

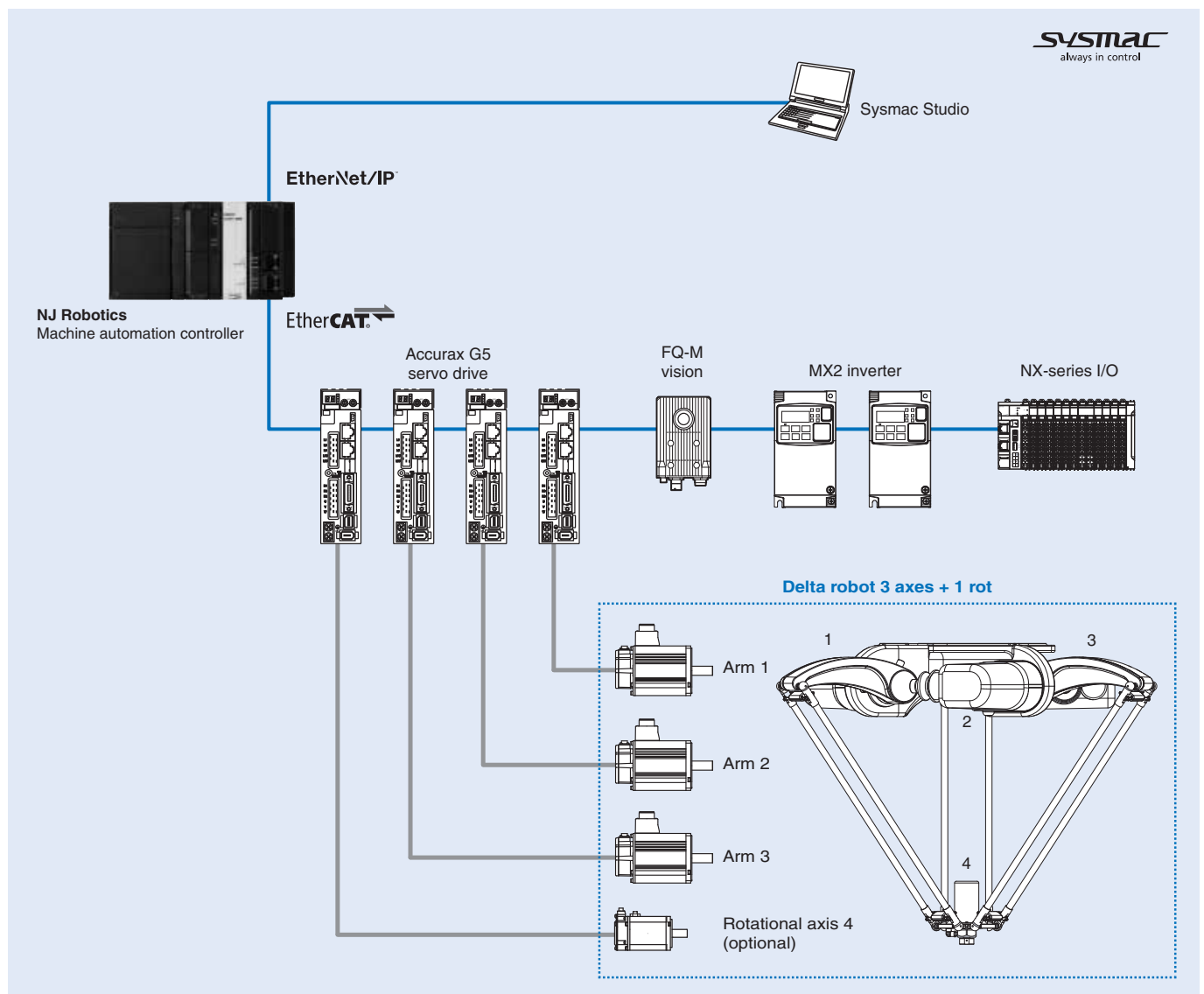
# Delta robot 3 axes + 1 rot

## 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 500 to 1,600 mm working range
- Payload range: 1 to 10 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

### Delta robot 3 axes + 1 rot series

#### IP69K protection class models

Model		CR_UGD4_XL_HD□		CR_UGD4_HD□		CR_UGD4_XS_HD□		
		With rotational axis	Without rotational axis	With rotational axis	Without rotational axis	With rotational axis	Without rotational axis	
Working volume	X, Y axis (stroke)	Ø 1,300 mm		Ø 1,100 mm		Ø 650 mm		
	Z axis (stroke) <sup>1</sup>	250 mm (maximum Ø 1,300 mm) 400 mm (center Ø 870 mm)		250 mm (maximum Ø 1,100 mm) 400 mm (center Ø 670 mm)		200 mm (maximum Ø 650 mm) 270 mm (center Ø 407.5 mm)		
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)	-	±180 deg (default setting, it can be changed)	-	±180 deg (default setting, it can be changed)	-	
Servo motor	Arm 1, 2, 3	Model	R88M-K1K030T-BS2-V2					
		Capacity	1,000 W					
	Rotational axis 4	Model	R88M-K75030T-BS2	-	R88M-K75030T-BS2	-	R88M-K75030T-BS2	-
		Capacity	750 W	-	750 W	-	750 W	-
Repeatability <sup>2</sup>	X, Y, Z axis	±0.2 mm		±0.2 mm		±0.2 mm		
	θ axis	±0.3 deg	-	±0.3 deg	-	±0.3 deg	-	
Maximum payload		2 kg		2 kg		2 kg		
Maximum through-put <sup>3</sup>		120 CPM <sup>4</sup>		150 CPM <sup>4</sup>		170 CPM <sup>4</sup>		
Gear box ratio	X, Y, Z axis	1:31		1:31		1:31		
	θ axis	1:10	-	1:10	-	1:10	-	
θ axis torque limitation		7 Nm		7 Nm		7 Nm		
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		100 kg						

<sup>1</sup>. For further details please check the dimensional drawing in the next section.

<sup>2</sup>. This is the value at a constant ambient temperature.

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

<sup>4</sup>. CPM: Cycle per minutes. Check the note 3 for the cycle definition.

#### IP67 protection class models

Model		R6Y3□110□03067NJ5			R6Y3□065□02067NJ5			
		With high inertia rotational axis	With low inertia rotational axis	Without rotational axis	With high inertia rotational axis	With low inertia rotational axis	Without rotational axis	
Working volume	X, Y axis (stroke)	Ø 1,100 mm			Ø 650 mm			
	Z axis (stroke) <sup>1</sup>	300 mm (maximum Ø 1,100 mm) 450 mm (center Ø 580 mm)			150 mm (maximum Ø 650 mm) 250 mm (center Ø 480 mm)			
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)		-	±180 deg (default setting, it can be changed)		-	
Servo motor	Arm 1, 2, 3	Model	R88M-K1K030T-BS2			R88M-K40030T-BS2		
		Capacity	1,000 W			400 W		
	Rotational axis 4	Model	R88M-K10030T-S2	R88M-K05030T-S2	-	R88M-K10030T-S2	R88M-K05030T-S2	-
		Capacity	100 W	50 W	-	100 W	50 W	-
Repeatability <sup>2</sup>	X, Y, Z axis	±0.2 mm			±0.1 mm			
	θ axis	±0.1 deg		-	±0.1 deg		-	
Maximum payload		3 kg			2 kg			
Maximum through-put <sup>3</sup>		150 CPM <sup>4</sup>			200 CPM <sup>4</sup>			
θ axis tolerable moment of inertia <sup>5</sup>		0.035 kgm <sup>2</sup>	0.01 kgm <sup>2</sup>	-	0.035 kgm <sup>2</sup>	0.01 kgm <sup>2</sup>	-	
User tubing (outer diameter)		Ø 6			Ø 6			
Travel limit		1. Soft limit, 2. Mechanical stopper (X, Y, Z axis)						
Noise level		< 73.7 dB (A)			< 64.5 dB (A)			
Ambient temperature		0°C to 45°C						
Relative humidity		Max. 85%						
Protection class		IP67						
Weight		75 kg			32 kg			

<sup>1</sup>. For further details please check the dimensional drawing in the next section.

<sup>2</sup>. This is the value at a constant ambient temperature.

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

<sup>4</sup>. CPM: Cycle per minutes. Check the note 3 for the cycle definition.

<sup>5</sup>. There are limits to acceleration coefficient settings.

