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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.

* Materials and specifications are subject to change without notice.

Cat. No. 3L2517 Dec '25

Kawasaki
Powering your potential

Kawasaki Robot

Explosion-Proof Painting Robots

Explosion-proof Painting Robots

Kawasaki offers explosion-proof painting robots with a world-leading market share, featuring a versatile lineup that automates painting processes for everything from small parts to large components.

K series

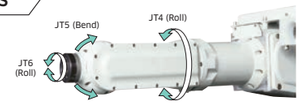
K	**F**	With an extremely compact wrist, the robot flexibly handles painting in narrow inner panel areas. It excels at simple repetitive motions, making teaching easy and efficient.
	J	A lightweight and slim painting robot that allows flexible layout planning in any installation configuration. Its hollow wrist enables internal routing of tubes and cables.
	L	An explosion-proof, heavy-duty robot with no restrictions on workpiece position or movement. Boasting a maximum payload of 45 kg—the largest in the K series.

Features

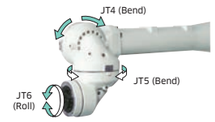
- Full lineup of painting robots cover diverse workpieces from small to large.
- The 3R type hollow wrist can install hoses inside to prevent dusts on the painted parts.
- Painting package cells support users to introduce robot painting lines with ease (optional).

Variations of wrists

RBR
KF121

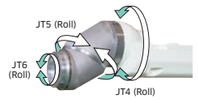


BBR
KF192 / KF262 / KL262

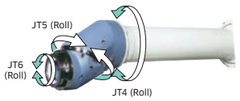


3R(Ø50mm*)
KJ125 / KJ155

*The shape of the tool mounting part of the wrist (flange surface) is same as that of the 3R (ϕ70mm)



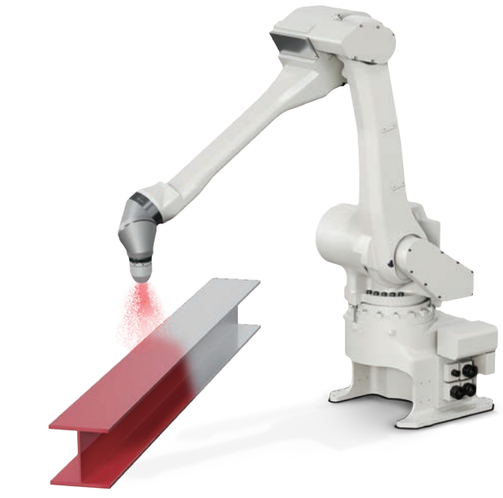
3R(Ø70mm)
KJ194 / KJ244 / KJ264
KJ314



			KF series			KJ series						KL series
			KF121	KF192	KF262	KJ125	KJ155	KJ194 (Floor)	KJ244 (Floor)	KJ264 (Floor)	KJ314 (Wall)	KL262 (Floor)
Degree of freedom (axes)			6			6					7	6
Wrist type			RBR	BBR		3R(Ø50mm)*5	3R(Ø50mm)*5	3R(Ø70mm)				BBR
Motion range(°)	Arm rotation	(JT1)	±160/±60	±150		±160	±160	±120				±120
	Arm out-in	(JT2)	±90	+110 - -60		+130 - -80						+130 - -80
	Arm up-down	(JT3)	±150	+90 - -80		+90 - -75	+90 - -75	+90 - -65				+90 - -65
	Wrist swivel	(JT4)	±270	±360		±720						±360
	Wrist bend	(JT5)	±145	±360		±720						±360
	Wrist twist	(JT6)	±360	±360		±410						±360
	Arm swing	(JT7)	-			-					±90	-
Painting speed (m/s)			1.5	2		1.5						1.6
Position repeatability*2 (mm)			±0.2	±0.5		±0.5	±0.5	±0.5				±0.5
Max. reach*1 (mm)			1,240	1,973	2,665	1,299	1,545	1,940	2,490	2,640	3,100	2,640
Payload (kg)			5	Wrist : 12 Arm : 20		Wrist : 8 Arm : 5	Wrist : 8 Arm : 5	Wrist : 15 Arm : 25				Wrist : 45
Wrist Torque (N·m)	JT4		7.8	33.3		21.8	21.8	56.2				260
	JT5		7.8	28.8		17	17	43.4				260
	JT6		2.9	7.9		8	8	22				120
Wrist Moment (kg·m²)	JT4		0.17	1.28	1.2	0.9	0.9	2.19				15.6
	JT5		0.17	0.96	0.9	0.54	0.54	1.31				15.6
	JT6		0.06	0.1	0.11	0.12	0.12	0.33				3.3
Mass (kg)			140	690	720	190	195	530	540		720	600
Mounting			Floor, wall, ceiling*4	Floor, wall		Floor, wall, ceiling	Floor, wall, ceiling	Floor, Shelf, wall			wall	Floor, Shelf
Explosionproof construction	America		Combination of pressurized and intrinsically safe (CL I ZN 1 AEx ib pxb IIB T4 / AEx ib IIB T4 Gb)	-		Combination of pressurized and intrinsically safe (CL I ZN 1 AEx ib pxb IIB T4 / AEx ib IIB T4 Gb)						-
	Canada		Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4 Gb)	-		Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4 Gb)						-
	Europe		Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)			Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)						-
	Korea		Combination of pressurized and intrinsically safe (Ex ib px IIB T4 / Ex ib IIB T4)					Please contact us.		Combination of pressurized and intrinsically safe (fG4 / Ex ib IIB T4)		-
	China		Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb)			Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb) -						
	Japan & Asia (except China & Korea)		Combination of pressurized and intrinsically safe (Expxib IIB T4 / Ex ib IIB T4 Gb)			Combination of pressurized and intrinsically safe (Expxib IIB T4 / Ex ib IIB T4 Gb)						
Temperature (℃)			0~40℃									
Color			Munsell 10GY9/1 equivalent									
Power requirements*3 (kVA)			1.5	5		3	3	5				
Controller	America, Canada		E37、F35	-		E35、F35						-
	Europe		E47、F45	E45、F45	E45、F45	E45、F45						-
	Japan & Asia		E27、F25	E25、F25	E25、F25	E25、F25						E25、F25 (Japan)

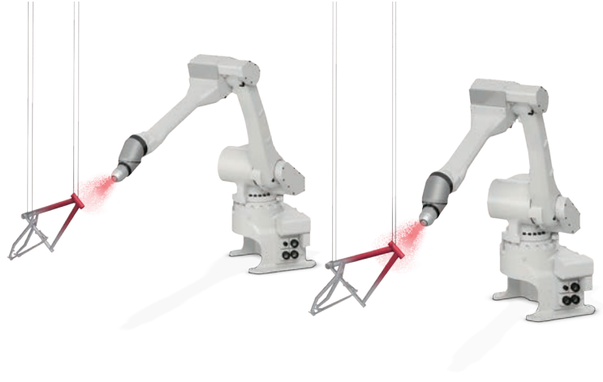
*Specifications are based on floor-mounted configuration (KJ314 is wall-mounted only). *1: RBR : Distance between centers of JT1 and JT5. 3R: Distance from JT1 center to the intersection of JT4 and JT5 rotation axes. BBR: Distance from JT1 center to the intersection of JT4 rotation axis. *2: Conforms to ISO9283. *3: Depends on payload and motion patterns.
*4: For U.S. and Canada, only floor-mounted and wall-mounted configurations are available. *5:The tool mounting section at the wrist flange end has the same shape as 3R (Ø70 mm).

Painting of Small Parts



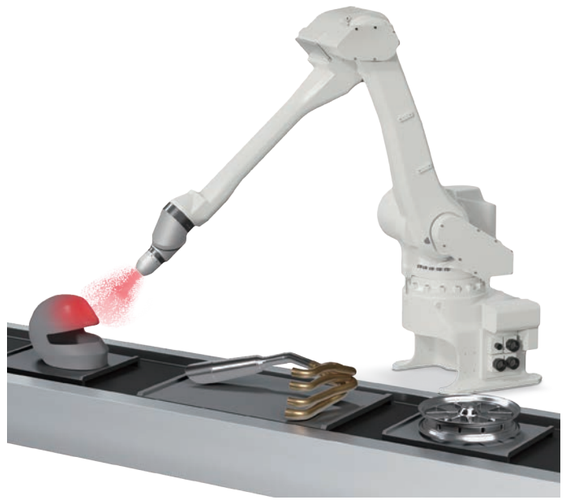
Precision-painted small parts for high-quality finishes

Painting of Moving Workpieces



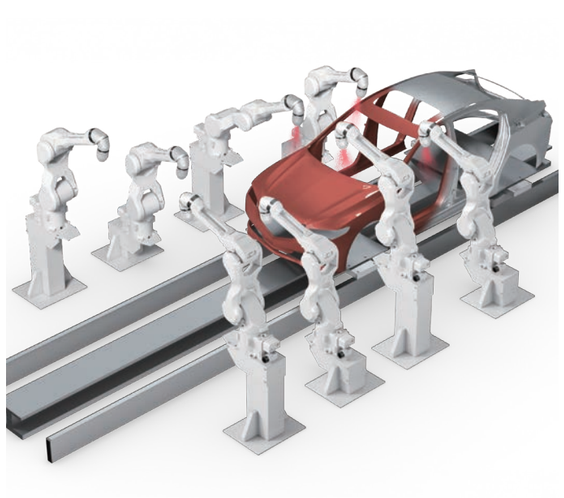
Stably paints workpieces with movement and realizes efficient work

Painting of Workpieces with Various Shapes



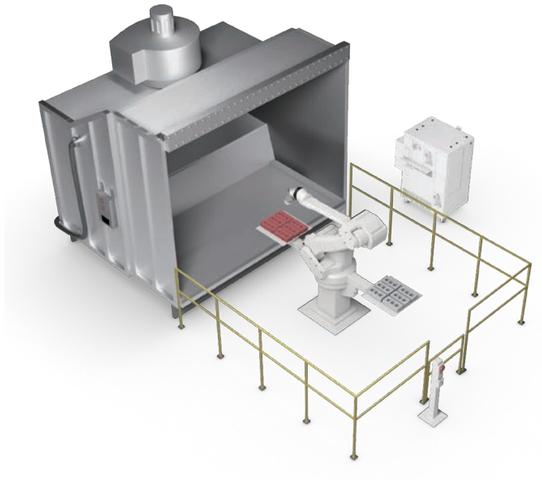
Uniformly paints workpieces with complex shapes and provides a beautiful finish

Remote-Controlled Painting

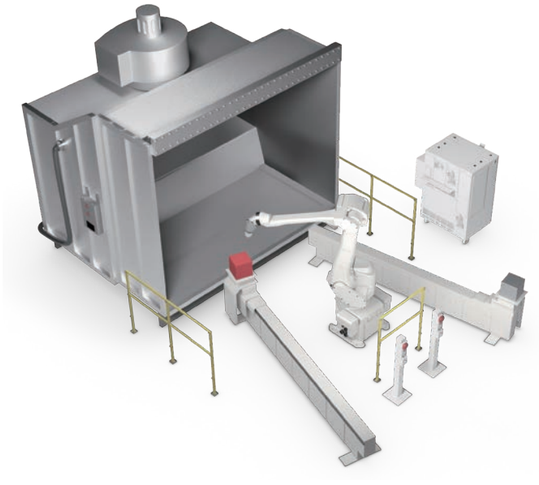


Efficient and high-precision coating with multiple machines for a wide working range and consistent quality

