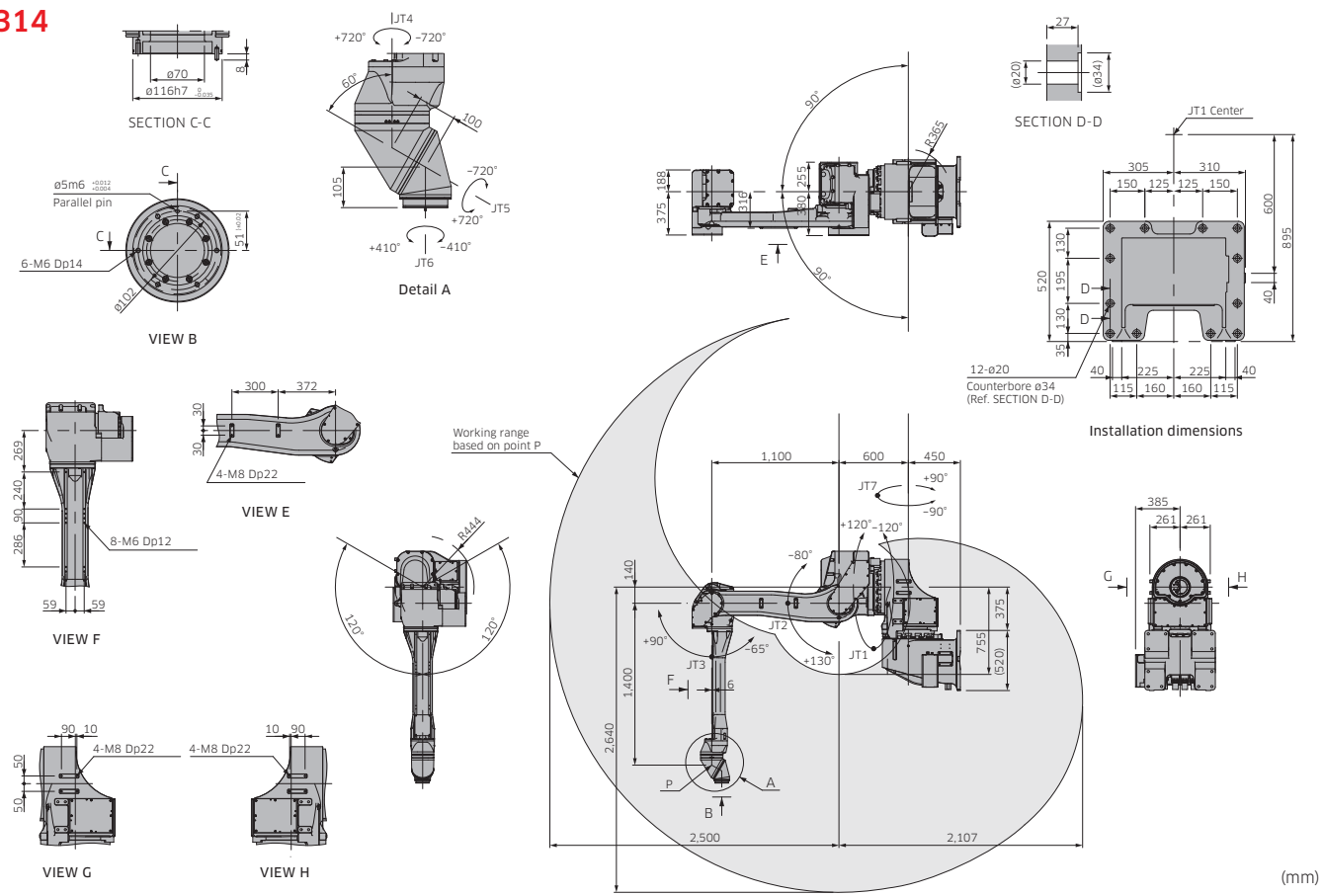
KJ264 Floor



KJ264 Wall



KJ314



E series

The E Controller combines 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. The small footprint of this compact controller allows for installation in "high-density" applications.

Explosion-proof teach pendant

The explosion-proof teach pendant's large, color LCD touch panel allows users to teach, edit and monitor information such as current position and I/O signals in the explosion-proof area. The interface panel can be customized to meet user preferences, and the backlit screen is easy to read in dark locations.

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 and the intuitive teaching interface is simple to use.

Painting control functions (option)

This flexible system is compatible with a range of painting devices, and allows you to control the color change valve, electro-pneumatic regulator and the rotation of the discharge control gear pump all from the controller's CPU board. You can also set up painting conditions and conduct discharge rate calibration on the teach pendant screen.

Increased memory storage

The enhanced CPU capacity of the E controller results in more accurate trajectory control, faster program execution, and quicker file saving and loading. In addition, the amount of memory provides greater program storage capacity, and the USB port makes it easy to connect external storage devices.

Easy maintenance

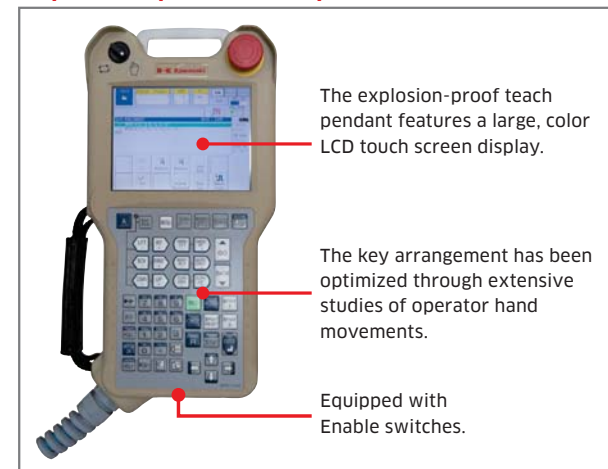
Modular components with limited cables translate into easy diagnostics and maintenance. A host of maintenance functions are available, including self-diagnostics on hardware and application errors to minimize troubleshooting and reduce MTTR (Mean Time To Repair). Remote diagnostics via the web server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

