



Industrial Robot MOTOMAN Series Product Ca



Certified for
ISO9001 and
ISO14001



JAB
QMS Accreditation
R009



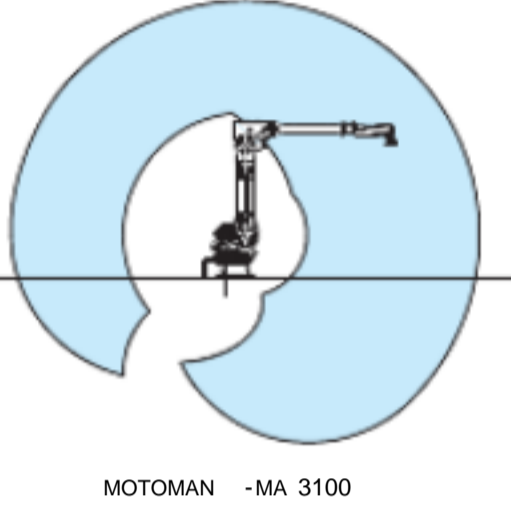
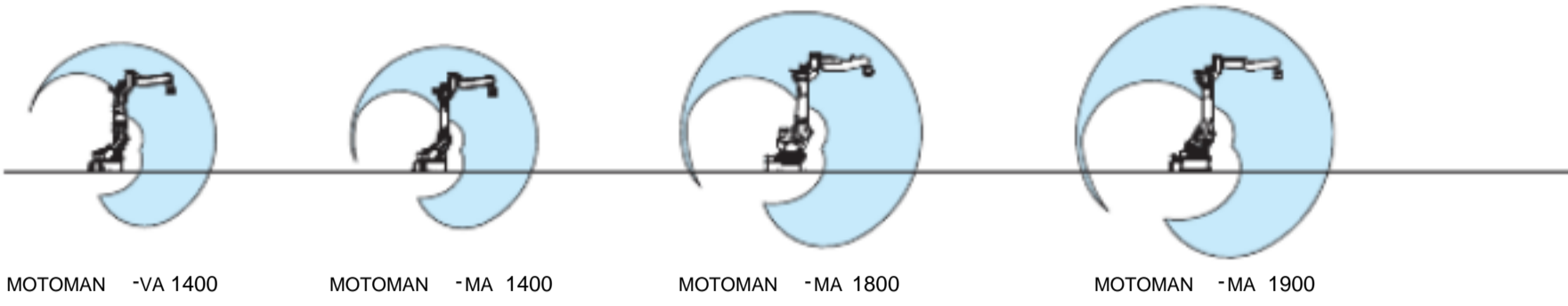
JQA-0813



JQA-EM0924

Application Optimizing Robots

Arc Welding

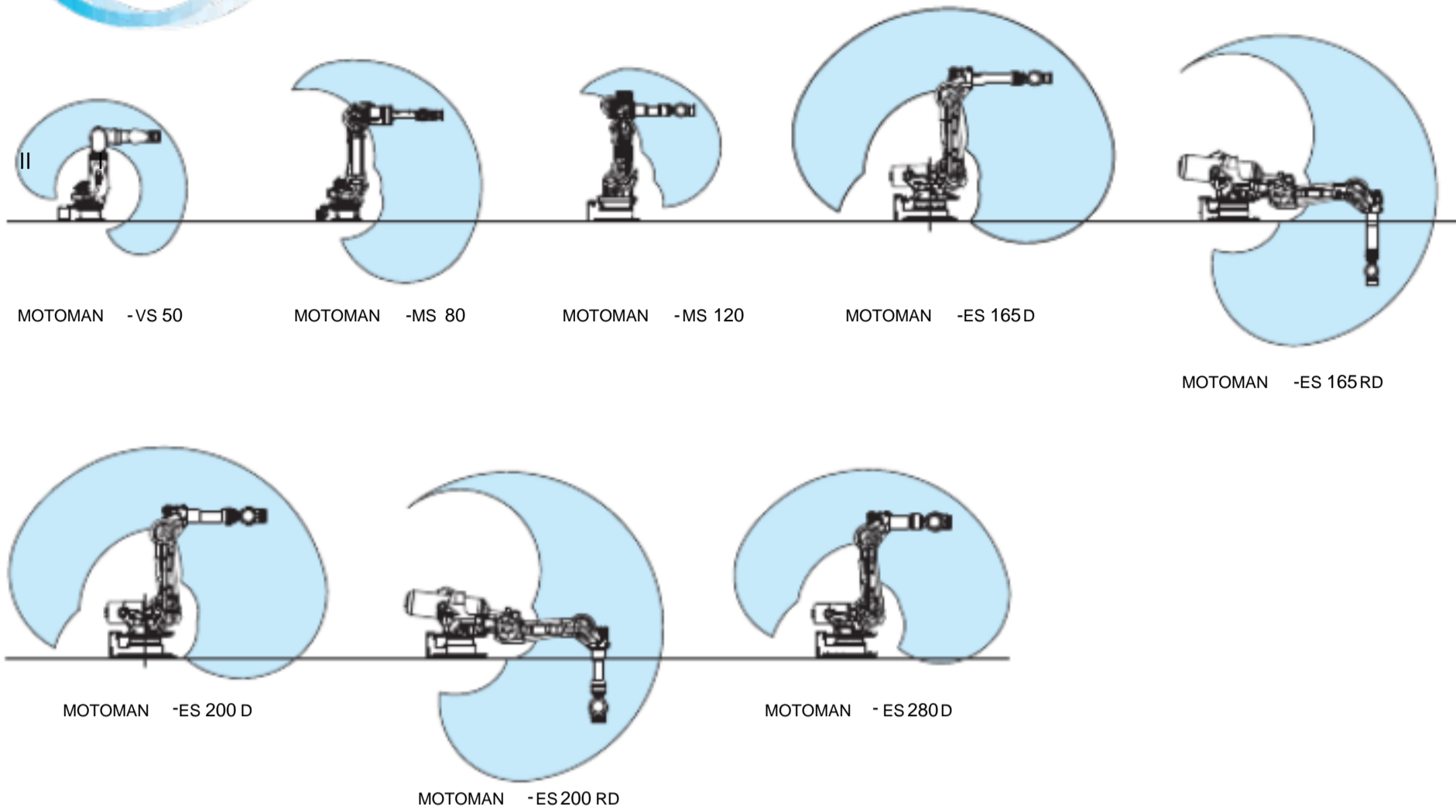


Application		Arc Welding				
Manipulator Model (MOTOMAN -)		VA1400	MA 1400	MA 1800	MA 1900	MA 3100
Controller	DX 100 Models	✓	✓	✓	✓	✓
	NX 100 Models					
	XRC Models					
	NXC 100 Models					
Mounting *1		F, W, C	F, W, C	F, W, C	F, W, C	F, W, C
Controlled Axis		7	6	6	6	6
Payload		3kg	3kg	15kg	3kg	3kg
Vertical Reach		2475 mm	2511 mm	3243 mm	3437 mm	5615 mm
Horizontal Reach		1434 mm	1434 mm	1807 mm	1904 mm	3121 mm
Repeatability *2		±0.08 mm	±0.08 mm	±0.08 mm	±0.08 mm	±0.15 mm
Range of Motion	S-axis (Turning)	-170 +170	-170 +170	-180 +180	-180 +180	-180 +180
	L-axis (Lower Arm)	-70 +148	-90 +155	-100 +155	-110 +155	-90 +135
	E-axis (Elbow)	-90 +90				
	U-axis (Upper Arm)	-175 +150	-175 +190	-175 +210	-165 +220	-160 +251
	R-axis (Wrist Roll)	-150 +150	-150 +150	-175 +175	-150 +150	-150 +150
	B-axis (Wrist Pitch/Yaw)	-45 +180	-45 +180	-45 +180	-45 +180	-45 +180
	T-axis (Wrist Twist)	-200 +200	-200 +200	-200 +200	-200 +200	-200 +200
Maximum Speed	S-axis (Turning)	220 /s	220 /s	195 /s	197 /s	180 /s
	L-axis (Lower Arm)	200 /s	200 /s	175 /s	175 /s	178 /s
	E-axis (Elbow)	220 /s				
	U-axis (Upper Arm)	220 /s	220 /s	190 /s	185 /s	178 /s
	R-axis (Wrist Roll)	410 /s	410 /s	380 /s	410 /s	400 /s
	B-axis (Wrist Pitch/Yaw)	410 /s	410 /s	340 /s	410 /s	410 /s
	T-axis (Wrist Twist)	610 /s	610 /s	560 /s	610 /s	610 /s
Allowable Moment	R-axis (Wrist Roll)	8.8N m	8.8N m	38.6N m	8.8N m	8.8N m
	B-axis (Wrist Pitch/Yaw)	8.8N m	8.8N m	38.6N m	8.8N m	8.8N m
	T-axis (Wrist Twist)	2.9N m	2.9N m	7.35N m	2.9N m	2.9N m
Allowable Inertia (GD ² /4)	R-axis (Wrist Roll)	0.27kg m ²	0.27kg m ²	1.04kg m ²	0.27kg m ²	0.27kg m ²
	B-axis (Wrist Pitch/Yaw)	0.27kg m ²	0.27kg m ²	1.04kg m ²	0.27kg m ²	0.27kg m ²
	T-axis (Wrist Twist)	0.03kg m ²	0.03kg m ²	0.04kg m ²	0.03kg m ²	0.03kg m ²
Mass		150kg	130kg	380kg	280kg	501kg
Power Requirements *3		1.5kVA	1.5kVA	2.5kVA	2.0kVA	2.5kVA

* 1 : F=Floor, W=Wall, C=Ceiling, S=Shelf (Note : S-axis motion is limited when mounted on the wall.)
 * 2 : Conforms to JIS B 8432 .
 * 3 : Varies in accordance with applications and motion patterns.

