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https://robotics.kawasaki.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 Akashi Works.

# Kawasaki Robot Lineup



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### **Our Product Philosophy is "Simple and friendly"**

With more than 50 years' experience in industrial robotics, we have consolidated our state-of-art technologies into productivity enhancing flexible automation solutions that are simple and friendly. Our product lineup offers comprehensive functionality with operational ease of use. Kawasaki began the robot business in 1968. Since that time, we have consistently produced high quality, cost effective industrial robots featuring state-of-the-art technology for both the domestic and overseas markets.

Our broad product portfolio services a wide range of applications across diverse industries; from the assembly of miniature components weighing only a few grams, to the material handling of castings weighing 1,500 kg. Our high-performance lineup is supported by our continuous development of control technology to improve functionality and operation for optimum control of the manipulator.

Our human and environmentally friendly robot systems provide a high level of skill and intelligence. We hope that you will benefit from our technology and experience in your future automation projects to increase production, lower costs and improve quality.









Small-to-medium Large payload payload robots robots R series CX series

Large payload robots robots CX series Z series

Extra large payload robots M series Spot welding robots B series Arc welding robots

Painting robots Explosion-proof K series Palletizing robots

Dual-arm SCARA Robot duAro

1



Pick & Place robots Y series Clean robots

Medical & pharmaceutical robots

### **Small-to-medium payload robots** up to 80 kg

#### **R** series

Setting the benchmark in its class - higher speed and longer reach in a compact design.



		RS003N	RS005N/005L	RS007N/007L	RS006L/010N	RS015X	RS010L/020N	RS030N/050N/080N
Applica	tion			•••••(•)*	2		••••(•)*2	
Degree	of freedom (axes)		1		6		1	
Max. pa	iyload (kg)	3	5	7	6/10	15	10/20	30/50/80
Max. re	ach (mm)	620	705/903	730/930	1,650/1,450	3,150	1,925/1,725	2,100
Repeata	ability *1 (mm)	±0.02	±0.02/±0.03	±0.02/±0.03	±0.03	±0.06	±0.05/±0.04	±0.06
	Arm rotation (JT1)	±160	±180	±180	±180	±180	±180	±180
	Arm out-in (JT2)	+15060	+13580	±135	+145105	+140105	+155105	+140105
Motion	Arm up-down (JT3)	+120150	+118172	±155/±157	+150163	+135155	+150163	+135155
range (°)	Wrist swivel (JT4)	±360	±360	±200	±270	±360	±270	±360
( )	Wrist bend (JT5)	±135	±145	±125	±145	±145	±145	±145
	Wrist twist (JT6)	±360	±360	±360	±360	±360	±360	±360
	Arm rotation (JT1)	360	360/300	470/370	250	180	190	180
	Arm out-in (JT2)	250	360/300	380/310	250	180	205	180
Max.	Arm up-down (JT3)	225	410/300	520/410	215	200	210	185/185/160
speed (°/s)	Wrist swivel (JT4)	540	460	550	365	410	400	260/260/185
()-)	Wrist bend (JT5)	225	460	550	380	360	360	260/260/165
	Wrist twist (JT6)	540	740	1,000	700	610	610	360/360/280
Mass (k	g)	20	34/37	35/36	150	545	230	555
Installa	tion		·	*	Floor, Ceiling		÷	•
Control	ler		F60		E01, F60	E02	E01	E02

\*1: conforms to ISO9283
 \*2: Model code has changed. The configuration is also slightly different from that shown in the photo.
 Application: Assembly
 Dispensing
 Machine tending
 Material handling
 Material removal
 Palletizing
 Arc welding

	CX110L	CX165L	CX210L
Application		• • • •	
Degree of freedom (axe	25)	6	
Max. payload (kg)	110	165	210
Max. reach (mm)	2,699	2,699	2,699
Repeatability *1 (mm)	±0.06	±0.06	±0.06
Arm rotation (J	T1) ±160	±160	±160
Arm out-in (J	T2) +8060	+8060	+8060
Motion Arm up-down (J	T3) +9575	+9575	+9575
(°) Wrist swivel (J	T4) ±210	±210	±210
Wrist bend (J	T5) ±120	±120	±120
Wrist twist (J	T6) ±360	±360	±360
Arm rotation (J	T1) 140	130	125
Arm out-in (J	T2) 135	125	115
Max. Arm up-down (J	T3) 135	125	115
speed (°/s) Wrist swivel (J	T4) 200	180	155
Wrist bend (J	T5) 200	180	160
Wrist twist (J	T6) 300	280	220
Mass (kg)	870	870	870
Installation		Floor	
Controller		E02	
1: conforms to ISO9283	•		

Application: • Assembly • Material handling • Palletizing • Spot welding

# Large payload robots up to 210 kg

#### **CX** series

Kawasaki's latest advances in technology deliver increased robot motion speed and installation flexibility.