## IP65 protection class models

Model		CR_UGD4_XXLH		CR_UGD4_XXL1300H		
		With rotational axis	Without rotational axis	With rotational axis	Without rotational axis	
Working volume	X, Y axis (stroke)	Ø 1,600 mm		Ø 1,300 mm		
	Z axis (stroke) <sup>*1</sup>	350 mm (maximum Ø 1,600 mm) 550 mm (center Ø 814 mm)		300 mm (maximum Ø 1,300 mm) 450 mm (center Ø 780 mm)		
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)	-	±180 deg (default setting, it can be changed)	-	
Servo motor	Arm 1, 2, 3	Model	R88M-K3K030C-BS2			
		Capacity	3,000 W			
	Rotational axis 4	Model	R88M-K1K030C-BS2	-	R88M-K1K030C-BS2	-
		Capacity	1,000 W	-	1,000 W	-
Repeatability <sup>*2</sup>	X, Y, Z axis	±0.5 mm				
	θ axis	±0.3 deg	-	±0.3 deg	-	
Maximum payload			10 kg			
Maximum through-put <sup>*3</sup>			80 CPM <sup>*4</sup>	90 CPM <sup>*4</sup>		
Gear box ratio	X, Y, Z axis	1:38,5				
	θ axis	1:20	-	1:20	-	
θ axis torque limitation			19 Nm	-	19 Nm	
User tubing (outer diameter)			Ø 8 <sup>*5</sup>			
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	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.

Model		CR_UGD4_XL		CR_UGD4		
		With rotational axis	Without rotational axis	With rotational axis	Without rotational axis	
Working volume	X, Y axis (stroke)	Ø 1,300 mm		Ø 1,100 mm		
	Z axis (stroke) <sup>*1</sup>	250 mm (maximum Ø 1,300 mm) 400 mm (center Ø 870 mm)		250 mm (maximum Ø 1,100 mm) 400 mm (center Ø 670 mm)		
	θ axis (rotation angle)	±180 deg (default setting, it can be changed)	-	±180 deg (default setting, it can be changed)	-	
Servo motor	Arm 1, 2, 3	Model	R88M-K1K030T-BS2			
		Capacity	1,000 W			
	Rotational axis 4	Model	R88M-K1K030T-BS2	-	R88M-K1K030T-BS2	-
		Capacity	1,000 W	-	1,000 W	-
Repeatability <sup>*2</sup>	X, Y, Z axis	±0.2 mm		±0.3 mm		
	θ axis	±0.3 deg	-	±0.4 deg	-	
Maximum payload			2 kg			
Maximum through-put <sup>*3</sup>			120 CPM <sup>*4</sup>	150 CPM <sup>*4</sup>		
Gear box ratio	X, Y, Z axis	1:31				
	θ axis	1:10	-	1:10	-	
θ axis torque limitation			7 Nm	-	7 Nm	
User tubing (outer diameter)			Ø 8 <sup>*5</sup>			
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	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.

Model		CR_UGD4MINI		
		With rotational axis	Without rotational axis	
Working volume	X, Y axis (stroke)	Ø 500 mm		
	Z axis (stroke) <sup>*1</sup>	130 mm (maximum Ø 500 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 <sup>*2</sup>	X, Y, Z axis	±0.2 mm		
	θ axis	±0.3 deg	-	
Maximum payload		1 kg		
Maximum through-put <sup>*3</sup>		200 CPM <sup>*4</sup>		
Gear box ratio	X, Y, Z axis	1:25		
	θ axis	1:1	-	
θ axis torque limitation		7 Nm		
User tubing (outer diameter)		Ø 8 <sup>*5</sup>		
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 <sup>*6</sup>		
Weight		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.

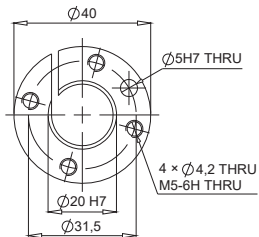
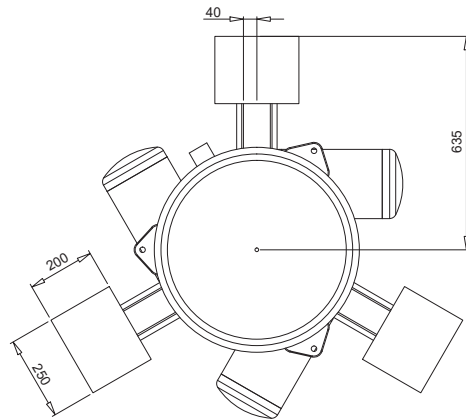
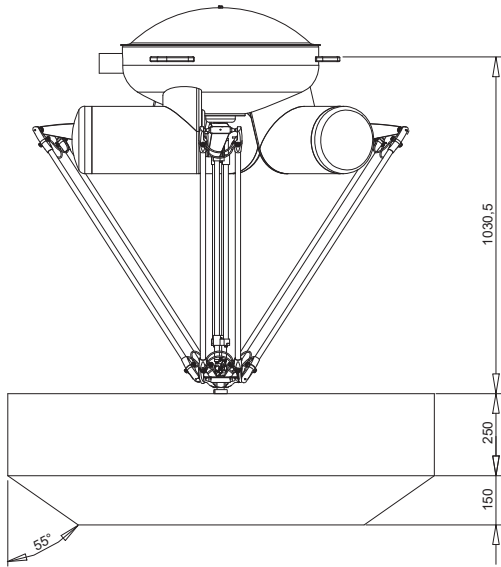
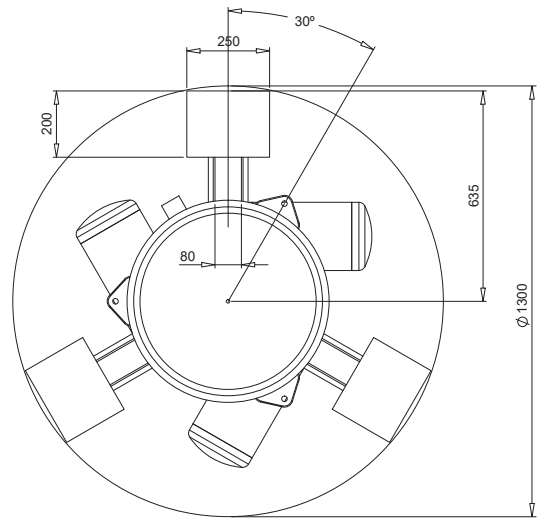
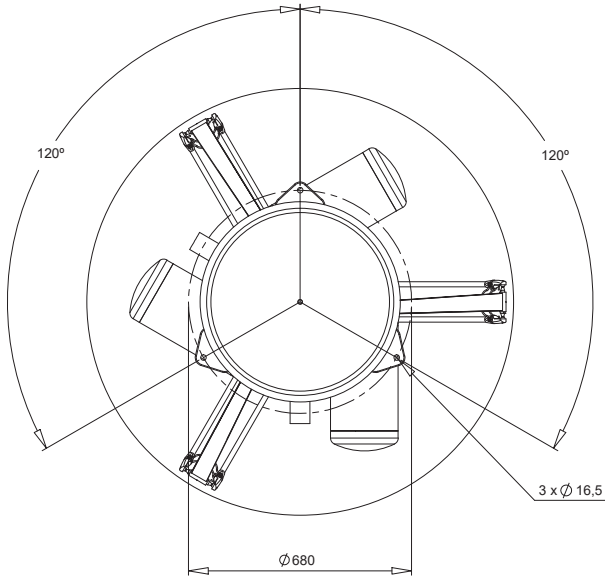
\*5. Only for the air suctioning. The air injection is not allowed.

\*6. The CR\_UGD4MINI\_□\_TS models are delivered standard with stainless steel + titanium secondary arms.