Application Optimizing Robots

Spot Welding

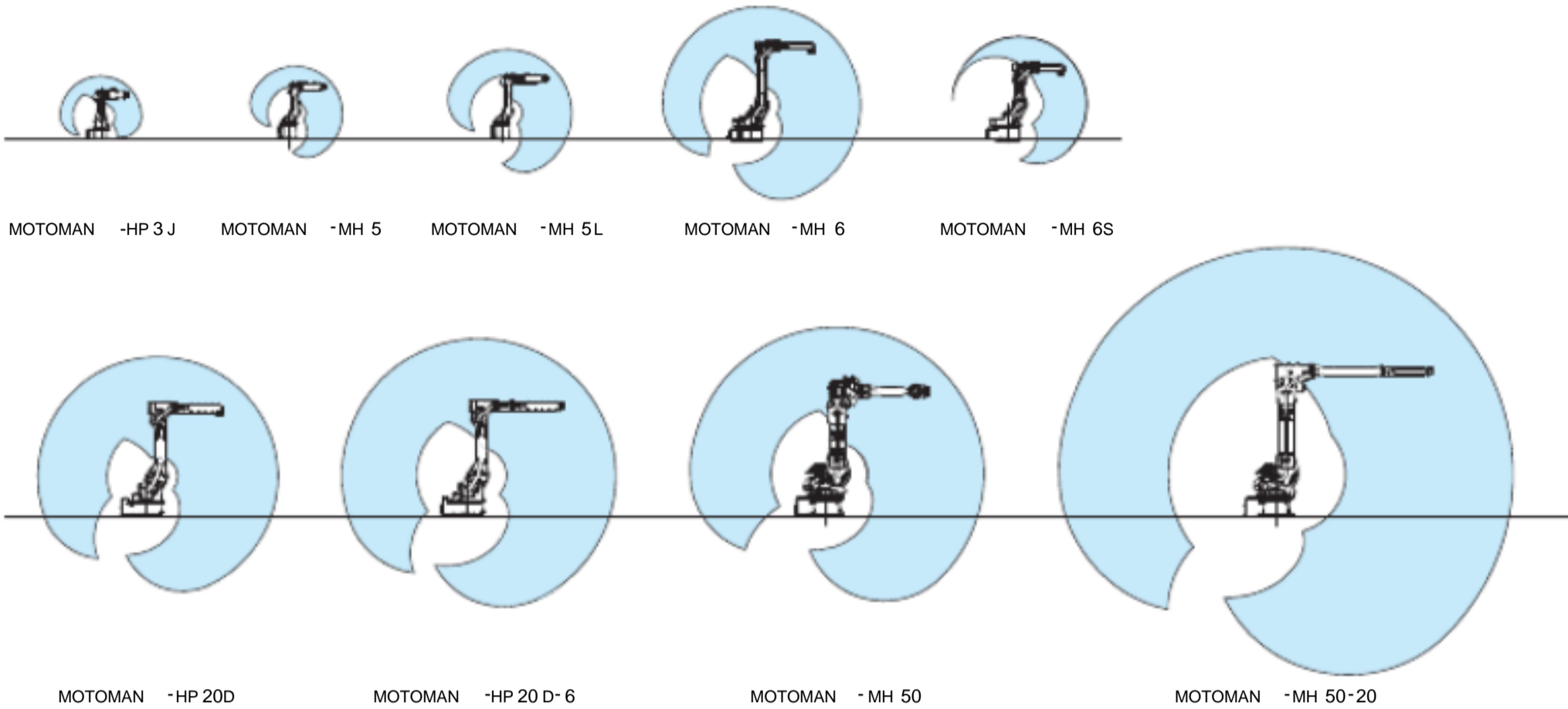


Application		Spot Welding															
Manipulator Model (MOTOMAN -)		VS 50		MS 80		MS 120		ES 165D		ES 165RD		ES 200 D		ES 200 RD		ES 280 D	
Controller	DX 100 Models	✓		✓		✓		✓		✓		✓		✓		✓	
	NX 100 Models																
	XRC Models																
	NXC 100 Models																
Mounting *1		F		F		F		F		S		F		S		F	
Controlled Axis		7		6		6		6		6		6		6		6	
Payload		50kg		80 kg *4		120kg		165kg *4		165kg *4		200 kg *4		200 kg *4		280kg	
Vertical Reach		2597 mm		3397 mm		2163 mm		3372 mm		4782 mm		3372 mm		4782 mm		3022 mm	
Horizontal Reach		1630 mm		2061 mm		1623 mm		2651 mm		3140 mm		2651 mm		3140 mm		2446 mm	
Repeatability *2		±0.1 mm		±0.07 mm		±0.2 mm		±0.2 mm		±0.2 mm		0.2 mm		±0.2 mm		±0.2 mm	
Range of Motion	S-axis (Turning)	-180	+180	-180	+180	-150	+150	-180	+180	-180	+180	-180	+180	-180	+180	-180	+180
	L-axis (Lower Arm)	-60	+125	-60	+120	-60	+50	-60	+76	-130	+80	-60	+76	-130	+80	-60	+76
	E-axis (Elbow)	-170	+170														
	U-axis (Upper Arm)	-35	+215	-170	+90	-105	+72	-1425	+230	-112	+208	-1425	+230	-107	+208	-1425	+230
	R-axis (Wrist Roll)	-170	+170	-360	+360*4	-360	+360	-360	+360*4	-360	+360*4	-360	+360*4	-360	+360*4	-360	+360*4
	B-axis (Wrist Pitch/Yaw)	-125	+125	-125	+125*4	-130	+130	-130	+130*4	-130	+130*4	-125	+125*4	-125	+125*4	-125	+125*4
	T-axis (Wrist Twist)	-180	+180	-360	+360*4	-360	+360	-360	+360*4	-360	+360*4	-360	+360*4	-360	+360*4	-360	+360*4
Maximum Speed	S-axis (Turning)	170 /s		170 /s		130 /s		110 /s		105 /s		95 /s		90 /s*4		90 /s	
	L-axis (Lower Arm)	130 /s		140 /s		110 /s		110 /s		105 /s		90 /s		85 /s*4		80 /s	
	E-axis (Elbow)	130 /s															
	U-axis (Upper Arm)	130 /s		160 /s		130 /s		110 /s		105 /s		95 /s		85 /s*4		90 /s	
	R-axis (Wrist Roll)	130 /s		230 /s		215 /s		175 /s		175 /s		120 /s		120 /s		115 /s	
	B-axis (Wrist Pitch/Yaw)	130 /s		230 /s		180 /s		150 /s		150 /s		120 /s		120 /s		110 /s	
	T-axis (Wrist Twist)	200 /s		350 /s		300 /s		240 /s		240 /s		190 /s		190 /s		190 /s	
Allowable Moment	R-axis (Wrist Roll)	377 N m		392N m*4		588 N m		921 N m*4		921N m*4		1344 N m*4		1344 N m*4		1333 N m	
	B-axis (Wrist Pitch/Yaw)	377 N m		392N m*4		588 N m		921 N m*4		921N m*4		1344 N m*4		1344 N m*4		1333 N m	
	T-axis (Wrist Twist)	147 N m		196N m*4		392 N m		490N m		490N m		715 N m		715 N m		706N m	
Allowable Inertia (GD ² /4)	R-axis (Wrist Roll)	29.6kg m ²		28kg m ² *4		35kg m ²		85kg m ² *4		85kg m ² *4		143kg m ² *4		143kg m ² *4		142 kg m ²	
	B-axis (Wrist Pitch/Yaw)	29.6kg m ²		28kg m ² *4		35kg m ²		85kg m ² *4		85kg m ² *4		143kg m ² *4		143kg m ² *4		142 kg m ²	
	T-axis (Wrist Twist)	12.5kg m ²		11kg m ² *4		14.5kg m ²		45kg m ²		45kg m ²		80kg m ²		80kg m ²		79 kg m ²	
Mass		640kg		550kg		950kg		1100 kg		1540 kg		1130 kg		1570kg		1120 kg	
Power Requirements *3		5.0kVA		4.0kVA		4.5kVA		5.0kVA		5.0kVA		5.0kVA		5.0kVA		10kVA	

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 * 3 : Varies in accordance with applications and motion patterns.
 * 4 : When not used with an external cable.

