

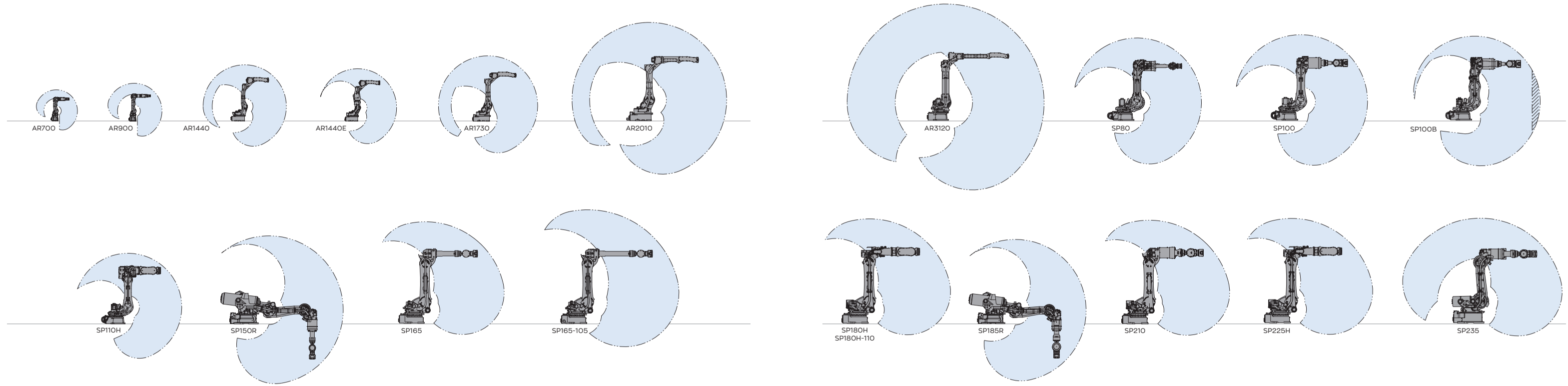
YASKAWA

MOTOMAN[®] ROBOTS

HIGH-PERFORMANCE ROBOTS FOR
ALL APPLICATIONS AND INDUSTRIES



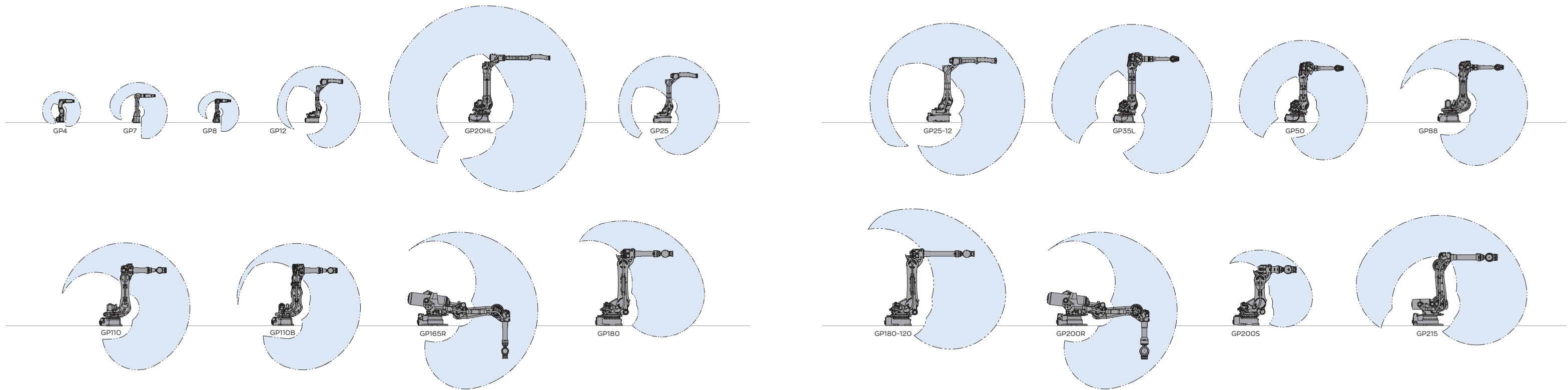
Reliable. Fast. Precise. Versatile.