### Large payload robots up to 300 kg

#### Z series

Robust low-maintenance design with wide work envelope provides application flexibility.

		ZX130S/130L/165U/200S/300S	ZH100U	ZT130S/165U/200S	ZT130Y/165X/165Y
Applicat	tion		• • •	••	• •
Degree	of freedom (axes)		6		
Max. pa	iyload (kg)	130/130/165/200/300	100	130/165/200	130/165/165
Max. rea	ach (mm)	2,651/2,951/2,651/2,651/2,501	1,634	3,230/3,230/3,230	3,130/2,830/3,130
Repeata	ability *1 (mm)	±0.3	±0.3	±0.3	±0.3
	Arm rotation (JT1)	±180	±160	±180	±180
	Arm out-in (JT2)	+7560	+12060	+6075	+50120
	Arm up-down (JT3)	+250120	+7590	+16595	+15065
range (°)	Wrist swivel (JT4)	±360	±360	±360	±360
()	Wrist bend (JT5)	±130/±130/±130/±120/±120	±130	±130/±130/±120	±130
	Wrist twist (JT6)	±360	±360	±360	±360
	Arm rotation (JT1)	130/110/110/105/100	140	130/105/100	120/120/105
	Arm out-in (JT2)	130/110/110/110/85	100	130/105/100	110/110/105
Max.	Arm up-down (JT3)	130/110/115/105/85	100	130/105/90	115/115/100
speed (°/s)	Wrist swivel (JT4)	180/140/140/120/90	150	180/135/120	160/140/140
( ) - /	Wrist bend (JT5)	180/135/155/120/90	150	180/135/115	180/155/155
	Wrist twist (JT6)	280/230/260/200/150	250	280/210/180	3,130/2,830/3,130           ±0.3           ±180           +50120           +15065           ±360           ±130           ±360           120/120/105           110/110/105           115/115/100           160/140/140           180/155/155           280/260/260
Mass (k	g)	1,350/1,400/1,350/1,400/1,400	750	1,550/1,550/1,600	1,665/1,650/1,665
Installat	tion	Floor	<u>.</u>	Sh	elf
Controll	ler		E02		

S & Konnada

ZX165U

\*1: conforms to ISO9283

Application: • Assembly • Material handling • Palletizing • Spot welding

		MX350L	MX420L	MX500N	MX700N	MT400N	MG10HL	MG15HL
Applica	tion				• •		·	
Degree	of freedom (axes)				6			
Max. pa	ayload (kg)	350	420	500	700	400	1,000	1,500
Max. re	ach (mm)	3,018	2,778	2,540	2,540	3,503	4,005	4,005
Repeata	ability *1 (mm)	±0.5	±0.5	±0.5	±0.5	±0.5	±0.1	±0.1
	Arm rotation (JT1)	±180	±180	±180	±180	±180	±150	±150
	Arm out-in (JT2)	+9045	+9045	+9045	+9045	+15135	+9040	+9040
Motion	Arm up-down (JT3)	+20115	+20125	+20130	+20130	+10630	+30110	+25110
range (°)	Wrist swivel (JT4)	±360	±360	±360	±360	±360	±360	±360
	Wrist bend (JT5)	±110	±110	±110	±110	±120	±120	±120
	Wrist twist (JT6)	±360	±360	±360	±360	±360	±360	±360
	Arm rotation (JT1)	80	80	80	65	80	65	65
	Arm out-in (JT2)	70	70	70	50	70	33.5	33.5
Max.	Arm up-down (JT3)	70	70	70	45	70	37.5	37.5
speed (°/s)	Wrist swivel (JT4)	80	80	80	50	70	65	36
()-)	Wrist bend (JT5)	80	80	80	50	70	65	36
	Wrist twist (JT6)	120	120	120	95	130	80	80
Mass (k	g)	2,800	2,800	2,750	2,860	2,600	6,500	6,550
Installa	tion		Flo	oor	·	Shelf	Fl	oor
Control	ler		EC	)4		E02	E	58
*1: confc	rms to ISO9283							