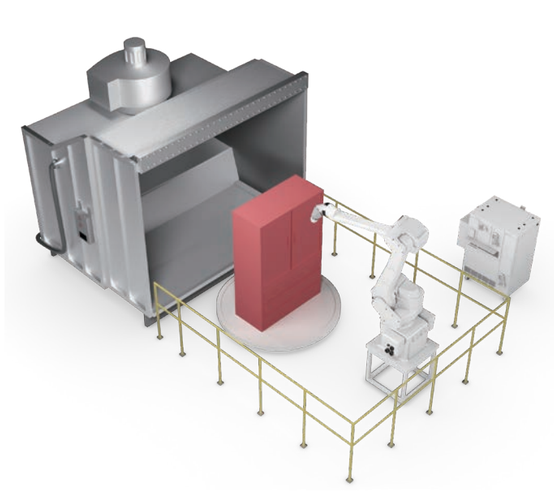
Small sized painting applications



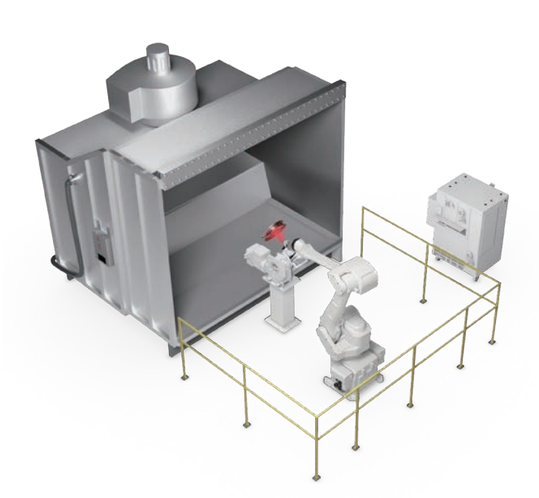
Medium sized work-piece painting cell



Large sized work-piece painting cell



Tilt Spinner



K series

【Applications】

Painting

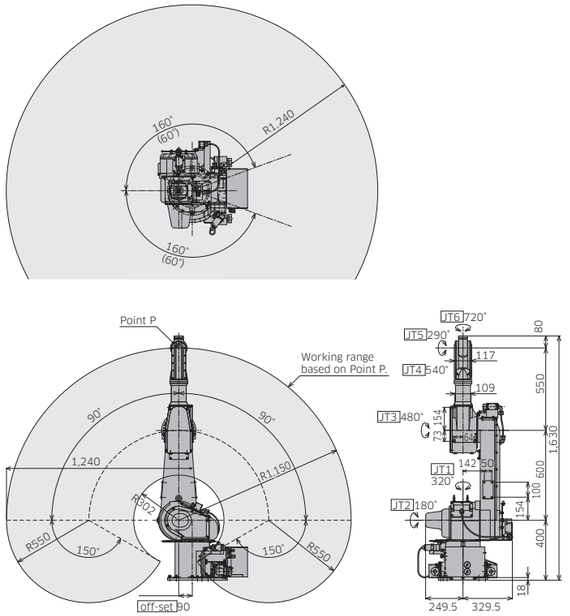
KF121

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		5
Max. reach*1 (mm)		1,240
Position repeatability*2 (mm)		±0.2
Motion range (°)	Arm rotation (JT1)	±160/±60 (Wall)
	Arm out-in (JT2)	±90
	Arm up-down (JT3)	±150
	Wrist swivel (JT4)	±270
	Wrist bend (JT5)	±145
	Wrist twist (JT6)	±360
Mass (kg)		140
Mounting		Floor, wall, ceiling*4
Power requirements*3 (kVA)		1.5
Explosion-proof construction	America	Combination of pressurized and intrinsically safe (CL I ZN 1 AEx ib pxb IIB T4 / AEx ib IIB T4 Gb)
	Canada	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4 Gb)
	Europe	Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)
	Korea	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4)
	China	Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb)
	Japan & Asia (except China & Korea)	Combination of pressurized and intrinsically safe (Expxib IIB T4 / Ex ib IIB T4 Gb)
Controller	America, Canada	E37、F35
	Europe	E47、F45
	Japan & Asia	E27、F25

*1: Distance between centers of JT1 and JT5.
*2: Conforms to ISO9283.
*3: Depends on payload and motion patterns.
*4: For America and Canada, only floor and wall mount types are available.

(mm)



*Number in ( ) represents wall mount type

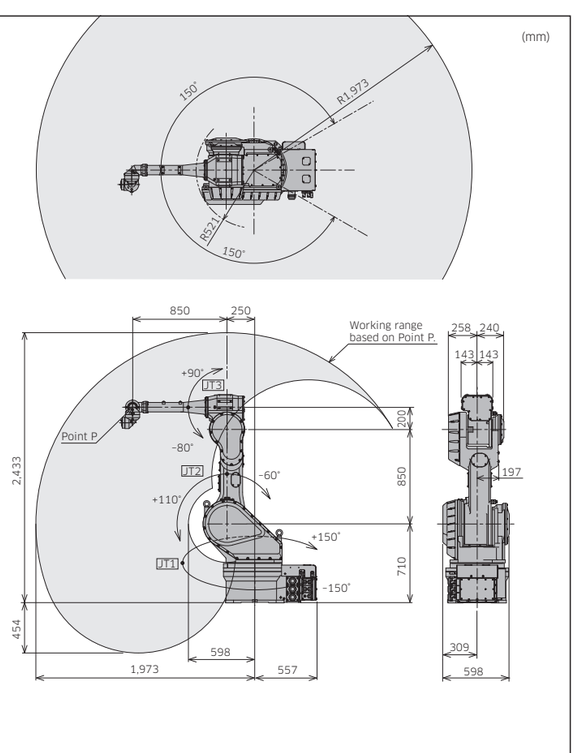
KF192

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		Wrist : 12 Arm : 20
Max. reach*1 (mm)		1,973
Position repeatability*2 (mm)		±0.5
Motion range (°)	Arm rotation (JT1)	±150
	Arm out-in (JT2)	+110 - −60
	Arm up-down (JT3)	+90 - −80
	Wrist swivel (JT4)	±360
	Wrist bend (JT5)	±360
	Wrist twist (JT6)	±360
Painting speed (m/s)		1.2
Mass (kg)		690
Mounting		Floor, wall
Power requirements*3 (kVA)		5
Explosion-proof construction	Europe	Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)
	Korea	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4)
	China	Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb)
	Japan & Asia (except China & Korea)	Combination of pressurized and intrinsically safe (Expxib IIB T4 / Ex ib IIB T4 Gb)
Controller	Europe	E45、F45
	Japan & Asia	E25、F25

*1: Distance between centers of JT1 and JT4.
*2: Conforms to ISO9283.
*3: Depends on payload and motion patterns.

(mm)



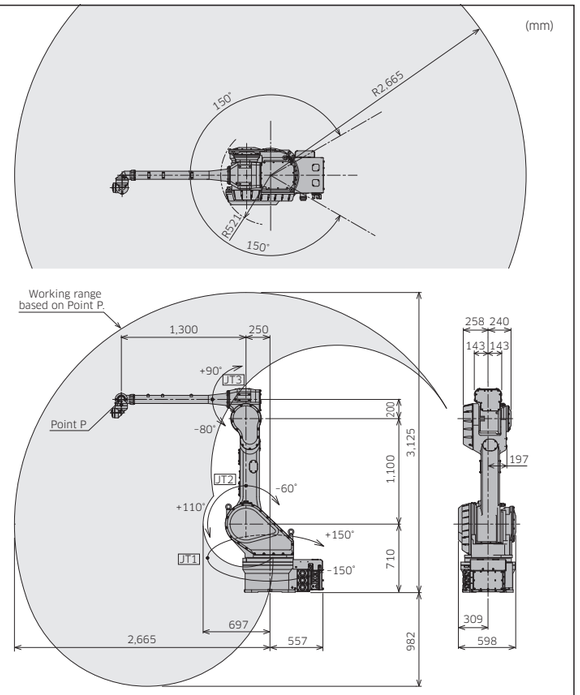
KF262

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		Wrist : 12 Arm : 20
Max. reach*1 (mm)		2,665
Position repeatability*2 (mm)		±0.5
Motion range (°)	Arm rotation (JT1)	±150
	Arm out-in (JT2)	+110 - −60
	Arm up-down (JT3)	+90 - −80
	Wrist swivel (JT4)	±360
	Wrist bend (JT5)	±360
	Wrist twist (JT6)	±360
Painting speed (m/s)		1.2
Mass (kg)		720
Mounting		Floor, wall
Power requirements*3 (kVA)		5
Explosion-proof construction	Europe	Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)
	Korea	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4)
	China	Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb)
	Japan & Asia (except China & Korea)	Combination of pressurized and intrinsically safe (Expxib IIB T4 / Ex ib IIB T4 Gb)
Controller	Europe	E45、F45
	Japan & Asia	E25、F25

*1: Distance between centers of JT1 and JT4.
*2: Conforms to ISO9283.
*3: Depends on payload and motion patterns.

(mm)



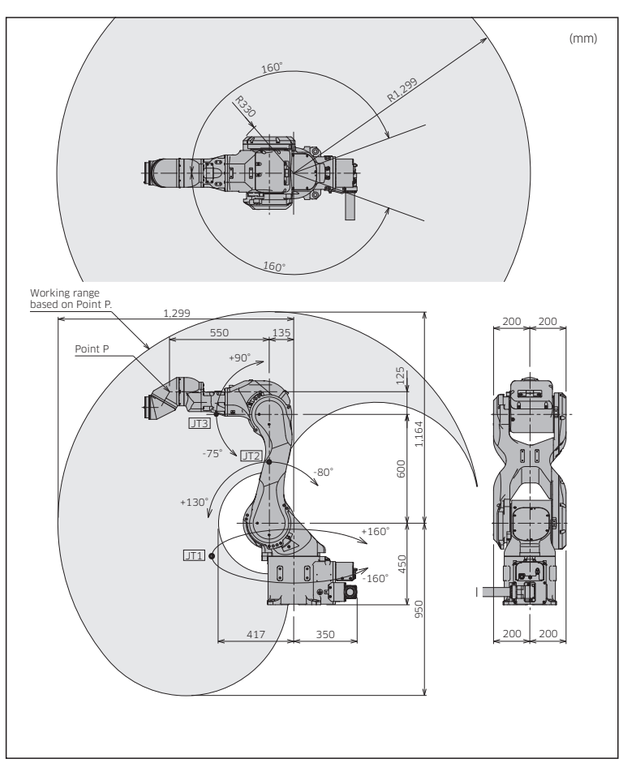
KJ125

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		Wrist : 8 Arm : 5
Max. reach*1 (mm)		1,299
Position repeatability*2 (mm)		±0.15
Motion range (°)	Arm rotation (JT1)	±160
	Arm out-in (JT2)	+130 - −80
	Arm up-down (JT3)	+90 - −75
	Wrist swivel (JT4)	±720
	Wrist bend (JT5)	±720
	Wrist twist (JT6)	±410
Painting speed (m/s)		1.5
Mass (kg)		190
Mounting		Floor, wall
Power requirements*3 (kVA)		3
Explosion-proof construction	America	Combination of pressurized and intrinsically safe (CL I ZN 1 AEx ib pxb IIB T4 / AEx ib IIB T4 Gb)
	Canada	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4 Gb)
	Europe	Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)
	Korea	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4)
	China	Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb)
	Japan & Asia (except China & Korea)	Combination of pressurized and intrinsically safe (fG4 / Ex ib IIB T4 Gb)
Controller	America, Canada	E35、F35
	Europe	E45、F45
	Japan & Asia	E25、F25

*1: Distance between centers of JT1 and JT5.
*2: Conforms to ISO9283.
*3: Depends on payload and motion patterns.