Highly expandable

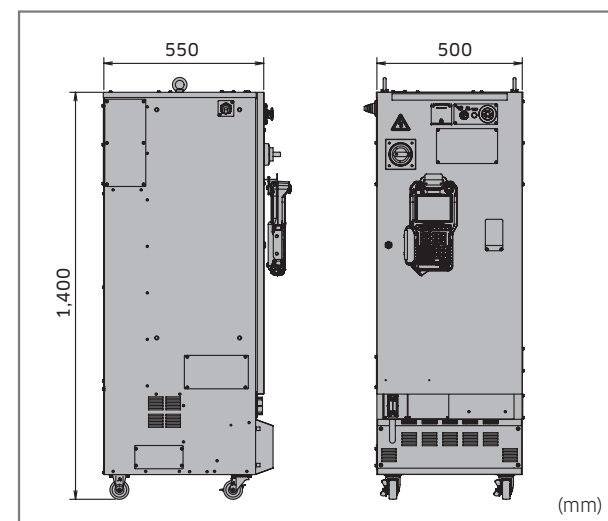
By installing an additional amplifier, travel unit, gear pump or a servo-powered part-positioning product, the system can accept up to three external axes. The system is compatible with a large number of field buses for controlling peripheral devices. The addition of a software sequencer function (KLogic), which can be edited on the teach pendant, makes it easy to structure a sophisticated system.



Explosion-proof teach pendant



External view & dimensions

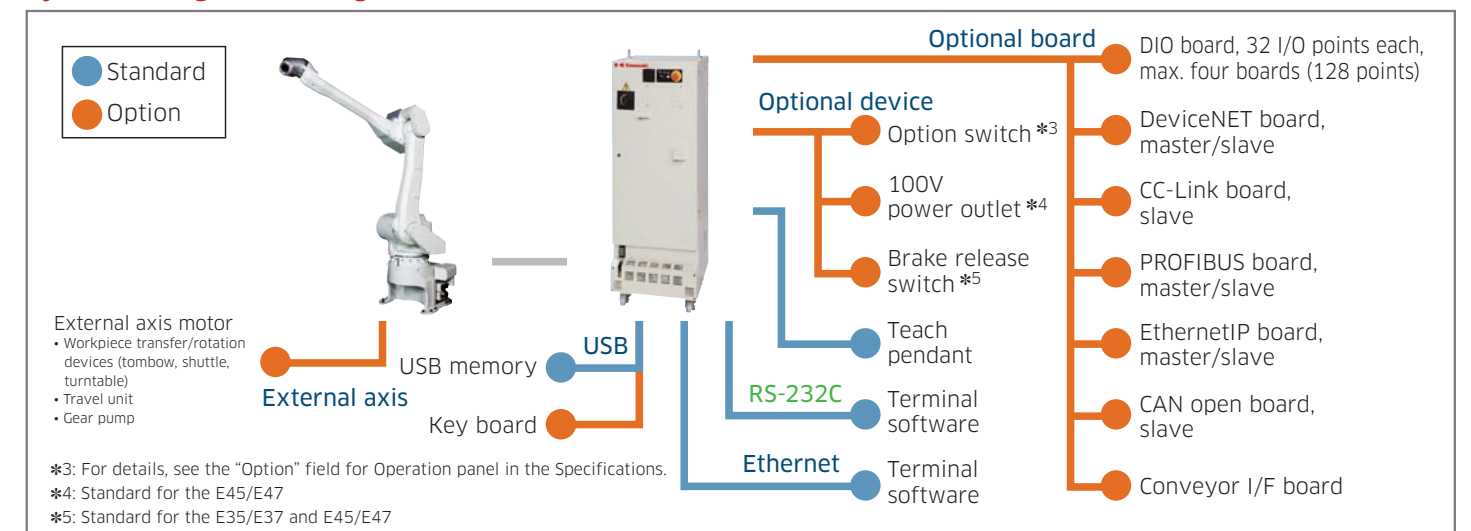


Specifications

		Standard	Option
America		E35/E37	
Europe		E45/E47	
Japan & Asia		E25/E27	
Dimensions (mm)		W500 × D550 × H1,400	
Structure		Enclosed structure with indirect cooling system	
Number of controlled axes		6	Max. 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. 128
	Output (channels)	32	Max. 128
Operation panel		E-Stop switch, Teach/repeat switch*1, 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
Cable length	Robot-controller (m)	3 inside the booth, 3 outside the booth	
	Teach pendant (m)	10	
Mass (kg)		120 (E25/E27), 170 (E35/E37, E45/E47)	
Power requirements	E35/E37	AC440-480V±10%, 60 Hz, 3ø 7.3 kVA (E35)/5.1 kVA (E37)*2 Protective ground, Leakage current: Maximum 10 mA	
	E45/E47	AC380-415V±10%, 50/60 Hz, 3ø 7.3 kVA (E45)/5.1 kVA (E47)*2 Protective ground, Leakage current: Maximum 10 mA	
	E25/E27	AC200-220V±10%, 50/60 Hz, 3ø 10 kVA (E25)/5.6 kVA (E27)*2 Class-D ground (standard for robots), Leakage current: Maximum 100 mA Class-A ground (for intrinsic explosion-proof safety circuits)	
Environmental conditions	Ambient temperature (°C)	0 - 45	
	Relative humidity (%)	35 - 85 (no dew, nor frost allowed)	
Body color		Munsell 10GY9/1 equivalent	
Teach pendant		TFT color LCD display with touch-panel, E-Stop switch, Teach lock switch, Enable switch	
Auxiliary storage unit		-	USB memory
Interface		USB, Ethernet (100BASE-TX), RS232C	