	ARC WELDING							SPOT WELDING													
Model	AR700	AR900	AR1440	AR1440E	AR1730	AR2010	AR3120	SP80*	SP100*	SP100B*	SP110H	SP150R*	SP165*	SP165-105*	SP180H	SP180H-110	SP185R*	SP210*	SP225H	SP235*	
Controller	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000
MLX300 Software Option																					
XP INCREASED IP PROTECTION (OPTION)																					
Food Grade Grease (OPTION)																					
Mounting	F, W, C, T	F, W, C, T	F, W, C, T	F	F, W, C, T	F, W, C, T	F, W, C, T	F, W, C, T	F	F	F	S	F	F	F	F	S	F	F	F	
Degrees of Freedom	6	6	6	7	6	6	6	6	6	7	6	6	6	6	6	6	6	6	6	6	6
Payload	8 kg	7 kg	12 kg	6 kg	25 kg	12 kg	20 kg	80 kg	100 kg	100 kg	110 kg	150 kg	165 kg	105 kg	180 kg	110 kg	185 kg	210 kg	225 kg	235 kg	
Vertical Reach	1,312 mm	1,693 mm	2,511 mm	2,487 mm	3,089 mm	3,649 mm	5,622 mm	3,751 mm	3,751 mm	3,792 mm	3,367 mm	4,782 mm	3,393 mm	4,105 mm	3,393 mm	3,393 mm	4,782 mm	3,393 mm	3,393 mm	3,490 mm	
Horizontal Reach	727 mm	927 mm	1,440 mm	1,440 mm	1,730 mm	2,010 mm	3,124 mm	2,236 mm	2,236 mm	2,236 mm	2,044 mm	3,140 mm	2,702 mm	3,058 mm	2,702 mm	2,702 mm	3,140 mm	2,702 mm	2,702 mm	2,710 mm	
Repeatability	0.01 mm	0.01 mm	0.02 mm	0.06 mm	0.02 mm	0.03 mm	0.07 mm	0.03 mm	0.03 mm	0.04 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	
Maximum Motion Range S-Axis (Turning/Sweep) L-Axis (Upper Arm) U-Axis (Upper Arm) R-Axis (Wrist Roll) B-Axis (Bend/Pitch/Yaw) T-Axis (Wrist Twist) 7th-Axis Other	±170° +145°/-65° +190°/-70° ±190° ±135° ±360° n/a n/a	±170° +145°/-65° +190°/-70° ±190° ±135° ±360° n/a n/a	±170° +155°/-90° +140°/-85° ±150° +90°/-135° ±210° n/a n/a	±170° +148°/-70° ±80° ±150° +90°/-135° ±210° E: ±90° n/a	±180° +155°/-105° +160°/-86° ±150° +90°/-135° ±210° n/a n/a	±180° +155°/-105° +160°/-86° ±150° +90°/-135° ±210° n/a n/a	±180° +135°/-90° +206°/-80° ±200° ±150° ±210° n/a n/a	±180° +155°/-90° +90°/-80° ±205° ±120° ±180° n/a n/a	±180° +155°/-90° +90°/-80° ±205° ±120° ±205° E: +120°/-45° n/a	±180° +155°/-90° +90°/-80° ±205° ±120° ±210° n/a n/a	±180° +155°/-90° +90°/-80° ±205° ±120° ±210° n/a n/a	±180° +155°/-90° +90°/-80° ±205° ±120° ±210° n/a n/a	±180° +80°/-130° +78°/-79.4° ±210° ±130° ±180° n/a n/a	±180° +76°/-60° +90°/-86° ±210° ±125° ±210° n/a n/a	±180° +76°/-60° +90°/-86° ±210° ±125° ±210° n/a n/a	±180° +76°/-60° +90°/-86° ±210° ±125° ±210° n/a n/a	±180° +80°/-130° +78°/-78.4° ±205° ±130° ±180° n/a n/a	±180° +76°/-60° +90°/-86° ±210° ±125° ±210° n/a n/a	±180° +76°/-60° +90°/-86° ±210° ±125° ±210° n/a n/a	±180° +76°/-60° +90°/-86° ±210° ±125° ±210° n/a n/a	±180° +76°/-60° +90°/-86° ±210° ±125° ±210° n/a n/a