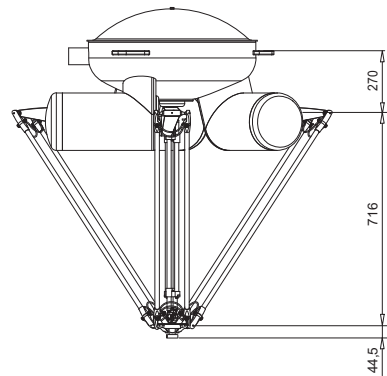
Dimensions

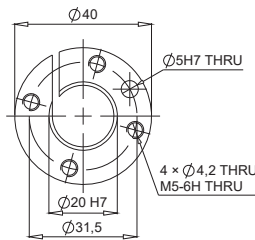
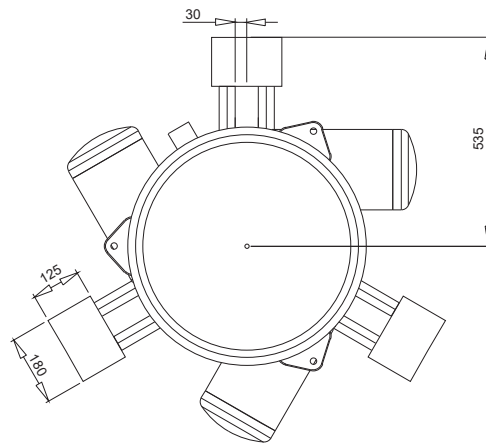
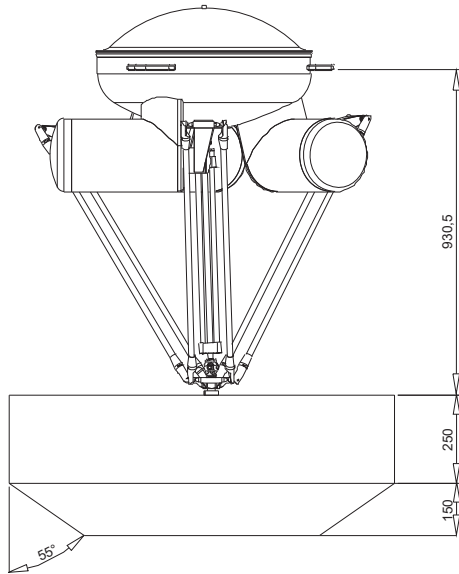
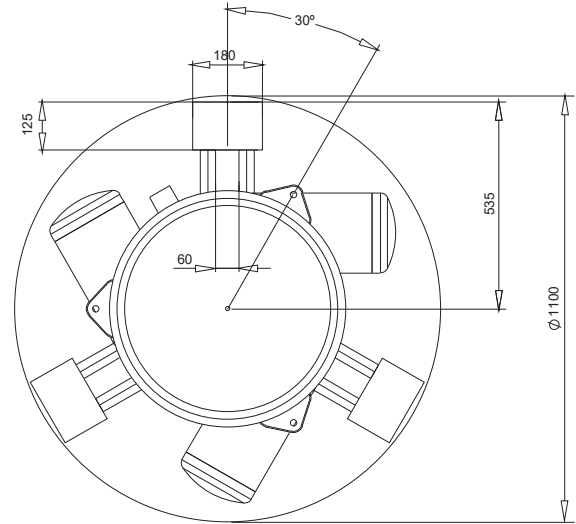
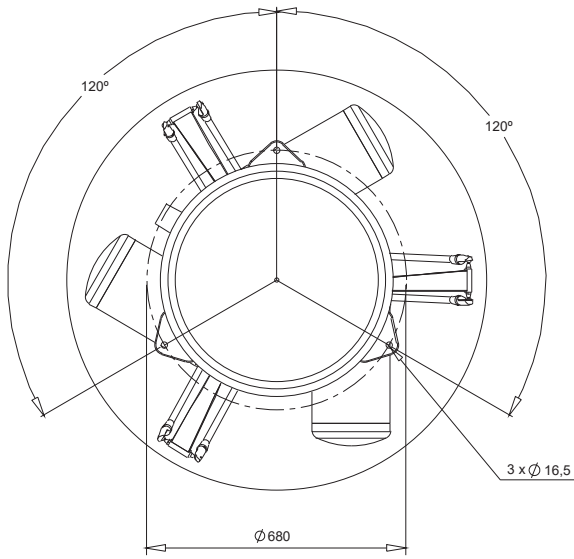
IP69K protection class models

CR\_UGD4\_XL □ R\_HD □

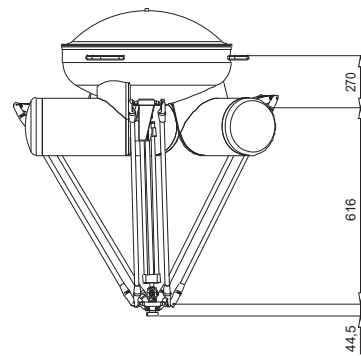


Gripper dimensions

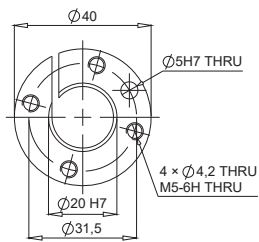
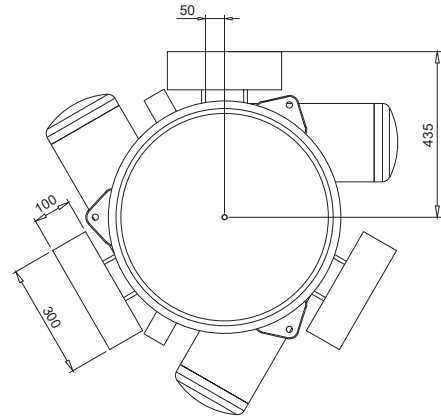
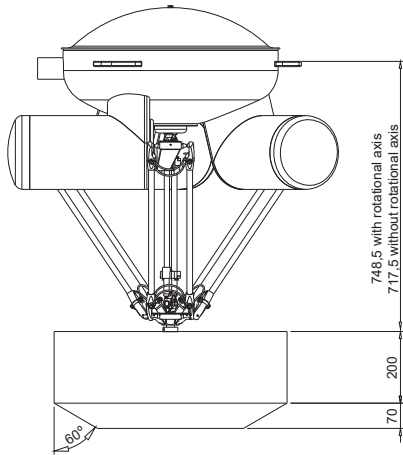
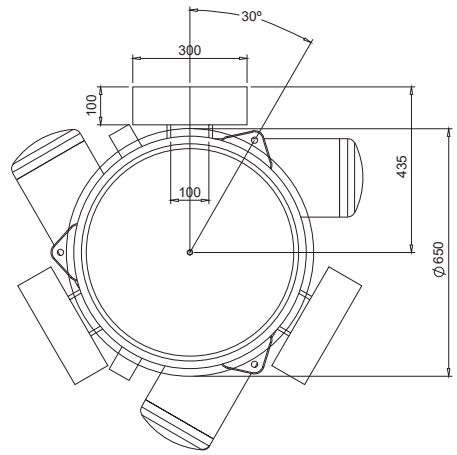
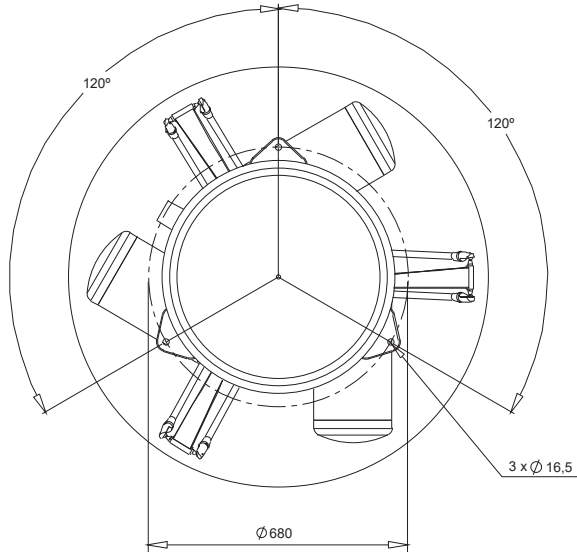




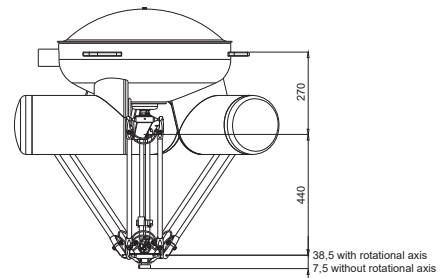
Gripper dimensions



CR\_UGD4\_XS\_□R\_HD□

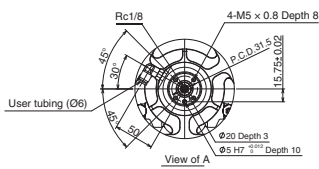
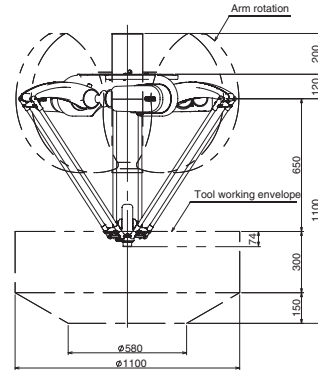
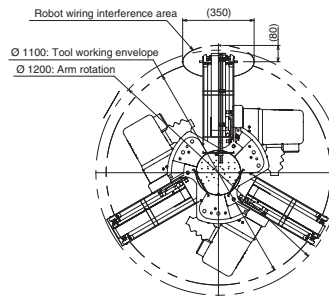
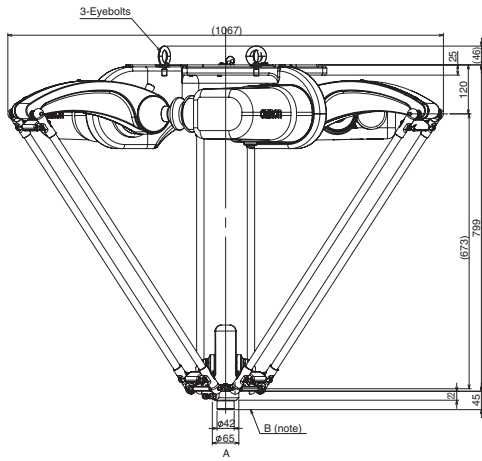
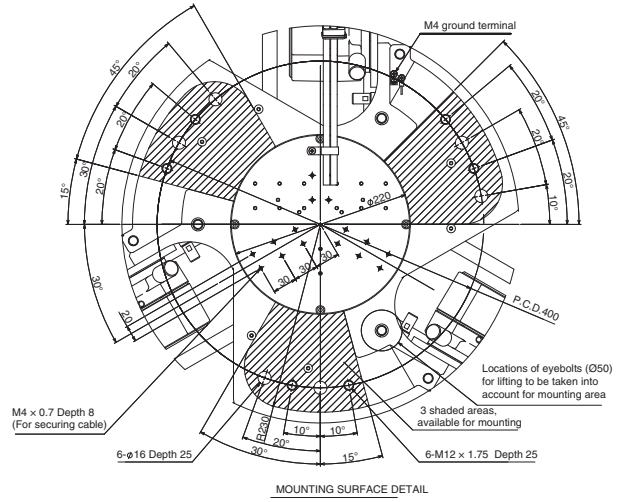
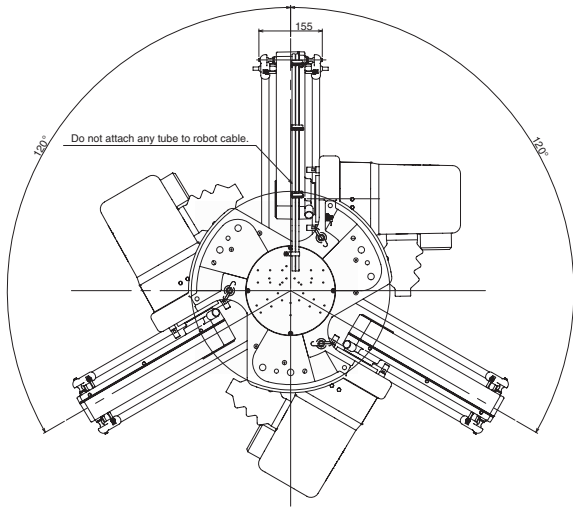