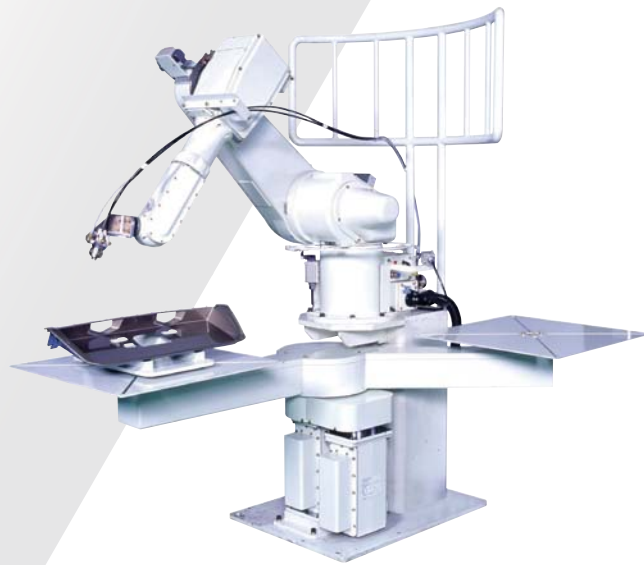
*1: The E45/E47 comes with three switches to change between teach/teach 100%/repeat, as standard equipment.
*2: Power requirements ensure maximum operation of a robot, not those required for normal operations.

System configuration diagram

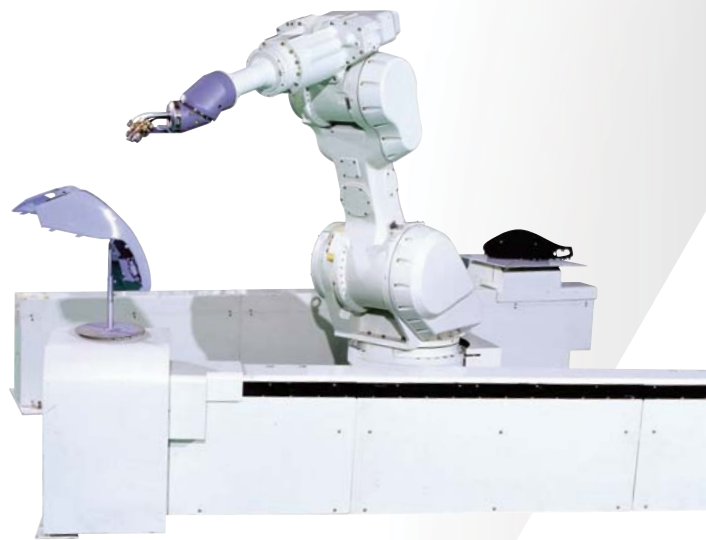


Our pre-configured paint packages allow production to begin almost instantly.

If you need to get your painting system up and running quickly, Kawasaki pre-configured paint packages are your best option. Paint packages can be customized to your specific part requirements, and these compact, ready-to-use units can be easily installed in limited space with minimal start-up time.



Servo Twister



Servo Shuttle

Peripheral Equipment

Efficient, high quality, automated spray painting is achieved by combining high performance part positioning products, advanced paint spray control systems and highly developed painting robots and atomizers. Kawasaki's peripheral equipment provides an ideal painting environment for any application.

Pre-configured paint packages

Kawasaki Robotics' pre-configured paint packages include a Kawasaki paint robot and a part positioning product that vary in motion and workpiece capacity, and can be used for any paint application. Each option is driven by servo motors that are controlled as external axes by the robot controller, which results in high quality painting.

Painting unit control panel (air panel)

The air panel allows you to control changes to discharge rate, atomizing air and air patterns, to handle even the most complex work applications.

Functions such as automatic color change and washing for each specified cycle could be incorporated, depending on customer need.

Robot travel unit

The robot travel unit coordinates robot movement with additional part positioning products so the paint process can take place on a moving component. The Kawasaki robot travel unit is used frequently for the painting of automobiles, construction machinery and septic tanks.

KOSMOS line control software

In painting processes where two or more robots are in operation, the KOSMOS line control panel provides real-time status information and access to production management information.

Line monitoring function

Monitor metrics for the whole system from the LCD screen, including robot and peripheral unit operation, painting conditions and system errors, among others.

Data setting function

Easily change coating requirements and communicate with the control panel using the intuitive, customizable touch panel interface. You can also monitor the following:

- Paint flow rate, atomizing air pressure, pattern air pressure, and the other painting requirement settings
- Time chart setting for color change, gun cleaning, etc.
- Program number setting for each workpiece type and color
- CCV number setting for each color

Statistical functions

View production, error and paint consumption statistics, among other valuable metrics.



Painting unit control panel



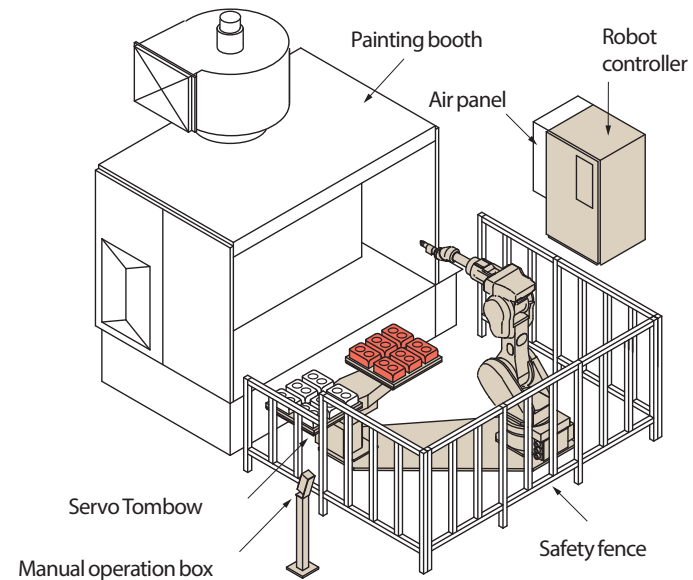
Line control panel

Small-sized painting applications

Servo Tombow

Smooth, high quality painting

- **Smooth movement**
Servo motion control ensures smooth movement, eliminating workpiece slippage
- **Higher paint quality**
For small cubical boxes (electronic appliances such as TV cabinets, etc.), the spray gun can be oriented to each surface at a right angle. The distance between the gun and the surface can also be adjusted simply by entering a value. These features enable easy operation and enhance painting quality.
- **Coordinated movement with robot**
The Servo Tombow's table rotation is synchronized with the robot's movements, assuring a uniform paint finish. The Tombow table offers 360 degrees of rotation.
- **Prevents paint mist accumulation**
To minimize paint mist accumulation, workpieces can be positioned above a water tank when spraying.

