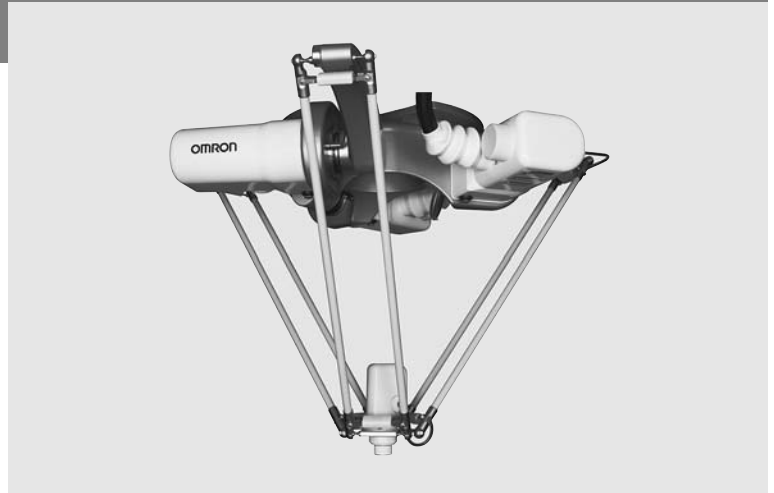


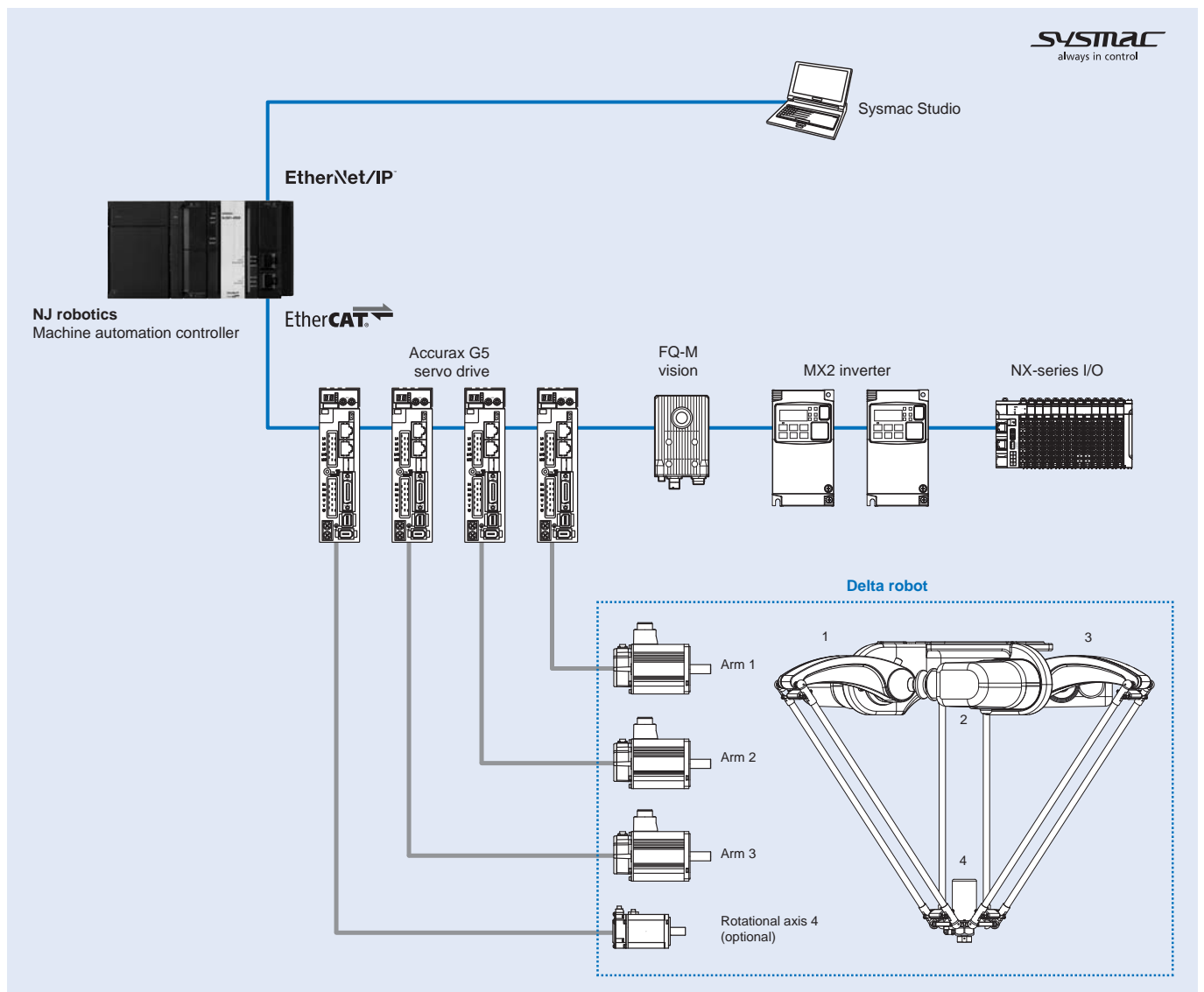
Delta robot

The fastest picking system integrated in the Sysmac platform

- Robot control integrated in the NJ robotics controller
- Control of up to 8 robots by one controller
- Degrees of freedom: 3 + 1 (rotational axis optional)
- Up to 200 cycle per minute
- Models from 450 to 1,600 mm working range
- Payload range: 1 to 8 kg
- Different types of Delta robot arms
- IP class range: IP65, IP67, IP69K
- Anti-collision detection option



System configuration



Note: Servo motors included in the Delta robot.

Specifications

Washdown Delta robot IP69K specifications

Model		CR_UGD4_R_HD@	CR_UGD4_NR_HD@	
Working volume	X, Y axis (stroke)	Ø 1100 mm		
	Z axis (stroke) ^{*1}	250 mm (maximum Ø 1100 mm) / 400 mm (center Ø 670 mm)		
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)	–	
Servo motor	Arm 1, 2, 3	Model	R88M-K1K030T-BS2-V2	
		Capacity	1000 W	
	Rotational axis 4	Model	R88M-K75030T-BS2	–
		Capacity	750 W	–
Repeatability ^{*2}	X, Y, Z axis	±0.2 mm		
	θ axis	±0.3 deg		
Maximum payload	2 kg			
Maximum through-put ^{*3}	150 CPM ^{*4}			
θ axis maximum torque	According to the servo motor		–	
Travel limit	1. Soft limit, 2. Mechanical stopper (X, Y, Z axis)			
Noise level	< 68 dB (A)			
Ambient temperature	Operating: 5°C to 45°C Storage: -25°C to 60°C			
Relative humidity	Max. 90%			
Protection class	IP69K			
Weight (kg)	100 kg			

*1 For further details please check the dimensional drawing in the next section.

*2 This is the value at a constant ambient temperature.

*3 With 0.1 kg payload. When reciprocating 305 mm in horizontal and 25 mm in vertical directions.

*4 CPM: Cycle per minutes. Check the note 3 for the cycle definition.

Washdown Delta robot IP67 specifications

Model		R6Y31110H03067NJ5	R6Y31110L03067NJ5	R6Y30110S03067NJ5	
Working volume	X, Y axis (stroke)	Ø 1100 mm			
	Z axis (stroke) ^{*1}	300 mm (maximum Ø 1100 mm) / 450 mm (center Ø 580 mm)			
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)		–	
Servo motor	Arm 1, 2, 3	Model	R88M-K1K030T-BS2		
		Capacity	1000 W		
	Rotational axis 4	Model	R88M-K10030T-S2	R88M-K05030T-S2	–
		Capacity	100 W	50 W	–
Repeatability ^{*2}	X, Y, Z axis	±0.2 mm			
	θ axis	±0.1 deg		–	
Maximum payload	3 kg				
Maximum through-put ^{*3}	150 CPM ^{*4}				
θ axis tolerable moment of inertia ^{*5}	0.035 kgm ²		0.01 kgm ²	–	
User tubing (outer diameter)	Ø 6				
Travel limit	1. Soft limit, 2. Mechanical stopper (X, Y, Z axis)				
Noise level	< 73.7 dB (A)				
Ambient temperature	0 to 45°C				
Relative humidity	Max. 85%				
Protection class	IP67				
Weight (kg)	75 kg				

*1 For further details please check the dimensional drawing in the next section.

*2 This is the value at a constant ambient temperature.

*3 With 0.1 kg payload. When reciprocating 305 mm in horizontal and 25 mm in vertical directions.

*4 CPM: Cycle per minutes. Check the note 3 for the cycle definition.

*5 There are limits to acceleration coefficient settings.