(mm)

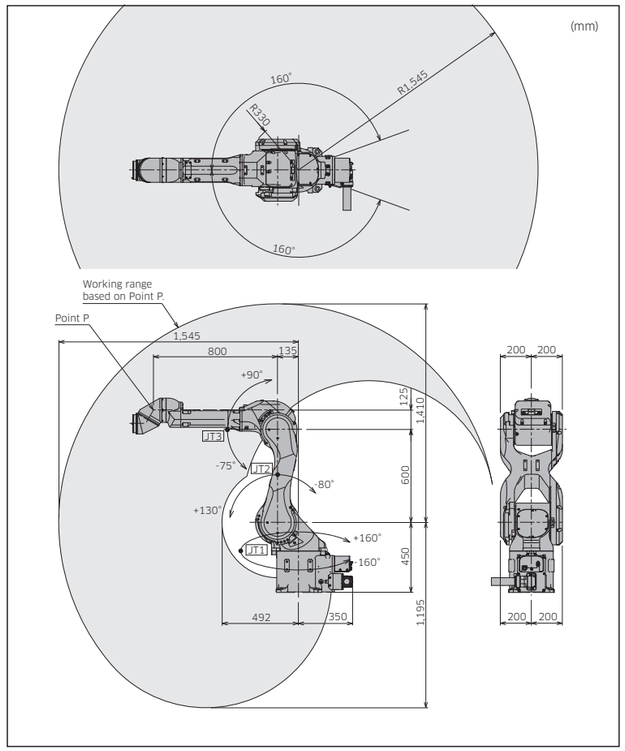


KJ155

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		Wrist : 8　Arm : 5
Max. reach*1 (mm)		1,545
Position repeatability*2 (mm)		±0.15
Motion range (°)	Arm rotation (JT1)	±160
	Arm out-in (JT2)	+130 - −80
	Arm up-down (JT3)	+90 - −75
	Wrist swivel (JT4)	±720
	Wrist bend (JT5)	±720
	Wrist twist (JT6)	±410
Painting speed (m/s)		1.5
Mass (kg)		195
Mounting		Floor, wall
Power requirements*3 (kVA)		3
Explosion-proof construction	America	Combination of pressurized and intrinsically safe (CL I ZN 1 AEx ib pxb IIB T4 / AEx ib IIB T4 Gb)
	Canada	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4 Gb)
	Europe	Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)
	Korea	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4)
	China	Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb)
	Japan & Asia (except China & Korea)	Combination of pressurized and intrinsically safe (fG4 / Ex ib IIB T4 Gb)
Controller	America, Canada	E35、F35
	Europe	E45、F45
	Japan & Asia	E25、F25

*1: Distance between centers of JT1 and JT5.
*2: Conforms to ISO9283.
*3: Depends on payload and motion patterns.

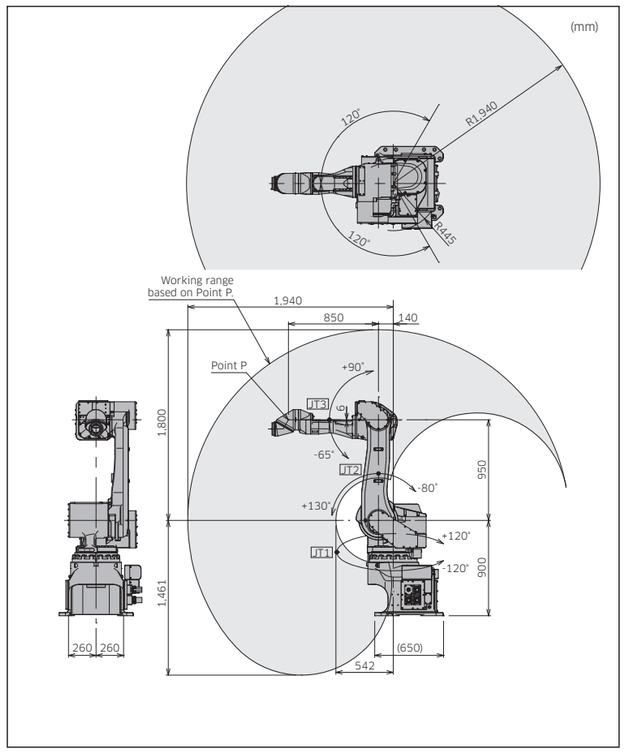


KJ194 (Floor)

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		Wrist : 15　Arm : 25
Max. reach*1 (mm)		1,940
Position repeatability*2 (mm)		±0.5
Motion range (°)	Arm rotation (JT1)	±120
	Arm out-in (JT2)	+130 - −80
	Arm up-down (JT3)	+90 - −65
	Wrist swivel (JT4)	±720
	Wrist bend (JT5)	±720
	Wrist twist (JT6)	±410
Painting speed (m/s)		1.5
Mass (kg)		530
Mounting		Floor
Power requirements*3 (kVA)		5
Explosion-proof construction	America	Combination of pressurized and intrinsically safe (CL I ZN 1 AEx ib pxb IIB T4 / AEx ib IIB T4 Gb)
	Canada	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4 Gb)
	Europe	Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)
	Korea	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4)
	China	Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb)
	Japan & Asia (except China & Korea)	Combination of pressurized and intrinsically safe (fG4 / Ex ib IIB T4 Gb)
Controller	America, Canada	E35、F35
	Europe	E45、F45
	Japan & Asia	E25、F25

*1: Distance between centers of JT1 and JT5.
*2: Conforms to ISO9283.
*3: Depends on payload and motion patterns.

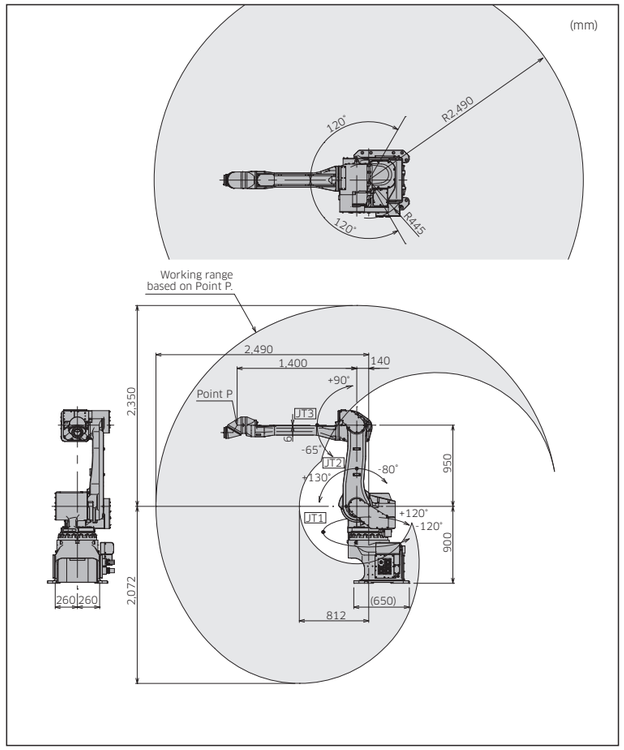


KJ244 (Floor)

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		Wrist : 15　Arm : 25
Max. reach*1 (mm)		2,490
Position repeatability*2 (mm)		±0.5
Motion range (°)	Arm rotation (JT1)	±120
	Arm out-in (JT2)	+130 - −80
	Arm up-down (JT3)	+90 - −65
	Wrist swivel (JT4)	±720
	Wrist bend (JT5)	±720
	Wrist twist (JT6)	±410
Painting speed (m/s)		1.5
Mass (kg)		540
MountingMounting		Floor
Power requirements*3 (kVA)		5
Explosion-proof construction	America	Combination of pressurized and intrinsically safe (CL I ZN 1 AEx ib pxb IIB T4 / AEx ib IIB T4 Gb)
	Canada	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4 Gb)
	Europe	Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)
	Korea	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4)
	China	Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb)
	China	Combination of pressurized and intrinsically safe (fG4 / Ex ib IIB T4 Gb)
Controller	America, Canada	E35、F35
	Europe	E45、F45
	Japan & Asia	E25、F25

*1: Distance between centers of JT1 and JT5.
*2: Conforms to ISO9283.
*3: Depends on payload and motion patterns.

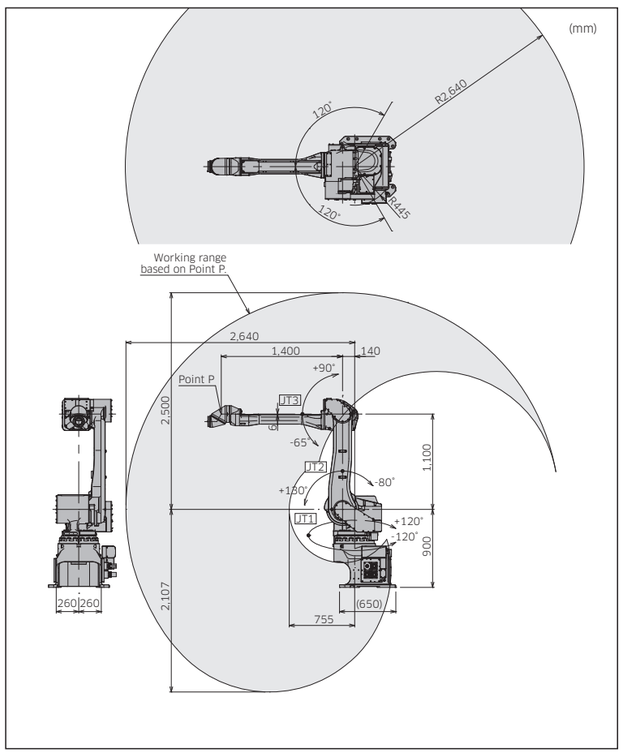


KJ264 (Floor)

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		Wrist : 15　Arm : 25
Max. reach*1 (mm)		2,640
Position repeatability*2 (mm)		±0.5
Motion range (°)	Arm rotation (JT1)	±120
	Arm out-in (JT2)	+130 - −80
	Arm up-down (JT3)	+90 - −65
	Wrist swivel (JT4)	±720
	Wrist bend (JT5)	±720
	Wrist twist (JT6)	±410
Painting speed (m/s)		1.5
Mass (kg)		540
Mounting		Floor
Power requirements*3 (kVA)		5
Explosion-proof construction	America	Combination of pressurized and intrinsically safe (CL I ZN 1 AEx ib pxb IIB T4 / AEx ib IIB T4 Gb)
	Canada	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4 Gb)
	Europe	Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)
	Korea	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4)
	China	Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb)
	China	Combination of pressurized and intrinsically safe (fG4 / Ex ib IIB T4 Gb)
Controller	America, Canada	E35、F35
	Europe	E45、F45
	Japan & Asia	E25、F25

*1: Distance between centers of JT1 and JT5.
*2: Conforms to ISO9283.
*3: Depends on payload and motion patterns.