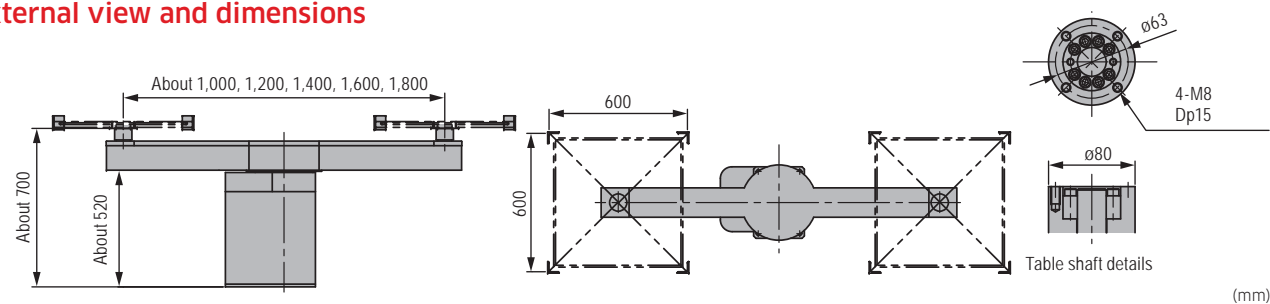


Specifications

	Standard	Heavy load carrying	
Table load	20 kg x 2 tables	40 kg x 2 tables	
No. of control axes	Robot 6 + Servo Tombow 2		
Control method	Servo control		
Teaching playback method	PTP teaching + CP control		
Position detection method	Absolute encoder		
Arm	Diameter (mm)	1,000, 1,200, 1,400, 1,600, 1,800	
	Operation angle	180°	
	Indexing time (sec)	Standard: 2 / 180°, Heavy: 2.4 / 180°	
Table	Operation angle	Infinite revolution	
	Indexing angle	90° and arbitrary angle	
	Indexing time (sec)	0.8 / 90°	1.2 / 90°
	Uninterrupted rotary speed (rpm)	Max. 90	Max. 45
Rotary direction	Normal / Reverse rotation		
Explosion protection	Air pressurized explosion protection and intrinsically safe Explosion-proof composite type (Expib II BT4 / Exib II BT4)		
Mass (kg)	Approx. 140 - 160		
Color	Munsell 10GY9/1 equivalent		

Note: The standard arm diameters are 1,000 mm, 1,200 mm, 1,400 mm, 1,600 mm, and 1,800 mm. The work loading table and loading fixtures to be prepared by the purchaser.

External view and dimensions

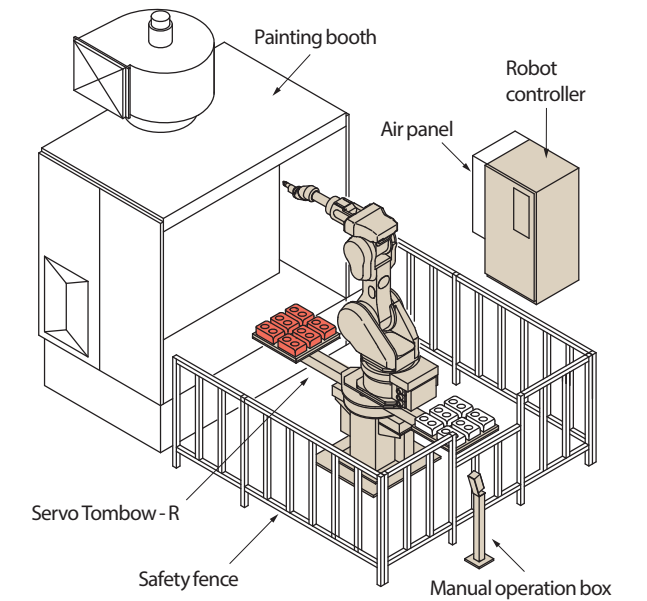


Small-sized painting applications

Servo Tombow - R

Enhanced space efficiency

- **Space saving**
The robot is installed at the center of the pre-configured Servo Tombow painting package, allowing for a smaller and more efficient workspace.
- **Adaptable to all painting conditions**
The tables and arm can be positioned and speed-controlled with a high level of precision. The tables can also be continuously rotated and fixed at any desired angle, making it possible to select the best painting method for the workpiece.
- **Enhanced paint quality**
Because there are few obstacles surrounding the tables, the robot can move freely and in-booth turbulence is minimized. This results in an enhanced paint quality.
- **Ideal for automated transportation equipment**
This system attaches and removes workpieces behind the paint robot. As a result, this system can be easily combined with automated transportation equipment that uses conveyors or delivery robots.