Washdown Mini Delta robot IP67 specifications

Model		R6Y31065H02067NJ5	R6Y31065L02067NJ5	R6Y30065S02067NJ5	
Working volume	X, Y axis (stroke)	Ø 650 mm			
	Z axis (stroke) ^{*1}	150 mm (maximum Ø 650 mm) / 250 mm (center Ø 480 mm)			
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)		–	
Servo motor	Arm 1, 2, 3	Model	R88M-K40030T-BS2		
		Capacity	400 W		
	Rotational axis 4	Model	R88M-K10030T-S2	R88M-K05030T-S2	–
		Capacity	100 W	50 W	–
Repeatability ^{*2}	X, Y, Z axis	±0.1 mm			
	θ axis	±0.1 deg		–	
Maximum payload		2 kg			
Maximum through-put ^{*3}		200 CPM ^{*4}			
θ axis tolerable moment of inertia ^{*5}		0.035 kgm ²	0.01 kgm ²	–	
User tubing (outer diameter)		Ø 6			
Travel limit		1. Soft limit, 2. Mechanical stopper (X, Y, Z axis)			
Noise level		< 64.5 dB (A)			
Ambient temperature		0 to 45°C			
Relative humidity		Max. 85%			
Protection class		IP67			
Weight (kg)		32 kg			

^{*1} For further details please check the dimensional drawing in the next section.

^{*2} This is the value at a constant ambient temperature.

^{*3} With 0.1 kg payload. When reciprocating 305 mm in horizontal and 25 mm in vertical directions.

^{*4} CPM: Cycle per minutes. Check the note 3 for the cycle definition.

^{*5} There are limits to acceleration coefficient settings.

Washdown Mini Delta robot IP65 specifications

Model		CR_UGD4MINI_R_TS	CR_UGD4MINI_NR_TS	
Working volume	X, Y axis (stroke)	Ø 500 mm		
	Z axis (stroke) ^{*1}	135 mm (maximum Ø 450 mm)	155 mm (maximum Ø 500 mm)	
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)		
Servo motor	Arm 1, 2, 3	Model	R88M-K40030T-BS2	
		Capacity	400 W	
	Rotational axis 4	Model	R88M-K40030T-BS2	
		Capacity	400 W	
Repeatability ^{*2}	X, Y, Z axis	±0.2 mm		
	θ axis	±0.3 deg		
Maximum payload		1 kg		
Maximum through-put ^{*3}		200 CPM ^{*4}		
θ axis maximum torque		According to the servo motor		
User tubing (outer diameter)		Ø 8 ^{*5}		
Travel limit		1. Soft limit, 2. Mechanical stopper (X, Y, Z axis)		
Noise level		< 68 dB (A)		
Ambient temperature		5°C to 45°C		
Relative humidity		Max. 90%		
Protection class		IP65		
Weight (kg)		25 kg		

^{*1} For further details please check the dimensional drawing in the next section.

^{*2} This is the value at a constant ambient temperature.

^{*3} With 0.1 kg payload. When reciprocating 305 mm in horizontal and 25 mm in vertical directions.

^{*4} CPM: Cycle per minutes. Check the note 3 for the cycle definition.

^{*5} Only for the air suctioning. The air injection is not allowed.

Delta robot XXL specifications

Model		CR_UGD4_XXLH_R	CR_UGD4_XXLH_NR	
Working volume	X, Y axis (stroke)	Ø 1600 mm		
	Z axis (stroke) ¹	350 mm (maximum Ø 1600 mm) / 550 mm (center Ø 815 mm)		
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)	–	
Servo motor	Arm 1, 2, 3	Model	R88M-K3K030C-BS2	
		Capacity	3000 W	
	Rotational axis 4	Model	R88M-K1K030C-BS2	–
		Capacity	1000 W	–
Repeatability ²	X, Y, Z axis	±1 mm		
	θ axis	±0.3 deg		
Maximum payload	8 kg			
Maximum through-put ³	80 CPM ⁴			
θ axis maximum torque	According to the servo motor		–	
User tubing (outer diameter)	Ø 8 ⁵			
Travel limit	1. Soft limit, 2. Mechanical stopper (X, Y, Z axis)			
Noise level	< 70 dB (A)			
Ambient temperature	5°C to 45°C			
Relative humidity	Max. 90%			
Protection class	IP65			
Weight (kg)	115 kg			

¹ For further details please check the dimensional drawing in the next section.

² This is the value at a constant ambient temperature.

³ With 0.1 kg payload. When reciprocating 305 mm in horizontal and 25 mm in vertical directions.

⁴ CPM: Cycle per minutes. Check the note 3 for the cycle definition.

⁵ Only for the air suctioning. The air injection is not allowed.

Delta robot XL specifications

Model		CR_UGD4_XL_R	CR_UGD4_XL_NR	
Working volume	X, Y axis (stroke)	Ø 1300 mm		
	Z axis (stroke) ¹	250 mm (maximum Ø 1300 mm) / 400 mm (center Ø 875 mm)		
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)	–	
Servo motor	Arm 1, 2, 3	Model	R88M-K1K030T-BS2	
		Capacity	1000 W	
	Rotational axis 4	Model	R88M-K1K030T-BS2	–
		Capacity	1000 W	–
Repeatability ²	X, Y, Z axis	±0.2 mm		
	θ axis	±0.3 deg		
Maximum payload	2 kg			
Maximum through-put ³	120 CPM ⁴			
θ axis maximum torque	According to the servo motor		–	
User tubing (outer diameter)	Ø 8 ⁵			
Travel limit	1. Soft limit, 2. Mechanical stopper (X, Y, Z axis)			
Noise level	< 68 dB (A)			
Ambient temperature	5°C to 45°C			
Relative humidity	Max. 90%			
Protection class	IP65			
Weight (kg)	65 kg			

¹ For further details please check the dimensional drawing in the next section.

² This is the value at a constant ambient temperature.

³ With 0.1 kg payload. When reciprocating 305 mm in horizontal and 25 mm in vertical directions.

⁴ CPM: Cycle per minutes. Check the note 3 for the cycle definition.

⁵ Only for the air suctioning. The air injection is not allowed.

Delta robot specifications

Model		CR_UGD4_R	CR_UGD4_NR	
Working volume	X, Y axis (stroke)	Ø 1100 mm		
	Z axis (stroke) ¹	250 mm (maximum Ø 1100 mm) / 400 mm (center Ø 580 mm)		
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)	–	
Servo motor	Arm 1, 2, 3	Model	R88M-K1K030T-BS2	
		Capacity	1000 W	
	Rotational axis 4	Model	R88M-K1K030T-BS2	–
		Capacity	1000 W	–
Repeatability ²	X, Y, Z axis	±0.3 mm		
	θ axis	±0.4 deg		
Maximum payload	2 kg			
Maximum through-put ³	150 CPM ⁴			
θ axis maximum torque	According to the servo motor		–	
User tubing (outer diameter)	Ø 8 ⁵			
Travel limit	1. Soft limit, 2. Mechanical stopper (X, Y, Z axis)			
Noise level	< 68 dB (A)			
Ambient temperature	5°C to 45°C			
Relative humidity	Max. 90%			
Protection class	IP65			
Weight (kg)	65 kg			

¹ For further details please check the dimensional drawing in the next section.

² This is the value at a constant ambient temperature.

³ With 0.1 kg payload. When reciprocating 305 mm in horizontal and 25 mm in vertical directions.

⁴ CPM: Cycle per minutes. Check the note 3 for the cycle definition.

⁵ Only for the air suctioning. The air injection is not allowed.

Mini Delta robot specifications

Model		CR_UGD4MINI_R	CR_UGD4MINI_NR	
Working volume	X, Y axis (stroke)	Ø 500 mm		
	Z axis (stroke) ¹	135 mm (maximum Ø 450 mm)	155 mm (maximum Ø 500 mm)	
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)	–	
Servo motor	Arm 1, 2, 3	Model	R88M-K40030T-BS2	
		Capacity	400 W	
	Rotational axis 4	Model	R88M-K40030T-BS2	–
		Capacity	400 W	–
Repeatability ²	X, Y, Z axis	±0.2 mm		
	θ axis	±0.3 deg		
Maximum payload	1 kg			
Maximum through-put ³	200 CPM ⁴			
θ axis maximum torque	According to the servo motor		–	
User tubing (outer diameter)	Ø 8 ⁵			
Travel limit	1. Soft limit, 2. Mechanical stopper (X, Y, Z axis)			
Noise level	< 68 dB (A)			
Ambient temperature	5°C to 45°C			
Relative humidity	Max. 90%			
Protection class	IP65			
Weight (kg)	25 kg			

¹ For further details please check the dimensional drawing in the next section.

² This is the value at a constant ambient temperature.

³ With 0.1 kg payload. When reciprocating 305 mm in horizontal and 25 mm in vertical directions.