Maximum Speed S-Axis L-Axis U-Axis R-Axis B-Axis T-Axis 7th-Axis Other	455°/s 385°/s 520°/s 550°/s 550°/s 1,000°/s n/a n/a	375°/s 315°/s 410°/s 550°/s 550°/s 1,000°/s n/a n/a	260°/s 230°/s 260°/s 470°/s 470°/s 700°/s n/a n/a	260°/s 230°/s 260°/s 470°/s 470°/s 700°/s E: 260°/s n/a	210°/s 210°/s 265°/s 420°/s 420°/s 885°/s n/a n/a	210°/s 210°/s 220°/s 435°/s 435°/s 700°/s n/a n/a	180°/s 140°/s 180°/s 400°/s 430°/s 630°/s n/a n/a	170°/s 140°/s 160°/s 175°/s 175°/s 350°/s n/a n/a	140°/s 110°/s 130°/s 175°/s 175°/s 255°/s E: 110°/s n/a	140°/s 110°/s 130°/s 175°/s 175°/s 315°/s n/a n/a	140°/s 110°/s 130°/s 175°/s 175°/s 240°/s n/a n/a	105°/s 105°/s 161°/s 225°/s 200°/s 240°/s n/a n/a	125°/s 115°/s 125°/s 182°/s 175°/s 265°/s n/a n/a	125°/s 115°/s 125°/s 182°/s 175°/s 265°/s n/a n/a	140°/s 115°/s 115°/s 150°/s 150°/s 310°/s n/a n/a	120°/s 97°/s 115°/s 120°/s 120°/s 230°/s n/a n/a	90°/s 85°/s 85°/s 120°/s 120°/s 190°/s n/a n/a	120°/s 97°/s 115°/s 150°/s 150°/s 220°/s n/a n/a	120°/s 97°/s 115°/s 150°/s 150°/s 230°/s n/a n/a	100°/s 90°/s 97°/s 120°/s 120°/s 190°/s n/a n/a	
Approximate Mass	32 kg	34 kg	150 kg	190 kg	250 kg	260 kg	560 kg	655 kg	695 kg	825 kg	730 kg	1,820 kg	1,020 kg	1,090 kg	1,120 kg	1,120 kg	1,890 kg	1,145 kg	1,110 kg	1,345 kg	
Power Rating	1 kVA	1 kVA	1.5 kVA	1.5 kVA	2 kVA	2 kVA	4 kVA	4 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	
Allowable Moment R-Axis B-Axis T-Axis	17 N·m 17 N·m 10 N·m	17 N·m 17 N·m 10 N·m	22 N·m 22 N·m 9.8 N·m	12.5 N·m 12.5 N·m 6 N·m	52 N·m 52 N·m 32 N·m	22 N·m 22 N·m 9.8 N·m	39.2 N·m 39.2 N·m 19.6 N·m	389 N·m 389 N·m 201 N·m	696 N·m 696 N·m 294 N·m	696 N·m 696 N·m 294 N·m	721 N·m 721 N·m 315 N·m	868 N·m 868 N·m 490 N·m	951 N·m 951 N·m 618 N·m	834 N·m 834 N·m 520 N·m	883 N·m 883 N·m 520 N·m	1,000 N·m 1,000 N·m 618 N·m	1,291 N·m 1,291 N·m 715 N·m	1,323 N·m 1,323 N·m 735 N·m	1,372 N·m 1,372 N·m 735 N·m	1,333 N·m 1,333 N·m 735 N·m	
Allowable Moment of Inertia R-Axis B-Axis T-Axis	0.5 kg·m² 0.5 kg·m² 0.2 kg·m²	0.5 kg·m² 0.5 kg·m² 0.2 kg·m²	0.65 kg·m² 0.65 kg·m² 0.17 kg·m²	0.4 kg·m² 0.4 kg·m² 0.08 kg·m²	2.3 kg·m² 2.3 kg·m² 1.2 kg·m²	0.65 kg·m² 0.65 kg·m² 0.17 kg·m²	1.05 kg·m² 1.05 kg·m² 0.75 kg·m²	28 kg·m² 28 kg·m² 10.3 kg·m²	58 kg·m² 58 kg·m² 33 kg·m²	58 kg·m² 58 kg·m² 33 kg·m²	85 kg·m² 85 kg·m² 45 kg·m²	83 kg·m² 83 kg·m² 45 kg·m²	88 kg·m² 88 kg·m² 46.3 kg·m²	77 kg·m² 77 kg·m² 40 kg·m²	85 kg·m² 85 kg·m² 40 kg·m²	104 kg·m² 104 kg·m² 52 kg·m²	141 kg·m² 141 kg·m² 80 kg·m²	143 kg·m² 143 kg·m² 84 kg·m²	209.8 kg·m² 209.8 kg·m² 162.1 kg·m²	315 kg·m² 315 kg·m² 200 kg·m²	