Application Optimizing Robots

Handling



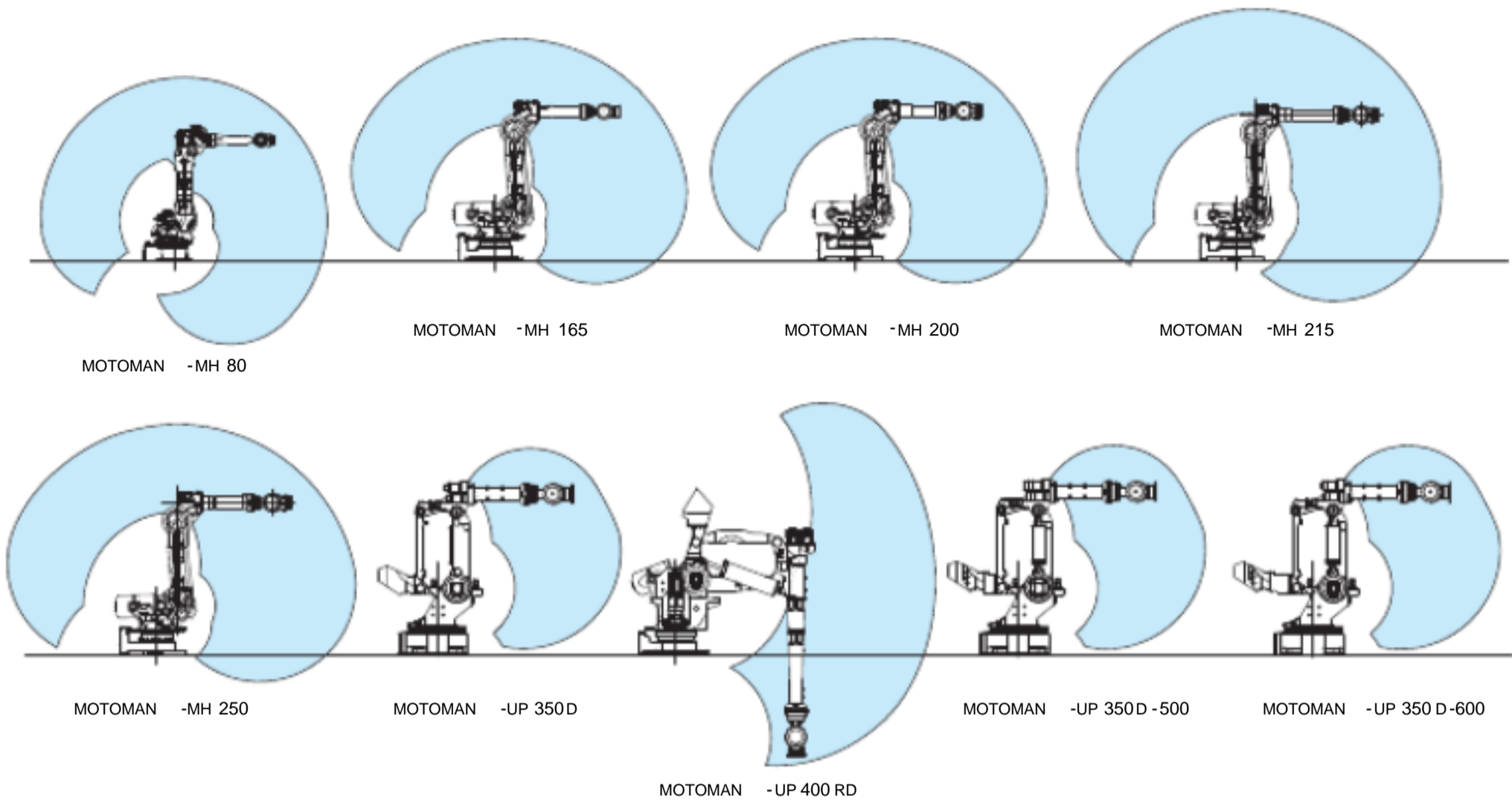
Application		Material Handling (General purpose)								
Manipulator Model (MOTOMAN)		HP 3J	MH 5	MH 5L	MH 6	MH 6S	HP 20D	HP 20D-6	MH 50	MH 50-20
Controller	DX100 Models		✓	✓	✓	✓	✓	✓	✓	✓
	NX100 Models									
	XRC Models									
	NXC 100 Models	✓	✓ *4	✓ *4						
Mounting *1		F, W, C	F, W, C	F, W, C	F, W, C	F, W, C	F, W, C	F, W, C	F, W, C	F, W, C
Controlled Axis		6	6	6	6	6	6	6	6	6
Payload		3kg	5kg	5kg	6kg	6kg	20kg	6kg	50kg	20kg
Vertical Reach		804 mm	1193 mm	1560 mm	2486 mm	1597 mm	3063 mm	3459 mm	3578 mm	5585 mm
Horizontal Reach		532 mm	706 mm	895 mm	1422 mm	997 mm	1717 mm	1915 mm	2061 mm	3106 mm
Repeatability *2		±0.03 mm	±0.02 mm	±0.03 mm	±0.08 mm	±0.08 mm	±0.06 mm	±0.06 mm	±0.07 mm	±0.15 mm
Range of Motion	S-axis (Turning)	-160 +160	-170 +170	-170 +170	-170 +170	-170 +170	-180 +180	-180 +180	-180 +180	-180 +180
	L-axis (Lower Arm)	-85 +90	-65 +150	-65 +150	-90 +155	-80 +133	-110 +155	-110 +155	-90 +135	-90 +135
	U-axis (Upper Arm)	-105 +260	-136 +255	-138 +255	-175 +250	-130 +165	-165 +255	-160 +255	-170 +251	-160 +251
	R-axis (Wrist Roll)	-170 +170	-190 +190	-190 +190	-180 +180	-180 +180	-200 +200	-200 +200	-360 +360	-190 +190
	B-axis (Wrist Pitch)	-120 +120	-125 +125	-125 +125	-45 +225	-45 +225	-50 +230	-50 +230	-125 +125	-50 +230
	T-axis (Wrist Twist)	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360
Maximum Speed	S-axis (Turning)	200 /s	376 /s	270 /s	220 /s	220 /s	197 /s	197 /s	180 /s	180 /s
	L-axis (Lower Arm)	150 /s	350 /s	280 /s	200 /s	220 /s	175 /s	175 /s	178 /s	178 /s
	U-axis (Upper Arm)	190 /s	400 /s	300 /s	220 /s	220 /s	187 /s	187 /s	178 /s	178 /s
	R-axis (Wrist Roll)	300 /s	450 /s	450 /s	410 /s	410 /s	400 /s	400 /s	250 /s	400 /s
	B-axis (Wrist Pitch)	300 /s	450 /s	450 /s	410 /s	410 /s	400 /s	400 /s	250 /s	400 /s
	T-axis (Wrist Twist)	420 /s	720 /s	720 /s	610 /s	610 /s	600 /s	600 /s	360 /s	600 /s
Allowable Moment	R-axis (Wrist Roll)	5.39N m	12N m	12N m	11.8N m	11.8N m	39.2N m	11.8N m	216N m	39.2N m
	B-axis (Wrist Pitch)	5.39N m	12N m	12N m	9.8N m	9.8N m	39.2N m	9.8N m	216N m	39.2N m
	T-axis (Wrist Twist)	2.94N m	7N m	7N m	5.9N m	5.9N m	19.6N m	5.9N m	147N m	19.6N m
Allowable Inertia (GD ² /4)	R-axis (Wrist Roll)	0.1kg m ²	0.30kg m ²	0.30kg m ²	0.27kg m ²	0.27kg m ²	1.05kg m ²	0.24kg m ²	28kg m ²	1.05kg m ²
	B-axis (Wrist Pitch)	0.1kg m ²	0.30kg m ²	0.30kg m ²	0.27kg m ²	0.27kg m ²	1.05kg m ²	0.17kg m ²	28kg m ²	1.05kg m ²
	T-axis (Wrist Twist)	0.03kg m ²	0.1kg m ²	0.1kg m ²	0.06kg m ²	0.06kg m ²	0.75kg m ²	0.06kg m ²	11kg m ²	0.75kg m ²
Mass		27 kg	28 kg	30 kg	130 kg	120 kg	268 kg	273 kg	550 kg	495 kg
Power Requirements *3		0.5kVA	1.0kVA	1.0kVA	1.5kVA	1.5kVA	2.0kVA	2.0kVA	4.0kVA	3.5kVA

* 1 : F=Floor, W=Wall, C=Ceiling, S=Shelf (Note : S-axis motion is limited when mounted on the wall.)

* 2 : Conforms to JIS B 8432 .

* 3 : Varies in accordance with applications and motion patterns.

* 4 : Only for handling.