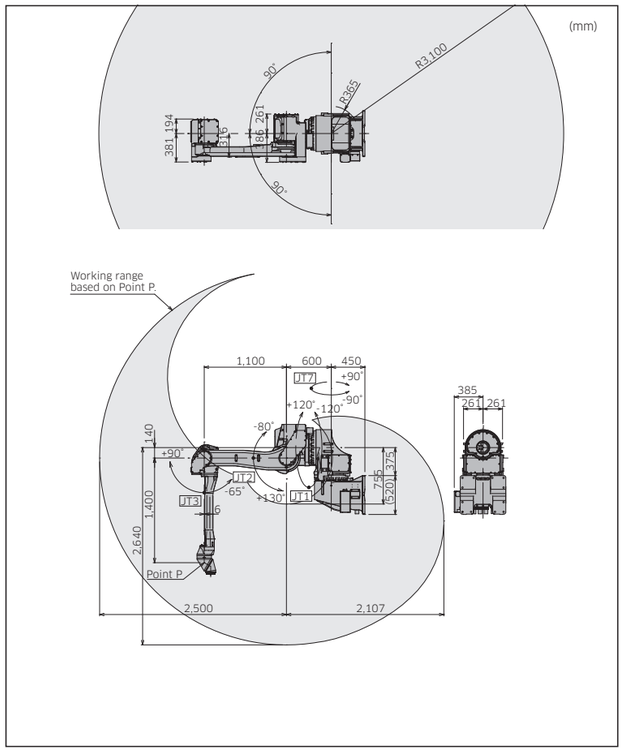


KJ314 (Wall)

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		7
Payload (kg)		Wrist : 15　Arm : 25
Max. reach*1 (mm)		3,100
Position repeatability*2 (mm)		±0.5
Motion range (°)	Arm rotation (JT1)	±120
	Arm out-in (JT2)	+130 - −80
	Arm up-down (JT3)	+90 - −65
	Wrist swivel (JT4)	±720
	Wrist bend (JT5)	±720
	Wrist twist (JT6)	±410
	Arm swing (JT7)	±90
Painting speed (m/s)		1.5
Mass (kg)		720
Mounting		Wall
Power requirements*3 (kVA)		5
Explosion-proof construction	America	Combination of pressurized and intrinsically safe (CL I ZN 1 AEx ib pxb IIB T4 / AEx ib IIB T4 Gb)
	Canada	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4 Gb)
	Europe	Combination of pressurized and intrinsically safe (II2 G Ex pxb ib IIB T4 / Ex ib IIB T4 Gb)
	Korea	Combination of pressurized and intrinsically safe (Ex ib pxb IIB T4 Gb / Ex ib IIB T4)
	China	Combination of pressurized and intrinsically safe (Ex ib px IIB T4 Gb / Ex ib IIB T4 Gb)
	Japan & Asia (except China & Korea)	Combination of pressurized and intrinsically safe (fG4 / Ex ib IIB T4 Gb)
Controller	America, Canada	E35、F35
	Europe	E45、F45
	Japan & Asia	E25、F25

*1: Distance between centers of JT1 and JT5.
*2: Conforms to ISO9283.
*3: Depends on payload and motion patterns.

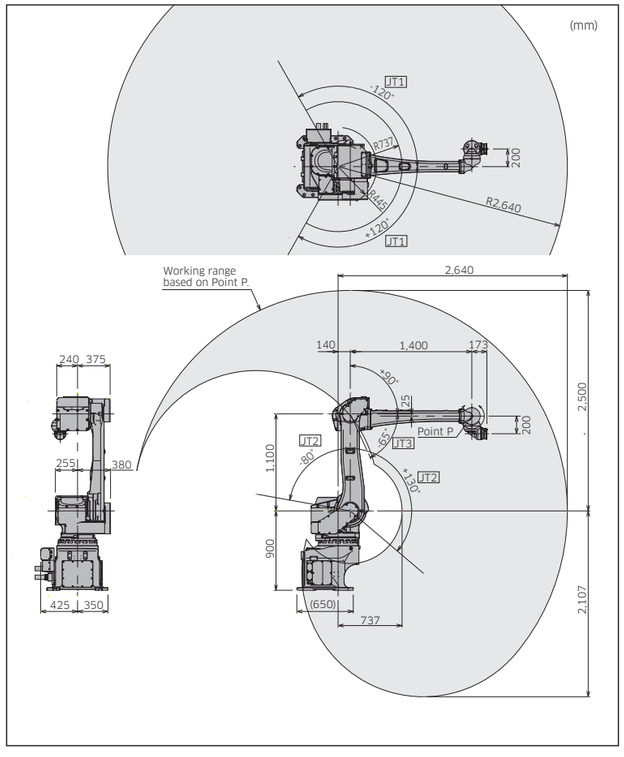


KL262

Standard Specifications

Type		Articulated robot
Degree of freedom (axes)		6
Payload (kg)		Wrist : 45
Max. reach*1 (mm)		2,640
Position repeatability*2 (mm)		Wrist flange surface: ±0.5
Motion range (°)	Arm rotation (JT1)	±120
	Arm out-in (JT2)	+130 - −80
	Arm up-down (JT3)	+90 - −65
	Wrist swivel (JT4)	±360
	Wrist bend (JT5)	±360
	Wrist twist (JT6)	±360
Painting speed (m/s)		1.6
Mass (kg)		600
Mounting		Floor
Power requirements*3 (kVA)		5
Explosion-proof construction	Japan	Combination of pressurized and intrinsically safe (fG4)
Controller	Japan	E25、F25

*1: Distance between centers of JT1 and JT5.
*2: Conforms to ISO9283.
*3: Depends on payload and motion patterns.



E25, E35, E45/E27, E37, E47

Features

- Space saving thanks to the small footprint.
- By installing additional amplifiers, a conveyor, a gear pump and up to 3 external exes can be used.

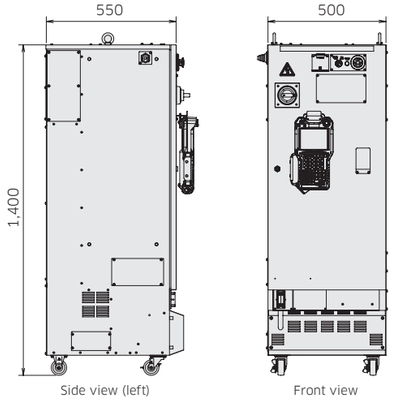
Standard Specifications

America & Canada		E35	E37
Europe		E45	E47
Japan & Asia		E25	E27
Dimensions (mm)		W500×D550×H1,400	
Construction		Enclosed structure/Indirect cooling system	
Controlled (axes)		6 (Max. 9)	
Memory capacity (MB)		8	
I/O signals	External operation	Motor power Off, Hold	
	Input (Channels)	32	
	Output (Channels)	32	
Cable length	Robot-controller (m)	3 (Inside the booth, 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　7.3kVA (E35)/5.1kVA (E37)*1 Protective ground, leakage current: 10 mA at maximum	
	E45/E47	AC380-415V ±10%, 50/60 Hz, 3ø　7.3kVA (E45)/5.1kVA (E47)*1 Protective ground, leakage current: 10 mA at maximum	
	E25/E27	AC200-220V ±10%, 50/60Hz, 3ø　10kVA (E25)/5.6kVA (E27)*1 Class-D ground (standard for robots), leakage current: 100 mA at maximum Class-A ground (for intrinsic explosion-proof safety circuits)	
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*2, control power light (Cycle start, motor-on, hold/run, and error rest are activated from the teach pendant.)	

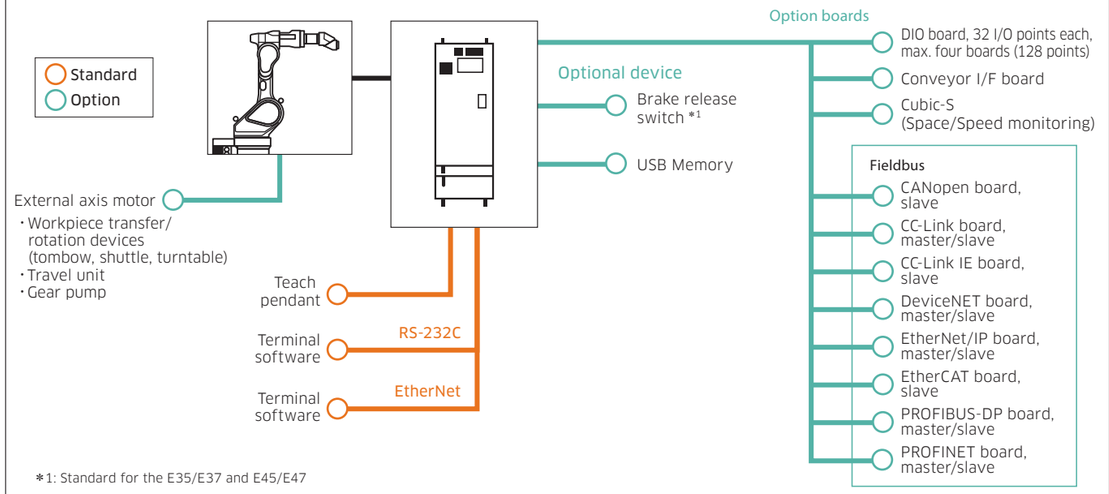
*1: Power requirements ensure maximum operation of a robot, not those required for normal operations.
*2: The E45/E47 comes with three switches to change between teach/teach 100%/repeat, as standard equipment.

External view and dimensions

E25, E35, E45 / E27, E37, E47



System configuration



*1: Standard for the E35/E37 and E45/E47

F25, F35, F45

Features

- Compared to the conventional E-series controller, the F Controller is more than 50% smaller in volume and significantly lighter in weight.
- Additionally, the air panel can be mounted directly on top of the controller, allowing for more efficient use of installation space.