* WORKING RANGE WITH HARNESS SHOWN FOR R-, B- AND T-AXIS MAXIMUM MOTION RANGE
MOUNTING: F = FLOOR; W = WALL; C = CEILING; T = TILT; S = SHELF

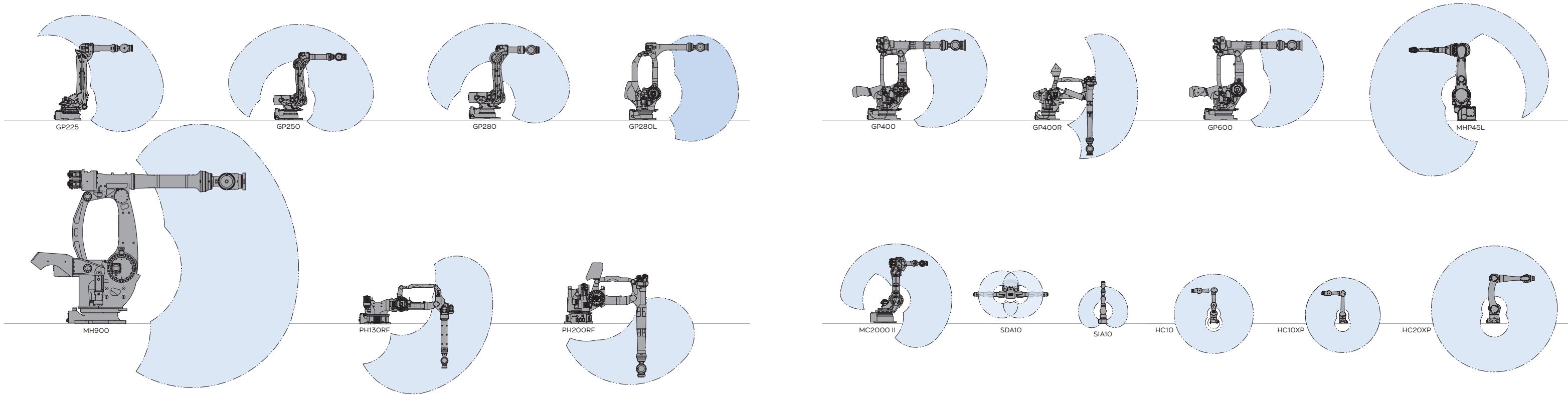
N/A = NOT APPLICABLE
TECHNICAL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