Application		Material Handling (General purpose)									
Manipulator Model (MOTOMAN)		MH 80	MH 165	MH 200	MH 215	MH 250	UP 350D	UP 400 RD	UP350D-500	UP350D-600	
Controller	DX 100 Models	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	NX 100 Models										
	XRC Models										
	NXC 100 Models										
Mounting *1		F	F	F	F	F	F	S	F	F	
Controlled Axis		6	6	6	6	6	6	6	6	6	
Payload		80 kg	165 kg *4	200 kg *4	215 kg	250 kg	350kg	400kg	500kg	600 kg	
Vertical Reach		3578 mm	3372 mm	3372 mm	3894 mm	3490 mm	2761 mm	4908 mm	2761 mm	2761 mm	
Horizontal Reach		2061 mm	2651 mm	2651 mm	2912 mm	2710 mm	2542 mm	3518 mm	2542 mm	2542 mm	
Repeatability *2		±0.07 mm	±0.2 mm	0.2 mm	±0.2 mm	0.2 mm	±0.5 mm	±0.5 mm	±0.5 mm	±0.5 mm	
Range of Motion	S-axis (Turning)	-180 +180	-180 +180	-180 +180	-180 +180	-180 +180	-150 +150	-150 +150	-150 +150	-150 +150	
	L-axis (Lower Arm)	-90 +135	-60 +76	-60 +76	-60 +76	-60 +76	-55 +61	-122 +20	-55 +61	-55 +61	
	U-axis (Upper Arm)	-170 +251	-1425 +230	-1425 +230	-1425 +230	-1425 +230	-113 +30	-9 +120	-113 +30	-113 +30	
	R-axis (Wrist Roll)	-360 +360	-360 +360*4	-360 +360*4	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360	
	B-axis (Wrist Pitch/Yaw)	-125 +125	-130 +130*4	-125 +125*4	-125 +125	-125 +125	-125 +125	-120 +120	-125 +125	-125 +125	
	T-axis (Wrist Twist)	-360 +360	-360 +360*4	-360 +360*4	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360	
Maximum Speed	S-axis (Turning)	170 /s	110 /s	95 /s	100 /s	100 /s	95 /s	80 /s	80 /s	60 /s	
	L-axis (Lower Arm)	140 /s	110 /s	90 /s	90 /s	90 /s	95 /s	80 /s	80 /s	70 /s	
	U-axis (Upper Arm)	160 /s	110 /s	95 /s	97 /s	97 /s	95 /s	80 /s	80 /s	70 /s	
	R-axis (Wrist Roll)	230 /s	175 /s	120 /s	120 /s	120 /s	100 /s	80 /s	100 /s	80 /s	
	B-axis (Wrist Pitch/Yaw)	230 /s	150 /s	120 /s	120 /s	120 /s	100 /s	80 /s	100 /s	80 /s	
	T-axis (Wrist Twist)	350 /s	240 /s	190 /s	190 /s	190 /s	160 /s	160 /s	160 /s	160 /s	
Allowable Moment	R-axis (Wrist Roll)	392 N m	921 N m *4	1344 N m *4	1176 N m	1385 N m	1960 N m	1960 N m	1960 N m	2450 N m	
	B-axis (Wrist Pitch/Yaw)	392 N m	921 N m *4	1344 N m *4	1176 N m	1385 N m	1960 N m	1960 N m	1960 N m	2450 N m	
	T-axis (Wrist Twist)	196 N m	490 N m	715 N m	710 N m	735 N m	823 N m	833 N m	823 N m	823 N m	
Allowable Inertia (GD ² /4)	R-axis (Wrist Roll)	28kg m ²	85kg m ² *4	143kg m ² *4	317kg m ²	317kg m ²	150 kg m ²	150 kg m ²	150kg m ²	200 kg m ²	
	B-axis (Wrist Pitch/Yaw)	28kg m ²	85kg m ² *4	143kg m ² *4	317kg m ²	317kg m ²	150 kg m ²	150 kg m ²	150kg m ²	200 kg m ²	
	T-axis (Wrist Twist)	11kg m ²	45kg m ²	80kg m ²	200kg m ²	200kg m ²	90kg m ²	50kg m ²	90kg m ²	90kg m ²	
Mass		555 kg	1100 kg	1130 kg	1140kg	1130 kg	2200 kg	3600kg	2350 kg	2400 kg	
Power Requirements *3		4.5kVA	5.0kVA	5.0kVA	6.0kVA	6.0kVA	5.5kVA	12kVA	5.5kVA	7.0kVA	

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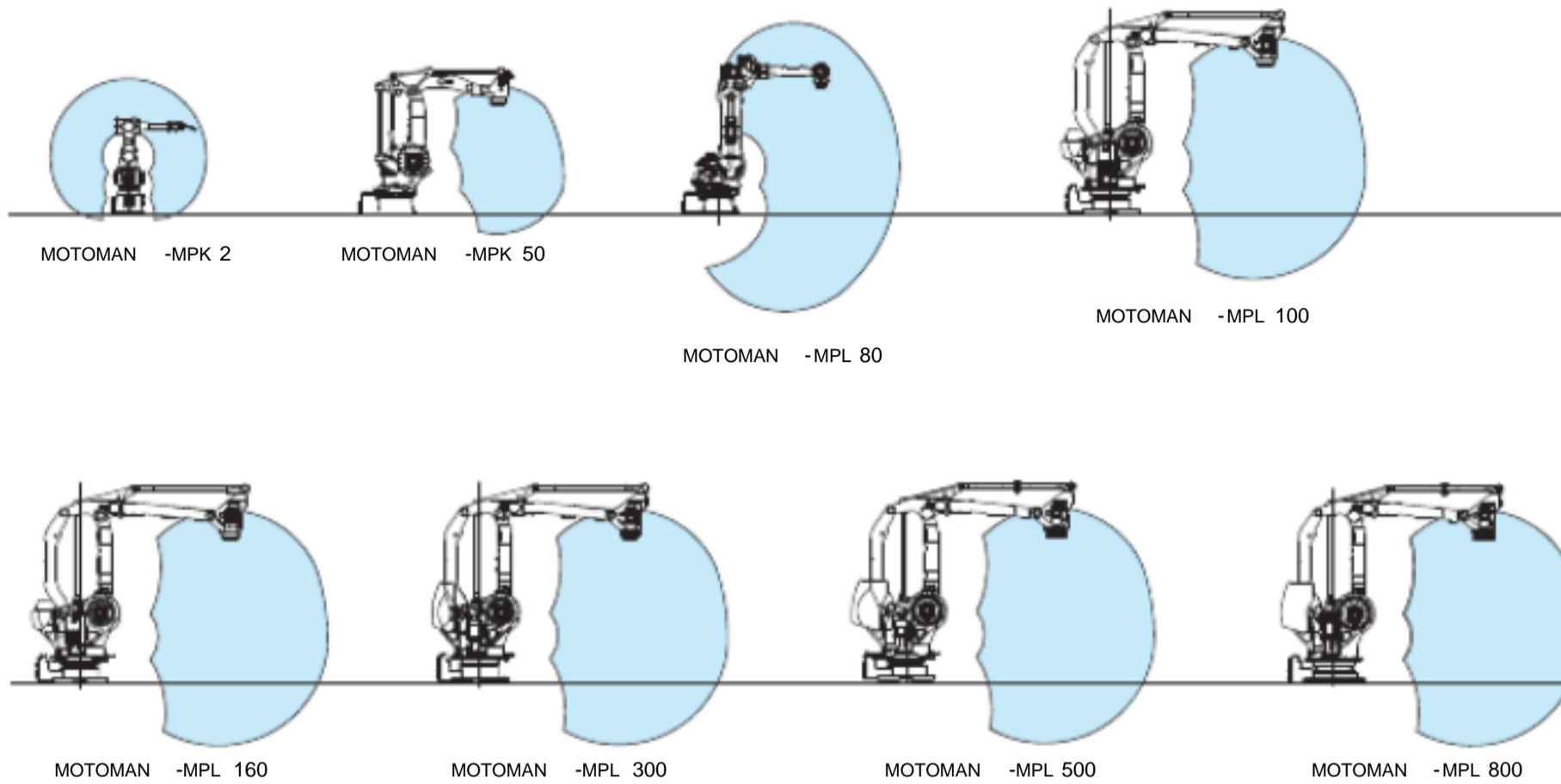
* 3 : Varies in accordance with applications and motion patterns.

* 4 : When not used with an external cable.

Application Optimizing Robots

Picking / Packing

Palletizing



Application		Picking / Packing		Palletizing					
Manipulator Model(MOTOMAN)		MPK 2	MPK 50	MPL 80	MPL 100	MPL 160	MPL 300	MPL 500	MPL 800
Controller	DX100 Models	✓	✓	✓	✓	✓	✓	✓	✓
	NX100 Models								
	XRC Models								
	NXC 100 Models								
Mounting *1		F, W, C	F	F	F	F	F	F	F
Controlled Axis		5	4	5	4	4	4	4	4
Payload		2 kg	50kg	80 kg	100kg	160 kg	300kg	500 kg	800 kg
Vertical Reach		1625 mm	1668 mm	3291 mm	3024 mm	3024 mm	3024 mm	3024 mm	3024 mm
Horizontal Reach		900 mm	1893 mm	2061 mm	3159 mm	3159 mm	3159 mm	3159 mm	3159 mm
Repeatability *2		±0.5 mm	±0.5 mm	±0.07 mm	±0.5 mm	±0.5 mm	±0.5 mm	±0.5 mm	±0.5 mm
Range of Motion	S-axis (Turning)	-170 +170	-180 +180	-180 +180	-180 +180	-180 +180	-180 +180	-180 +180	-180 +180
	L-axis (Lower Arm)	-120 +120	-35 +80	-90 +135	-45 +90	-45 +90	-45 +90	-45 +90	-45 +90
	U-axis (Upper Arm)	-102 +282	-105 +15	-160 +35	-120 +155	-120 +155	-120 +155	-120 +155	-120 +155
	R-axis (Wrist Roll)								
	B-axis (Wrist Pitch)	-150 +150		-15 +15					
	T-axis (Wrist Twist)	-270 +270	-350 +350	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360	-360 +360
Maximum Speed	S-axis (Turning)	320 /s	185 /s	170 /s	140 /s	140 /s	90 /s	85 /s	65 /s
	L-axis (Lower Arm)	330 /s	215 /s	170 /s	140 /s	140 /s	100 /s	85 /s	65 /s
	U-axis (Upper Arm)	330 /s	215 /s	170 /s	140 /s	140 /s	110 /s	85 /s	65 /s
	R-axis (Wrist Roll)								
	B-axis (Wrist Pitch)	380 /s		170 /s					
	T-axis (Wrist Twist)	2000 /s	374 /s	350 /s	305 /s	305 /s	195 /s	195 /s	125 /s
Allowable Moment	R-axis (Wrist Roll)								
	B-axis (Wrist Pitch)	3.5N m		78.4N m					
	T-axis (Wrist Twist)	1.5N m		20.5N m					
Allowable Inertia (GD ² /4)	R-axis (Wrist Roll)								
	B-axis (Wrist Pitch)	0.065kg m ²		16kg m ²					
	T-axis (Wrist Twist)	0.012kg m ²	5.5kg m ²	6.1kg m ²	80kg m ²	80kg m ²	140kg m ²	200kg m ²	550kg m ²
Mass		75kg	670 kg	550kg	1700kg	1700 kg	1820 kg	2300 kg	2550 kg
Power Requirements *3		1.5kVA	4.0kVA	4.0kVA	9.5kVA	9.5kVA	9.5kVA	9.5kVA	10kVA