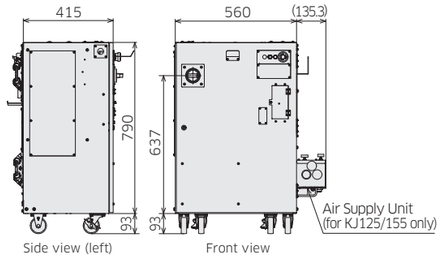
Standard Specifications

America & Canada		F35
Europe		F45
Japan & Asia		F25
Dimensions (mm)		W560×D415×H790
Construction		Enclosed structure Indirect cooling system
Controlled (axes)		7 (Max. 9)
Memory capacity (MB)		16
I/O signals	External operation	Motor power Off, Hold
	Input (Channels)	32
	Output (Channels)	32
Cable length	Robot-controller (m)	3 (Inside the booth, outside the booth)
	Teach pendant (m)	10
Mass (kg)		70(F25)、95(F35)、100(F45)
Power requirements	F25	AC200V - AC220V ±10%, 50/60Hz, 3 phases
	F35	AC440V - AC480V ±10%, 60Hz, 3 phases
	F45	AC380V - AC415V ±10%, 50/60Hz, 3 phases
Installation environment	Ambient temperature (℃)	0 - 45
	Relative humidity (%)	35 - 85 (non-condensation)
Teach pendant		Color LCD with touch panel Emergency Stop SW, Teach Lock SW and Enable SW
Operation panel		Emergency Stop SW, Teach/Repeat SW*2

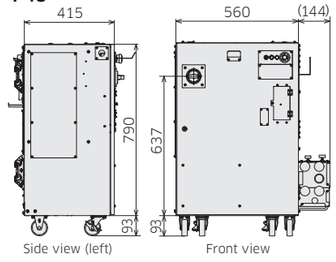
*1: Power requirements ensure maximum operation of a robot, not those required for normal operations.
*2: The F45 comes with three switches to change between teach/teach 100%/repeat, as standard equipment.

External view and dimensions

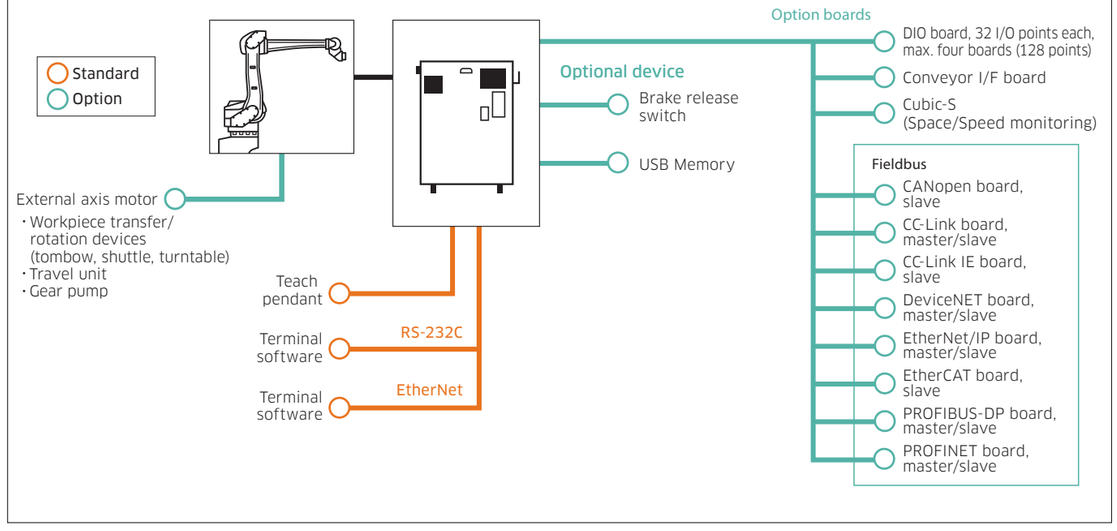
F25, 35



F45



System configuration



New Lightweight Explosion Proof Teach Pendant

- Reduces weight by more than 30%
- Changing the liquid crystal method to STN
  →TFT high-brightness LCD improves brightness and visibility
- Significantly improved viewing angles, reducing the stress of teaching work

Item	Current Explosion-proof Teach Pendant	New Lightweight Explosion-Proof Teach Pendant
Operability	Equivalent (Key Arrangement is the same)	
Size	215(W) x 346(H) x 58(D)	162(W) x 304(H) x 58(D)
Weight	1500g	1000g
Screen Size	7.2inch	5.7inch
LCD	STN Color	TFT Color
Explosion-proof	Structure Intrinsically Safe	

Explosion-proof color LCD with large touch panel enables teaching, editing work, pre-position/IO signals, and other information in the explosion-proof area
monitor and user-customizable interface panel. Also, back
It also has a light, so the screen is clear even in low light conditions.

USER FRIENDLY OPERATION

The easy to use intrinsically safe teach pendant now incorporates a low-voltage color LCD touchscreen as well as motor power and cycle start at your fingertips while programming inside the paint booth. Multiple information screens can be displayed simultaneously including spray condition and diagnostics. The intuitive teaching interface is simple to use.

ADVANCED TECHNOLOGIES

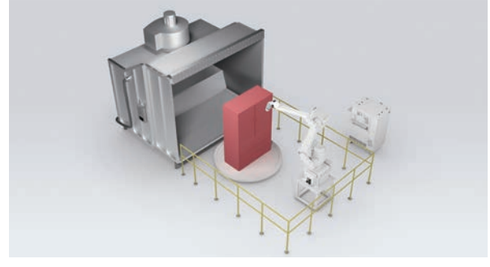
The high performance CPU provides extremely accurate trajectory control, high-speed program execution as well as extremely fast loading and saving of files. Two Ethernet ports are available for the user to connect directly to a laptop or to an Ethernet network to remotely save programs or monitor the process.

EASY MAINTENANCE

Modular components with limited cables allow for easy diagnostics and maintenance. On board self diagnostics minimizes troubleshooting and reduces MTTR. Remote Diagnostics via the web server option enables service support from anywhere in the world. The E35/37 controller's main circuitry modules, including the I/O boards and MC unit, are interchangeable with non-paint E controllers reducing spare parts inventory and order lead time. All standard circuitry and intrinsically safe components are now mounted inside the main controller enclosure, eliminating the bulky side box.

EXPANDABLE

Three additional axes can be added for control of process equipment and a 7th axis rail. Numerous communication field buses are available for controlling peripheral devices. The controller supports a wide range of fieldbus protocols for peripheral device control. It can implement either the KLogic software sequencer, which allows program editing directly from the teach pendant, or the CODESYS software PLC, which complies with the international IEC 61131-3 standard. These capabilities make it easy to build sophisticated automation systems.



Small sized painting applications

Servo Tombow

Space saving and easy-to-install

1. Smooth movement

Servo motion control provides smooth movement to eliminate work slippage.

2. Higher painting quality

For small cubical boxes (electronic appliances such as TV cabinets.), 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 the painting quality.

3. Synchronous operation with the robot

The Servo Tombow's table rotation is synchronized with the robot movements, assuring a uniform paint finish for cylindrical shaped components such as hot plates, wooden trays and automobile hubs. The Tombow table offers 360 degrees of rotation.

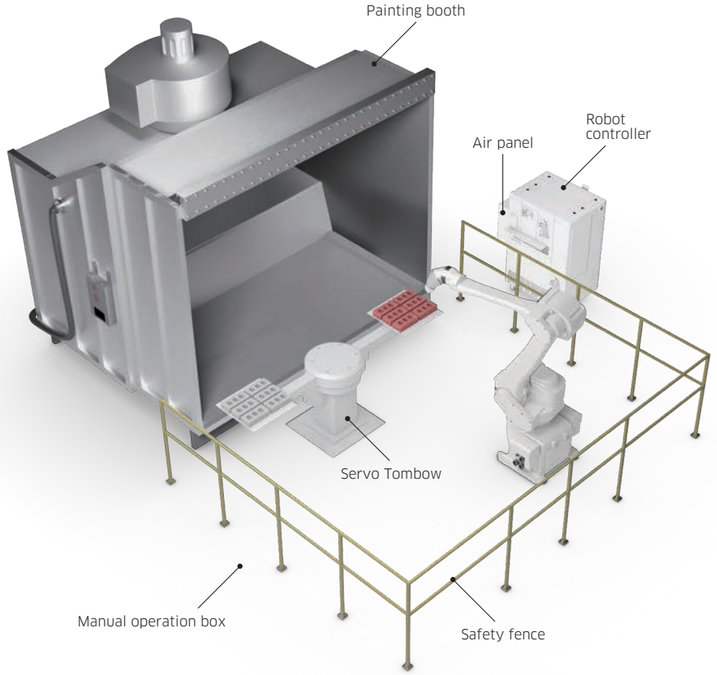
4. Preventing paint mist accumulation

To reduce the problem of paint mist accumulation, workpieces can be positioned above a water tank when spraying.

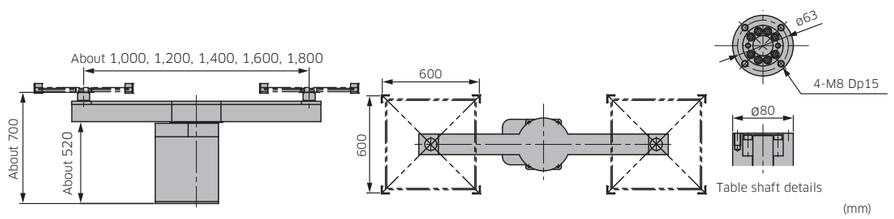
Standard Specifications

		Standard	Heavy load type
Table load		20 kg x 2 Table	40 kg x 2 Table
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)	2.0/180°	2.4/180°
Table	Operation angle	Infinite revolution	
	Indexing angle (°)	90-deg 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 lengths 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

1. Space efficient

The paint robot is installed at the center of the Servo Tombow painting system, thereby achieving a greater space efficiency.

2. Adaptability to different 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.

3. Enhanced paint quality

There are few obstacles surrounding the tables, allowing the paint robot to freely change its posture. The lack of obstacles also means that the airflow inside the booth does not become too turbulent. These advantages lead to an improved level of paint quality.

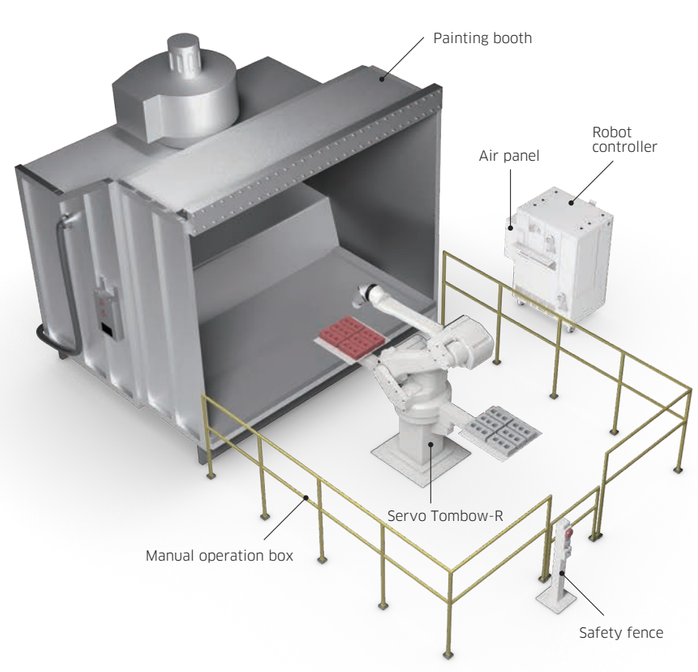
4. Ideal for automated transportation equipment

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.