	HANDLING, ASSEMBLY, DISPENSING AND MORE																		
Model	GP4	GP7	GP8	GP12	GP20HL	GP25	GP25-12	GP35L		GP50	GP88	GP110	GP110B	GP165R	GP180	GP180-120	GP200R	GP200S	GP215
Controller	YRC1000 YRC1000micro	YRC1000 YRC1000micro	YRC1000 YRC1000micro	YRC1000 YRC1000micro	YRC1000	YRC1000	YRC1000	YRC1000		YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000
MLX300 Software Option	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
XP† INCREASED IP PROTECTION (OPTION)	IP67 STANDARD	IP67 STANDARD	IP67 STANDARD	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Food Grade Grease (OPTION)		✓	✓	✓		✓				✓									
Mounting	F, W, C, T	F, W, C, T	F, W, C, T	F, W, C, T	F, W, C, T	F, W, C, T	F, W, C, T	F, W, C, T		F, W, C, T	F, W, C, T	F	F	S	F	F	S	F	F
Degrees of Freedom	6	6	6	6	6	6	6	6		6	6	6	7	6	6	6	6	6	6
Payload	4 kg	7 kg	8 kg	12 kg	20 kg	25 kg	12 kg	35 kg		50 kg	88 kg	110 kg	110 kg	165 kg	180 kg	120 kg	200 kg	200 kg	215 kg
Vertical Reach	1,008 mm	1,693 mm	1,312 mm	2,511 mm	5,622 mm	3,089 mm	3,649 mm	4,449 mm		3,578 mm	3,751 mm	3,751 mm	3,792 mm	4,782 mm	3,393 mm	4,105 mm	4,782 mm	2,295 mm	3,894 mm
Horizontal Reach	550 mm	927 mm	727 mm	1,440 mm	3,124 mm	1,730 mm	2,010 mm	2,538 mm		2,061 mm	2,236 mm	2,236 mm	2,236 mm	3,140 mm	2,702 mm	3,058 mm	3,140 mm	1,886 mm	2,912 mm
Repeatability	0.01 mm	0.01 mm	0.01 mm	0.02 mm	0.07 mm	0.02 mm	0.03 mm	±0.07 mm		0.03 mm	0.03 mm	0.03 mm	0.04 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm
Maximum Motion Range																			
S-Axis (Turning/Sweep)	±170°	±170°	±170°	±170°	±180°	±180°	±180°	±180°		±180°	±180°	±180°	±180°	±180°	±180°	±180°	±180°	±180°	±180°
L-Axis (Lower Arm)	+130°/-110°	+145°/-65°	+145°/-65°	+155°/-90°	+135°/-90°	+155°/-105°	+155°/-105°	+135°/-90°		+135°/-90°	+155°/-90°	+155°/-90°	+155°/-45°	+80°/-130°	+76°/-60°	+76°/-60°	+80°/-130°	+76°/-60°	+76°/-60°
U-Axis (Upper Arm)	+200°/-65°	+190°/-70°	+190°/-70°	+150°/-85°	+206°/-80°	+160°/-86°	+160°/-86°	+206°/-80°		+206°/-80°	+90°/-80°	+90°/-70°	+90°/-70°	+78°/-79.4°	+90°/-86°	+90°/-86°	+78°/-78.4°	+90°/-86°	+197°/-77.8°
R-Axis (Wrist Roll)	±200°	±190°	±190°	±200°	±200°	±200°	±200°	±360°		±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°
B-Axis (Bend/Pitch/Yaw)	±123°	±135°	±135°	±150°	±150°	±150°	±150°	±125°		±125°	±125°	±125°	±125°	±130°	±130°	±130°	±125°	±125°	±125°
T-Axis (Wrist Twist)	±455°	±360°	±360°	±455°	±455°	±455°	±455°	±360°		±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°
7th-Axis	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	E: ±120°/-45°	n/a	n/a	n/a	n/a	n/a	n/a
Other	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Maximum Speed																			
S-Axis	465°/s	375°/s	455°/s	260°/s	180°/s	210°/s	210°/s	180°/s		180°/s	170°/s	140°/s	140°/s	105°/s	125°/s	125°/s	90°/s	120°/s	100°/s
L-Axis	465°/s	315°/s	385°/s	230°/s	180°/s	210°/s	210°/s	140°/s		178°/s	140°/s	110°/s	110°/s	105°/s	115°/s	115°/s	85°/s	97°/s	90°/s
U-Axis	525°/s	410°/s	520°/s	260°/s	180°/s	260°/s	220°/s	178°/s		178°/s	160°/s	130°/s	130°/s	105°/s	125°/s	125°/s	85°/s	97°/s	97°/s
R-Axis	565°/s	550°/s	550°/s	470°/s	400°/s	420°/s	435°/s	250°/s		250°/s	230°/s	175°/s	175°/s	175°/s	182°/s	182°/s	120°/s	145°/s	120°/s
B-Axis	565°/s	550°/s	550°/s	470°/s	430°/s	420°/s	250°/s	250°/s		250°/s	230°/s	175°/s	175°/s	150°/s	175°/s	175°/s	120°/s	145°/s	120°/s
T-Axis	1,000°/s	1,000°/s	1,000°/s	700°/s	630°/s	885°/s	700°/s	360°/s		360°/s	350°/s	255°/s	255°/s	240°/s	265°/s	265°/s	190°/s	220°/s	190°/s
7th-Axis	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	E: 110°/s	n/a	n/a	n/a	n/a	n/a	n/a
Other	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Approximate Mass	28 kg	34 kg	32 kg	150 kg	560 kg	250 kg	260 kg	600 kg		570 kg	630 kg	660 kg	790 kg	1,760 kg	1,020 kg	1,090 kg	1,830 kg	950 kg	1,340 kg
Power Rating	1 kVA	1 kVA	1 kVA	1.5 kVA	4 kVA	2 kVA	2 kVA	4.5 kVA		4.5 kVA	4 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA	5 kVA
Allowable Moment																			
R-Axis	8.86 N·m	17 N·m	17 N·m	22 N·m	39.2 N·m	52 N·m	22 N·m	147 N·m		216 N·m	408 N·m	721 N·m	721 N·m	921 N·m	1,000 N·m	883 N·m	1,344 N·m	1,372 N·m	1,176 N·m
B-Axis	8.86 N·m	17 N·m	17 N·m	22 N·m	39.2 N·m	52 N·m	22 N·m	147 N·m		216 N·m	408 N·m	721 N·m	721 N·m	921 N·m	1,000 N·m	883 N·m	1,344 N·m	1,372 N·m	1,176 N·m
T-Axis	4.9 N·m	10 N·m	10 N·m	9.8 N·m	19.6 N·m	32 N·m	9.8 N·m	78 N·m		147 N·m	206 N·m	294 N·m	294 N·m	490 N·m	618 N·m	520 N·m	715 N·m	735 N·m	710 N·m
Allowable Moment of Inertia																			
R-Axis	0.2 kg·m²	0.5 kg·m²	0.5 kg·m²	0.65 kg·m²	1.05 kg·m²	2.3 kg·m²	0.65 kg·m²	10 kg·m²		28 kg·m²	30 kg·m²	60 kg·m²	60 kg·m²	85 kg·m²	90 kg·m²	79 kg·m²	143 kg·m²	145 kg·m²	317 kg·m²
B-Axis	0.2 kg·m²	0.5 kg·m²	0.5 kg·m²	0.65 kg·m²	1.05 kg·m²	2.3 kg·m²	0.65 kg·m²	10 kg·m²		28 kg·m²	30 kg·m²	60 kg·m²	60 kg·m²	85 kg·m²	90 kg·m²	79 kg·m²	143 kg·m²	145 kg·m²	317 kg·m²
T-Axis	0.07 kg·m²	0.2 kg·m²	0.2 kg·m²	0.17 kg·m²	0.75 kg·m²	1.2 kg·m²	0.17 kg·m²	4 kg·m²		11 kg·m²	11 kg·m²	33.7 kg·m²	33.7 kg·m²	45 kg·m²	46.3 kg·m²	40 kg·m²	80 kg·m²	84 kg·m²	200 kg·m²

† CONTACT YASKAWA MOTOMAN FOR AVAILABILITY OF XP ROBOT MODELS
MOUNTING: F = FLOOR; W = WALL; C = CEILING; T = TILT; S = SHELF

N/A = NOT APPLICABLE
TECHNICAL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