MG15HL

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Application: 

Machine tending

Material handling

# Extra large payload robots up to 1,500 kg

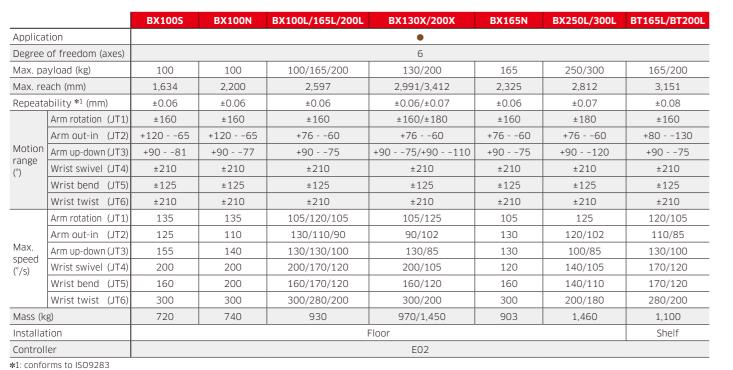
#### **M** series

Achieves high wrist torque and a compact body without any counterweight; the maximum payload is 1,500 kg.

### **Spot welding robots**

#### **B** series

High speed spot welding with greater spot control. Space saving design supports "high density" applications.



BX200L

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Application: 
Spot welding
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		BA006N	BA006L	RA005L	RA006L	RA010N	RA010L	RA020N
Applicat	tion				•			
Degree	of freedom (axes)				6			
Max. pa	yload (kg)	6	6	5	6	10	10	20
Max. re	ach (mm)	1,445	2,036	903	1,650	1,450	1,925	1,725
Repeata	ability *1 (mm)	±0.06	±0.08	±0.03	±0.03	±0.03	±0.05	±0.04
	Arm rotation (JT1)	±165	±165	±180	±180	±180	±180	±180
	Arm out-in (JT2)	+15090	+15090	+13580	+145105	+145105	+155105	+155105
Motion	Arm up-down (JT3)	+90175	+90175	+118172	+150163	+150163	+150163	+150163
range (°)	Wrist swivel (JT4)	±180	±180	±360	±270	±270	±270	±270
.,	Wrist bend (JT5)	±135	±135	±145	±145	±145	±145	±145
	Wrist twist (JT6)	±360	±360	±360	±360	±360	±360	±360
	Arm rotation (JT1)	240	210	300	250	250	190	190
	Arm out-in (JT2)	240	210	300	250	250	205	205
Max.	Arm up-down (JT3)	220	220	300	215	215	210	210
speed (°/s)	Wrist swivel (JT4)	430	430	460	365	365	400	400
() -/	Wrist bend (JT5)	430	430	460	380	380	360	360
	Wrist twist (JT6)	650	650	740	700	700	610	610
Mass (k	g)	150	160	37	150	150	230	230
Installat	tion				Floor, Ceiling			
Controll	er	E01	, F60	F60	E01,	F60	E	01
*1: confo	rms to ISO9283							

Application: • Arc welding

# **Arc welding robots**

Kawasaki robots use the latest arc welding technology to rival the quality of a skilled human welder.



BA006N

### **Painting robots** explosion-proof

#### **K** series

The optimum wrist configuration and model can be selected according to the workpiece. Servo controlled part positioning equipment available.