Gripper dimensions



## IP67 protection class models

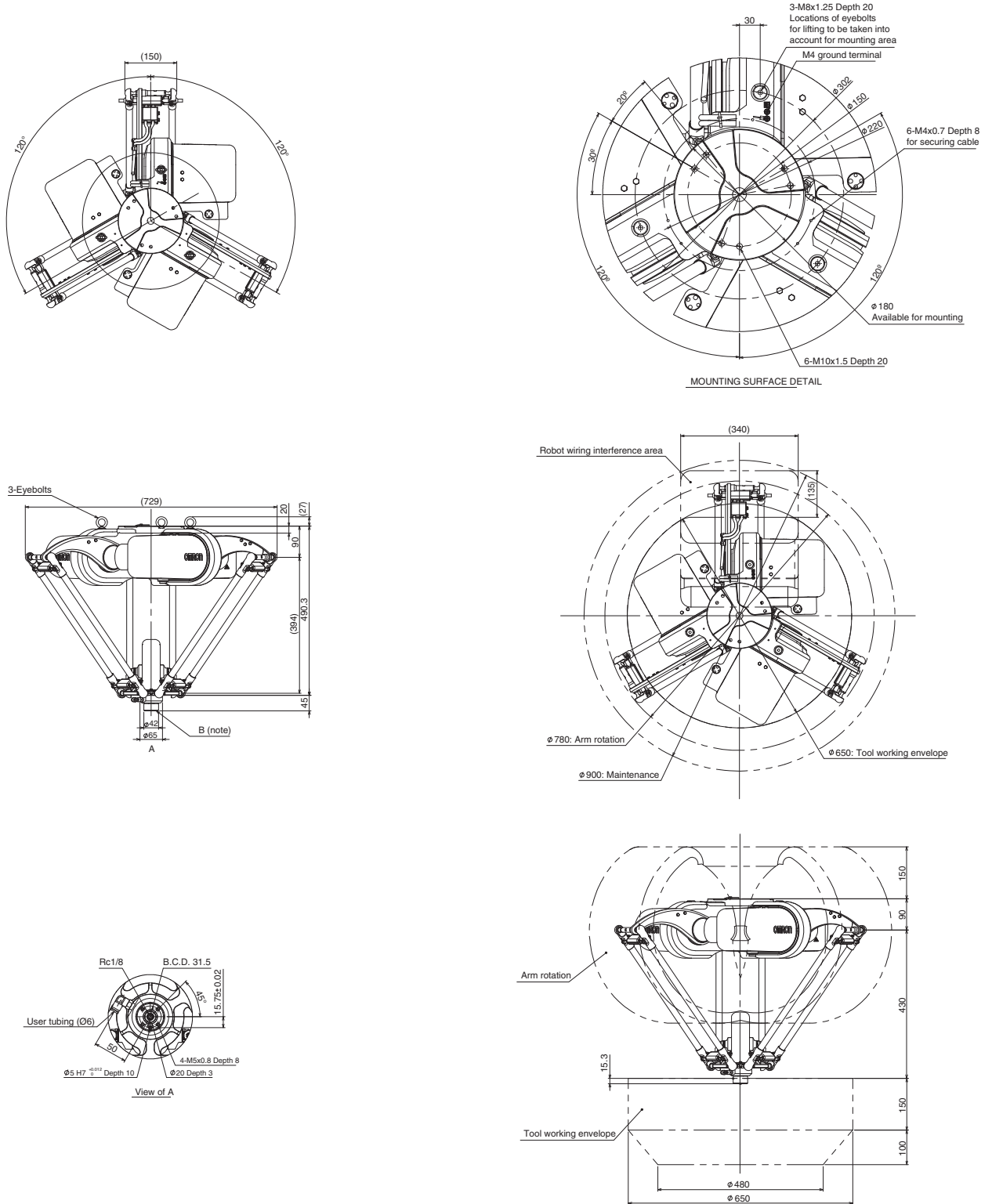
R6Y3□110□03067NJ5



**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.



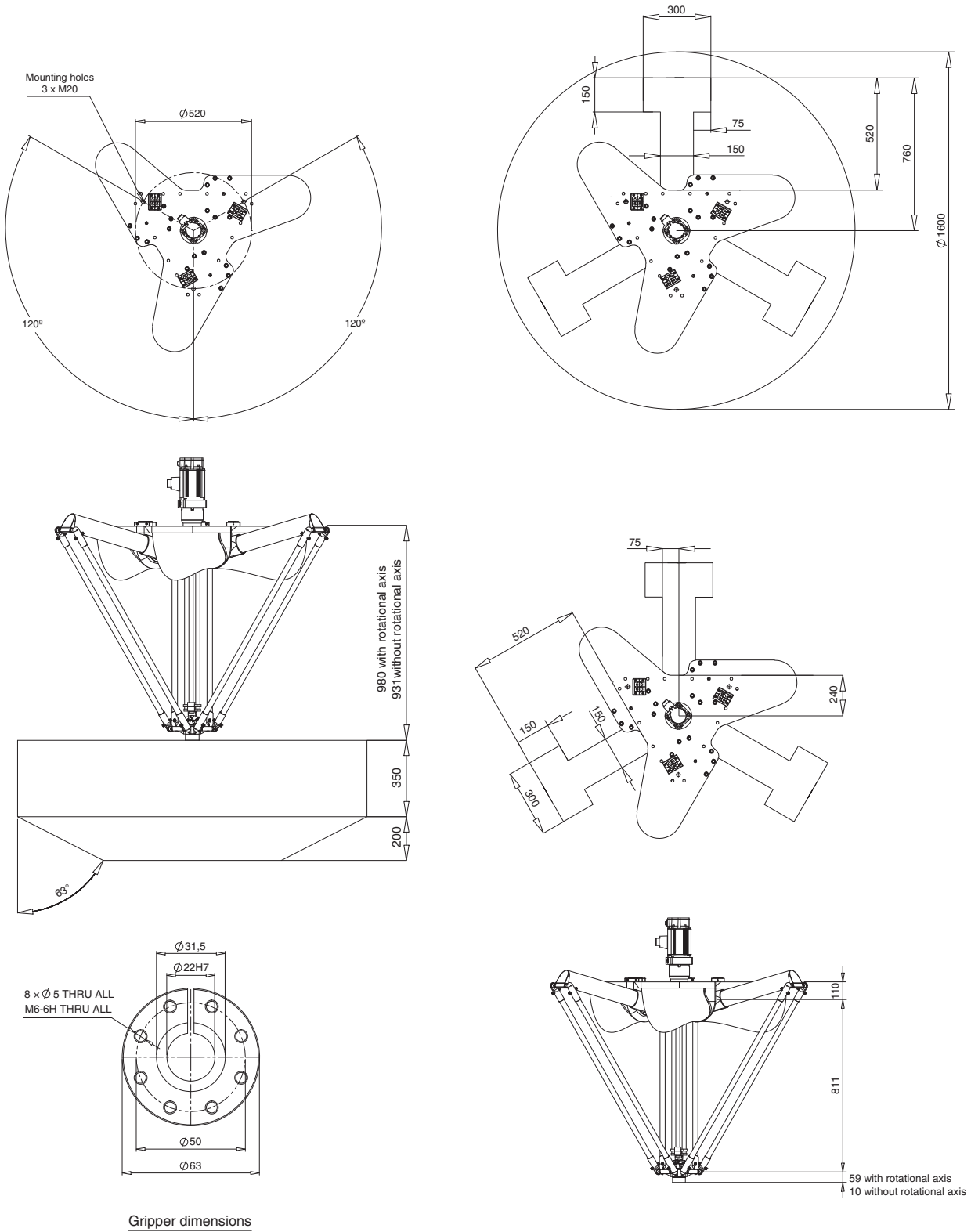
R6Y3□065□02067NJ5



**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.

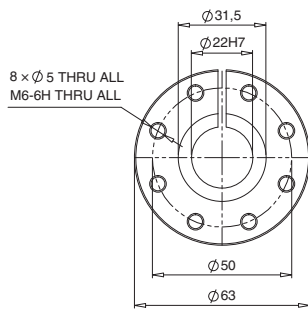
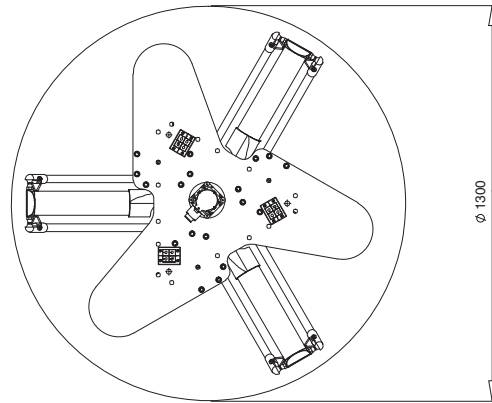
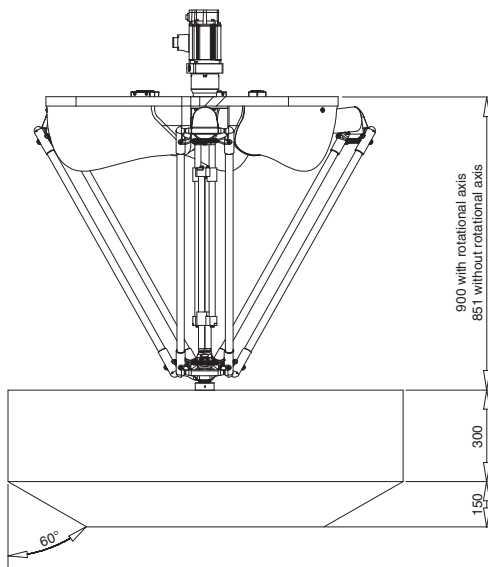