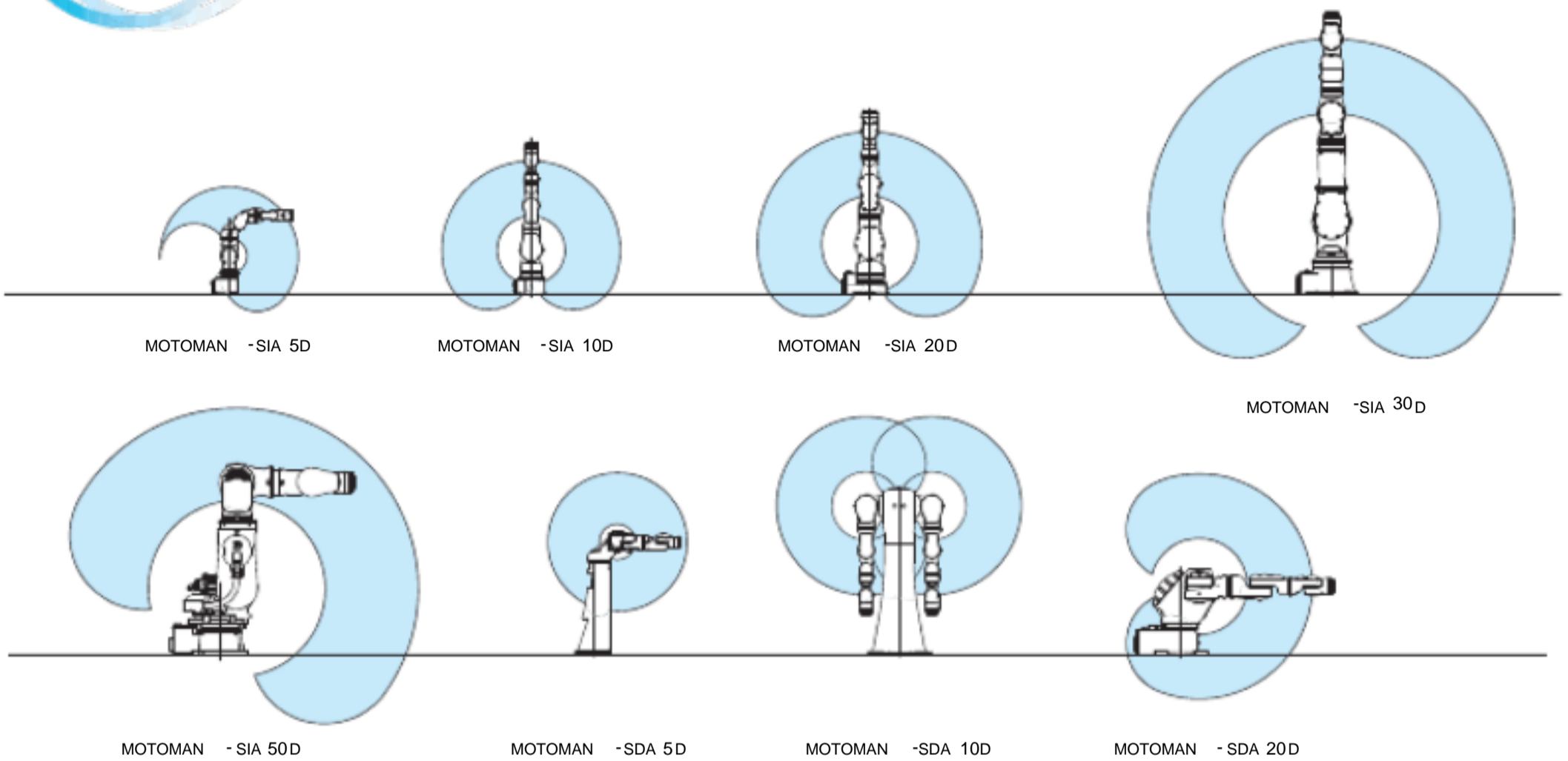
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* 2 : Conforms to JIS B 8432 .

* 3 : Varies in accordance with applications and motion patterns.

Application Optimizing Robots

Assembly & Distributing



Application		Assembly & Distributing							
Manipulator Model(MOTOMAN)		SIA 5D	SIA 10D	SIA 20D	SIA 30D	SIA 50 D	SDA 5D	SDA 10D	SDA 20D
Controller	DX 100 Models	✓	✓	✓	✓	✓	✓	✓	✓
	NX 100 Models								
	XRC Models								
	NXC 100 Models								
Mounting *1		F, W, C	F, W, C	F, W, C	F	F	F, C	F	F
Degrees of Freedom		7	7	7	7	7	15	15	15
Payload		5kg	10kg	20kg	30kg	50kg	5kg/Arm	10kg/Arm	20kg/Arm
Vertical Reach		1007 mm	1203 mm	1498 mm	2597 mm	2597 mm	1118 mm	1440 mm	1820 mm
Horizontal Reach		559 mm	720 mm	910 mm	1485 mm	1630 mm	1604 mm	1970 mm	2590 mm
Ripeatability *2		±0.06 mm	±0.1 mm	±0.1 mm	±0.1 mm	±0.1 mm	±0.06 mm	±0.1 mm	±0.1 mm
Range of Motion	Rotation						-170 +170	-170 +170	-180 +180
	S-axis (Turning)	-180 +180	-180 +180	-180 +180	-180 +180	-180 +180	-90 +270	-180 +180	-180 +180
	L-axis (Lower Arm)	-110 +110	-110 +110	-110 +110	-125 +125	-60 +125	-110 +110	-110 +110	-110 +110
	E-axis (Elbow)	-170 +170	-170 +170	-170 +170	-170 +170	-170 +170	-170 +170	-170 +170	-170 +170
	U-axis (Upper Arm)	-90 +115	-135 +135	-130 +130	-110 +110	-35 +215	-90 +115	-135 +135	-130 +130
	R-axis (Wrist Roll)	-180 +180	-180 +180	-180 +180	-170 +170	-170 +170	-180 +180	-180 +180	-180 +180
	B-axis (Wrist Pitch)	-110 +110	-110 +110	-110 +110	-110 +110	-125 +125	-110 +110	-110 +110	-110 +110
T-axis (Wrist Twist)	-180 +180	-180 +180	-180 +180	-180 +180	-180 +180	-180 +180	-180 +180	-180 +180	
Maximum Speed	Rotation						180 /s	130 /s	125 /s
	S-axis (Turning)	200 /s	170 /s	130 /s	130 /s	170 /s	200 /s	170 /s	130 /s
	L-axis (Lower Arm)	200 /s	170 /s	130 /s	130 /s	130 /s	200 /s	170 /s	130 /s
	E-axis (Elbow)	200 /s	170 /s	170 /s	130 /s	130 /s	200 /s	170 /s	170 /s
	U-axis (Upper Arm)	200 /s	170 /s	170 /s	130 /s	130 /s	200 /s	170 /s	170 /s
	R-axis (Wrist Roll)	200 /s	200 /s	200 /s	170 /s	130 /s	200 /s	200 /s	200 /s
	B-axis (Wrist Pitch)	230 /s	200 /s	200 /s	170 /s	130 /s	230 /s	200 /s	200 /s
T-axis (Wrist Twist)	350 /s	400 /s	400 /s	200 /s	200 /s	350 /s	400 /s	400 /s	
Allowable Moment	R-axis (Wrist Roll)	14.7N m	31.4N m	58.8N m	117.6N m	377N m	14.7N m	31.4N m	58.8N m
	B-axis (Wrist Pitch)	14.7N m	31.4N m	58.8N m	117.6N m	377N m	14.7N m	31.4N m	58.8N m
	T-axis (Wrist Twist)	7.35N m	19.6N m	29.4N m	58.8N m	147N m	7.35N m	19.6N m	29.4N m
Allowable Inertia (GD ² /4)	R-axis (Wrist Roll)	0.45kg m ²	1.0kg m ²	4.0kg m ²	6.0kg m ²	29.6kg m ²	0.45kg m ²	1.0kg m ²	4.0kg m ²
	B-axis (Wrist Pitch)	0.45kg m ²	1.0kg m ²	4.0kg m ²	6.0kg m ²	29.6kg m ²	0.45kg m ²	1.0kg m ²	4.0kg m ²
	T-axis (Wrist Twist)	0.11kg m ²	0.4kg m ²	2.0kg m ²	3.0kg m ²	12.5kg m ²	0.11kg m ²	0.4kg m ²	2.0kg m ²
Mass		30 kg	60 kg	120kg	345 kg	640 kg	110 kg	220 kg	380kg
Power Requirements *3		1.0kVA	1.5kVA	2.2kVA	2.8kVA	5.0kVA	1.4kVA	2.7kVA	4.4kVA

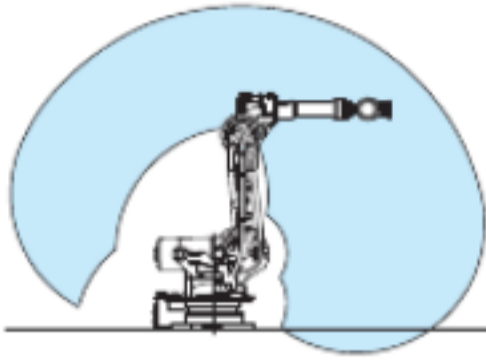
* 1 : F=Floor, W=Wall, C=Ceiling, S=Shelf

* 2 : Conforms to JIS B 8432.