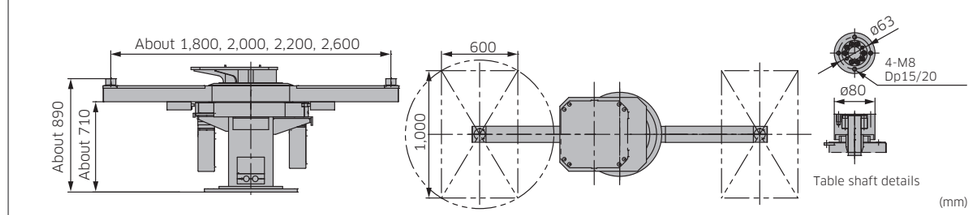
Standard Specifications

		Standard	Heavy load type
Table load		20 kg x 2 Table	40 kg x 2 Table
No. of control (axes)		Robot 6+Servo tombow-R 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, 2,400, 2,600	1,800, 2,000, 2,200
	Operation angle (°)	180	
	Indexing time (sec)	4.0/180°	
Table	Operation angle	Infinite revolution	
	Indexing angle (°)	90-deg 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 (excluding the manipulator base)	
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 but sophisticated system

1. 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. Such compactness allows you to install this system in a narrow hand-blowing booth.

2. Rotary table functions

In spite of its small size the Servo Twister provides rotary coating, indexed coating and rotary synchronization functions.

3. 6-axis robots

The Servo Twister installation uses a 6-axis, articulated robot.

4. Shared coating program

The integration of the robot and painting table into one unit allows for programs to be shared by more than one robot.

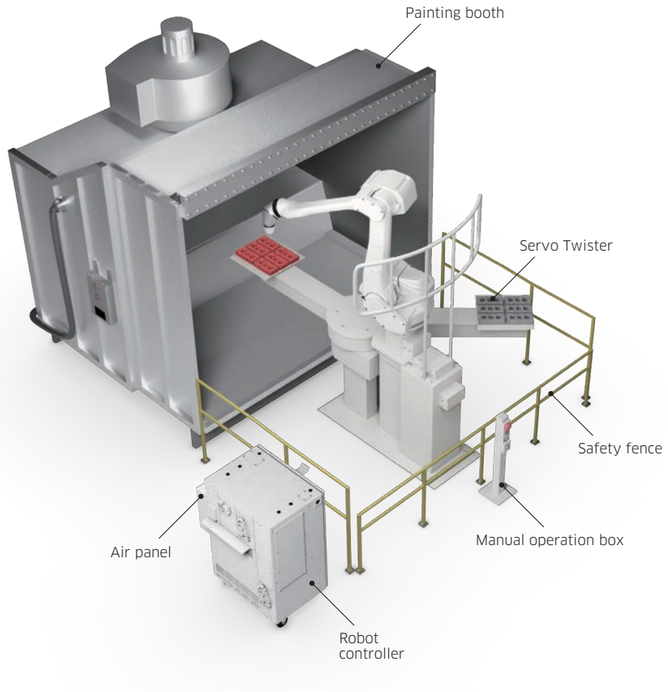
5. Short installation time

The servo twister cell can be built before delivery, so that the time for installation could be done as quick as one day.

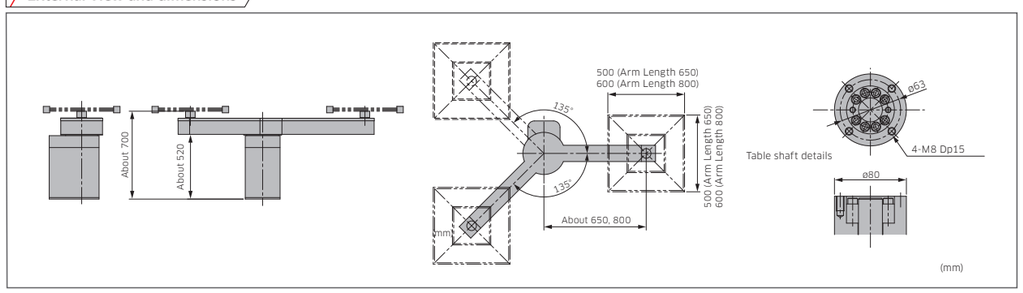
Standard Specifications

		Standard
Table load		20 kg x 2 Table
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	Diameter (mm)	650, 800
	Operation angle (°)	135
	Indexing time (sec)	1.8/135°
Table	Operation angle	Infinite revolution
	Indexing angle (°)	90-deg 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 work-piece painting cell

Servo Shuttle

Ultimate “table painting” type

1. Improvement in productivity

Servo motion provides high speed work transfer and table rotation with shock-less smooth start and stop motion, and also enables continuous rotation tracking with robot and any stand-by position of feeder.

2. Higher coating quality

Controlling the position of the table provides the optimum painting position. This combined with the high-speed, high-precision robot with the servo shuttle enables high-quality painting.

3. Simple teaching

The simple teaching function provided by the KF series painting robot eliminates time-consuming program teaching.

4. Increased table load

The system can be used for painting large TV cabinets, sanitary ware, automobile instrument panels etc.

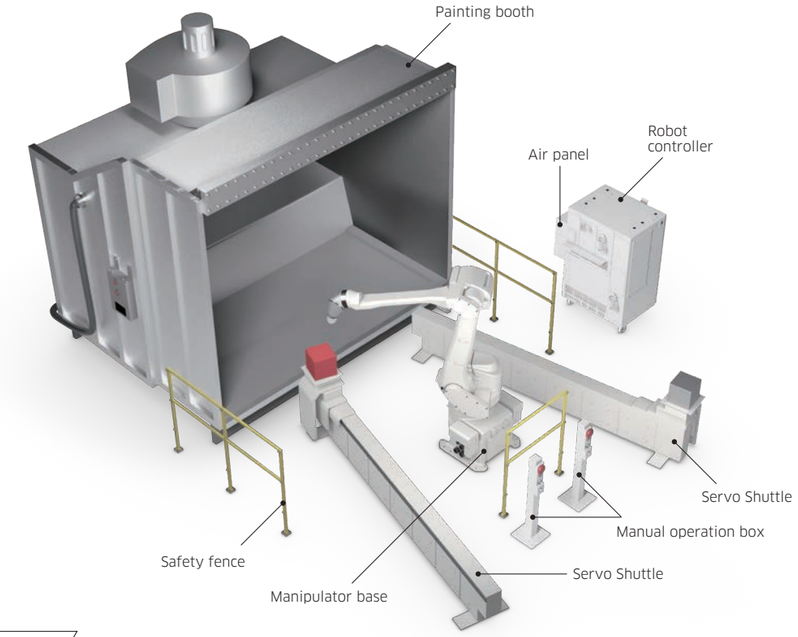
5. Simple installation

This complete package is simple to install, but will provide for the painting of the most complex of components. installation could be done as quick as one day.

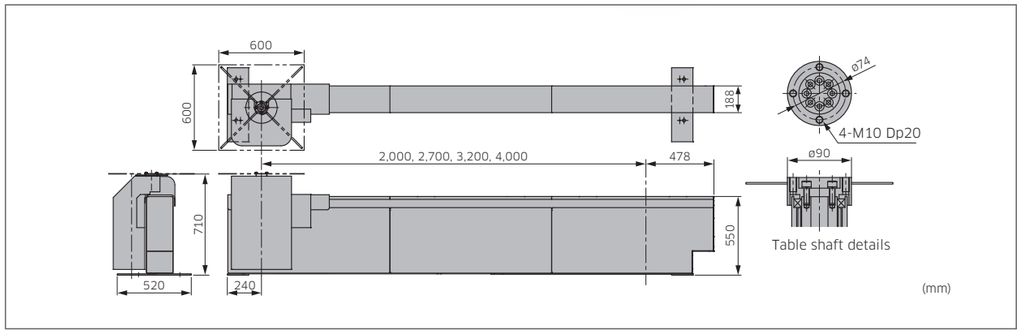
Standard Specifications

		Standard	Heavy load type
Table load		20 kg x 2 Table	60 kg x 2 Table
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/秒)	1,000	
Table	Operation angle	Infinite revolution	
	Indexing angle (°)	90-deg 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		The 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)		One side: 300 to 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 work-piece painting cell

Servo Wing

The installation space for “Table Painting” was made even smaller.

1. Space saving
While suitable for workpieces of a larger size than in the Servo Shuttle, the installation space is made smaller. Because the left and right workpieces are closer together, loading and unloading work is reduced.

2. Even small-sized robots can handle large workpieces
Because there is one painting position, the distance between the workpiece and the robot becomes closer, making the robot possibly smaller than that in the Servo Shuttle.

3. Less teaching work
Because the left and right arms can be set for the same painting positions (one position), a single program can be used, thus making the teaching time shorter.

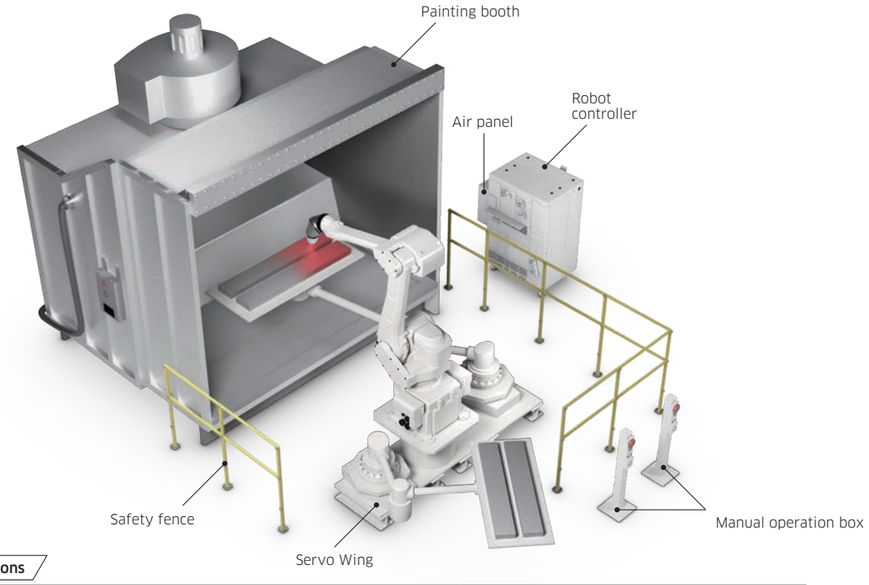
4. Preventing paint mist accumulation
Because the arms are slim with no fixed rails, painting can be conducted above the water, reducing soiling of the booth. In addition, the airflow turbulence inside the paint booth can be minimized.

5. Short Construction Period
This device is delivered pre-assembled. So, it can be installed in as short as one day and you can start production immediately.