		KF121	KF192/193/194	KF262/263/264	KG264	KJ264(Floor/Shelf/Wall)/314
Applicatio	n			•		
Degree of	freedom (axes)			6		6/6/6/7
Max. paylo	oad (kg)	5	Wrist : 12 Arm : 20	Wrist : 12 Arm : 20	Wrist : 20 Arm : 30	Wrist : 15 Arm : 25
Max. reach	ו (mm)	1,240	1,973/1,973/1,978	2,665/2,665/2,668	2,665	2,640/2,640/2,640/3,100
Repeatabil	lity *1 (mm)	±0.2	±0.5	±0.5	±0.5	±0.5
Ar	rm rotation (JT1)	±160	±150	±150	±120	±120/±120/+30120/±120
A	rm out-in (JT2)	±90	+11060	+11060	+12060	+13080
Motion Ar	rm up-down (JT3)	±150	+9080	+9080	+9065	+9065
	rist swivel (JT4)	±270	±360/±720/±720	±360/±720/±720	±720	±720
(°) W	rist bend (JT5)	±145	±360/±720/±720	±360/±720/±720	±720	±720
W	rist twist (JT6)	±360	±360/±410/±410	±360/±410/±410	±410	±410
A	rm swing (JT7)	-	-	-	-	-/-/±90
Wrist type		RBR	BBR/3Rø40/3Rø70	BBR/3Rø40/3Rø70	3Rø70	3Rø70
Mass (kg)		140	690/720/750	720/740/770	795	540/530/530/720
Explosion	protection			ed type and intrinsically s II BT4/Exib II BT4)	afety type	Combination of pressurized type and intrinsically safety type (f2G4/Exib II BT4)
Installation	n			Floor, Wall		Floor/Shelf/Wall/Wall
	America	E37		-		E35
Controller	Europe	E47			E45	
	Japan & Asia	E27			E25	

KJ264

\*1: conforms to ISO9283 Application: 

Painting

		RD080N	CP180L	CP300L	CP500L	CP700L			
Applica	tion			•					
Degree	of freedom (axes)	5 4							
Max. pa	yload (kg)	80	180	300	500	700			
	Arm rotation (JT1)	±180	±160	±160	±160	±160			
Motion	Arm out-in (JT2)	+140105	+9546	+9546	+9546	+9546			
range	Arm up-down (JT3)	+40205	+15110	+15110	+15110	+15110			
(°)	Wrist swivel (JT4)	±360	±360	±360	±360	±360			
	Wrist compensation (JT5)	±10 *3	N/A	N/A	N/A	N/A			
	Arm rotation (JT1)	180	140 *4	115 * <sup>5</sup>	85	75			
Max.	Arm out-in (JT2)	180	125 * <sup>4</sup>	100 * <sup>5</sup>	80	65			
speed (°/s)	Arm up-down (JT3)	175	130 *4	100 * <sup>5</sup>	80	65			
()-)	Wrist swivel (JT4)	360	400 *4	250 * <sup>5</sup>	180	170			
Working	Width	1,100	1,800	1,800	1,800	1,800			
area	Depth	1,100	1,600	1,600	1,600	1,600			
(mm)	Height	2,062.3	2,200	2,200	2,200	2,200			
Palletizing	capacity <b>*</b> 1(cycle/hour)	900	2,050 *4	1,700 *5	1,000	900			
Repeata	ability *² (mm)	±0.07	±0.5	±0.5	±0.5	±0.5			
Mass (k	g)	540	1,600	1,600	1,650	1,650			
Controll	er			E03					

\*1: Motion pattern (400mm up, 2,000mm horizontal, 400mm down in a to-and-fro motion) \*2: conforms to ISO9283 \*3: operating angle of the JT5 is ±10 degrees perpendicular to the ground. \*4: in case of 130 kg payload and less \*5: in case of 250 kg payload and less Application: 

Palletizing

CP700L

# **Palletizing robots**

Kawasaki's high-speed palletizing robots meet the demands for flexibility and speed.

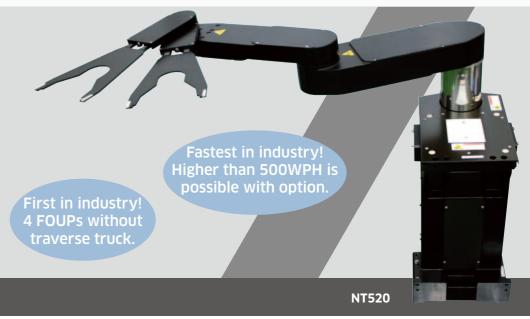


# Dual-arm SCARA Robot

While only using space that can fit one person, the duAro can achieve dual-armed collaborative movements, which are impossible when using two SCARA robots.