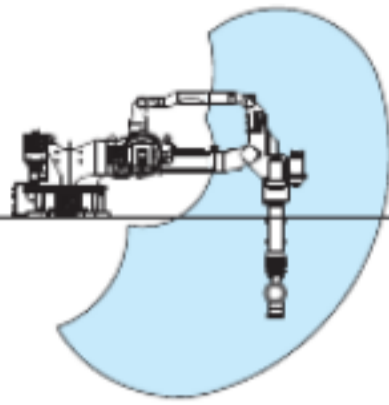
* 3 : Varies in accordance with applications and motion patterns.

Application Optimizing Robots

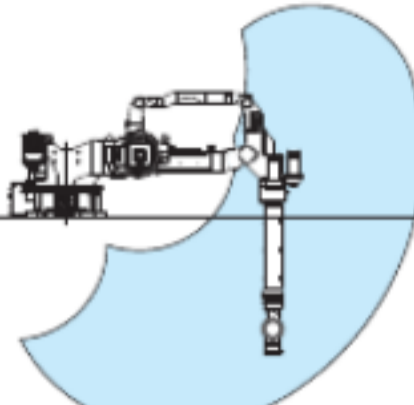
Press Handling



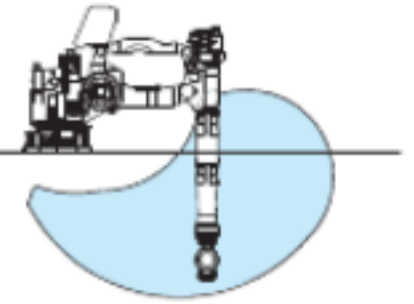
MOTOMAN - EPH 130



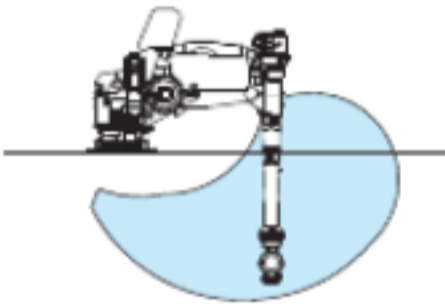
MOTOMAN - EPH 130 R



MOTOMAN - EPH 130 RL



MOTOMAN - EPH 4000



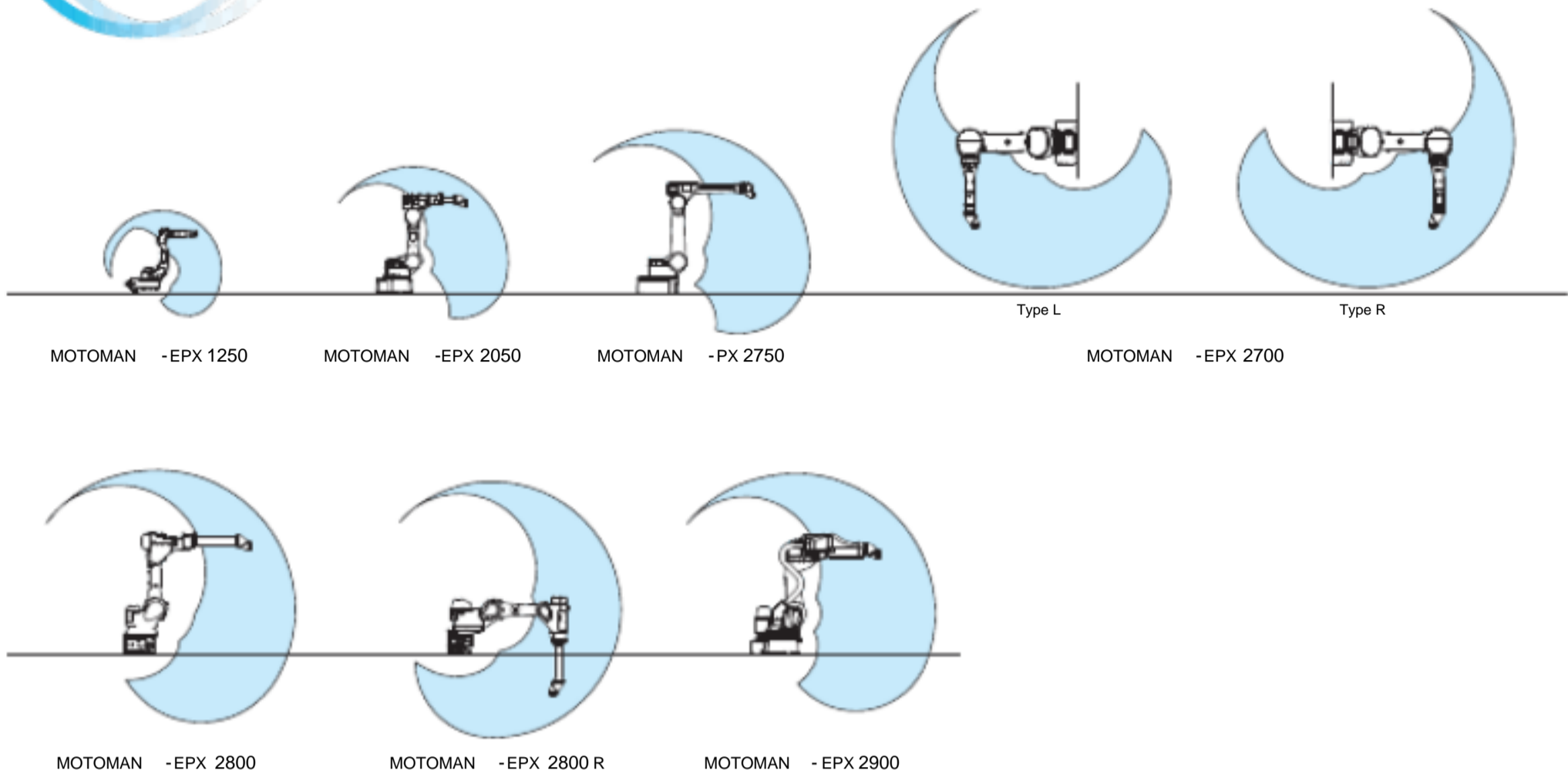
MOTOMAN - EP 4000 N

Application		Press Handling									
Manipulator Model (MOTOMAN -)		EPH 130		EPH 130R		EPH 130 RL		EPH 4000		EP 4000 N	
Controller	DX 100 Models										
	NX 100 Models	✓		✓		✓		✓		✓	
	XRC Models										
	NXC 100 Models										
Mounting *1		F		S		S		S		S	
Controlled Axis		6		6		6		6		6	
Payload		130kg		130kg		130kg		200kg		200kg	
Vertical Reach		3372 mm		3775 mm		4151 mm		2629 mm		2629 mm	
Horizontal Reach		2651 mm		3134 mm		3474 mm		3505 mm		3505 mm	
Repeatability *2		±0.2 mm		±0.2 mm		±0.3 mm		±0.5 mm		±0.5 mm	
Range of Motion	S-axis (Turning)	-180	+180	-180	+180	-180	+180	-150	+150	-150	+150
	L-axis (Lower Arm)	-60	+76	-130	+70	-130	+70	-122	+25	-122	+25
	U-axis (Upper Arm)	-137.5	+230	-70	+95	-70	+95	-70	+53	-70	+53
	R-axis (Wrist Roll)	-360	+360	-360	+360	-360	+360	-360	+360	-360	+360
	B-axis (Wrist Pitch/Yaw)	-130	+130	-130	+130	-130	+130	-120	+120	-120	+120
	T-axis (Wrist Twist)	-360	+360	-360	+360	-360	+360	-360	+360	-360	+360
Maximum Speed	S-axis (Turning)	130 /s		110 /s		110 /s		90 /s		90 /s	
	L-axis (Lower Arm)	130 /s		110 /s		110 /s		90 /s		90 /s	
	U-axis (Upper Arm)	130 /s		110 /s		110 /s		90 /s		90 /s	
	R-axis (Wrist Roll)	215 /s		215 /s		215 /s		80 /s		80 /s	
	B-axis (Wrist Pitch/Yaw)	180 /s		180 /s		180 /s		80 /s		80 /s	
	T-axis (Wrist Twist)	300 /s		300 /s		300 /s		160 /s		160 /s	
Allowable Moment	R-axis (Wrist Roll)	735 N m		735 N m		735 N m		1274 N m		1274 N m	
	B-axis (Wrist Pitch/Yaw)	735 N m		735 N m		735 N m		2156 N m		2156 N m	
	T-axis (Wrist Twist)	421 N m		421 N m		421 N m		0N m		0N m	
Allowable Inertia (GD ² /4)	R-axis (Wrist Roll)	45kg m ²		45kg m ²		45-130kg m ² *4		84.5kg m ²		84.5kg m ²	
	B-axis (Wrist Pitch/Yaw)	45kg m ²		45kg m ²		45-130kg m ² *4		330kg m ²		330kg m ²	
	T-axis (Wrist Twist)	15kg m ²		15kg m ²		15-38kg m ² *4		80kg m ²		80kg m ²	
Mass		1495 kg		1420 kg		1445 kg		3050 kg		3100 kg	
Power Requirements *3		10kVA		10kVA		10kVA		22 kVA		22kVA	

* 1 : F=Floor, W=Wall, C=Ceiling, S=Shelf (Note : S-axis motion is limited when mounted on the wall.)
 * 2 : Conforms to JIS B 84323 .
 * 3 : Varies in accordance with applications and motion patterns.
 * 4 : Varies in accordance with load torque.