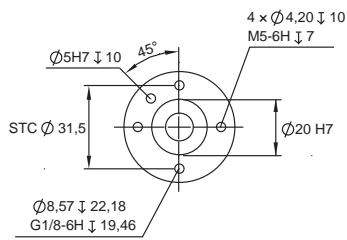
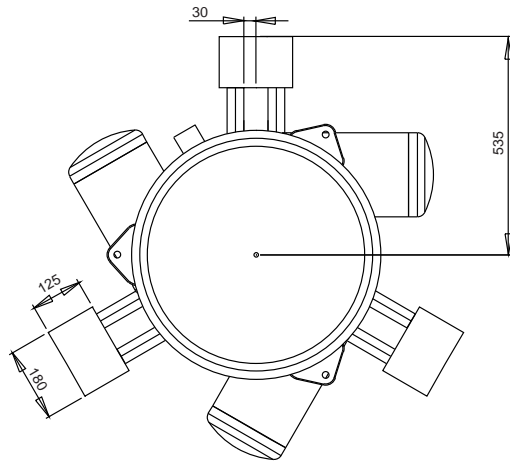
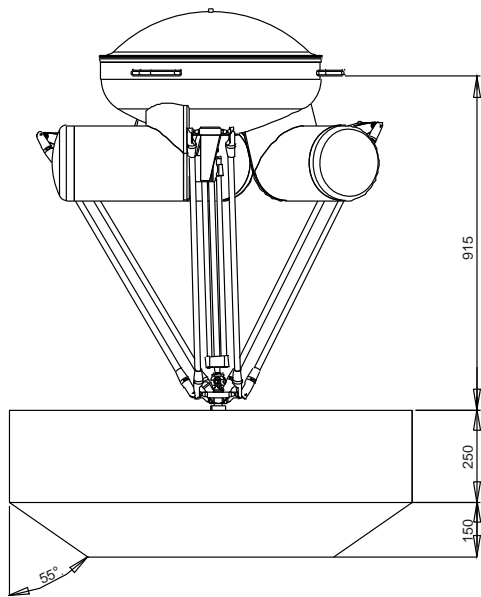
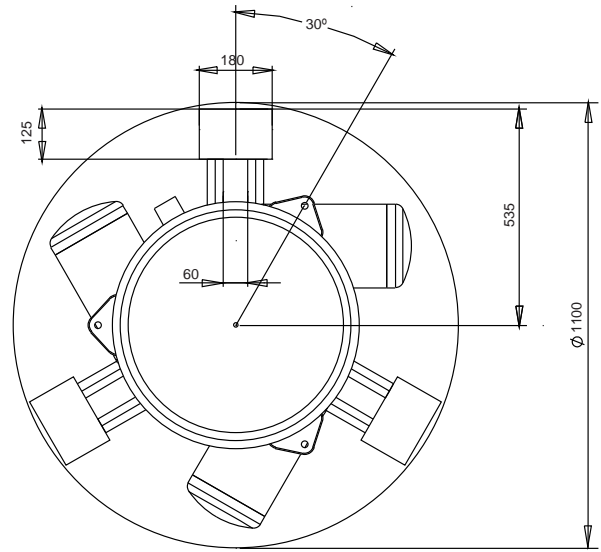
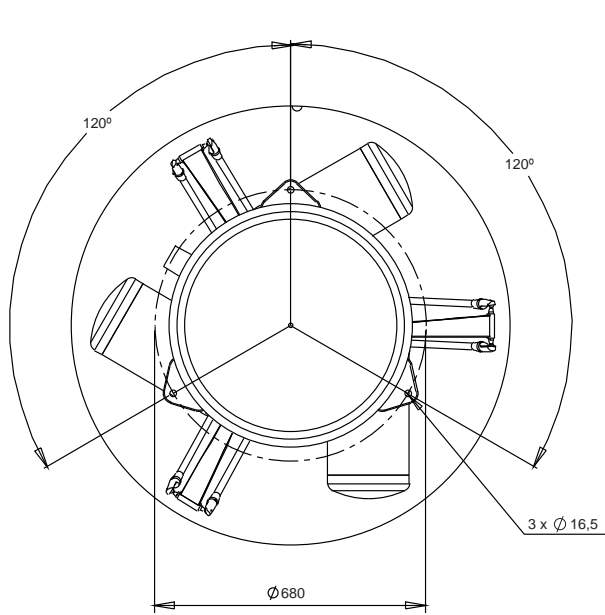
⁴ CPM: Cycle per minutes. Check the note 3 for the cycle definition.

⁵ Only for the air suctioning. The air injection is not allowed.

Dimensions

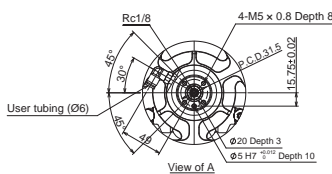
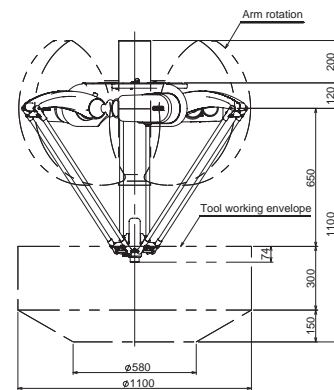
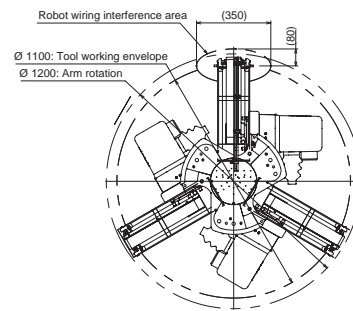
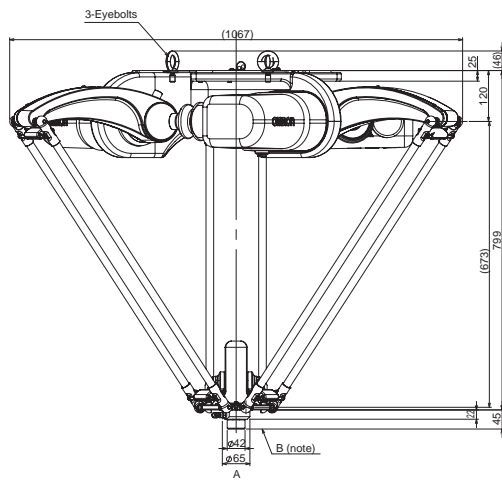
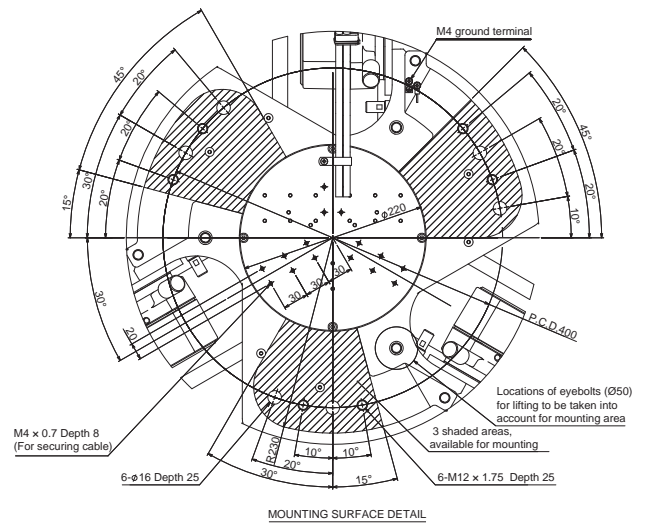
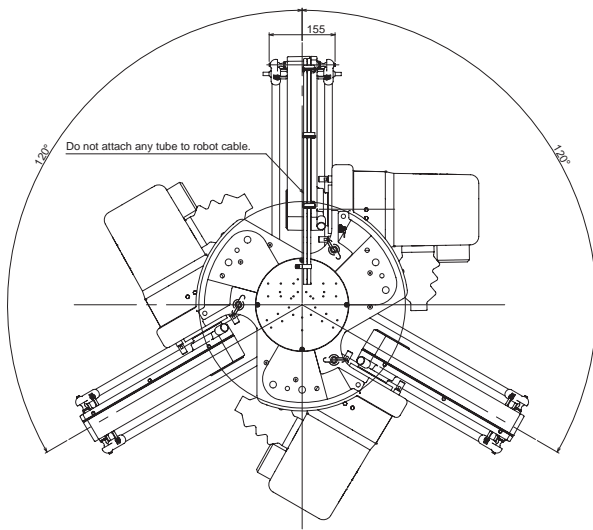
Washdown Delta robot IP69K dimensions