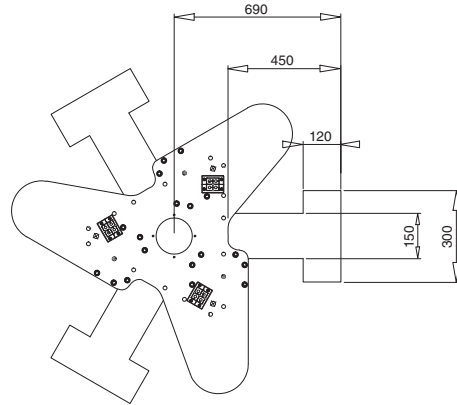
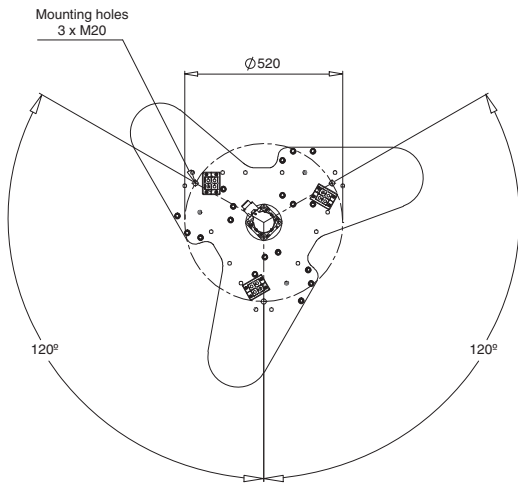
## IP65 protection class models

CR\_UGD4\_XXLH\_□R

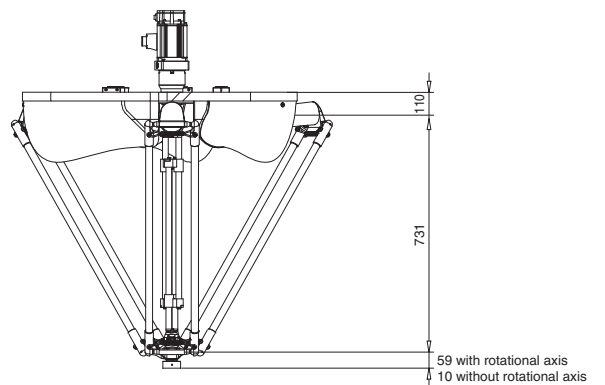


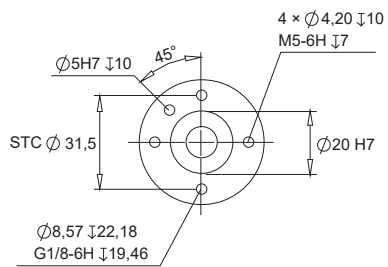
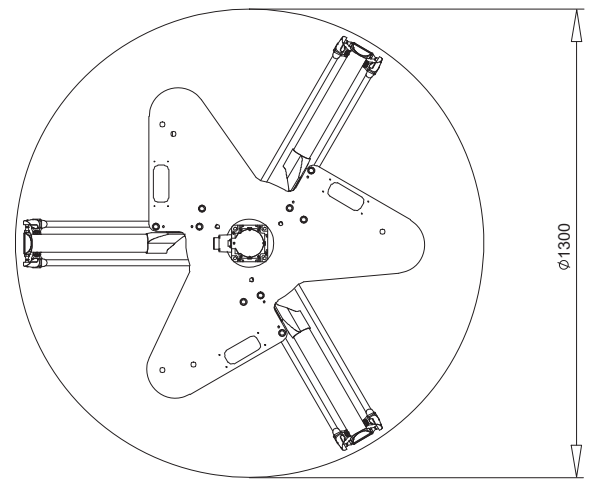
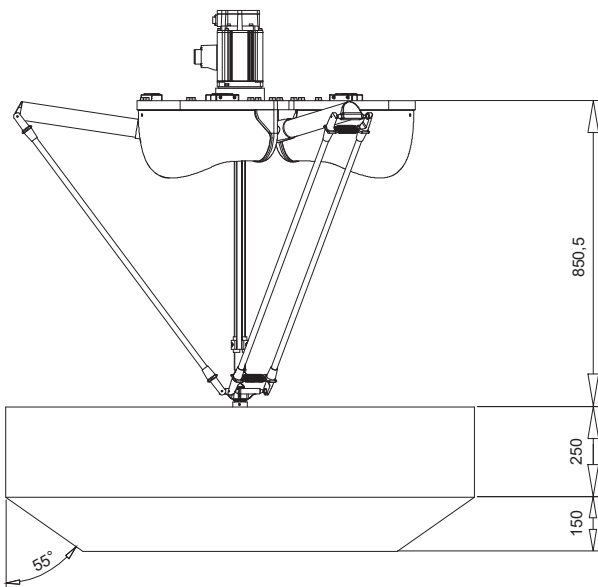
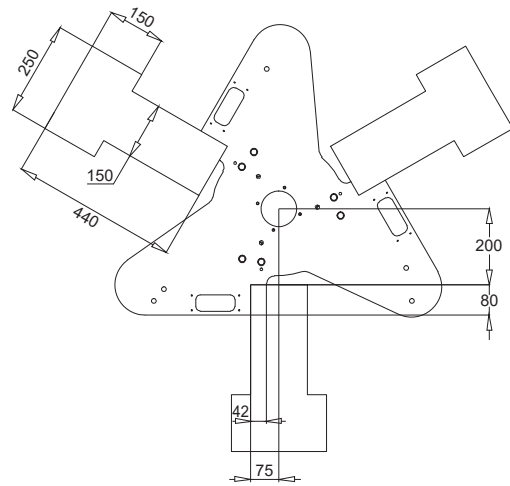
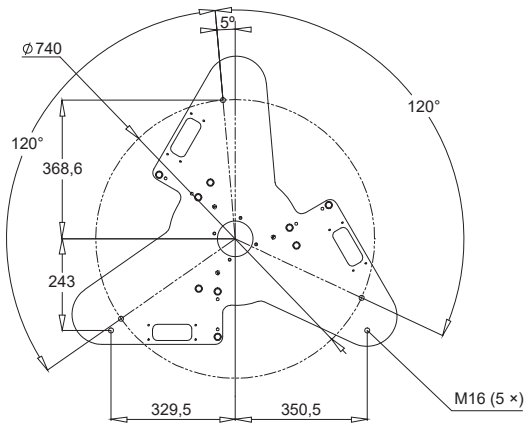
Gripper dimensions