Application Optimizing Robots

Painting



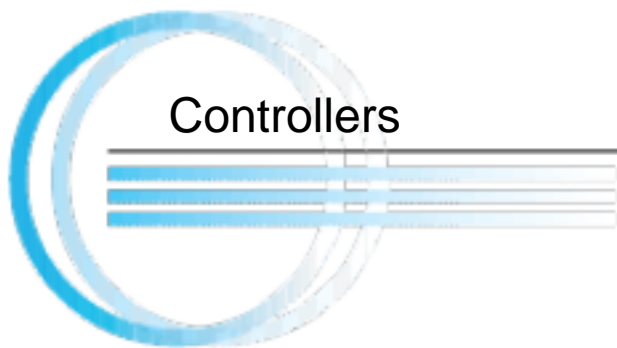
Application		Painting						
Manipulator Model (MOTOMAN -)		EPX1250	EPX 2050	PX2750	EPX 2700	EPX 2800	EPX 2800R	EPX 2900
Controller	DX 100 Models							
	NX 100 Models	✓	✓		✓	✓	✓	✓
	XRC Models			✓				
	NXC 100 Models							
Mounting *1		F, W, C	F	F	W	F	S	F
Controlled Axis		6	6	6	6	6	6	6
Payload		5kg	15kg	10kg	15kg	20kg	15kg	20kg
Vertical Reach		1852 mm	2806 mm	3758 mm	5147 mm	4582 mm	4751 mm	4410 mm
Horizontal Reach		1256 mm	2054 mm	2729 mm	2700 mm	2778 mm	2825 mm	2900 mm
Repeatability *2		±0.15 mm	±0.5 mm	±0.5 mm	±0.15 mm	±0.5 mm	±0.5 mm	±0.5 mm
Range of Motion	S-axis (Turning)	-170 +170	-90 +90	-150 +150	-125+25,25 +125	-150 +150	-120 +120	-150 +150
	L-axis (Lower Arm)	-65 +120	-50 +100	-40 +90	-65 +140	-45 +120	*4	-50 +110
	U-axis (Upper Arm)	-165 +205	-163 +5	+10 +168	-65 +90	-85 +90	-70 +90	-70 +90
	R-axis (Wrist Roll)	-190 +190	-360 +360	-260 +260	-720 +720	-360 +360	-360 +360	-360 +360
	B-axis (Wrist Pitch/Yaw)	-145 +145	-360 +360	-270 +270	-720 +720	-360 +360	-360 +360	-360 +360
	T-axis (Wrist Twist)	-360 +360	-360 +360	-260 +260	-720 +720	-360 +360	-360 +360	-360 +360
Maximum Speed	S-axis (Turning)	185 /s						155 /s
	L-axis (Lower Arm)	185 /s						125 /s
	U-axis (Upper Arm)	185 /s	2.0m/s	2.0m/s	2.0m/s	2.0m/s	2.0m/s	155 /s
	R-axis (Wrist Roll)	360 /s						450 /s
	B-axis (Wrist Pitch/Yaw)	410 /s						550 /s
	T-axis (Wrist Twist)	500 /s						650 /s
Allowable Moment	R-axis (Wrist Roll)	8.0N m	45.8N m	30.4N m	45.8N m	77.4N m	45.8N m	72.0N m
	B-axis (Wrist Pitch/Yaw)	8.0N m	33.8N m	19.6N m	33.8N m	49.9N m	33.8N m	51.5N m
	T-axis (Wrist Twist)	3.0N m	10.8N m	9.8N m	10.8N m	19.6N m	10.8N m	19.6N m
Allowable Inertia (GD ² /4)	R-axis (Wrist Roll)	0.20kg m ²	1.45kg m ²	0.97kg m ²	1.45kg m ²	2.45kg m ²	1.45kg m ²	2.73kg m ²
	B-axis (Wrist Pitch/Yaw)	0.20kg m ²	0.79kg m ²	0.40kg m ²	0.79kg m ²	1.20kg m ²	0.79kg m ²	1.63kg m ²
	T-axis (Wrist Twist)	0.07kg m ²	0.10kg m ²	0.10kg m ²	0.10kg m ²	0.20kg m ²	0.10kg m ²	0.20kg m ²
Mass		110kg	540kg	560kg	590kg	650kg	820kg	1030kg
Power Requirements *3		1.5kVA	5.0kVA	5.0kVA	5.0kVA	5.0kVA	5.0kVA	5.0kVA

* 1 : F=Floor, W=Wall, C=Ceiling, S=Shelf (Note : S-axis motion is limited when mounted on the wall.)

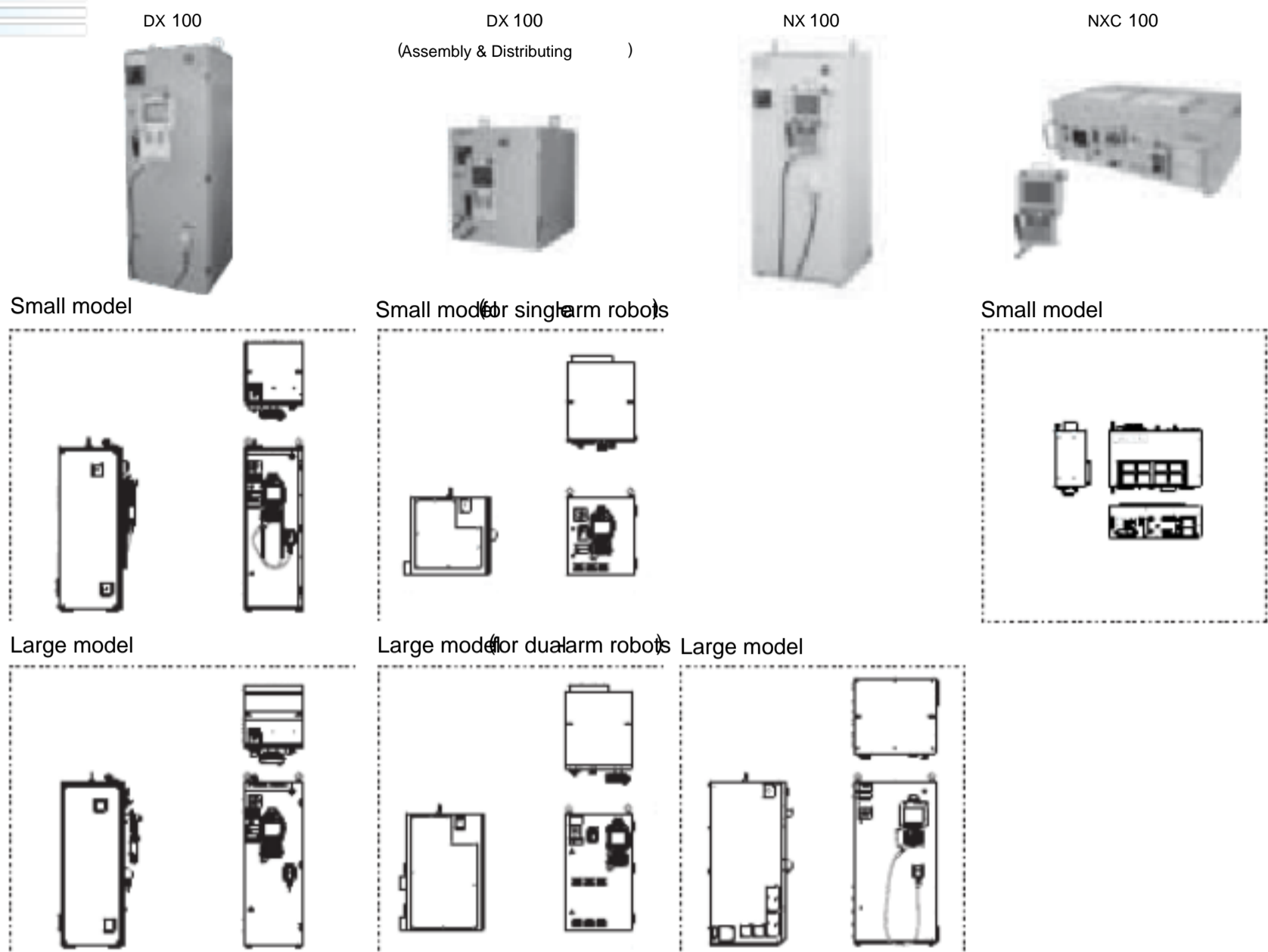
* 2 : Conforms to JIS B 8432.

* 3 : Varies in accordance with applications and motion patterns.