	HANDLING, ASSEMBLY, DISPENSING AND MORE									PRESS TENDING		CUTTING	ACTUATOR-BASED		COLLABORATIVE		
Model	GP225	GP250	GP280	GP280L	GP400	GP400R	GP600	MHP45L †	MH900	PH130RF	PH200RF	MC2000 II	SDA10 [§] DUAL ARM	SIA10 [§] SINGLE ARM	HC10	HC10XP (WELDING COMPATIBLE)	HC20XP
Controller	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	YRC1000	DX200-FM	DX200	YRC1000	YRC1000	DX200	FS100	FS100	YRC1000	YRC1000	YRC1000 YRC1000micro
MLX300 Software Option	✓	✓	✓	✓	✓	✓	✓		✓	✓							
XP † INCREASED IP PROTECTION (OPTION)	✓	✓	✓		✓												
Food Grade Grease (OPTION)																	
Mounting	F	F	F	F	F	S	F	F, W, C, S	F	S	S	F	F	F, W, C, T	F, W, C, T	F, W, C, T	F, W, C, T
Degrees of Freedom	6	6	6	6	6	6	6	6	6	6	6	6	15	7	6	6	6
Payload	225 kg	250 kg	280 kg	280 kg	400 kg	400 kg	600 kg	45 kg	900 kg	130 kg	200 kg	50 kg	10 kg PER ARM	10 kg	10 kg	10 kg	20 kg
Vertical Reach	3,393 mm	3,490 mm	2,962 mm	3,552 mm	2,898 mm	4,908 mm	2,898 mm	5,373 mm	6,209 mm	4,151 mm	2,629 mm	3,161 mm	1,440 mm	1,203 mm			
Horizontal Reach	2,702 mm	2,710 mm	2,446 mm	3,114 mm	2,942 mm	3,518 mm	2,942 mm	2,850 mm	4,683 mm	3,474 mm	3,505 mm	2,038 mm	720 mm PER ARM 1,970 mm P-POINT TO P-POINT	720 mm	[1,200 mm MAX. WORKING RANGE]	[1,200 mm MAX. WORKING RANGE]	[1,700 mm MAX. WORKING RANGE]
Repeatability	0.05 mm	0.05 mm	0.05 mm	±0.1 mm	0.1 mm	0.1 mm	0.1 mm	±0.07 mm	±0.5 mm	0.3 mm	0.5 mm	±0.07 mm	±0.1 mm	±0.1 mm	0.05 mm	0.05 mm	0.05 mm
Maximum Motion Range																	
S-Axis (Turning/Sweep)	±180°	±180°	±180°	±180°	±180°	±150°	±180°	±150°	±165°	±180°	±150°	±180°	±180°	±180°	±180°	±180°	±180°
L-Axis (Lower Arm)	+76°/-60°	+76°/-60°	+76°/-60°	+90°/-45°	+61°/-55°	+20°/-122°	+61°/-55°	+140°/-65°	+100°/-60°	+70°/-130°	+25°/-122°	+135°/-90°	±110°	±110°	±180°	±180°	±180°
U-Axis (Upper Arm)	+90°/-86°	+197°/-77.8°	+197°/-77.8°	+15.5°/-120°	+18°/-113°	+120°/-9°	+18°/-113°	+180°/-65°	+35°/-130°	+95°/-70°	+53°/-70°	+235°/-158°	±135°	±135°	+355°/-5°	+265°/-95°	+247°/-67°
R-Axis (Wrist Roll)	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±180°	±180°	±180°	±180°	±210°
B-Axis (Bend/Pitch/Yaw)	±125°	±125°	±125°	±125°	±115°	±120°	±115°	±125°	±120°	±130°	±120°	±125°	±110°	±110°	±180°	±180°	±180°
T-Axis (Wrist Twist)	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±180°	±180°	±180°	±180°	±210°
7th-Axis	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	E: ±170°	E: ±170°	n/a	n/a	n/a
Other	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ROTATION: ±170°	n/a	n/a	n/a	n/a
Maximum Speed																	
S-Axis	120°/s	100°/s	90°/s	110°/s	102°/s	80°/s	82°/s		45°/s	110°/s	90°/s	150°/s	170°/s	170°/s	130°/s	130°/s	80°/s
L-Axis	97°/s	90°/s	80°/s	90°/s	97°/s	80°/s	82°/s		30°/s	110°/s	90°/s	150°/s	170°/s	170°/s	130°/s	130°/s	80°/s
U-Axis	115°/s	97°/s	90°/s	97°/s	97°/s	80°/s	82°/s	1.6 m/s MAXIMUM LINEAR SPEED	30°/s	110°/s	90°/s	150°/s	170°/s	170°/s	130°/s	130°/s	80°/s
R-Axis	145°/s	120°/s	115°/s	125°/s	80°/s	80°/s	80°/s		36°/s	215°/s	80°/s	250°/s	200°/s	200°/s	180°/s	180°/s	130°/s
B-Axis	145°/s	110°/s	110°/s	80°/s	125°/s	80°/s	80°/s		37°/s	180°/s	80°/s	250°/s	200°/s	200°/s	180°/s	180°/s	130°/s
T-Axis	220°/s	190°/s	190°/s	205°/s	172°/s	160°/s	162°/s		70°/s	300°/s	160°/s	250°/s	400°/s	400°/s	250°/s	250°/s	180°/s
7th-Axis	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	E: 170°/s	E: 170°/s	n/a	n/a	n/a
Other	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	ROTATION: 130°/s	n/a	n/a	n/a	n/a
Approximate Mass	1,080 kg	1,345 kg	1,300 kg	2,380 kg	2,840 kg	3,560 kg	3,035 kg	650 kg	10,000 kg	1,560 kg	2,940 kg	845 kg	220 kg	60 kg	47 kg	58 kg	140 kg
Power Rating	5 kVA	5 kVA	5 kVA	7.5 kVA	7 kVA	7 kVA	7 kVA	3 kVA	35 kVA	7.5 kVA	22 kVA	3.5 kVA	2.7 kVA	1.5 kVA	1 kVA	1 kVA	1.5 kVA
Allowable Moment																	
R-Axis	1,372 N·m	1,385 N·m	1,333 N·m	1,960 N·m	2,989 N·m	1,960 N·m	3,430 N·m	252.8 N·m	14,700 N·m	735 N·m	1,274 N·m	110 N·m	31.4 N·m	31.4 N·m	27.4 N·m	27.4 N·m	58.8 N·m
B-Axis	1,372 N·m	1,385 N·m	1,333 N·m	1,960 N·m	2,989 N·m	1,960 N·m	3,430 N·m	252.8 N·m	14,700 N·m	735 N·m	2,156 N·m	110 N·m	31.4 N·m	31.4 N·m	27.4 N·m	27.4 N·m	58.8 N·m
T-Axis	735 N·m	735 N·m	706 N·m	950 N·m	1,343 N·m	833 N·m	1,764 N·m	117.6 N·m	4,900 N·m	421 N·m	0 N·m	55 N·m	19.6 N·m	19.6 N·m	9.8 N·m	9.8 N·m	29.4 N·m
Allowable Moment of Inertia																	
R-Axis	145 kg·m ²	317 kg·m ²	142 kg·m ²	220 kg·m ²	500 kg·m ²	150 kg·m ²	520 kg·m ²	13.9 kg·m ²	3,000 kg·m ²	45 kg·m ²	84.5 kg·m ²	7 kg·m ²	1 kg·m ²	1 kg·m ²	0.78 kg·m ²	0.78 kg·m ²	4 kg·m ²
B-Axis	145 kg·m ²	317 kg·m ²	142 kg·m ²	220 kg·m ²	500 kg·m ²	150 kg·m ²	520 kg·m ²	13.9 kg·m ²	3,000 kg·m ²	45 kg·m ²	330 kg·m ²	7 kg·m ²	1 kg·m ²	1 kg·m ²	0.78 kg·m ²	0.78 kg·m ²	4 kg·m ²
T-Axis	84 kg·m ²	200 kg·m ²	79 kg·m ²	140 kg·m ²	315 kg·m ²	50 kg·m ²	350 kg·m ²	3.2 kg·m ²	2,200 kg·m ²	15 kg·m ²	80 kg·m ²	1 kg·m ²	0.4 kg·m ²	0.4 kg·m ²	0.1 kg·m ²	0.1 kg·m ²	2 kg·m ²