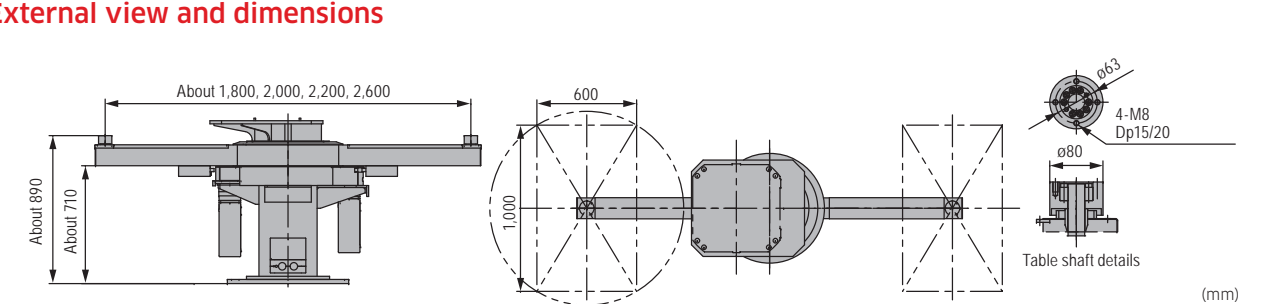


Specifications

	Standard	Heavy load carrying	
Table load	20 kg x 2 tables	40 kg x 2 tables	
No. of control axes	Robot 6 + Servo Tombow 2		
Control method	Servo control		
Teaching playback method	PTP teaching + CP control		
Position detection method	Absolute encoder		
Arm	Diameter (mm)	1,800, 2,000, 2,200, 2,600	1,800, 2,000, 2,200
	Operation angle	180°	
	Indexing time (sec)	4 / 180°	
Table	Operation angle	Infinite revolution	
	Indexing angle	90° and arbitrary angle	
	Indexing time (sec)	1.0 / 90°	1.7 / 90°
	Uninterrupted rotary speed (rpm)	Max. 120	Max. 45
Rotary direction	Normal / Reverse rotation		
Explosion protection	Air pressurized explosion protection and intrinsically safe Explosion-proof composite type (Expib II BT4 / Exib II BT4)		
Mass (kg)	Approx. 550-690 (without robot)		
Color	Munsell 10GY9/1 equivalent		

Note: A set of work loading tables and loading fixtures are necessary. Install the Manipulator KF121 onto a tombow-R with an arm length of 1,800 mm or 2,000 mm. Install the Manipulator KF192 / 193 / 194 onto a tombow-R with an arm length of 2,200 mm or 2,600 mm.

External view and dimensions



Small-sized painting applications

Servo Twister

A compact, sophisticated system

- Small installation space**

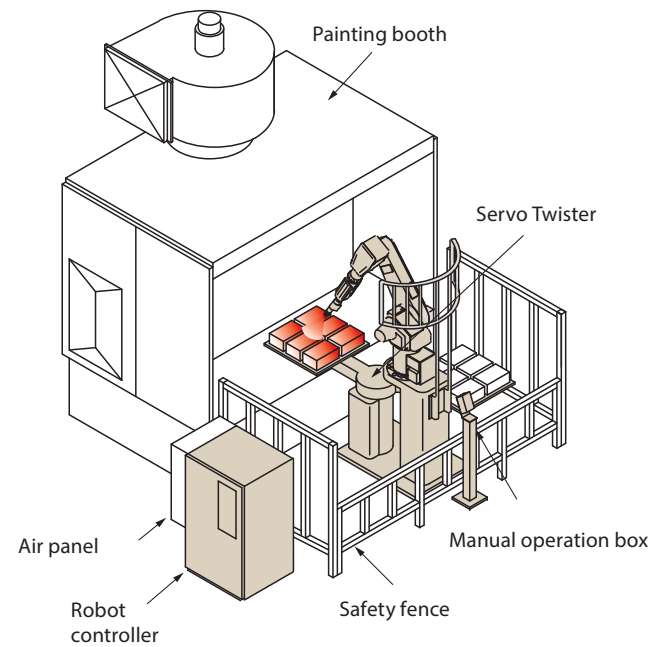
The minimum installation space required for this system is 2,200 mm wide x 1,966 mm long for a 600 x 600 mm table. Its compact size allows for installation a narrow, hand-spraying booth.

- Rotary table functions**

The Servo Twister provides rotary coating, indexed coating and rotary synchronization functions.

- Shared coating program**

The robot and painting table are integrated into one unit, so programs can be shared by more than one robot.

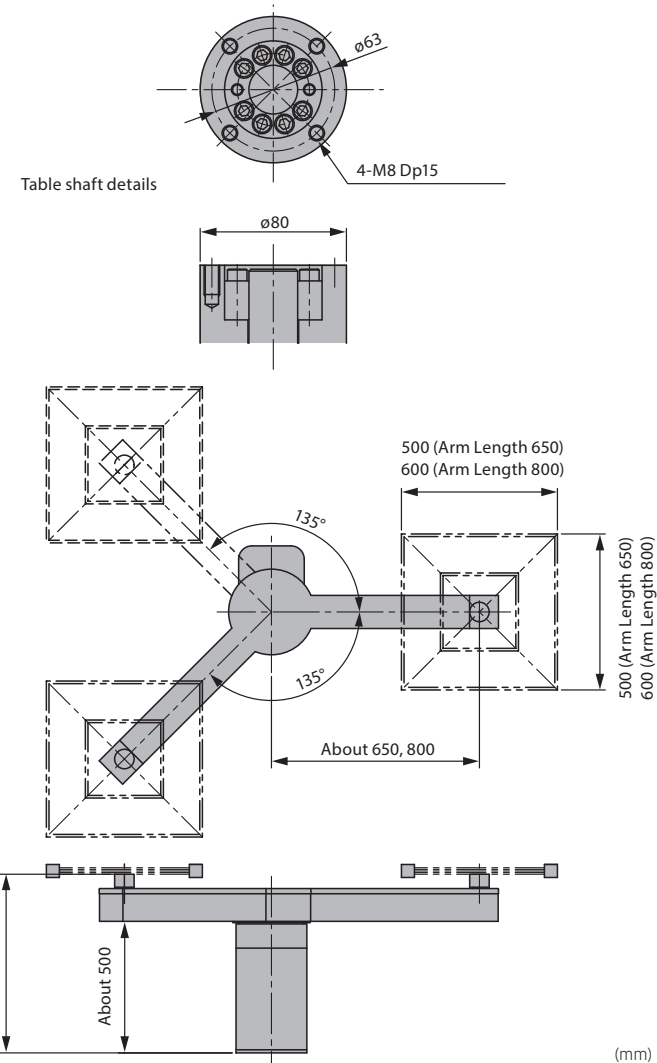


Specifications

		Standard
Table load		20 kg x 2 tables
No. of control axes		Robot 6 + Servo Twister 2
Control method		Servo control
Teaching playback method		PTP teaching + CP control
Position detection method		Absolute encoder
Arm	Length (mm)	650, 800
	Operation angle	135°
	Indexing time (sec)	1.8 / 135°
Table	Operation angle	Infinite revolution
	Indexing angle	90° and arbitrary angle
	Indexing time (sec)	0.8 / 90°
	Uninterrupted rotary speed (rpm)	Max. 90
	Rotary direction	Normal / Reverse rotation
Explosion protection		Air pressurized explosion protection and intrinsically safe Explosion-proof composite type (Expib II BT4 / Exib II BT4)
Mass (kg)		120
Color		Munsell 10GY9/1 equivalent

Note: The work loading table and loading fixtures to be prepared by the purchaser.