CR_UGD4_@R_HD@



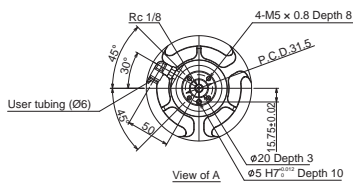
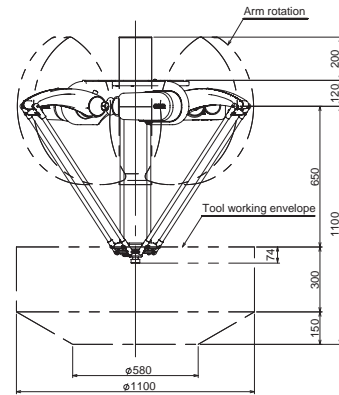
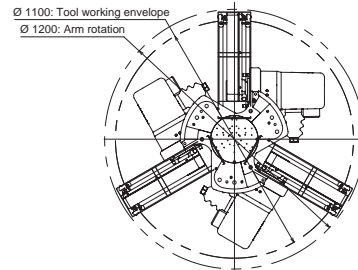
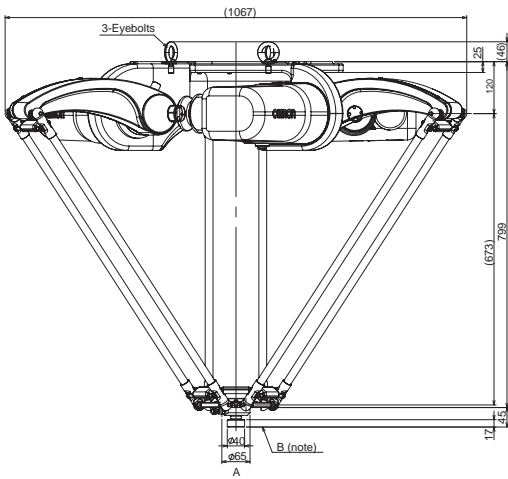
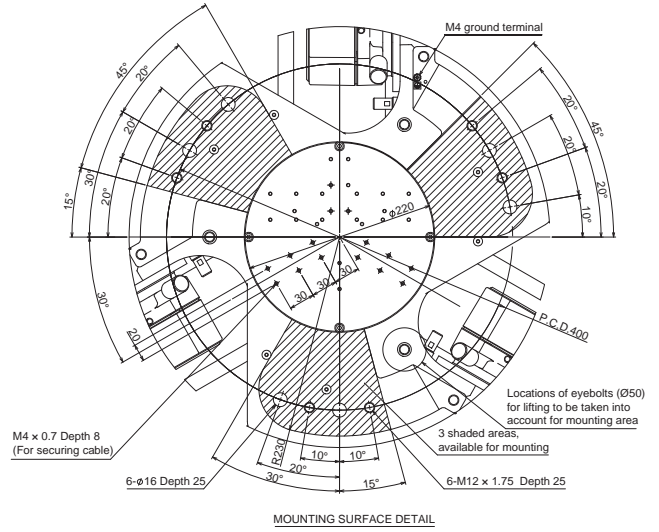
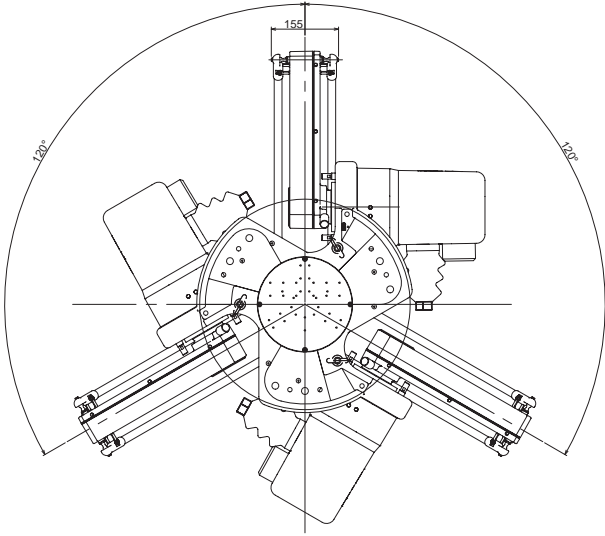
Gripper dimensions

Washdown Delta robot IP67 dimensions
R6Y31110@03067NJ5 (3 axes + 1 rotational axis)



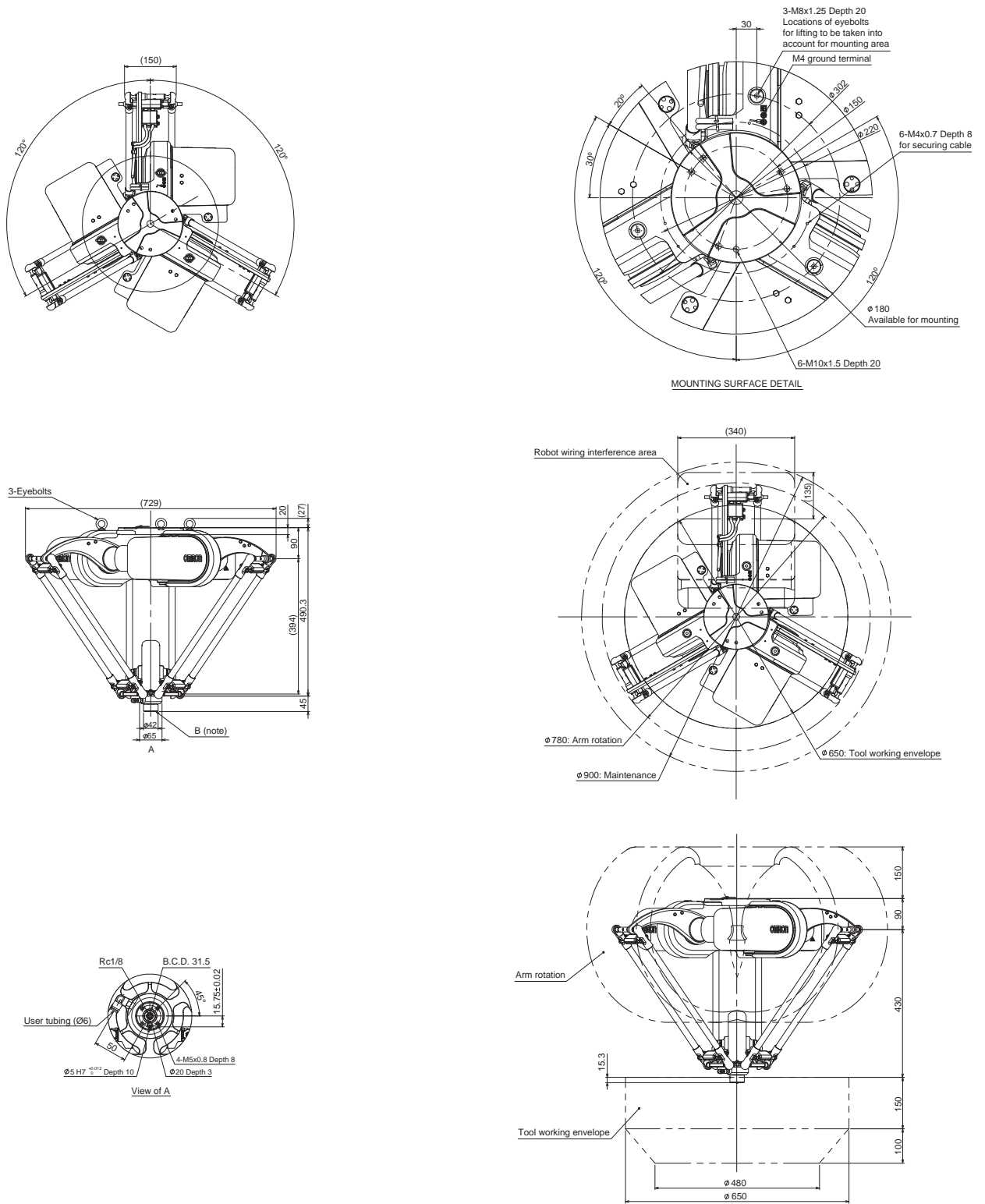
Note: The three areas of the robot base are available for mounting. Leave other area unoccupied for other needs (e.g. wiring). Also note the locations of the eyebolts when designing a mounting frame. Any part of end-effector should not stick out above the surface of B.

R6Y30110S03067NJ5 (3 axes)