		duAi	ro 1		
Applicatio	n	• •	• •		
Degree of	freedom (axes)	4 × 2	arms		
Max. paylo	oad (kg)	2 (1	arm)		
Repeatabi	lity (mm)	±0.	05		
		Arm 1 (lower arm)	Arm 2 (upper arm)		
Matian	Arm rotation (°)	-170 - +170 (JT1)	-140 - +500 (JT1)		
Motion range (°)	Arm rotation (°)	-140 - +140 (JT2)	-140 - +140 (JT2)		
i diige ()	Arm up-down (mm)	0 - +150 (JT3) *1	0 - +150 (JT3) *1		
	Wrist swivel (°)	-360 - +360 (JT4) *1	JT1) -140 - +500 (JT1) JT2) -140 - +140 (JT2) JT3) *1 0 - +150 (JT3) *		
Mass (kg)		about	200		
Installation	n	Flo	or		
Controller		D61			



### **Pick & place robots**

#### **Y** series

Ultra high-speed picking robot with renowned Kawasaki product quality and reliability.



			YF0	02N	YF0	03N	
Application				•	•		
Туре				Parallel	link type		
Max. payloa	ayload (kg) 2 3			3			
Degree of		Standard		2	1		
freedom (ax	es)	Option	-		Ľ.	5	
Motion rang	e (m	im)	ø600 ×	H200	ø1,300	× H500	
Cycle time *	<sup>1</sup> (Pa	ayload)	0.3 s (0.5 kg)	0.36 s (2 kg)	0.27 s (1 kg) 0.45 s (3 kg)		
Positional re	sitional repeatability *2 (mm)		± 0.	.04	± (	D.1	
Angular repe	eata	bility (°)	± 0.1				
Mass (kg)			6	0	14	15	
Installation				Cei	ling		
Environmental	Amb	ient Temperature (°C)	0 -	40	0 -	45	
condition	Rela	ative Humidity (%)	35	- 85 (No dew,	nor frost allowe	ed)	
Degree of		Standard		IP	65		
protection		Option	-		IP	67	
		America		ES	97		
Controller		Europe		ES	E91		
		Japan & Asia		ES	94		
*1: Motion pat	tern	(25mm up. 305n	nm horizontal, 25	mm down in a to	-and-fro motion)		

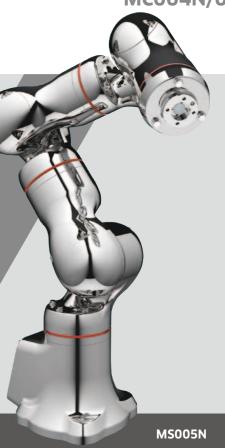
\*1: Motion pattern (25mm up, 305mm horizontal, 25mm down in a to-and-fro motion
 \*2: conforms to ISO9283
 Application: Assembly Material handling

		MC004N/004V	MS005N
Degree	of freedom (axes)	6	7
Max. pa	yload (kg)	4	5
Max. rea	ach (mm)	505.8	660
Repeata	bility *1 (mm)	±0.05	±0.1
	Arm rotation (JT1)	±180	±180
	Arm out-in (JT2)	+13595	+13590
Motion	Arm up-down (JT3)	+60155	±120
range	Wrist swivel (JT4)	±270	±180
(°)	Wrist bend (JT5)	±120	±115
	Wrist twist (JT6)	±270	±180
	Arm rotation (JT7)	-	±180
	Arm rotation (JT1)	200	130
	Arm out-in (JT2)	180	130
Max.	Arm up-down (JT3)	225	215
speed	Wrist swivel (JT4)	700	300
(°/s)	Wrist bend (JT5)	500	300
	Wrist twist (JT6)	350	480
	Arm rotation (JT7)	-	215
Mass (k	g)	25	50
Installat	ion	Floor, ceiling	Floor, ceiling
Controll	er	F6	50
⊧1: confoi	rms to ISO9283		

### **Medical & pharmaceutical robots** MC004N/004V/MS005N

### Clean robots NT series Horizontal Articulated type

We offer a wide range of clean robots that can be used in semi-conductor manufacturing lines.



A clean robot for medical and pharmaceutical applications.

### Controller

Combines high performance, unprecedented reliability, a host of integrated features and simple operation all in a compact design. The enhanced CPU capacity allows for more accurate trajectory control and faster application program execution.