External view and dimensions



Medium-sized painting applications

Servo Shuttle

The ultimate table painting package

- Highly efficient**

Servo motion control ensures smooth movement while providing high speed work transfers, table rotation and continuous rotation tracking with the robot and any standby feeder position.

- Higher coating quality**

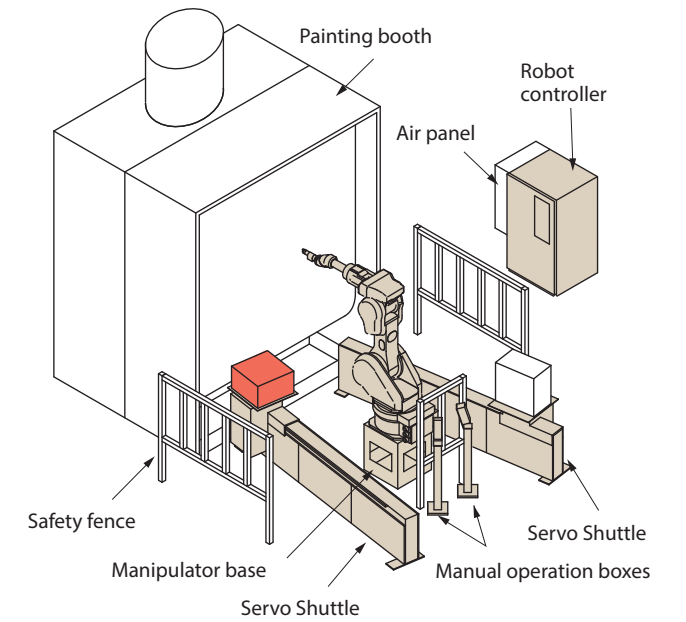
The combination of controlled table positions, a high speed precision robot and the Servo Shuttle results in high quality painting.

- Increased table load**

Paint large items such as automobile instrument panels.

- Simple installation**

The pre-configured Servo Shuttle painting package is easy to install and still allows for the painting of complex workpieces.

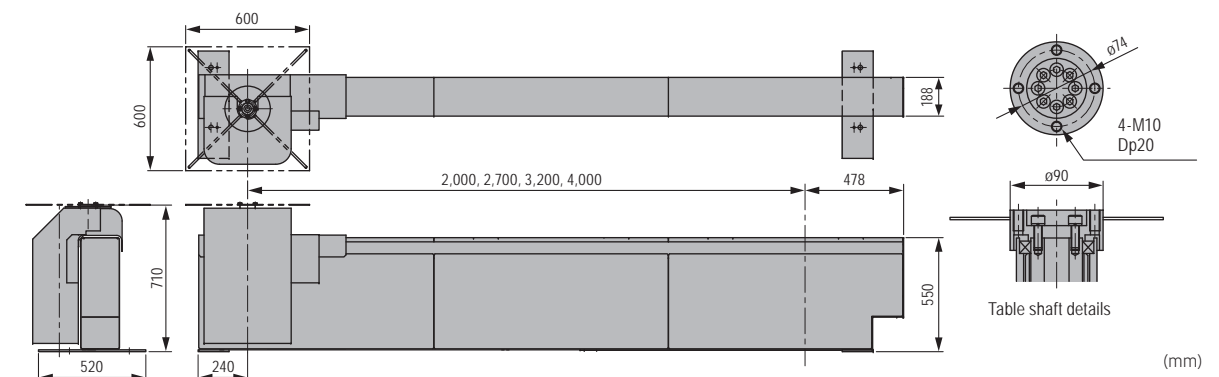


Specifications

		Standard	Heavy load carrying
Table load		20 kg x 2 tables	60 kg x 2 tables
No. of control axes		Robot 6 + Servo Shuttle 2	
Control method		Servo control	
Teaching playback method		PTP teaching + CP control	
Position detection method		Absolute encoder	
Shuttle	Stroke (mm)	2,000, 2,700, 3,200, 4,000	
	Max. speed (mm / sec)	1,000	
Table	Operation angle	Infinite revolution	
	Indexing angle	90° and arbitrary angle	
	Indexing time (sec)	0.8 / 90°	1.2 / 90°
	Uninterrupted rotary speed (rpm)	Max. 90	Max. 45
	Rotary direction	Normal / Reverse rotation	
Intermediate stop function		Intermediate stop function and multiple coating control function are available	
Explosion protection		Air pressurized explosion protection and intrinsically safe Explosion-proof composite type (Expib II BT4 / Exib II BT4)	
Mass (kg)		Approx. 300 - 500	
Color		Munsell 10GY9/1 equivalent	

Note: The work loading table and loading fixtures to be prepared by the purchaser.