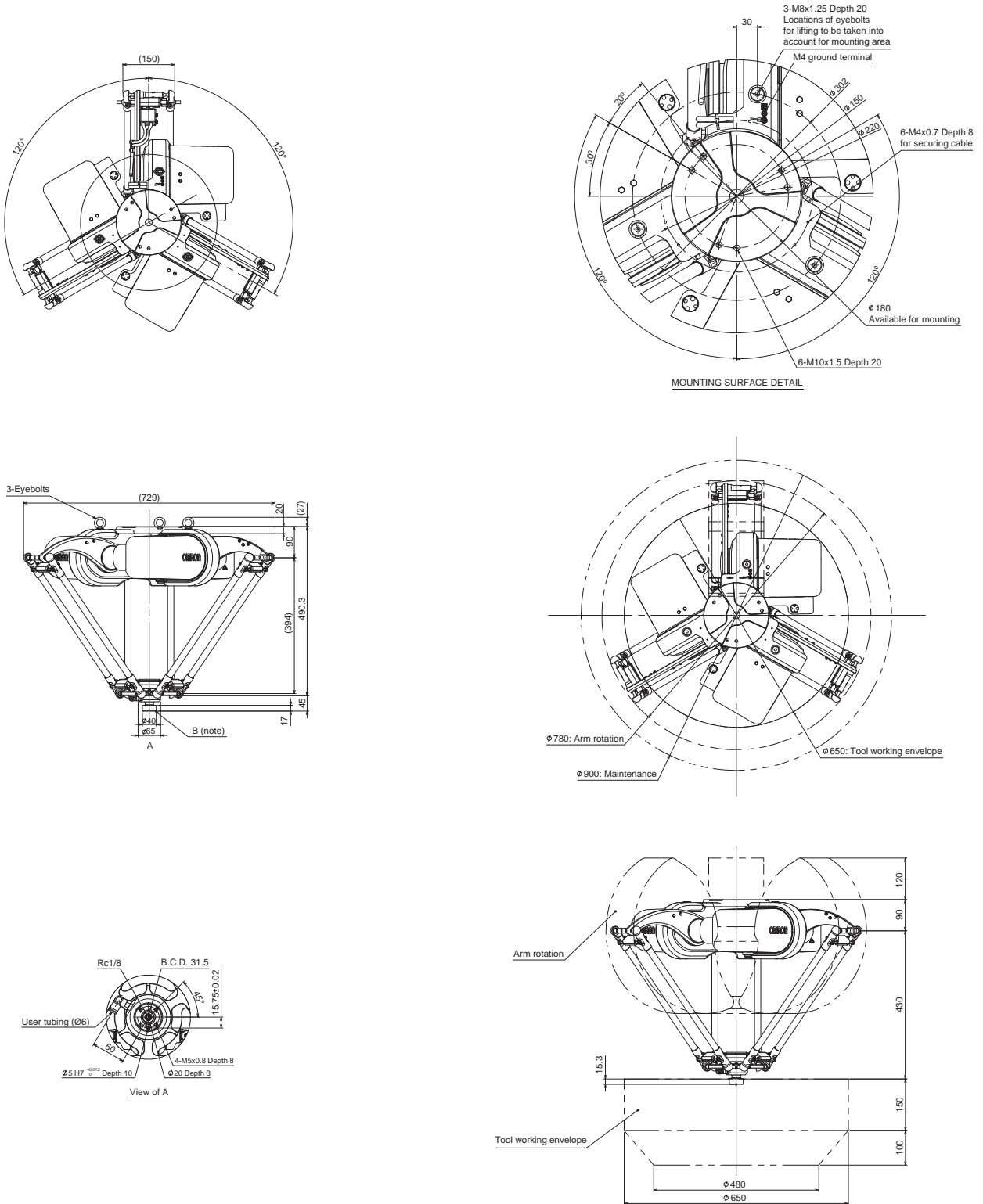
Note: The three areas of the robot base are available for mounting. Leave other area unoccupied for other needs (e.g. wiring). Also note the locations of the eyebolts when designing a mounting frame. Any part of end-effector should not stick out above the surface of B.

Washdown Mini Delta robot IP67 dimensions
R6Y31065@02067NJ5 (3 axes + 1 rotational axis)



Note: Mounting area should be smaller than 180 mm diameter to avoid collision with robot cable. Frame of base should not be in the arm moving area. Any part of end-effector should not stick out above the surface of B.

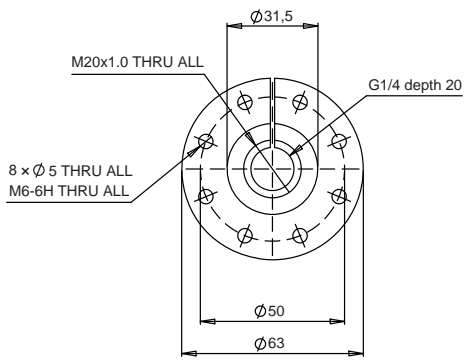
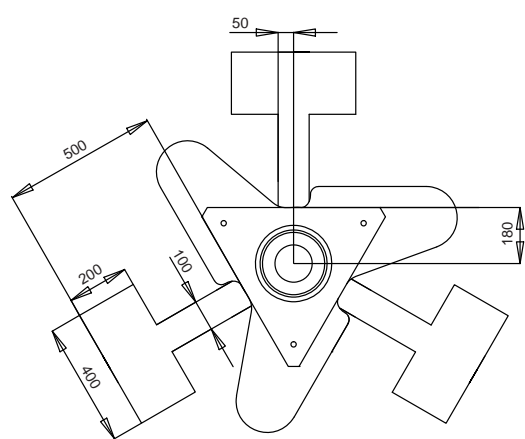
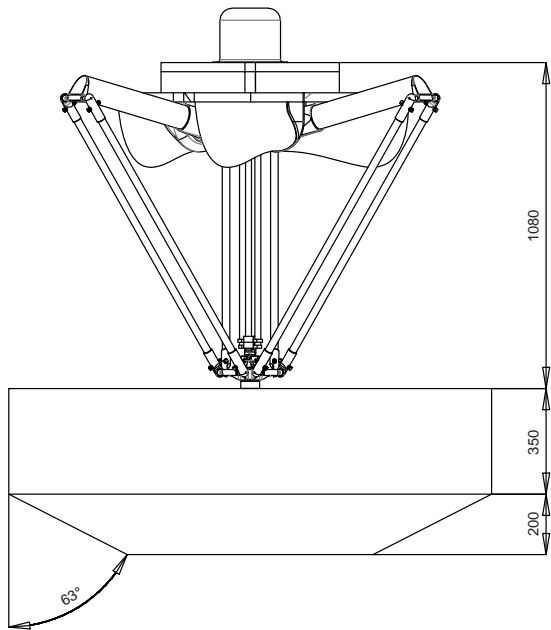
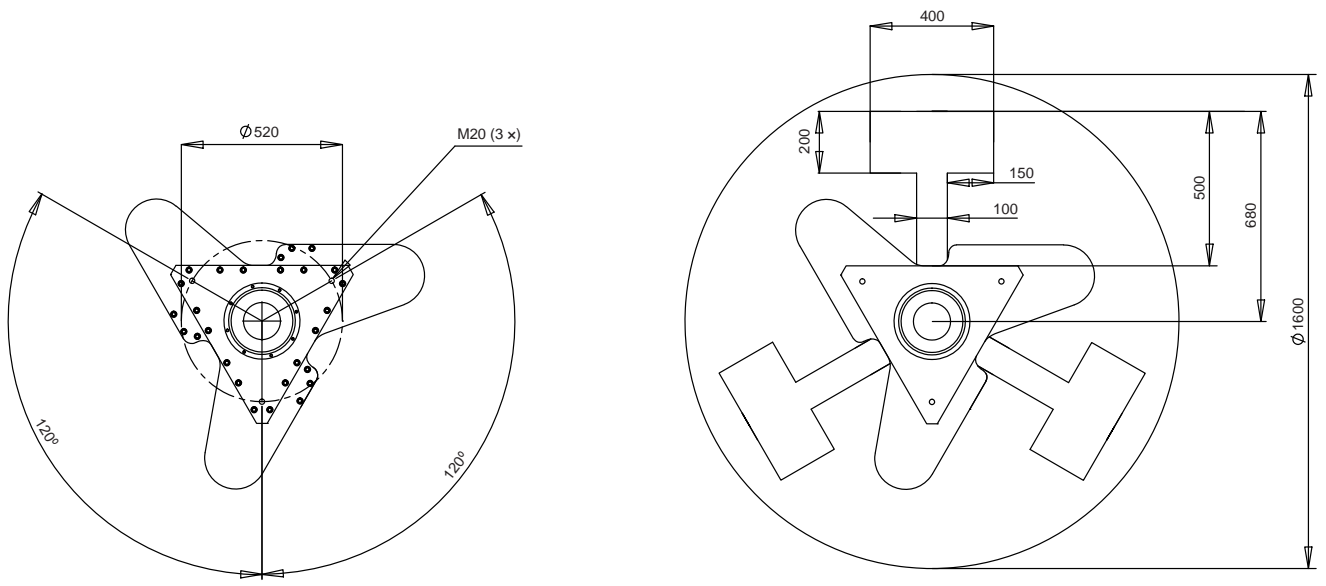
R6Y30065S02067NJ5 (3 axes)



Note: Mounting area should be smaller than 180 mm diameter to avoid collision with robot cable. Frame of base should not be in the arm moving area. Any part of end-effector should not stick out above the surface of B.