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E35

F60

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E51/52/54

America		E97				E35/37		
Europe	F60	E91	E01/02/03/04		E51/52/54	E45/47	E58	D60/61
Japan & Asia		E94				E25/27		
Features	The F60 is the smallest and lightest controller in its class in the world. It can be carried by one person. The cabinet allows free setup, e.g.horizontal or vertical installation as well as multiple cabinet stacking. Despite of its compact size, many options are available for expansion in pursuance of easy to use operations.	,	The EOX controllers are standard for world-wide use and available for multiple primary power supply voltages with a separate transformer unit. Achieve extremely compact design, compared to E2X/3X/4X controllers. The EO3 controller, for use on palletizing robots, has an electricity regeneration function that reduces energy consumption.	un us Th thi sta In ex	e E51/52/54 controllers are iversal controllers for worldwide e. ey use the same components as ose used for the EOX series andard controllers. addition for a higher pandability, they can equip with extra built-in interlocking unit.	These controllers are for explosion-proof painting robots with a new explosion-proof teach pendant featuring a color LCD, Programming and editing work can efficiently be carried out from inside the explosion- proof paint booth.	The E58 controller supports the extra large payload robots (MG series). This universal controller can cope with different voltages of the primary power supply in the world.	The D60 controller is for a semiconductor robot with a single arm, while the D61 controller is for semiconductor robots with up to two arms and for the duAro.
Drive system	Full digital servo system	Full digital servo system	Full digital servo system		Full digital servo system	Full digital servo system	Full digital servo system	Full digital servo system
Teaching method	Easy operation teaching or AS language programming	Easy operation teaching or AS language programming	Easy operation teaching or As language programming		Easy operation teaching or AS language programming	Easy operation teaching or AS language programming	Easy operation teaching or AS language programming	Manual,semi-automatic, full-automatic teaching
Teach pendant	Color LCD teach pendant	Color LCD teach pendant	Color LCD teach pendant		Color LCD teach pendant	Explosion-proof teach pendant Color LCD teach pendant	Color LCD teach pendant	Small teach pendant
Memory capacity (MB)	16	8	8		8	8	8	4
External operation	Emergency stop, Hold etc.	Emergency stop, Hold etc.	Emergency stop, Hold etc.		Emergency stop, Hold etc.	Emergency stop, Hold etc.	Emergency stop, Hold etc.	Emergency stop, Hold etc.
/O Signals Input (Channels)	16 (max. 144)	32 (max. 96)	32 (max. 96)		32 (max. 128)	32 (max. 128)	32 (max. 128)	16/16 (max. 32)
Output (Channels)	16 (max. 144)	32 (max. 96)	32 (max. 96)		32 (max. 128)	32 (max. 128)	32 (max. 128)	8/8 (max. 16)
Structure	Open structure with direct cooling system (Option: Enclosed structure)	Open structure with direct cooling system *1 (Option: Enclosed structure)	Enclosed structure with indirect cooling system		Enclosed structure with indirect cooling system	Enclosed structure with indirect cooling system	Enclosed structure with indirect cooling system	Open structure with direct cooling system
America					140/140/145 *2	170	215	
Mass Europe		10	40/40/45/40		140/140/145 *2	170	215	14/20
kg) Asia	8.3	40	40/40/45/40		140/140/145 *2	120	215	- 14/20
Japan	]				110/110/115 *2	120	165	

\*1: Enclosed structure with indirect cooling system In the case of E91 \*2: for MX series

#### **Teach** pendant

#### **Color LCD teach pendant for the E series controllers**

The teach pendant boasts a significantly lighter body with an optimized weight balance that reduces the burden of teaching work. The operator can now switch on the motors and activate the cycle start all from the teach pendant. In addition, new features such as the easy-to-navigate screen and switch layout allow for a more convenient control system. Two information windows can be displayed simultaneously on the monitor screen, providing access to different type of information (e.g. positional information and signal information).



#### **Explosion-proof teach pendant**

The explosion-proof teach pendant features a color LCD with a large-sized touch screen that allows for teaching, editing, and monitoring of information such as current position and I/O signals in the painting area. It is possible to customize the interface panel according to user preference. The backlight provides a clear view of the screen in dark locations.