* 4 -130 +90 (S-axis -90 +90)
 -130 +30 (S-axis +90 +120)
 -130 +30 (S-axis -90 -120)



Controllers



Standard Specifications of Controller * 1

Controller Model		DX100	DX100(Assembly & Distributing)	NX 100	NXC 100	
S	Manipulator Model	Small Model	VA1400, MA 1400, MA1900 MA3100, MH5, MH5L, MH6, MH6S, HP20D, HP20D-6, MPK2	SIA5D, SIA 10D, SIA20D	HP 3J, MH 5, MH 5L	
		Large Model	MA1800, VS50, MS80, MS120, ES165D, ES165RD, ES200D, ES200RD, ES280D* ² , MH50, MH50-20, MH80, MH 165, MH 200, MH 215* ² ,MH250* ² , UP350D, UP400RD, UP350D-500, UP350D-600, MPK50* ² , MPL80* ² , MPL100* ² , MPL 160* ² , MPL 300* ² , MPL500* ² , SIA30D, SIA50D	SDA 5D, SDA 10D, SDA20D	EPH 130, EPH 130R, EPH 130 RL, EPH 4000 , EP4000N	
	Dimensions (W ×H ×D)	Small Model	425 ×1200 ×450 mm (Possible to control 3 external axes)	500 ×580 ×580 mm (Possible to control 1 external axes)	500 ×1200 ×500 mm (Possible to control 2 external axes)	485 ×183 ×300 mm (Possible to control 1 external axes)
		Large Model	425 ×1200 ×450 mm (Possible to control 2 external axes)	500 ×880 ×580 mm (Possible to control 1 external axes)	600 ×1200 ×550 mm (Possible to control 2 external axes)	
	Approximate Mass	Small Model	100 kg	100kg	100kg	16kg
Large Model	100 kg * ²	150kg	150kg			
IEC Protection Class		IP54	IP54	IP51	IP20	
E	Dimensions (W ×H ×D)	169 ×314.5 ×50 mm	169 ×314.5 ×50 mm	199 ×338 ×60 mm	199 ×338 ×60 mm	
	Approximate Mass	0.990kg	0.990kg	1.320 kg	1.320 kg	
	IEC Protection Class	IP65	IP65	IP65	IP65	
	External Interface	CF slot ×1 USB Port (1.1) ×1	CF slot ×1 USB Port (1.1) ×1	CF slot ×1	CF slot ×1	
S	Number of Controlled Manipulators		Up to 8 manipulators	Up to 8 manipulators	Up to 4 manipulators	Up to 4 manipulators
	Number of Controlled Axes		Up to 72 axes	Up to 72 axes	Up to 36 axes	Up to 36 axes
	Number of JOBS	Robot	16 JOBS	16 JOBS	8 JOBS	8 JOBS
		System	4 JOBS	4 JOBS	4 JOBS	4 JOBS
	Number of Controlled Groups	Up to 32 groups		Up to 32 groups	Up to 16 groups	Up to 16 groups
		Robot	Up to 8 groups (R 1 to R 8)	Up to 8 groups (R 1 to R 8)	Up to 4 groups (R 1 to R 4)	Up to 4 groups (R 1 to R 4)
		Base	Up to 8 groups (B 1 to B 8)	Up to 8 groups (B 1 to B 8)	Up to 4 groups (B 1 to B 4)	Up to 4 groups (B 1 to B 4)
	Station	Up to 24 groups (S1 to S24)	Up to 24 groups (S1 to S24)	Up to 12 groups (S1 to S12)	Up to 12 groups (S1 to S12)	
	JOB Capacity		JOB : 200000steps Robot command : 10000steps	JOB : 200000steps Robot command: 10000steps	JOB : 60000steps Robot command: 10000steps	JOB : 60000steps Robot command: 10000steps
	CIO Ladder		20000 steps	20000 steps	Standard : 10000 steps Extension : 15000 steps	Standard : 10000 steps Extension : 15000 steps
I/O		System Input : 2048 (max.) System Output : 2048 (max.)	System Input : 2048(max.) System Output : 2048(max.)	System Input : 1024(max.) System Output : 1024(max.)	System Input : 1024(max.) System Output : 1024(max.)	
Number of JOB Names		Up to 32 digits	Up to 32 digits	Up to 8 digits	Up to 8 digits	

* 1 : These specifications and dimensions are for standard specifications and they are subject to change due to the optional installation.

* 2 : When manipulator is ES 280D, MH 215, MH 250, MPK 50, MPL 80, MPL 100, MPL 160, MPL 300, and MPL 500, the regenerative resistor box (120 mm in depth, 50kg) is mounted on the surface of the backside of the controller.

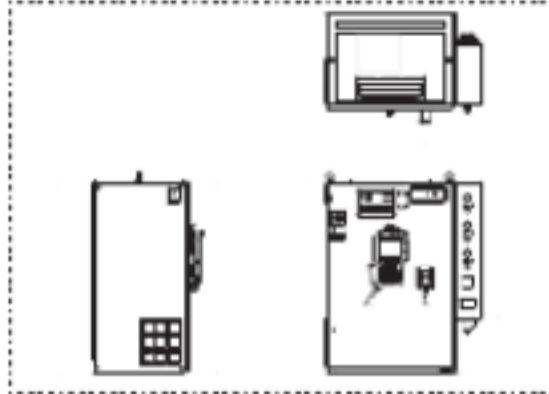
Note : Contact YASKAWA regarding the dimension of the controller for MPL 800.

For Painting

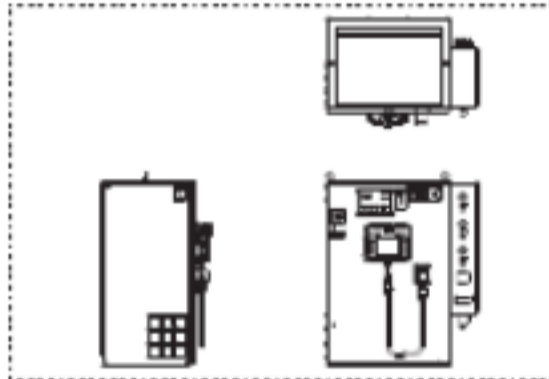
NX 100 (Painting)



Standard pendant model



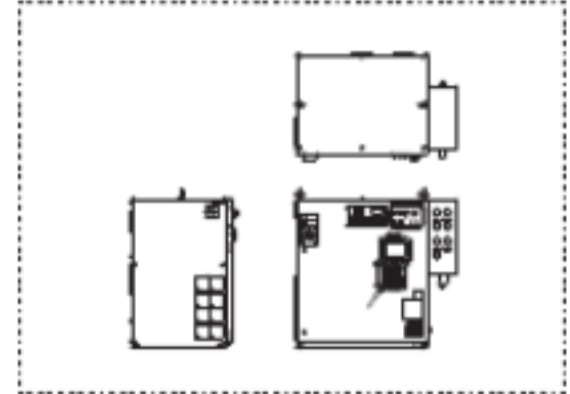
Explosion -proof pendant model



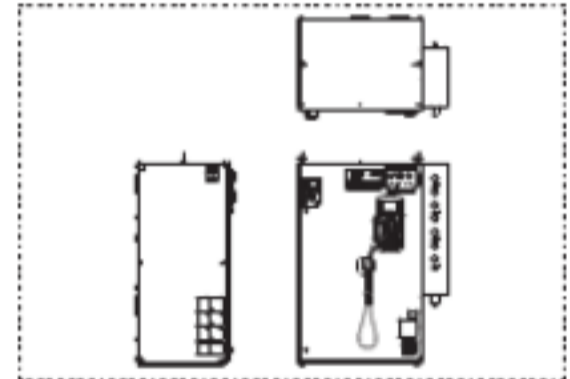
XRC (Painting)



Standard pendant model



Explosion -proof pendant model



Standard Specifications of Controller *

Controller Model		NX 100 (Painting)	XRC (Painting)
Controller	Manipulator Model	Standard Pendant	EPX2050, EPX2700, EPX2800, EPX2800R, EPX2900
		Explosionproof Pendant	EPX2050, EPX2700, EPX2800, EPX2800R, EPX2900
	Dimensions (W ×H ×D)	Standard Pendant	974 ×1200 ×600 mm (Possible to control 3 external axes)
		Explosionproof Pendant	974 ×1200 ×600 mm (Possible to control 3 external axes)
	Approximate Mass	Standard Pendant	250 kg
Explosionproof Pendant		250 kg	
IEC Protection Class		IP41 (Option : IP54)	
Pendant	Dimensions (W ×H ×D)	Standard Pendant	199 ×338 ×60 mm
		Explosionproof Pendant	235 ×203 ×78 mm
	Approximate Mass	Standard Pendant	1.32kg
		Explosionproof Pendant	1.25kg
IEC Protection Class		IP65	
External Interface		CF slot ×1	Standard RS232C for Backup Explosion-proof N/A
Software	Number of Controlled Manipulators		Up to 4 robots
	Number of Controlled Axes		Up to 36 axes
	Number of JOBS	Robot	8 JOBS
		System	4 JOBS
	Number of Controlled Groups	Up to 16 groups	
		Robot	UP to 4 groups (R1 to R 4)
		Base	UP to 4 groups (B1 to B 4)
	Station	UP to 12 groups (S1 to S 12)	
	JOB Capacity		60000 steps 10000 steps
	CIO Ladder		Standard : 10000 steps Extension : 15000 steps
I/O		System Input : 1024 (max.) System Output : 1024 (max.)	
Number of JOB Names		Up to 8 digits	

* : These specifications and dimensions are for standard specifications and they are subject to change due to the optional installation.
 Note : Contact YASKAWA regarding the dimension of the controller for EPX 1250 .

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