† FACTORY MUTUAL APPROVED FOR CLASS 1, DIV. 1 USE IN HAZARDOUS ENVIRONMENTS

† CONTACT YASKAWA MOTOMAN FOR AVAILABILITY OF XP ROBOT MODELS

MOUNTING: F = FLOOR; W = WALL; C = CEILING; T = TILT; S = SHELF

§ CONTACT YASKAWA MOTOMAN FOR VARIOUS PAYLOAD MODELS

N/A = NOT APPLICABLE

TECHNICAL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

SG400

SG650

MotoMini

MPP3S

MPP3H

MPL80 II

MPL100 II

MPL160 II

MPL300 II

MPL500 II

MPL800 II

PL190
PL320

PL500

MPX1150

MPX1950

MPX2600

MPX3500

	PICKING, PACKING, PALLETIZING														PAINT			
Model	SG400	SG650	MotoMini	MPP3S	MPP3H	MPL80 II	MPL100 II	MPL160 II	MPL300 II	MPL500 II	MPL800 II	PL190	PL320	PL500	MPX1150 †	MPX1950 †	MPX2600 †	MPX3500 †
Controller	YRC1000micro	YRC1000micro	YRC1000micro	FS100 MLX200	FS100 MLX200	DX200 MLX200	DX200	DX200 MLX200	DX200 MLX200	DX200	DX200	YRC1000	YRC1000	YRC1000	DX200-FM	DX200-FM	DX200-FM	DX200-FM
MLX300 Software Option	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓				
XP † INCREASED IP PROTECTION (OPTION)				IP67 STANDARD	IP67 STANDARD													
Food Grade Grease (OPTION)				STANDARD	STANDARD	✓	✓	✓	✓									
Mounting	F	F	F, W, C, T	C	C	F	F	F	F	F	F	F	F	F	F, W, C	F, W, C	F, W, C	F, W, C
Degrees of Freedom	4	4	6	4	4	5	5	4	4	4	4	4	4	4	6	6	6	6
Payload	3 kg	6 kg	0.5 kg	3 kg	3 kg	80 kg	100 kg	160 kg	300 kg	500 kg	800 kg	190 kg	320 kg	500 kg	5 kg	7 kg	15 kg	15 kg
Vertical Reach	200 mm U-AXIS STROKE	210 mm U-AXIS STROKE	495 mm	Z300 mm	Z601 mm	3,291 mm	3,149 mm	3,024 mm	3,024 mm	3,024 mm	3,024 mm	3,024 mm	3,024 mm	3,024 mm	1,290 mm	2,730 mm	3,643 mm	5,095 mm
Horizontal Reach	400 mm RADIAL REACH	650 mm RADIAL REACH	350 mm	Ø800 mm	Ø1,300 mm	2,061 mm	2,150 mm	3,159 mm	3,159 mm	3,159 mm	3,159 mm	3,159 mm	3,159 mm	3,159 mm	727 mm	1,450 mm	2,000 mm	2,700 mm
Repeatability	0.01 mm	0.01 mm	0.02 mm	±0.1 mm	±0.1 mm	±0.07 mm	±0.2 mm	±0.5 mm	±0.5 mm	±0.5 mm	±0.5 mm	0.05 mm	0.05 mm	0.05 mm	±0.02 mm	±0.15 mm	±0.2 mm	±0.15 mm
Maximum Motion Range																		
S-Axis (Turning/Sweep)	±142°	±137°	±170°	n/a	n/a	±180°	±180°	±180°	±180°	±180°	±180°	±180°	±180°	±180°	±170° **	±170° **	±150° **	±150°
L-Axis (Lower Arm)	±147°	±150°	+90°/-85°	n/a	n/a	+135°/-90°	+76°/-60°	+90°/-45°	+90°/-45°	+90°/-45°	+90°/-45°	+90°/-45°	+90°/-45°	+90°/-45°	+120°/-80°	+140°/-100°	+130°/-65°	+140°/-65°
U-Axis (Upper Arm)	200 mm	210 mm	+120°/-175°	n/a	n/a	+35°/-160°	+40°/-147°	+15.5°/-120°	+15.5°/-120°	+15.5°/-120°	+15.5°/-120°	+15.5°/-120°	+15.5°/-120°	+15.5°/-120°	+90°/-70°	+235°/-62°	+150°/-65°	+90°/-65°
R-Axis (Wrist Roll)	±360°	±360°	±140°	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	±190°	±200°	±720°	±720°
B-Axis (Bend/Pitch/Yaw)	n/a	n/a	+210°/-30°	n/a	n/a	±15°	±15° †	n/a	n/a	n/a	n/a	n/a	n/a	n/a	±135°	±150°	±720°	±720°
T-Axis (Wrist Twist)	n/a	n/a	n/a	±360°	±360°	±360°	±210° †	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±360°	±400°	±720°	±720°
7th-Axis	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Other	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Maximum Speed																		
S-Axis	740°/s	450°/s	315°/s	n/a	n/a	170°/s	125°/s	140°/s	90°/s	85°/s	65°/s	140°/s	120°/s	85°/s	1.5 m/s MAXIMUM LINEAR SPEED	1.5 m/s MAXIMUM LINEAR SPEED	2.0 m/s MAXIMUM LINEAR SPEED	2.0 m/s MAXIMUM LINEAR SPEED
L-Axis	800°/s	730°/s	315°/s	n/a	n/a	170°/s	88°/s	140°/s	100°/s	85°/s	65°/s	145°/s	110°/s	85°/s				
U-Axis	1,200 mm/s	1,300 mm/s	420°/s	n/a	n/a	170°/s	125°/s	140°/s	110°/s	85°/s	65°/s	145°/s	110°/s	85°/s				
R-Axis	3,000°/s	2,500°/s	600°/s	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a				
B-Axis	n/a	n/a	600°/s	n/a	n/a	170°/s	175°/s	n/a	n/a	n/a	n/a	n/a	n/a	n/a				
T-Axis	n/a	n/a	600°/s	1,400°/s	1,400°/s	350°/s	265°/s	305°/s	195°/s	195°/s	125°/s	420°/s	300°/s	195°/s				
7th-Axis	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a				
Other	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a				
Approximate Mass	14 kg	19 kg	7 kg	95 kg	115 kg	550 kg	950 kg	1,700 kg	1,820 kg	2,300 kg	2,550 kg	1,680 kg	1,680 kg	2,390 kg				
Power Rating	1 kVA	1 kVA	0.5 kVA	1.5 kVA	1.5 kVA	DX200/MLX300: 4 kVA MLX200: 6 kVA	8 kVA	DX200/MLX300: 9.5 kVA MLX200: 10 kVA	DX200/MLX300: 9.5 kVA MLX200: 10 kVA	8 kVA	8 kVA	9.5 kVA	9.5 kVA	8 kVA	1 kVA	2.5 kVA	3 kVA	3 kVA
Allowable Moment																		
R-Axis	n/a	n/a	0.42 N·m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	12 N·m	19.6 N·m	93.2 N·m	93.2 N·m
B-Axis	n/a	n/a	0.42 N·m	n/a	n/a	78.4 N·m	196 N·m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	12 N·m	19.6 N·m	58.8 N·m	58.8 N·m
T-Axis	n/a	n/a	0.37 N·m	2.94 N·m	2.94 N·m	20.5 N·m	0 N·m	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7 N·m	9.8 N·m	19.6 N·m	19.6 N·m
Allowable Moment of Inertia																		
R-Axis	0.06 kg·m ²	0.12 kg·m ²	0.00378 kg·m ²	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.3 kg·m ²	0.6 kg·m ²	3.75 kg·m ²	3.75 kg·m ²
B-Axis	n/a	n/a	0.00378 kg·m ²	n/a	n/a	16 kg·m ²	88 kg·m ²	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.3 kg·m ²	0.6 kg·m ²	2.225 kg·m ²	2.225 kg·m ²
T-Axis	n/a	n/a	0.00299 kg·m ²	0.017 kg·m ²	0.017 kg·m ²	6.1 kg·m ²	55 kg·m ²	80 kg·m ²	140 kg·m ²	200 kg·m ²	550 kg·m ²	90 kg·m ²	160 kg·m ²	200 kg·m ²	0.1 kg·m ²	0.16 kg·m ²	0.20 kg·m ²	0.20 kg·m ²