Delta robot XXL dimensions

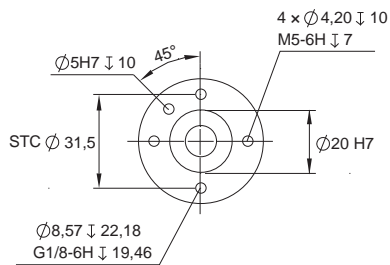
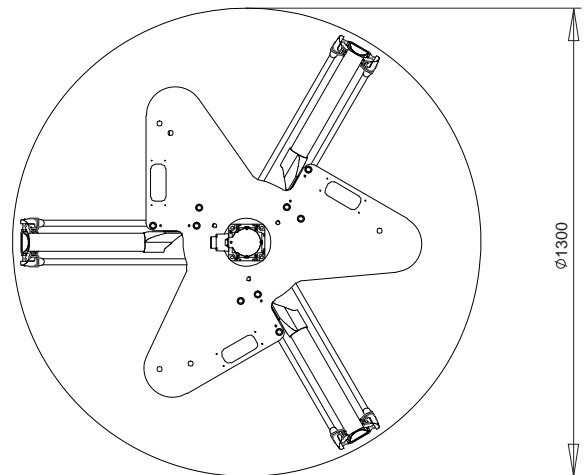
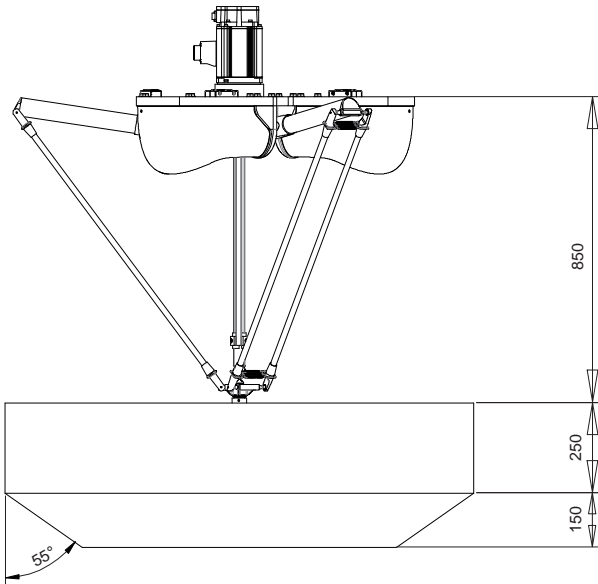
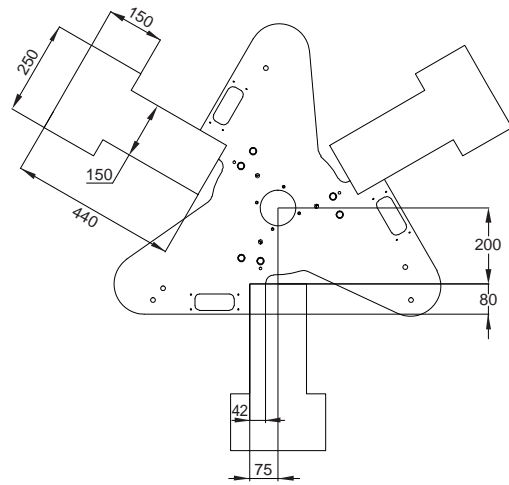
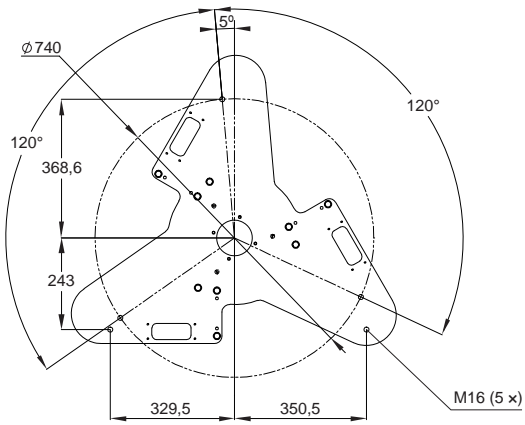
CR_UGD4_XXLH_@R



Gripper dimensions

Delta robot XL dimensions

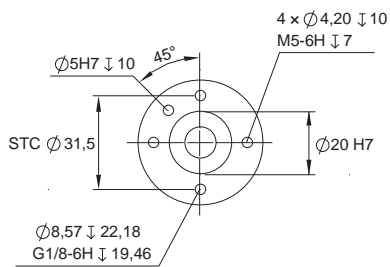
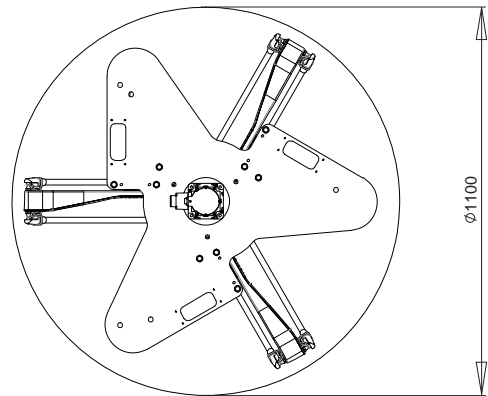
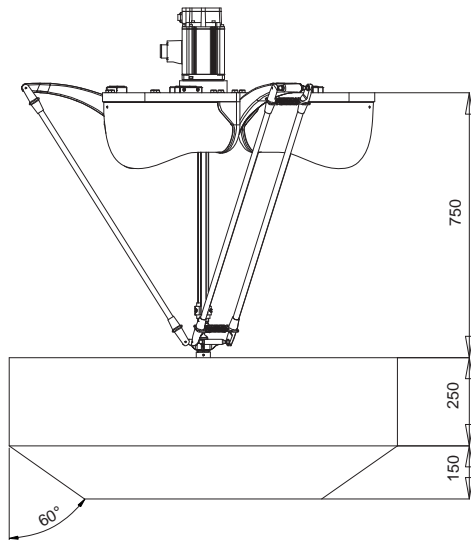
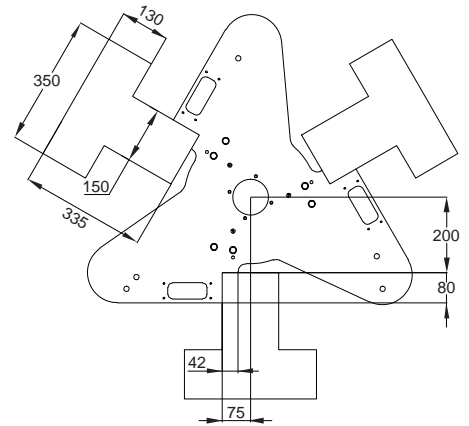
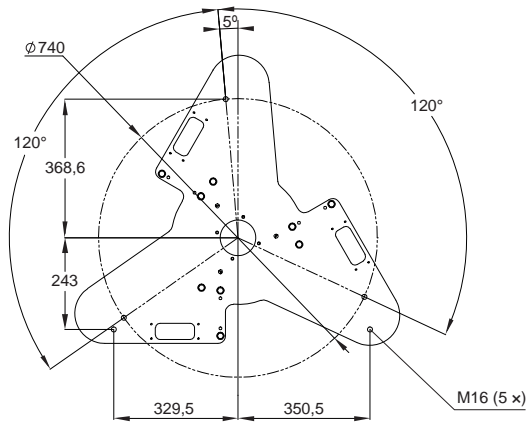
CR_UGD4_XL_@R



Gripper dimensions

Delta robot dimensions

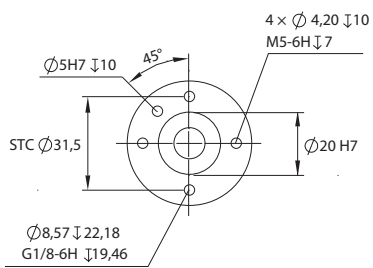
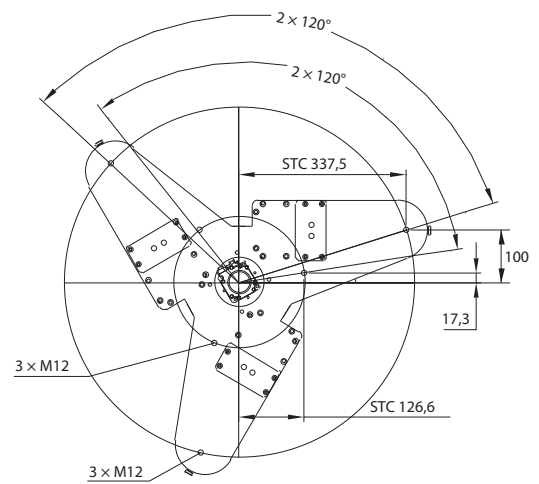
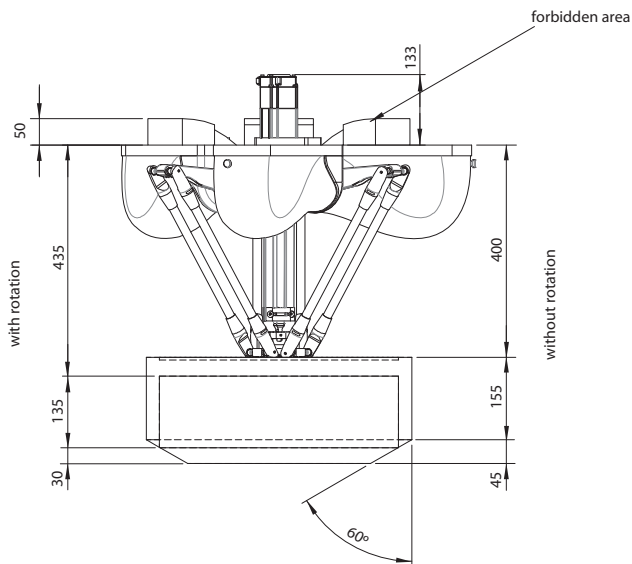
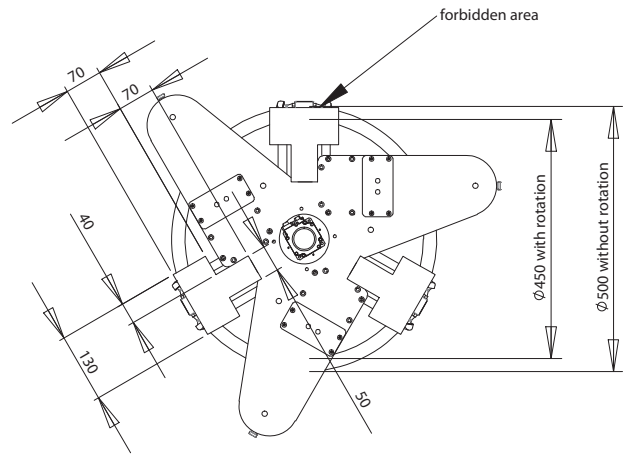
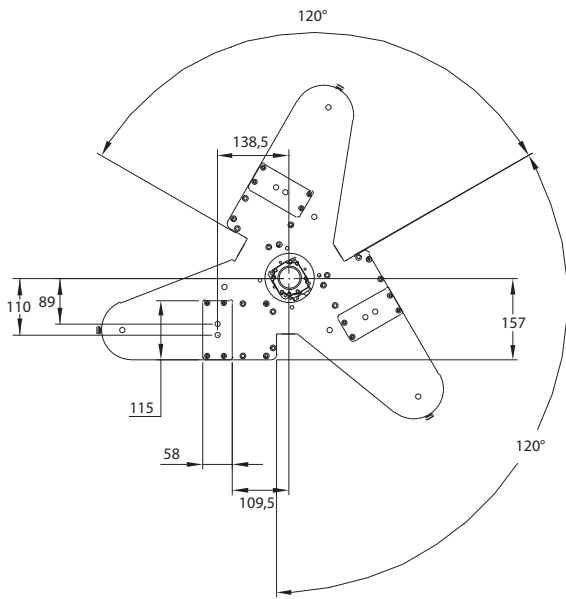
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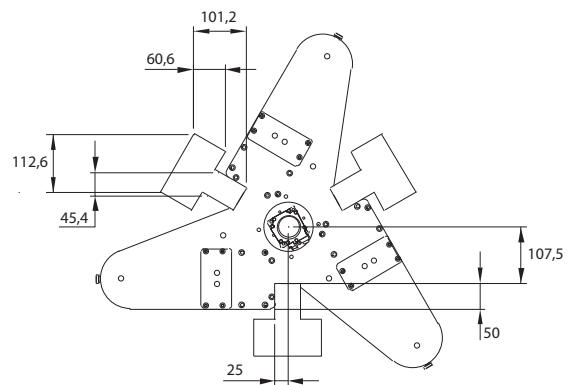
Gripper dimensions