CR\_UGD4\_XXL1300H\_□R

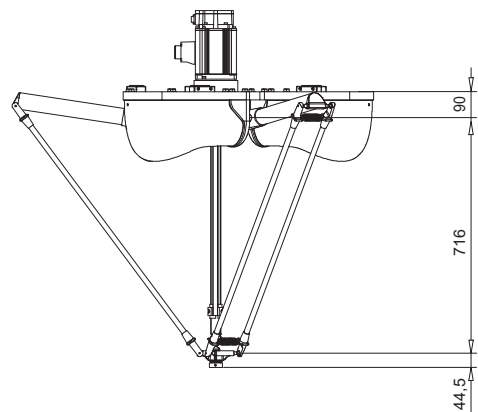


Gripper dimensions

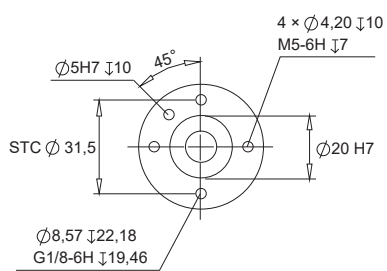
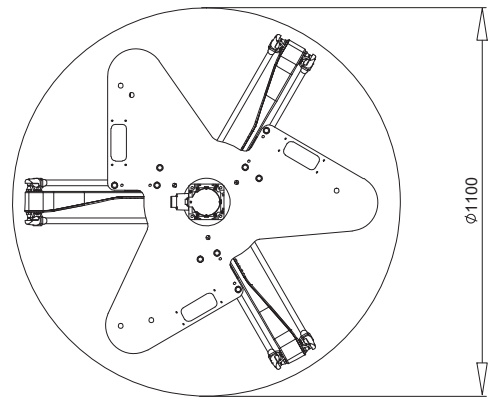
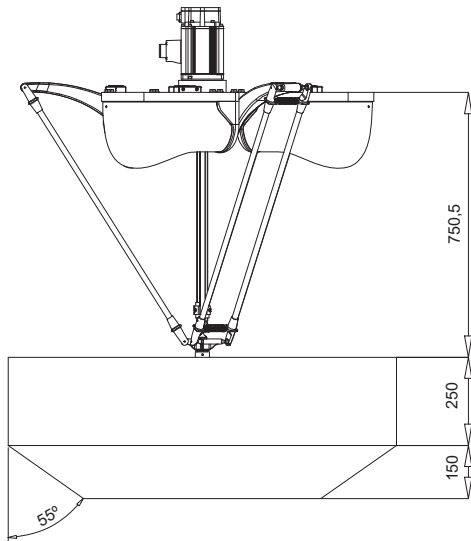
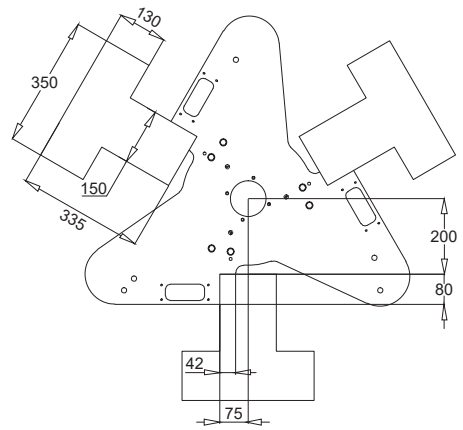
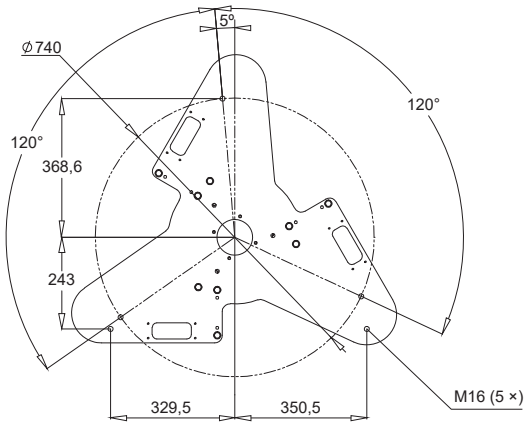




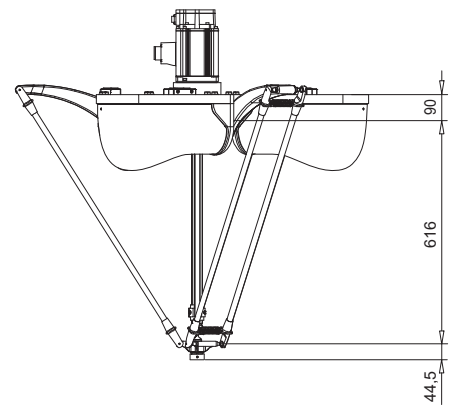
Gripper dimensions

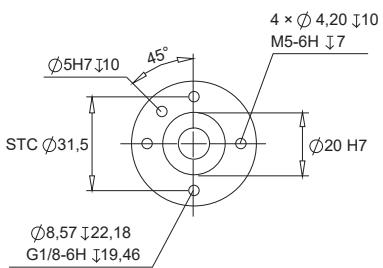
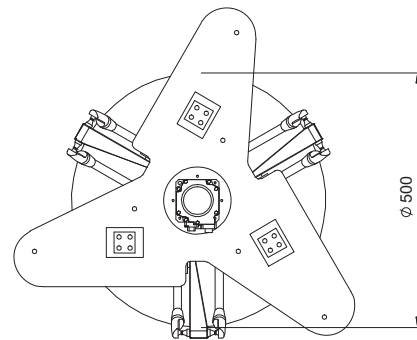
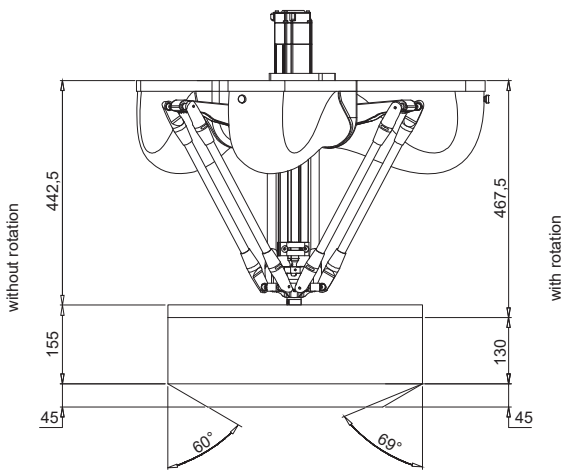
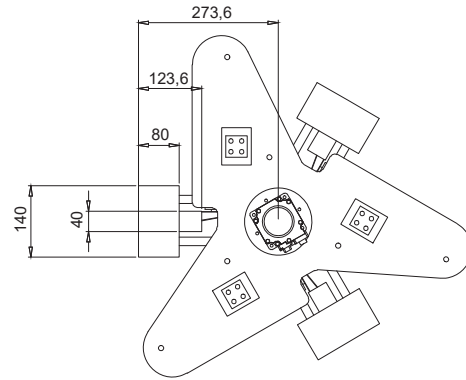
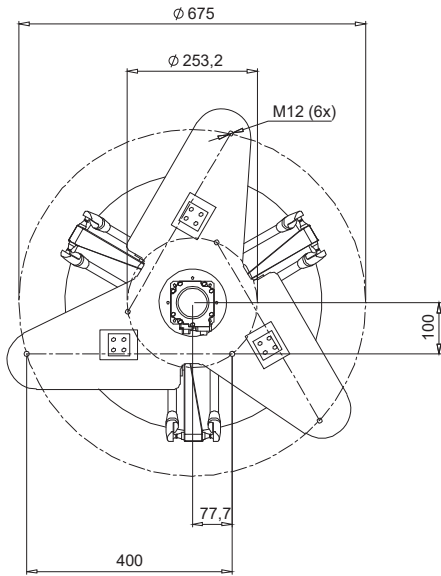