† CONTACT YASKAWA MOTOMAN FOR AVAILABILITY OF XP ROBOT MODELS

‡ MOTION RANGE LIMITED BY CABLING FLANGE

MOUNTING: F = FLOOR; W = WALL; C = CEILING; T = TILT; S = SHELF

† FACTORY MUTUAL APPROVED FOR CLASS 1, DIV. 1 USE IN HAZARDOUS ENVIRONMENTS

** WALL MOUNTED ±90° | N/A = NOT APPLICABLE

TECHNICAL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Robot Controllers



The **YRC1000** is compact, fast and precise. It is built to a global standard and does not require a transformer for input voltages ranging from 380VAC to 480VAC. The YRC1000 features integrated machine and functional safety for simplified setup.



The smallest robot controller in its class, the ultra-compact **YRC1000micro** minimizes installation space and optimizes performance with power and precision. Ideal for factories with high density layouts, the YRC1000micro can be installed in a vertical or horizontal position, or in a 19-inch rack.



The powerful, energy-efficient **DX200** controller delivers application flexibility and high reliability. Patented multiple robot control (up to 8 robots/72 axes) with coordinated motion between devices optimizes productivity. Leading functional safety ensures operator safety.

	YRC1000	YRC1000micro	DX200
CONTROLLER			
Model	YRC1000	YRC1000micro	DX200
Dimensions	598 mm x 499 mm x 427 mm	425 mm x 125 mm x 280 mm; HC-series: 425 mm x 180 mm x 315 mm	800 mm x 1,000 mm x 650 mm
Approximate Mass	70 kg max.	10.5 kg	150-250 kg
Ambient Temperature	During operation: 0° to 45° C Storage: -10° to 60° C	During operation: 0° to 40° C Storage: -10° to 60° C	During operation: 0° to 45° C
Humidity	90% max. non-condensing	90% max. non-condensing	90% max. non-condensing
Primary Power Requirements	Three-phase, 380/480 VAC (+10%, -15%), 50/60 Hz (±2%)	Single-phase: 200/230 VAC (+10%, -15%), 50/60 Hz (±2%) Three-phase: 200/220 VAC (+10%, -15%), 50/60 Hz (±2%)	Three-phase, 240/480/575 VAC at 50/60 Hz
I/O Options	Digital I/O: 4,096 inputs and 4,096 outputs NPN - Standard: 40 inputs/40 outputs consisting of 24 user inputs/24 user outputs PNP - Optional: 32 transistor outputs; 8 relay outputs max. I/O **	Specialized signals: 7 inputs and 1 output General signals: 8 inputs and 8 outputs (8 transistor outputs)	Digital I/O: 4,096 inputs and 4,096 outputs NPN - Standard: 40 inputs/40 outputs consisting of 24 user inputs/24 user outputs PNP - Optional: 32 transistor outputs; 8 relay outputs max. I/O **
Interface	RS-232C/RS422: 1 ch	n/a	Ethernet (10 BASE-T / 100 BASE-TX)
Multiple Robot Control	Ability to control up to 8 robots/72 axes (not applicable for collaborative robots)	n/a	Ability to control up to 8 robots/72 axes
Programming Language	INFORM III, menu-driven programming	INFORM III, menu-driven programming	INFORM III, menu-driven programming
SAFETY			
Safety Specs	Category 3 PLc Meets ANSI/RIA R15.06-2012 and CSA Z434-03 Controller safety-rated emergency stop and safety gate inputs Programming pendant includes: safety-rated emergency stop pushbutton, 3-position enable switch with key-lock and manual brake release built into programming pendant	Category 3 PLc Meets ANSI/RIA R15.06-2012 and CSA Z434-03 Controller safety-rated emergency stop and safety gate inputs Programming pendant includes: safety-rated emergency stop pushbutton, 3-position enable switch with key-lock and manual brake release built into programming pendant	Category 4 PLc Meets ANSI/RIA 15.06-2012 and CSA Z434-03 Controller safety-rated emergency stop and safety gate inputs Programming pendant includes: safety-rated emergency stop pushbutton, 3-position enable switch with key-lock and manual brake release built into programming pendant
Functional Safety Unit	Category 3 (PLd SIL2) Robot range limiting (32 zones), speed limiting, tool change monitoring, tool angle monitoring, axis range limiting, axis speed monitoring, 3D graphic pendant set-up	Category 3 (PLd SIL2) Robot range limiting (32 zones), speed limiting, tool change monitoring, tool angle monitoring, axis range limiting, axis speed monitoring, 3D graphic pendant set-up	Category 3 (PLd SIL2) Robot range limiting (32 zones), speed limiting, tool change monitoring, tool angle monitoring, axis range limiting, axis speed monitoring, graphic pendant set-up
Protection Rating	IP54 (duct fan is IP2X)	IP20	IP54
Standard Software Features	Arm interference, collision detection, machine lock and safety interlock	Collision detection, machine lock and safety interlock	Arm interference, collision detection, machine lock and safety interlock
PENDANT			
Pendant Dimensions	152 mm x 299 mm x 53 mm	152 mm x 299 mm x 53 mm	169 mm x 314.5 mm x 50 mm
Pendant Display	5.7-inch full-color touchscreen, 640 x 480 (VGA)	5.7-inch full-color touchscreen, 640 x 480 (VGA)	5.7-inch full-color touchscreen, 640 x 480 (VGA)
Pendant Weight	0.73 kg	0.73 kg	0.998 kg
Pendant O/S	Windows® Embedded Compact 7	Windows® Embedded Compact 7	Windows® CE
Windows® Menu-Driven Interface	User-selectable touchscreen menu, multiple windows supported	User-selectable touchscreen menu, multiple windows supported	User-selectable touchscreen menu, multiple windows supported
Backup Media	One SD card slot; one USB port (2.0)	One SD card slot; one USB port (2.0)	One compact Flash slot; one USB port (1.1)
Protection Rating	IP54	IP54	IP65
MAINTENANCE			
Self-Diagnostics	Classifies errors and major/minor alarms and displays data; monitors reducers for predictive wear; alerts when major power components reach design life	Classifies errors and major/minor alarms and displays data; monitors reducers for predictive wear; alerts when major power components reach design life	Classifies errors and major/minor alarms and displays data; monitors reducers for predictive wear; alerts when major power components reach design life
Alarm Display	Alarm messages; alarm history provides instruction of how to repair fault	Alarm messages; alarm history provides instruction of how to repair fault	Alarm messages; alarm history provides instruction of how to repair fault
I/O Diagnostics	Permits simulated enabled/disabled input/output	Permits simulated enabled/disabled input/output	Permits simulated enabled/disabled input/output
TCP Calibration	Automatically calibrates parameters for end-effectors, optional TCP recovery function	Automatically calibrates parameters for end-effectors, optional TCP recovery function	Automatically calibrates parameters for end-effectors, optional TCP recovery function
Tool Weight Calibration	Automatically calibrates tool weight, center of gravity and inertia for peak performance	Automatically calibrates tool weight, center of gravity and inertia for peak performance	Automatically calibrates tool weight, center of gravity and inertia for peak performance

** PNP NOT SUPPORTED ON HC-SERIES ROBOTS WITH DIRECT TEACH FUNCTION
N/A = NOT APPLICABLE
TECHNICAL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



MLX300 SOFTWARE OPTION

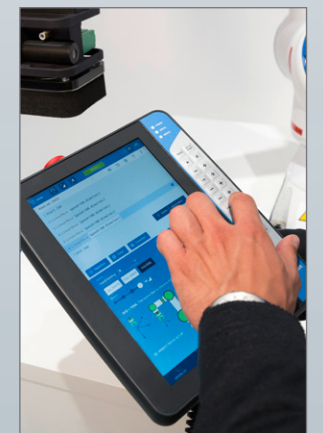
Robot and PLC integration

- Program in PLC environment; knowledge of robot programming language is minimized
- Single programming language for entire system
- Easy-to-use library of function blocks and sample programs
- Compatible with multiple HMIs
- Supports peripheral functions such as vision and conveyor tracking

SMART PENDANT

Next generation of robot programming

Yaskawa's Smart Pendant radically changes the way a robot is programmed. Featuring a 10-inch touchscreen with an easy-to-use tablet-based interface, Smart Pendant is ideal for novice robot users. Its patented, built-in Smart Frame technology eliminates the use of coordinate frames; the robot adapts to the user's position.



- Fast, simple learning curve
- Easy-to-understand operation; intuitive format
- Simplified INFORM programming supports powerful controller functionality
- User-friendly graphical interfaces for I/O configuration, safety setup and 3D simulation
- Third-party extension apps allow for powerful customization options

Please visit our web site for the most up-to-date list of robot models.

YASKAWA-MOTOMAN.COM



Yaskawa is the leading global manufacturer of industrial robots, low and medium voltage variable frequency drives, servo systems and machine controllers. Our standard products, as well as tailor-made solutions, are well known and have a high reputation for outstanding quality and reliability.

YASKAWA

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