Washdown Mini Delta robot IP65 / Mini Delta robot dimensions

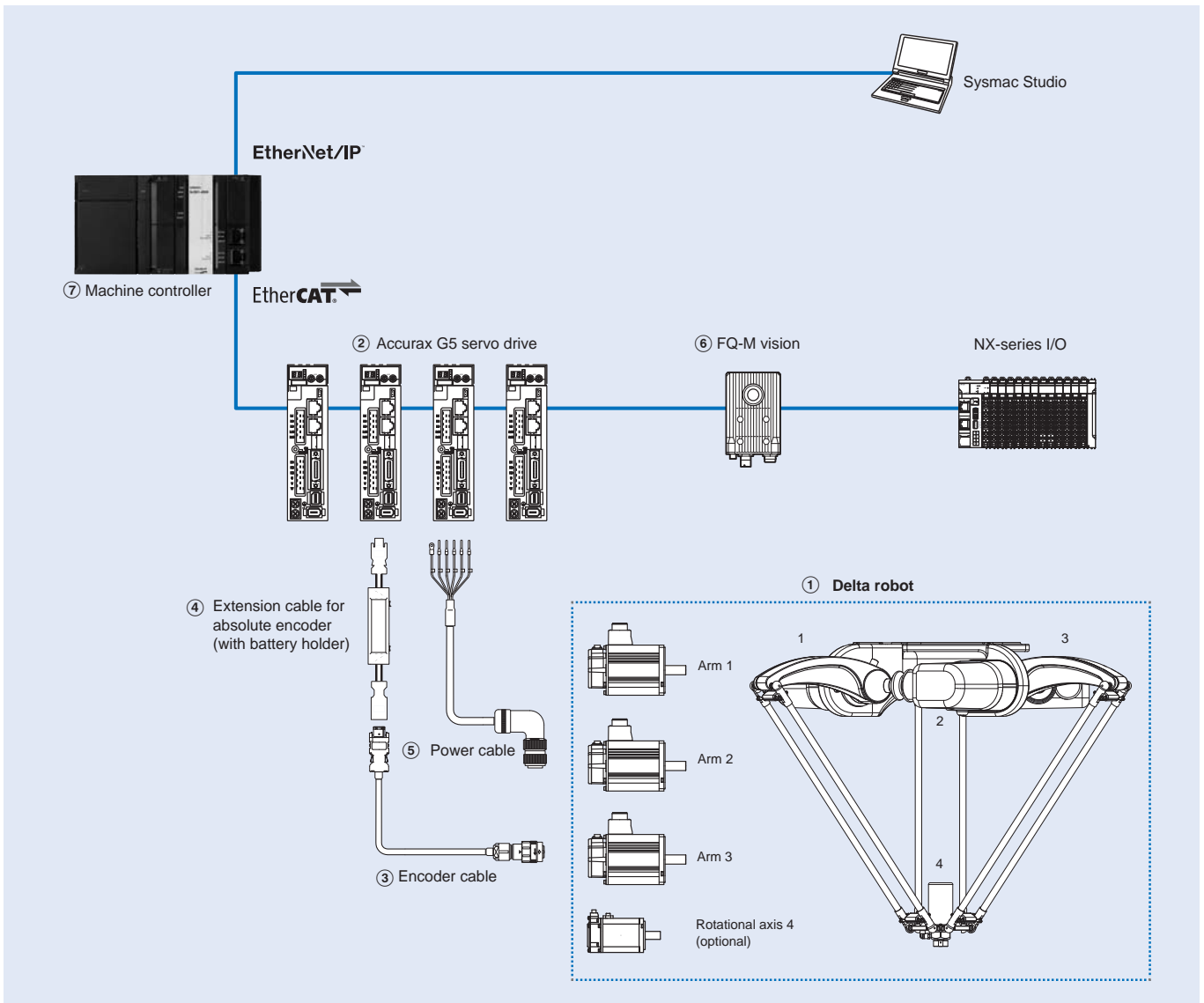
CR_UGD4MINI_@R@



Gripper dimensions

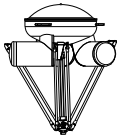
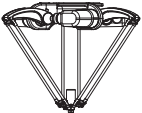




Ordering information

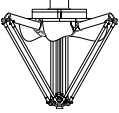





Note: Servo motors included in the Delta robot.

Washdown Delta robot series

Symbol	Model	Cable length	Max. payload	Working range	Description	Axis	Applicable servo (2)	
 Delta robot IP69K	CR_UGD4_R_HD3 CR_UGD4_R_HD5 CR_UGD4_R_HD10 CR_UGD4_R_HD15 CR_UGD4_R_HD20	3 m 5 m 10 m 15 m 20 m	2 kg	Ø 1100 x 250 mm	3 + 1 axes Hygienic Design (only this robot includes the cables)	Arm 1	R88D-KN15H-ECT	
	CR_UGD4_NR_HD3 CR_UGD4_NR_HD5 CR_UGD4_NR_HD10 CR_UGD4_NR_HD15 CR_UGD4_NR_HD20	3 m 5 m 10 m 15 m 20 m				3 axes Hygienic Design (only this robot includes the cables)	Arm 2	R88D-KN15H-ECT
 Delta robot IP67	R6Y31110H03067NJ5		3 kg	Ø 1100 x 450 mm	3 + 1 axes (high inertia rotational axis)	Arm 1	R88D-KN15H-ECT	
						Arm 2	R88D-KN15H-ECT	
						Arm 3	R88D-KN15H-ECT	
	R6Y31110L03067NJ5				3 + 1 axes (low inertia rotational axis)	Rotational 4	R88D-KN01H-ECT	
						Arm 1	R88D-KN15H-ECT	
						Arm 2	R88D-KN15H-ECT	
						Arm 3	R88D-KN15H-ECT	
	R6Y30110S03067NJ5				3 axes	Rotational 4	R88D-KN01H-ECT	
						Arm 1	R88D-KN15H-ECT	
 Mini Delta robot IP67	R6Y31065H02067NJ5		2 kg	Ø 650 x 250 mm	3 + 1 axes (high inertia rotational axis)	Arm 1	R88D-KN04H-ECT	
						Arm 2	R88D-KN04H-ECT	
						Arm 3	R88D-KN04H-ECT	
	R6Y31065L02067NJ5				3 + 1 axes (low inertia rotational axis)	Rotational 4	R88D-KN01H-ECT	
						Arm 1	R88D-KN04H-ECT	
						Arm 2	R88D-KN04H-ECT	
						Arm 3	R88D-KN04H-ECT	
	R6Y30065S02067NJ5				3 axes	Rotational 4	R88D-KN01H-ECT	
						Arm 1	R88D-KN04H-ECT	
 Mini Delta robot IP65	CR_UGD4MINI_R_TS		1 kg	Ø 450 x 135 mm	3 + 1 axes	Arm 1	R88D-KN04H-ECT	
						Arm 2	R88D-KN04H-ECT	
	CR_UGD4MINI_NR_TS				Ø 500 x 155 mm	3 axes	Arm 3	R88D-KN04H-ECT
							Rotational 4	R88D-KN04H-ECT
							Arm 1	R88D-KN04H-ECT
							Arm 2	R88D-KN04H-ECT