CR\_UGD4\_□R

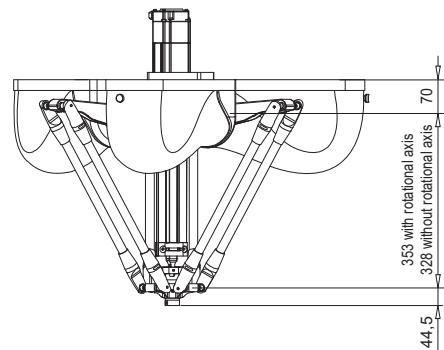


Gripper dimensions

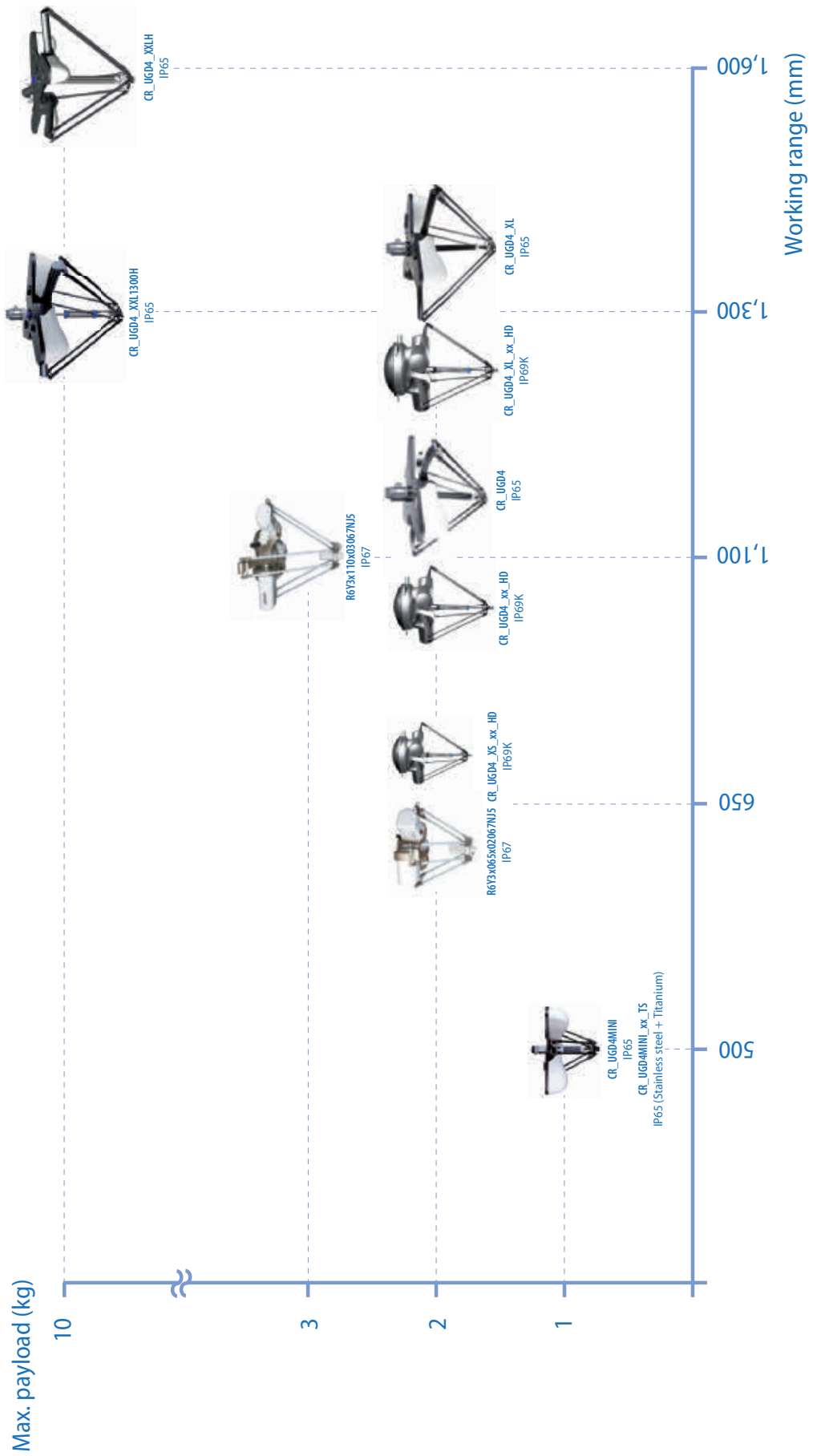




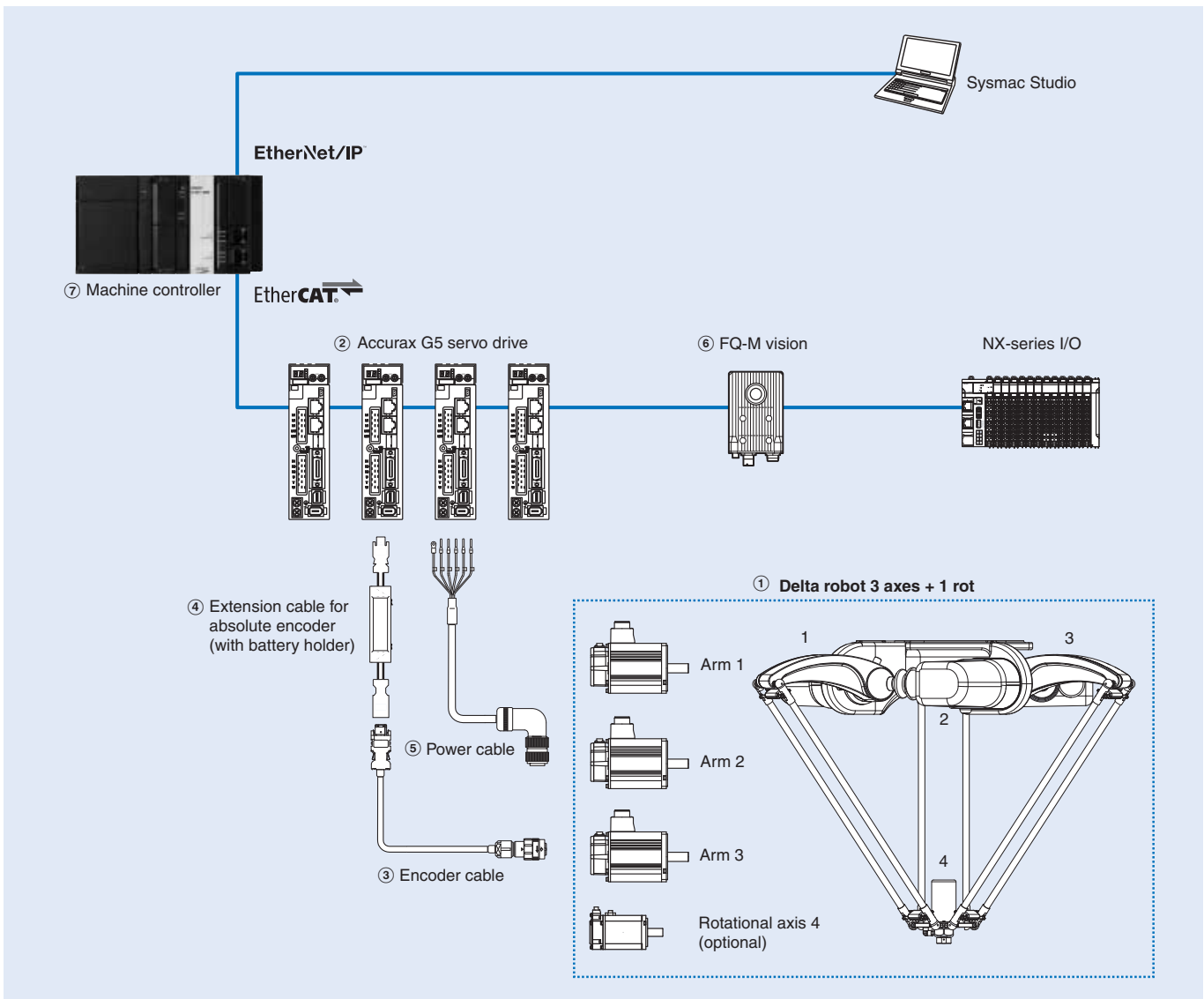
Gripper dimensions



Selection table



## Ordering information

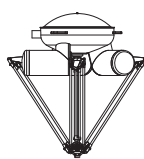
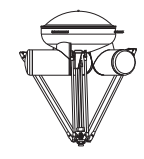
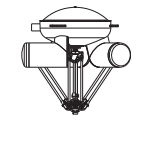


**Note:** Servo motors included in the Delta robot.



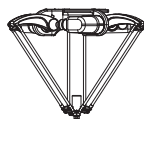
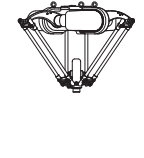
Delta robot 3 axes + 1 rot series