External view and dimensions

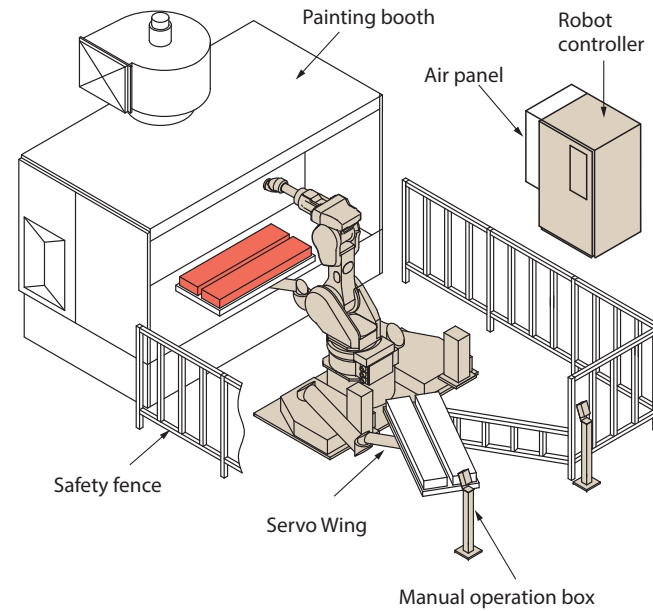


Medium-sized workpiece painting package

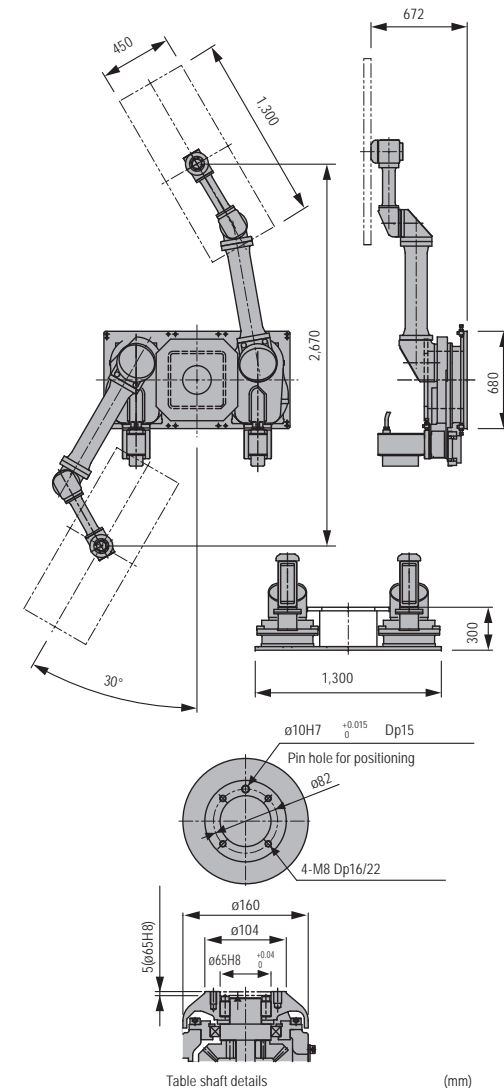
Servo Wing

High quality table painting with a small footprint

- Space saving**
 This pre-configured painting package can handle large workpieces while its efficient layout minimizes its overall footprint.
- Less time spent teaching**
 A single program can be used because the left and right arms can be set for the same painting positions, thus reducing teaching time.
- Minimize booth contamination & airflow turbulence**
 Slim arms without fixed rails mean painting can be done above a water tank. This reduces contamination and airflow turbulence in the paint booth.



External view and dimensions



Specifications

		Standard
Table load		30 kg x 2 tables
No. of control axes		Robot 6 + Servo Wing 2
Control method		Servo control
Teaching playback method		PTP teaching + CP control
Position detection method		Absolute encoder
Arm	Stroke (mm)	2,670
	Indexing time (sec)	3.2
Table	Operation angle	Infinite revolution
	Indexing angle	90° and arbitrary angle
	Indexing time (sec)	1.2 / 90°
	Uninterrupted rotary speed (rpm)	Max. 90
	Rotary direction	Normal / Reverse rotation
Intermediate stop function	Intermediate stop and multiple coating control functions are available.	
Explosion protection	Air pressurized explosion protection and intrinsically safe Explosion-proof composite type (Expib II BT4 / Exib II BT4)	
Mass (kg)	970	
Color	Munsell 10GY9/1 equivalent	

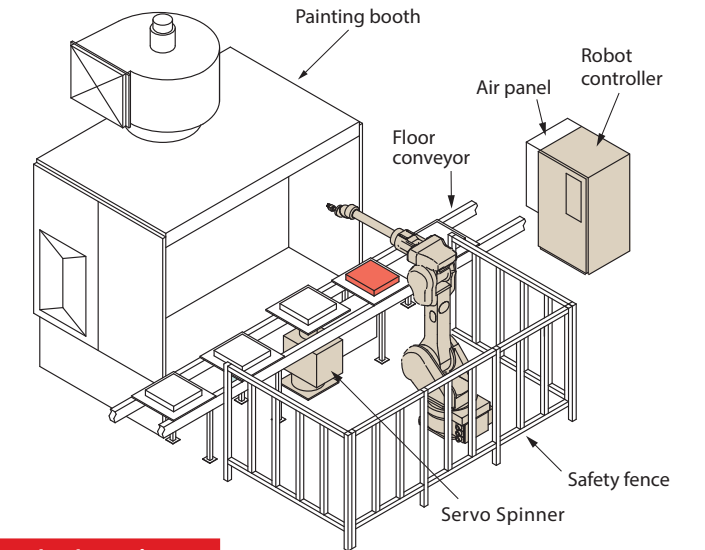
Note: The arm index time indicates the time of arm movement from the intermediate stop position to the painting position.
The arm index time varies depending on the intermediate stop position.