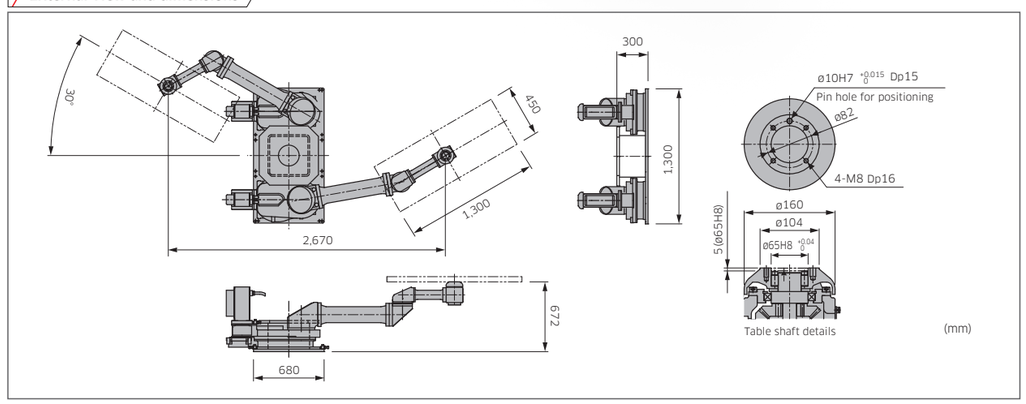
Standard Specifications

Table load		30 kg x 2 Table
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	Diameter (mm)	2,670
	Operation angle (°)	3.2
Table	Operation angle	Infinite revolution
	Indexing angle (°)	90-deg and arbitrary angle
	Indexing time (sec)	1.2/90°
	Uninterrupted rotary speed (rpm)	Max. 90
	Rotary direction	Normal/reverse rotation
Intermediate stop function		The 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)		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.



External view and dimensions



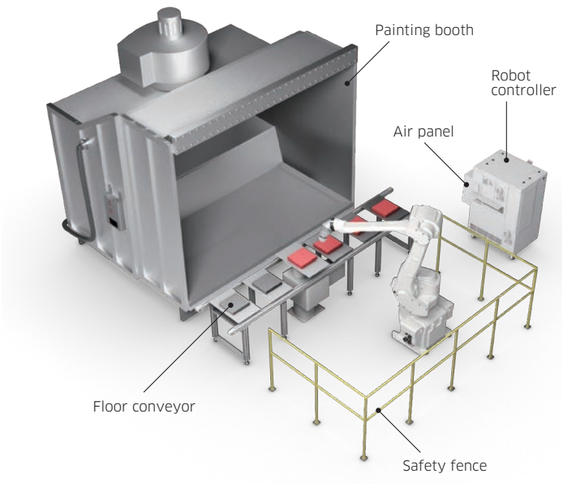
Medium sized work-piece painting cell

Servo Spinner

A new dimension in “line coating”

1. Flexible component placement
Choose the optimum painting posture for the workpiece, and reduce contamination of the paint booth.

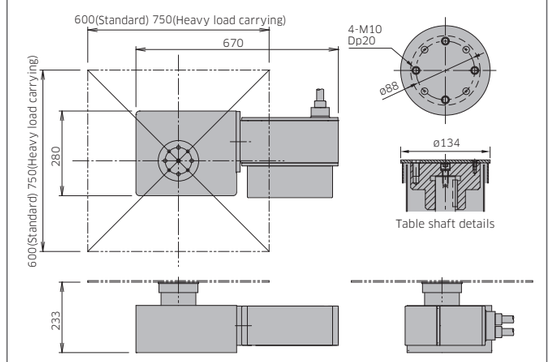
2. Uninterrupted painting
Painting can be performed with the table rotating, thus minimizing the robot's wait time.



Standard Specifications

		Standard	Heavy load type
Table load		20	60
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-deg 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



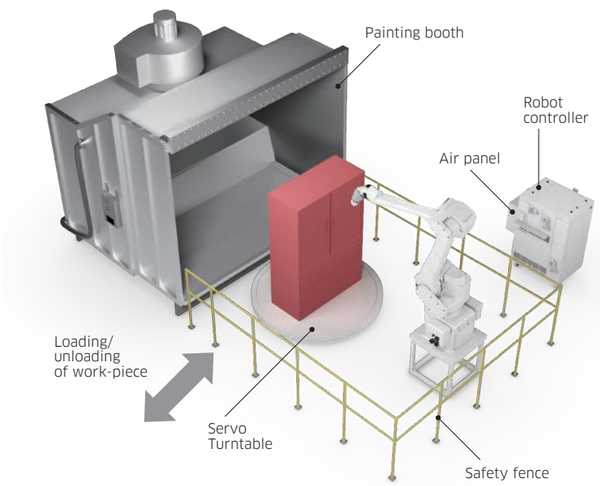
Large sized work-piece painting cell

Servo Turntable

Complete surface painting is possible with uninterrupted turntable rotation

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

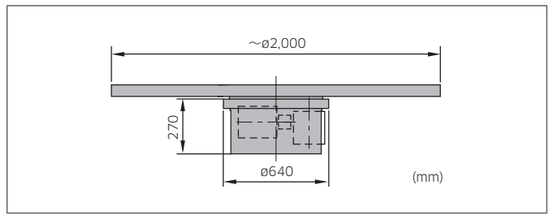
2. The system can be applied to various types of painting such as synchronous control, arbitrary-angle indexing and paint spraying with continuous rotation of the table.



Standard Specifications

		Standard	Heavy load type
Table load (kg)		Max. 500	Max. 1,000
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-deg 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)		up to ø2,000	
Color		Munsell 10GY9/1 equivalent	
Foot switch function (Option)		Uninterrupted normal rotation, rotation stop	Uninterrupted rotation, 45-deg., 90-deg., 180-deg., indexing (changeable indexing angle), rotation stop

External view and dimensions



Medium sized work-piece painting cell

Tilt Spinner

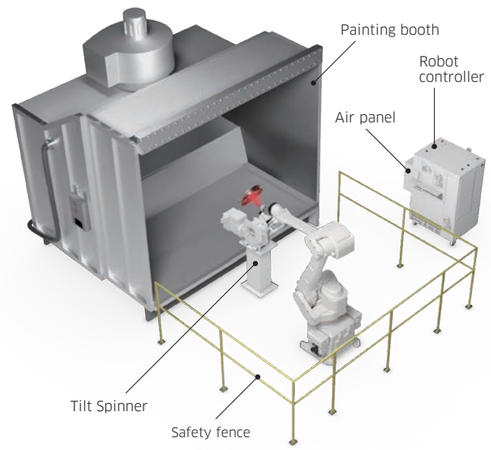
It is a new style of “line painting”.

1. Arbitrary positioning of the workpiece on the line

The robot can adopt a painting posture that matches the shape of the workpiece, allowing for a comfortable setup that reduces booth contamination.

2. Continuous rotation painting is possible

Continuous rotation of the table enables painting during movement, minimizing robot idle time.



Standard Specifications

No. of control (axes)		Robot 6+Servo tombow-R 2
Control method		Servo control
Teaching playback method		PTP teaching+CP control
Position detection method		Absolute encoder
Inclined axis	Operation angle (°)	±45°
	Indexing time* (sec)	1.0/45°
Operation angle	Operation angle (°)	Infinite revolution
	Indexing angle (°)	90-deg and arbitrary angle
	Indexing time* (sec)	0.9/90°
	Uninterrupted rotary speed (rpm)	Max. 60
	Time to Reach Maximum Table Speed	0.4 sec
	Rotation Direction	Forward/Reverse Rotation
	Payload	40kg
	Allowable Inertia Moment	Maximum 4.2 kg·m^2
Workpiece Size		700mm x 700mm
Explosion-proof composite type		Air pressurized explosion protection and intrinsically safe. (Expib Ⅱ BT4 / Exib Ⅱ BT4)
Mass (kg)		270kg
Color		Munsell 10GY9/1 equivalent
Motion range (°)		-
Mounting		Floor
Installation environment		Ambient temperature (℃) 0 - 40 Relative humidity (%) 35 - 85 (No dew, nor frost allowed)
Air Supply		Clean, dry air : 0.08Nm^3/min、0.4～0.7MPa Atmospheric dew point : -17℃ or lower Solid particles : 0.01μm or smaller Oil content : Mist removal efficiency 99.9999% or higher
Options		None

*Arm indexing time refers to the time from the intermediate stop position to the painting position. Arm indexing time varies depending on the intermediate stop position.

Kawasaki’s cooperative coating technology

Next-generation coating solutions that deliver high quality, energy efficiency, and operational effectiveness.

The coating process is one of the most demanding energy consumption at manufacturing sites, and it is necessary to improve it to achieve carbon neutrality. Kawasaki proposes a new collaborative coating solution that enhances quality while reducing energy consumption and costs—achieved through synchronized operation of multiple robots.

Technical Overview

Cooperative painting is a control technology that synchronizes the movements of the painting and transport robots, optimizing the relative motion and spray angle of the paint gun. This enhances production efficiency while maintaining high paint quality.

Main Advantages

Stabilization of paint quality

Optimizing the workpiece orientation relative to the spray surface improves film thickness uniformity and color tone stability. It also supports electrostatic coating for a refined, high-quality finish.

Efficiency of equipment start-up

Shared coordinate systems between robots reduce setup errors and simplify teaching and adjustments, shortening start-up time.

Reduced paint usage

Enhanced application efficiency minimizes overspray, reducing paint consumption and lowering operational costs.

Reduced maintenance load

Optimizing the spray direction reduces paint scattering, resulting in less booth contamination and lower cleaning and maintenance workload.

Reduced takt time

Coordinated movement with the transport robot maintains application speed while minimizing acceleration and deceleration of the paint gun, boosting overall productivity.

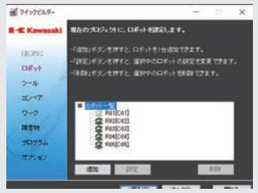
neoROSET is a programming tool that enables robot programming and accurate simulation on a PC.
By performing offline verification in advance, risks that may be concerned about introducing a robot system can be reduced.

neoROSET

Flow of using the system

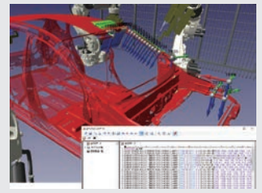
neoROSET provides maximum effectiveness with simple operation.

Placement considerations



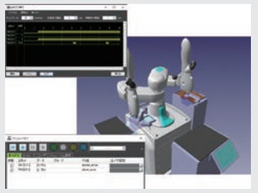
Interactive operation makes it easy to add robots and workpieces and modify their placement. Eventhose who are unfamiliar with design work can confidently check whether a robot can reach a workpiece.

Teaching and programming



You can easily create machining operations by snapping to vertices and edges of CAD data and adding t eaching points directly to the workpiece. You can also easily program by adding items that display explanations of commands.

Simulation

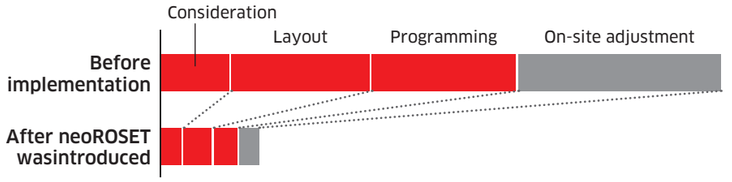


The movement of robots and peripheral devices, as well as interference conditions when models come into contact,can be displayed, a llowing you to prevent system problems before they occur. You can also check the status of currently executing program steps and signals,shortening the time it takes to find problems.