IP69K protection class models

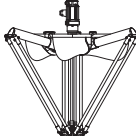



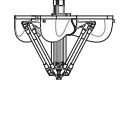
Symbol	Model	Cable length	Max. payload	Working range	Description <sup>1</sup>	Axis	②Applicable servo drive		
① 	CR_UGD4_XL_R_HD3	3 m	2 kg	Ø 1,300 x 250 mm (Max. 400)	3 + 1 axes Hygienic Design	Arm 1	R88D-KN15H-ECT		
	CR_UGD4_XL_R_HD5	5 m				Arm 2	R88D-KN15H-ECT		
	CR_UGD4_XL_R_HD10	10 m				Arm 3	R88D-KN15H-ECT		
	CR_UGD4_XL_R_HD15	15 m				Rotational 4	R88D-KN08H-ECT		
	CR_UGD4_XL_R_HD20	20 m							
	CR_UGD4_XL_NR_HD3	3 m			3 axes Hygienic Design	Arm 1	R88D-KN15H-ECT		
	CR_UGD4_XL_NR_HD5	5 m				Arm 2	R88D-KN15H-ECT		
	CR_UGD4_XL_NR_HD10	10 m				Arm 3	R88D-KN15H-ECT		
	CR_UGD4_XL_NR_HD15	15 m							
	CR_UGD4_XL_NR_HD20	20 m							
① 	CR_UGD4_R_HD3	3 m	2 kg	Ø 1,100 x 250 mm (Max. 400)	3 + 1 axes Hygienic Design	Arm 1	R88D-KN15H-ECT		
	CR_UGD4_R_HD5	5 m				Arm 2	R88D-KN15H-ECT		
	CR_UGD4_R_HD10	10 m				Arm 3	R88D-KN15H-ECT		
	CR_UGD4_R_HD15	15 m				Rotational 4	R88D-KN08H-ECT		
	CR_UGD4_R_HD20	20 m							
	CR_UGD4_NR_HD3	3 m			3 axes Hygienic Design	Arm 1	R88D-KN15H-ECT		
	CR_UGD4_NR_HD5	5 m				Arm 2	R88D-KN15H-ECT		
	CR_UGD4_NR_HD10	10 m				Arm 3	R88D-KN15H-ECT		
	CR_UGD4_NR_HD15	15 m							
	CR_UGD4_NR_HD20	20 m							
① 	CR_UGD4_XS_R_HD3	3 m	2 kg	Ø 650 x 200 mm (Max. 270)	3 + 1 axes Hygienic Design	Arm 1	R88D-KN15H-ECT		
	CR_UGD4_XS_R_HD5	5 m				Arm 2	R88D-KN15H-ECT		
	CR_UGD4_XS_R_HD10	10 m				Arm 3	R88D-KN15H-ECT		
	CR_UGD4_XS_R_HD15	15 m				Rotational 4	R88D-KN08H-ECT		
	CR_UGD4_XS_R_HD20	20 m							
	CR_UGD4_XS_NR_HD3	3 m			3 axes Hygienic Design	Arm 1	R88D-KN15H-ECT		
	CR_UGD4_XS_NR_HD5	5 m				Arm 2	R88D-KN15H-ECT		
	CR_UGD4_XS_NR_HD10	10 m				Arm 3	R88D-KN15H-ECT		
	CR_UGD4_XS_NR_HD15	15 m							
	CR_UGD4_XS_NR_HD20	20 m							

<sup>1</sup>The models with IP69K protection class include the encoder, power and brake cables.

IP67 protection class models


Symbol	Model	Max. payload	Working range	Description	Axis	②Applicable servo drive
① 	R6Y31110H03067NJ5	3 kg	Ø 1,100 x 300 mm (Max. 450)	3 + 1 axes (high inertia rotational axis)	Arm 1	R88D-KN15H-ECT
	R6Y31110L03067NJ5				Arm 2	R88D-KN15H-ECT
					Arm 3	R88D-KN15H-ECT
					Rotational 4	R88D-KN01H-ECT
	R6Y30110S03067NJ5			3 + 1 axes (low inertia rotational axis)	Arm 1	R88D-KN15H-ECT
				Arm 2	R88D-KN15H-ECT	
				Arm 3	R88D-KN15H-ECT	
				Rotational 4	R88D-KN01H-ECT	
				3 axes	Arm 1	R88D-KN15H-ECT
Arm 2	R88D-KN15H-ECT					
Arm 3	R88D-KN15H-ECT					
① 	R6Y31065H02067NJ5	2 kg	Ø 650 x 150 mm (Max. 250)	3 + 1 axes (high inertia rotational axis)	Arm 1	R88D-KN04H-ECT
	R6Y31065L02067NJ5				Arm 2	R88D-KN04H-ECT
					Arm 3	R88D-KN04H-ECT
					Rotational 4	R88D-KN01H-ECT
	R6Y30065S02067NJ5			3 + 1 axes (low inertia rotational axis)	Arm 1	R88D-KN04H-ECT
				Arm 2	R88D-KN04H-ECT	
				Arm 3	R88D-KN04H-ECT	
				Rotational 4	R88D-KN01H-ECT	
				3 axes	Arm 1	R88D-KN04H-ECT
Arm 2	R88D-KN04H-ECT					
Arm 3	R88D-KN04H-ECT					

## IP65 protection class models

Symbol	Model	Max. payload	Working range	Description	Axis	②Applicable servo drive
① 	CR_UGD4_XXLH_R	10 kg	Ø 1,600 x 350 mm (Max. 550)	3 + 1 axes	Arm 1	R88D-KN30F-ECT
	CR_UGD4_XXLH_NR			3 axes	Arm 2	R88D-KN30F-ECT
① 	CR_UGD4_XXL1300H_R		Ø 1,300 x 300 mm (Max. 450)	3 + 1 axes	Arm 3	R88D-KN30F-ECT
	CR_UGD4_XXL1300H_NR			Rotational 4	Arm 1	R88D-KN15F-ECT
① 	CR_UGD4_XL_R	2 kg	Ø 1,300 x 250 mm (Max. 400)	3 + 1 axes	Arm 2	R88D-KN30F-ECT
	CR_UGD4_XL_NR			3 axes	Arm 1	R88D-KN30F-ECT
① 	CR_UGD4_R	2 kg	Ø 1,100 x 250 mm (Max. 400)	3 + 1 axes	Arm 2	R88D-KN30F-ECT
	CR_UGD4_NR			3 axes	Arm 1	R88D-KN30F-ECT
① 	CR_UGD4MINI_R CR_UGD4MINI_R_TS <sup>*1</sup>	1 kg	Ø 500 x 130 mm (Max. 175)	3 + 1 axes	Arm 3	R88D-KN15H-ECT
	CR_UGD4MINI_NR CR_UGD4MINI_NR_TS <sup>*1</sup>			Rotational 4	Arm 1	R88D-KN15H-ECT
			Ø 500 x 155 mm (Max. 200)	3 axes	Arm 2	R88D-KN15H-ECT
					Arm 3	R88D-KN15H-ECT


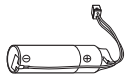
\*1: The CR\_UGD4MINI\_□\_TS models are delivered standard with stainless steel + titanium secondary arms.

## Encoder cables

Symbol	Applicable Delta robots	Model	Appearance
③	CR_UGD4_XL_□_HD□ (Arm 1, 2, 3) <sup>*1</sup>	1.5 m R88A-CRKC001-5NR-E	
	CR_UGD4_□_HD□ (Arm 1, 2, 3) <sup>*1</sup>	3 m R88A-CRKC003NR-E	
	CR_UGD4_XS_□_HD□ (Arm 1, 2, 3) <sup>*1</sup>	5 m R88A-CRKC005NR-E	
	R6Y3□110□03067NJ5	10 m R88A-CRKC010NR-E	
	CR_UGD4_XXLH	15 m R88A-CRKC015NR-E	
	CR_UGD4_XXL1300H	20 m R88A-CRKC020NR-E	
	CR_UGD4_XL		
	CR_UGD4		
	R6Y3□065□02067NJ5 (Rotational axis 4)		
	CR_UGD4_XL_□_HD□ (Rotational axis 4) <sup>*1</sup>	1.5 m R88A-CRKA001-5CR-E	
CR_UGD4_□_HD□ (Rotational axis 4) <sup>*1</sup>	3 m R88A-CRKA003CR-E		
CR_UGD4_XS_□_HD□ (Rotational axis 4) <sup>*1</sup>	5 m R88A-CRKA005CR-E		
R6Y3□065□02067NJ5 (Arm 1, 2, 3)	10 m R88A-CRKA010CR-E		
CR_UGD4MINI_□_TS	15 m R88A-CRKA015CR-E		
CR_UGD4MINI	20 m R88A-CRKA020CR-E		

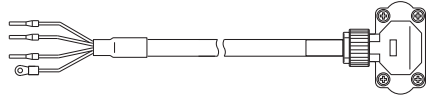

\*1: The models with IP69K protection class include the encoder cables.

## Absolute encoder battery cable (encoder extension cable only)

Symbol	Specifications	Model	Appearance
④	Absolute encoder battery cable	Battery not included 0.3 m R88A-CRGD0R3C-E	
		Battery included 0.3 m R88A-CRGD0R3C-BS-E	
	Absolute encoder backup battery	2,000 mA, 3.6 V - R88A-BAT01G	

Power and brake cables

Symbol	Applicable Delta robots			Model	Appearance	
⑤	CR_UGD4_XL□_HD□ <sup>1</sup> CR_UGD4□_HD□ CR_UGD4_XS□_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 CR_UGD4_XXL1300H	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		
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	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	
	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		

Symbol	Applicable Delta robots				Model	Appearance	
⑤	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	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 models with IP69K protection class 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				

## 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.