Delta robot series

Symbol	Model	Max. payload	Working range	Description	Axis	Applicable servo (2)	
 Delta robot XXL	CR_UGD4_XXLH_R	8 kg	Ø 1600 x 550 mm	3 + 1 axes	Arm 1	R88D-KN30F-ECT	
	CR_UGD4_XXLH_NR				Arm 2	R88D-KN30F-ECT	
 Delta robot XL	CR_UGD4_XL_R	2 kg	Ø 1300 x 400 mm	3 + 1 axes	Arm 3	R88D-KN30F-ECT	
					Rotational 4	R88D-KN15F-ECT	
	CR_UGD4_XL_NR				3 axes	Arm 1	R88D-KN30F-ECT
						Arm 2	R88D-KN30F-ECT
						Arm 3	R88D-KN30F-ECT
						Rotational 4	R88D-KN15H-ECT
 Delta robot	CR_UGD4_R	2 kg	Ø 1100 x 400 mm	3 + 1 axes	Arm 1	R88D-KN15H-ECT	
	CR_UGD4_NR				Arm 2	R88D-KN15H-ECT	
						Arm 3	R88D-KN15H-ECT
						Rotational 4	R88D-KN15H-ECT
 Mini Delta robot	CR_UGD4MINI_R	1 kg	Ø 450 x 135 mm	3 + 1 axes	Arm 1	R88D-KN15H-ECT	
					Arm 2	R88D-KN15H-ECT	
					Arm 3	R88D-KN15H-ECT	
	CR_UGD4MINI_NR				3 axes	Rotational 4	R88D-KN04H-ECT
						Arm 1	R88D-KN04H-ECT
						Arm 2	R88D-KN04H-ECT

Encoder cables

Symbol	Applicable Delta robots	Model	Appearance	
③	*1 CR_UGD4_@_HD@ (Arm 1, 2, 3) R6Y3@110@03067NJ5 CR_UGD4_XXLH CR_UGD4_XL CR_UGD4	1.5 m	R88A-CRKC001-5NR-E	
		3 m	R88A-CRKC003NR-E	
		5 m	R88A-CRKC005NR-E	
		10 m	R88A-CRKC010NR-E	
		15 m	R88A-CRKC015NR-E	
	*1 CR_UGD4_@_HD@ (Rotational axis 4) R6Y3@065@02067NJ5 CR_UGD4MINI_@_TS CR_UGD4MINI	1.5 m	R88A-CRKA001-5CR-E	
		3 m	R88A-CRKA003CR-E	
		5 m	R88A-CRKA005CR-E	
		10 m	R88A-CRKA010CR-E	
		15 m	R88A-CRKA015CR-E	
20 m	R88A-CRKA020CR-E			

*1. The CR_UGD4_@_HD@ models include the encoder cables.

Absolute encoder battery cable (encoder extension cable only)

Symbol	Specifications	Model	Appearance	
④	Absolute encoder battery cable	Battery not included	0.3 m	<p>Battery holder</p>
		Battery included	0.3 m	
	Absolute encoder backup battery	2.000 mA.h, 3.6 V	—	R88A-BAT01G

Power and brake cables

Symbol	Applicable Delta robots	Model	Appearance			
⑤	*1 CR_UGD4_@_HD@	Arm 1, 2, 3	Power cable with brake	1.5 m	R88A-CAGB001-5BR-E	
				3 m	R88A-CAGB003BR-E	
				5 m	R88A-CAGB005BR-E	
				10 m	R88A-CAGB010BR-E	
				15 m	R88A-CAGB015BR-E	
				20 m	R88A-CAGB020BR-E	
		Rotational axis 4	Power cable without brake	1.5 m	R88A-CAKA001-5SR-E	
				3 m	R88A-CAKA003SR-E	
				5 m	R88A-CAKA005SR-E	
				10 m	R88A-CAKA010SR-E	
				15 m	R88A-CAKA015SR-E	
				20 m	R88A-CAKA020SR-E	
		Rotational axis 4	Brake cable	1.5 m	R88A-CAKA001-5BR-E	
				3 m	R88A-CAKA003BR-E	
				5 m	R88A-CAKA005BR-E	
				10 m	R88A-CAKA010BR-E	
				15 m	R88A-CAKA015BR-E	
				20 m	R88A-CAKA020BR-E	
	R6Y3@110@03067NJ5	Arm 1, 2, 3	Power cable with brake	1.5 m	R88A-CAGB001-5BR-E	
				3 m	R88A-CAGB003BR-E	
				5 m	R88A-CAGB005BR-E	
				10 m	R88A-CAGB010BR-E	
				15 m	R88A-CAGB015BR-E	
				20 m	R88A-CAGB020BR-E	
Rotational axis 4		Power cable without brake	1.5 m	R88A-CAGB001-5SR-E		
			3 m	R88A-CAGB003SR-E		
			5 m	R88A-CAGB005SR-E		
			10 m	R88A-CAGB010SR-E		
			15 m	R88A-CAGB015SR-E		
			20 m	R88A-CAGB020SR-E		
CR_UGD4_XXLH	Arm 1, 2, 3	Power cable with brake	1.5 m	R88A-CAGD001-5BR-E		
			3 m	R88A-CAGD003BR-E		
			5 m	R88A-CAGD005BR-E		
			10 m	R88A-CAGD010BR-E		
			15 m	R88A-CAGD015BR-E		
			20 m	R88A-CAGD020BR-E		
	Rotational axis 4	Power cable with brake	1.5 m	R88A-CAKF001-5BR-E		
			3 m	R88A-CAKF003BR-E		
			5 m	R88A-CAKF005BR-E		
			10 m	R88A-CAKF010BR-E		
			15 m	R88A-CAKF015BR-E		
			20 m	R88A-CAKF020BR-E		

Symbol	Applicable Delta robots			Model	Appearance					
⑤	CR_UGD4_XL CR_UGD4	Arm 1, 2, 3 and rotational axis 4	Power cable with brake	1.5 m	R88A-CAGB001-5BR-E					
				3 m	R88A-CAGB003BR-E					
				5 m	R88A-CAGB005BR-E					
				10 m	R88A-CAGB010BR-E					
				15 m	R88A-CAGB015BR-E					
				20 m	R88A-CAGB020BR-E					
	R6Y3@065@02067NJ5	Arm 1, 2, 3		Power cable without brake	1.5 m	R88A-CAKA001-5SR-E				
					3 m	R88A-CAKA003SR-E				
					5 m	R88A-CAKA005SR-E				
					10 m	R88A-CAKA010SR-E				
					15 m	R88A-CAKA015SR-E				
				20 m	R88A-CAKA020SR-E					
				Rotational axis 4		Power cable without brake		1.5 m	R88A-CAGB001-5SR-E	
								3 m	R88A-CAGB003SR-E	
								5 m	R88A-CAGB005SR-E	
								10 m	R88A-CAGB010SR-E	
		CR_UGD4MINI @_TS CR_UGD4MINI	Arm 1, 2, 3 and rotational axis 4	Power cable without brake	1.5 m	R88A-CAKA001-5SR-E				
					3 m	R88A-CAKA003SR-E				
					5 m	R88A-CAKA005SR-E				
					10 m	R88A-CAKA010SR-E				
15 m	R88A-CAKA015SR-E									
20 m	R88A-CAKA020SR-E									
Brake cable				Brake cable	1.5 m	R88A-CAKA001-5BR-E				
					3 m	R88A-CAKA003BR-E				
					5 m	R88A-CAKA005BR-E				
					10 m	R88A-CAKA010BR-E				
		15 m	R88A-CAKA015BR-E							
20 m	R88A-CAKA020BR-E									

*1. The CR_UGD4 @_HD@ models include the power and brake cables.

Vision

Name	Type		Model
⑥ FQ-M series	Color	NPN	FQ-MS120-ECT
		PNP	FQ-MS125-ECT
	Monochrome	NPN	FQ-MS120-M-ECT
		PNP	FQ-MS125-M-ECT

Machine controller

Name	Functions	Delta robot control	Axes	Model	
⑦ NJ Robotics	CPU unit	Logic sequence, motion, robotics and database connection	Control of up to 8 Delta robot depending on the number of axes supported by the CPU	16	NJ501-4320
				64	NJ501-4500
				32	NJ501-4400
				16	NJ501-4300
				16	NJ501-4310
	Power supply unit		Control of one Delta robot		NJ-PA3001 (220 VAC) NJ-PD3001 (24 VDC)

Accessories

Name	Applicable Delta robots	Specifications	Model
Anti-collision detection option	R6Y3@110@03067NJ5 R6Y3@065@02067NJ5	Connectors mounted between the TCP flange and the arms	R6YACAD01

Computer software

Specifications	Model
Sysmac Studio version 1.03 or higher	SYSMAC-SE2@@@

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.