Application to actual equipment

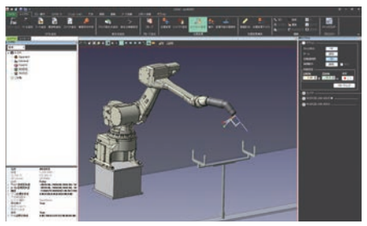
Programs created with neoROSET can be loaded to the actual machine, or saved to neoROSET. You can also monitor the robot’s posture and signal status, reducing on site adjustment time.

Dramatically reduces teaching time



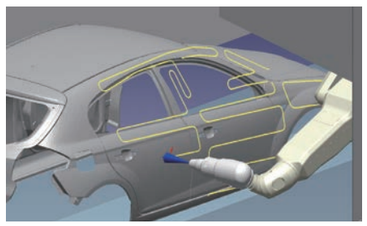
By using neoROSET, the time required for conventional offline teaching and adjustment can be reduced to a fraction or even up to one-tenth.

Simple and intuitive operation



Its intuitive graphical user interface allows users to visually create robot programs, even without specialized programming knowledge.

Display of processing results



The trajectory of the machining results when welding or painting commands are executed can be displayed separately from the air cutting operation.

Operating environment

Item	Contents
Operating System (OS)	Windows(R)10 Pro x64/Windows(R)10 Enterprise x64 Windows(R)11 Pro x64/Windows(R)11 Enterprise x64 Japanese version / English version / Chinese version / German version
CPU	Intel Core i5 or higher recommended
Memory	Minimum 8GB RAM, 16GB or more recommended
Free space	30GB or more, Solid State Drive (SSD) recommended
Resolution	1920 x 1080 or higher recommended
Video card	Intel UHD Graphics or higher / NVIDIA Quadro series recommended
Other requirements	Mouse (with wheel recommended) or equivalent pointing device PDF Reader such as Adobe® Acrobat® Reader

CAD formats are supported as standard!

neoROSET can import data from many commonly used 3D CAD programs and use it to create programs.This allows you to build an environment where CAD data and robots can be used, seamlessly connecting the design department and the manufacturing site.In addition, it is backward compatible with the conventional software K-ROSET, and can load K-ROSET projects.

*Supported CAD formats are updated from time to time.

CAD Format	
Format	Extension
CATIA V5	CATProduct
	CATPart
CATIA V4	model
SollidWorks	sldasm
	sldprt
Pro/E	asm
	prt
Rhinoceros	3dm
AutodeskInventor	ipt
	iam
SolidEdge	par
	asm
	psm
NX	prt

Standard Format	
Format	Extension
ACIS	sat
	sab
IGES	iges/igs
STEP	step/stp
DXF	dxf
DWG	dwg
JT	jt
Parasolid	x_t
	x_b
STL	stl

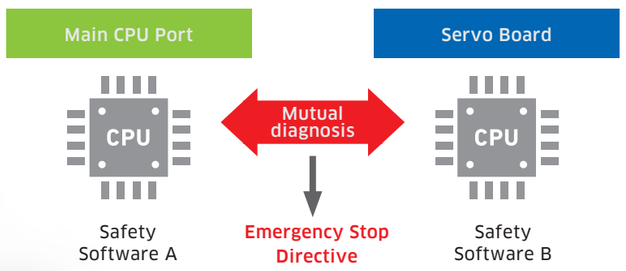
Robot Motion Monitoring Safety Unit

CoreCubic-S is a safety feature that monitors robot behavior with software. Monitor the operation to safely stop the robot or system.

CoreCubic-S

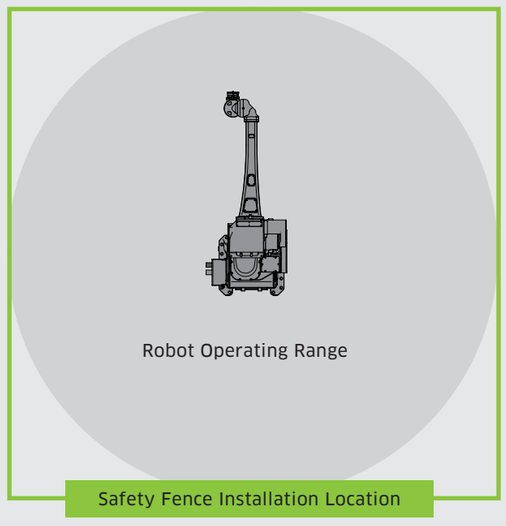
Built-in explosion-proof F-controller

Both the main CPU board and servo board software monitor the robot status. Mutual diagnostics between the two CPUs ensure safety.



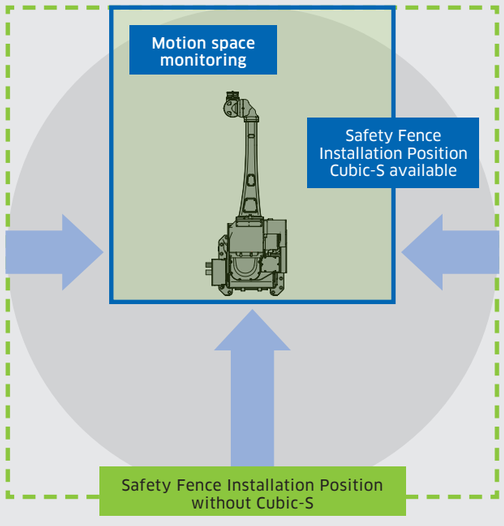
Item	CoreCubs-S
Safety Performance	Protective Stop Function, Emergency Stop Function: PL e (Category 4), SIL3 Other Safety Functions: PL d (Category 3), SIL2
Number of Monitoring Axes	Up to **17** Axes
User Input/Output	DJ Board (Optional) Additional (*2 Points per DJ Board: 8/8 Points) Safety Duplexing Input: **16** points (Max) Safety Duplex Output: **16** points (Max) Tool ID Input: 5 points
Safety Features	Safety Features Operating space monitoring, axis monitoring, speed monitoring, stop monitoring, tool direction monitoring, protective stop, emergency stop, safety state output, EtherNet/IP safety, **logic arithmetic**

Before Introduction



After Implementation

CoreCubic-S

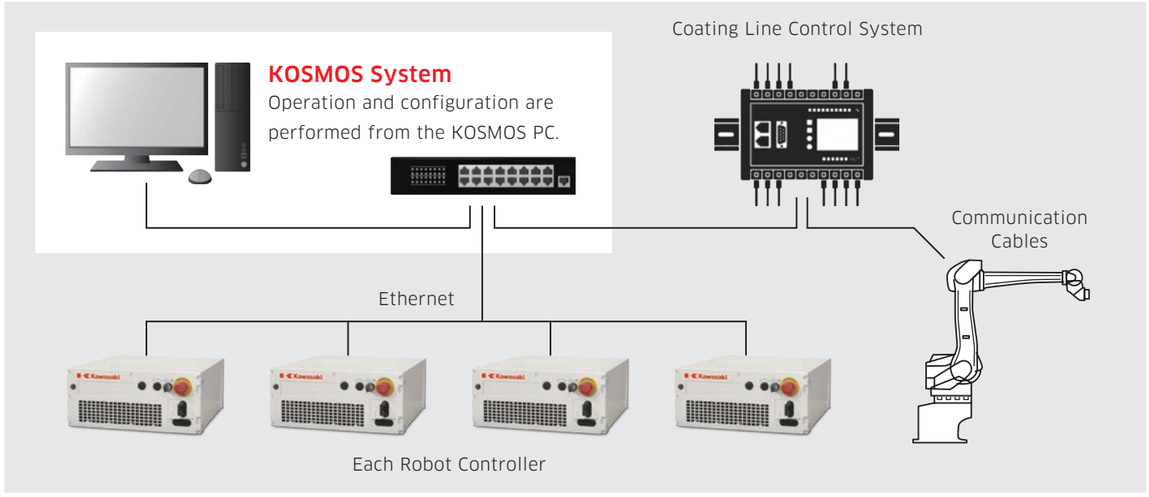


Safety fences can be installed regardless of the robot's range of motion,

reducing the footprint !

Coating Robot Control System

KOSMOS is a software that sets and displays the painting data associated with each robot.



Centralized management of all data

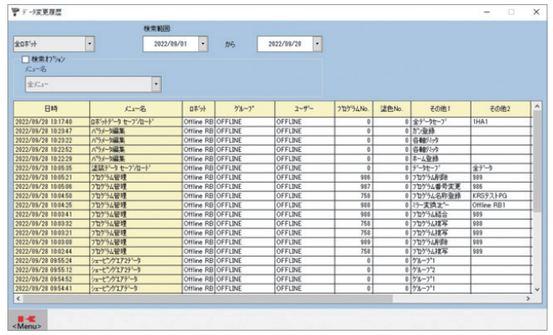
Each axis's software limit and home position settings can be managed directly through the robot program—without the need for a teaching pendant.

What does KOSMOS deal with?

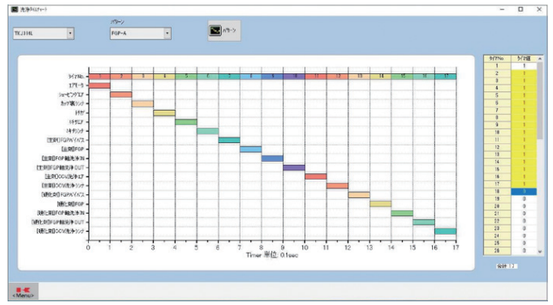
- **Paint condition**
  Spraying air/pattern air/spraying volume, high voltage level, etc.
- **Calibration**
- **Statistics, each history check**
  Abnormal statistics, data change history, robot utilization rate, paint usage, abnormal history, data change history, etc.
- **Data Save, Data Load**
  Teaching Program, System Parameters, Paint Data, Data Backup

Statistics, each history check

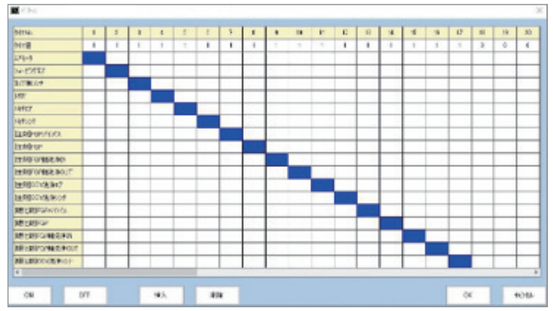
The system allows verification of when and by whom data was modified, as well as the specific details of each change.



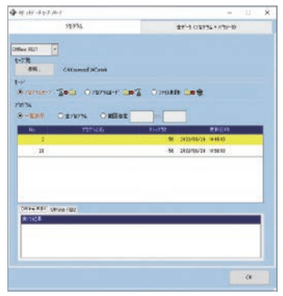
Paint Data : Paint Equipment Time Chart



ON/OFF pattern and time to be turned on



Robot Data : Saving and Loading



The program can select individual robots or all robots to be saved and loaded.