Medium-sized workpiece painting package

Servo Spinner

A new dimension in line coating

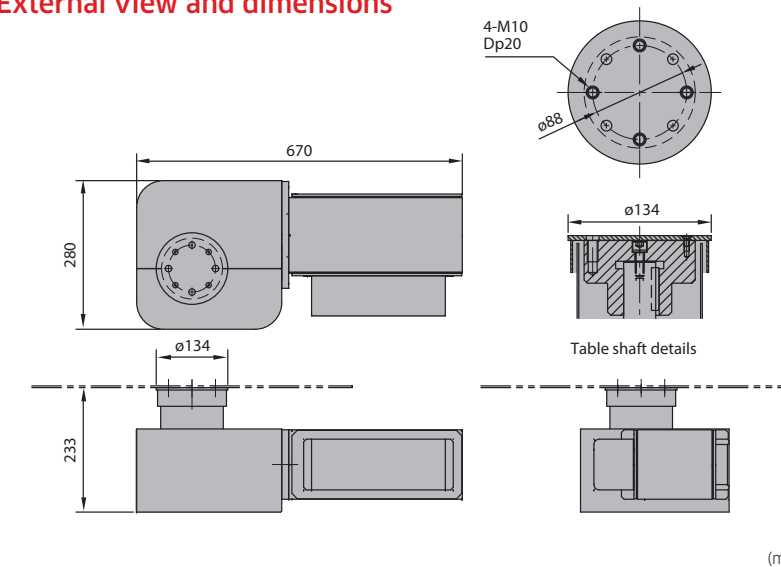
- Flexible component placement**
 You can choose the ideal painting position for the workpiece, which reduces contamination of the paint booth.
- Increase efficiency**
 Painting is performed as the table rotates, minimizing the robot's wait time and increasing efficiency.



Specifications

	Standard	Heavy load carrying	
Table load	20 kg	60 kg	
No. of control axes	Robot 6 + Servo Spinner 1		
Control method	Servo control		
Teaching playback method	PTP teaching + CP control		
Position detection method	Absolute encoder		
Table	Operation angle	Infinite revolution	
	Indexing angle	90° and arbitrary angle	
	Indexing time (sec)	0.8 / 90°	1.1 / 90°
	Uninterrupted rotary speed (rpm)	Max. 90	Max. 45
	Rotary direction	Normal / Reverse rotation	
Explosion protection	Air pressurized explosion protection and intrinsically safe Explosion-proof composite type (Expib II BT4 / Exib II BT4)		
Mass (kg)	60		
Color	Munsell 10GY9/1 equivalent		

External view and dimensions



Large-sized workpiece painting package

Servo Turntable

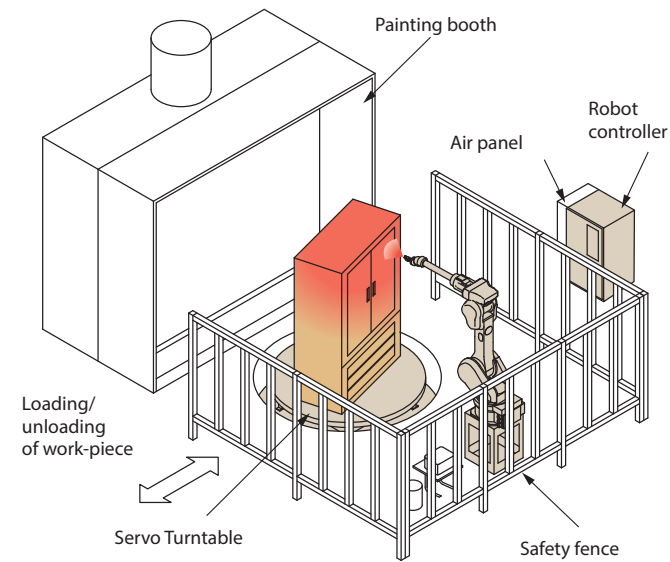
Complete surface painting with uninterrupted turntable rotation

- **Flexible Workpiece Placement**

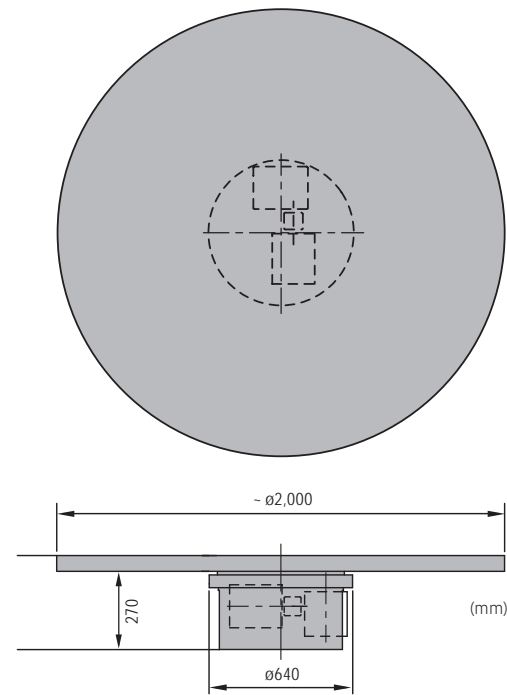
The integrated control of the robot and table allows any painting position to be achieved according to the work shape.

- **Compatible with Many Paint Applications**

This system accommodates various types of painting applications, such as synchronous control, arbitrary-angle indexing, and paint spraying with continuous rotation of the table.



External view and dimensions



Specifications

		Standard	Heavy load carrying
Table load		Max. 500 kg	Max. 1,000 kg
No. of control axes		Robot 6 + Servo Turntable 1	
Control method		Servo control	
Teaching playback method		PTP teaching + CP control	
Position detection method		Absolute encoder	
Table	Operation angle	Infinite revolution	
	Indexing angle	90° and arbitrary angle	
	Indexing time (sec)	2.5 / 90°	5 / 90°
	Uninterrupted rotary speed (rpm)	Max. 10	Max. 5
Rotary direction		Normal / Reverse rotation	
Explosion protection		Air pressurized explosion protection and intrinsically safe Explosion-proof composite type (Expib II BT4 / Exib II BT4)	
Mass (kg)		180 (without table jig)	
Table	Diameter (mm)	Available up to ø2,000	
Color		Munsell 10GY9/1 equivalent	
Option: Foot switch function		Uninterrupted normal rotation, Rotation stop	Uninterrupted rotation, 45°, 90°, 180°, Indexing (changeable indexing angle), Rotation stop

