

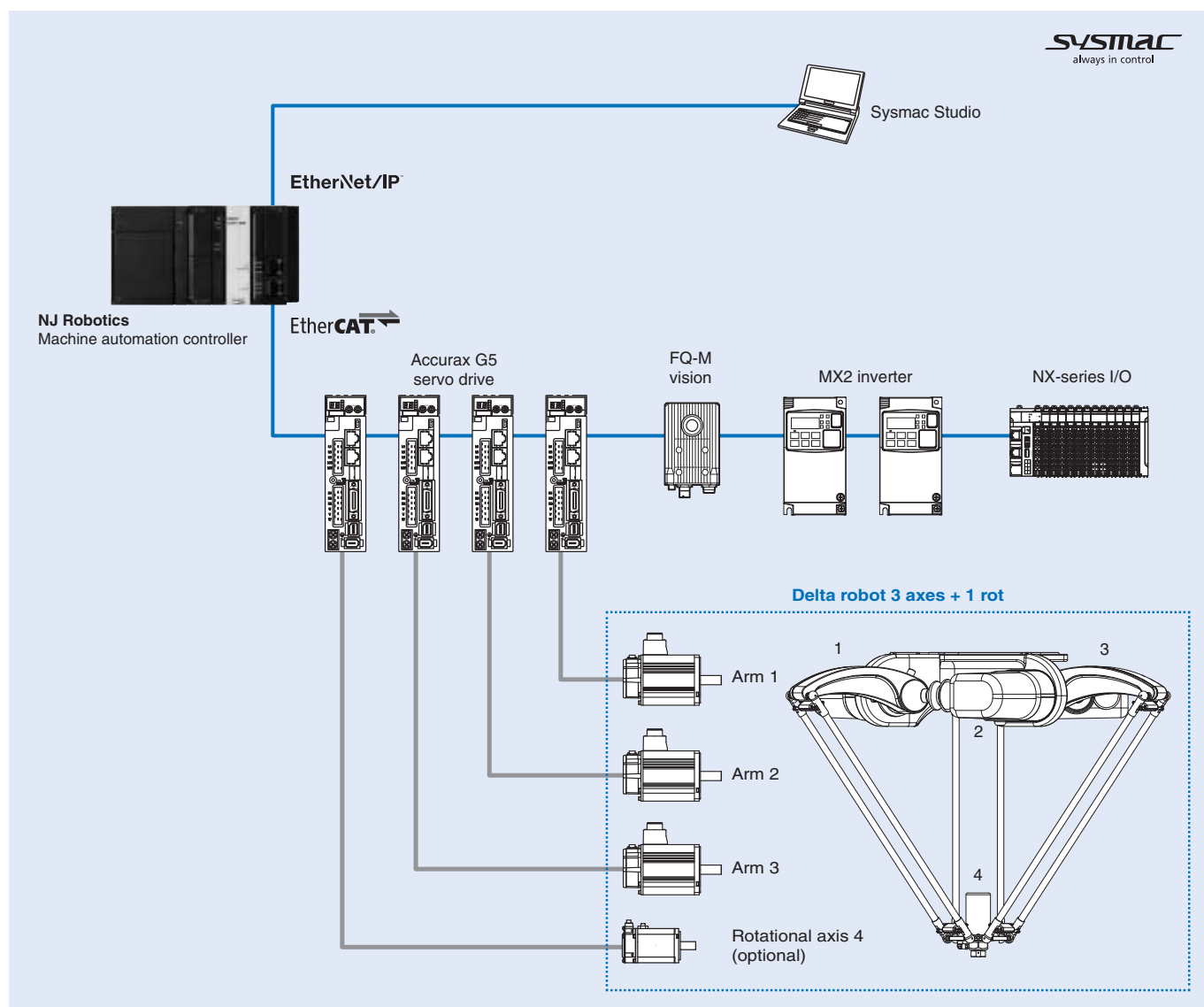
# Delta robot 3 axes + 1 rot

## 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 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

| Model                             |                               | CR_UGD4_R_HD□                                          | CR_UGD4_NR_HD□      |
|-----------------------------------|-------------------------------|--------------------------------------------------------|---------------------|
| Working volume                    | X, Y axis (stroke)            | Ø 1,100 mm                                             |                     |
|                                   | Z axis (stroke) <sup>*1</sup> | 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)          | -                   |
| Servo motor                       | Arm 1, 2, 3                   | Model                                                  | R88M-K1K030T-BS2-V2 |
|                                   |                               | Capacity                                               | 1,000 W             |
|                                   | Rotational axis 4             | Model                                                  | R88M-K75030T-BS2    |
|                                   |                               | Capacity                                               | 750 W               |
| Repeatability <sup>*2</sup>       | X, Y, Z axis                  | ±0.2 mm                                                |                     |
|                                   | θ axis                        | ±0.3 deg                                               |                     |
| Maximum payload                   |                               | 2 kg                                                   |                     |
| Maximum through-put <sup>*3</sup> |                               | 150 CPM <sup>*4</sup>                                  |                     |
| 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<br>Storage: -25°C to 60°C       |                     |
| Relative humidity                 |                               | Max. 90%                                               |                     |
| Protection class                  |                               | IP69K                                                  |                     |
| Weight                            |                               | 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

| Model                                            |                               | R6Y31110H03067NJ5                                      | R6Y31110L03067NJ5     | R6Y30110S03067NJ5 |
|--------------------------------------------------|-------------------------------|--------------------------------------------------------|-----------------------|-------------------|
| Working volume                                   | X, Y axis (stroke)            | Ø 1,100 mm                                             |                       |                   |
|                                                  | Z axis (stroke) <sup>*1</sup> | 300 mm (maximum Ø 1,100 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                                               | 1,000 W               |                   |
|                                                  | Rotational axis 4             | Model                                                  | R88M-K10030T-S2       | R88M-K05030T-S2   |
|                                                  |                               | Capacity                                               | 100 W                 | 50 W              |
| Repeatability <sup>*2</sup>                      | X, Y, Z axis                  | ±0.2 mm                                                |                       |                   |
|                                                  | θ axis                        | ±0.1 deg                                               |                       |                   |
| Maximum payload                                  |                               | 3 kg                                                   |                       |                   |
| Maximum through-put <sup>*3</sup>                |                               | 150 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> | -                 |
| 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°C to 45°C                                            |                       |                   |
| Relative humidity                                |                               | Max. 85%                                               |                       |                   |
| Protection class                                 |                               | IP67                                                   |                       |                   |
| Weight                                           |                               | 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

| Model                                            |                               | R6Y31065H02067NJ5                                    | R6Y31065L02067NJ5     | R6Y30065S02067NJ5 |
|--------------------------------------------------|-------------------------------|------------------------------------------------------|-----------------------|-------------------|
| Working volume                                   | X, Y axis (stroke)            | Ø 650 mm                                             |                       |                   |
|                                                  | Z axis (stroke) <sup>*1</sup> | 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 <sup>*2</sup>                      | X, Y, Z axis                  | ±0.1 mm                                              |                       |                   |
|                                                  | θ axis                        | ±0.1 deg                                             |                       |                   |
| Maximum payload                                  |                               | 2 kg                                                 |                       |                   |
| Maximum through-put <sup>*3</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> | -                 |
| 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°C to 45°C                                          |                       |                   |
| Relative humidity                                |                               | Max. 85%                                             |                       |                   |
| Protection class                                 |                               | IP67                                                 |                       |                   |
| Weight                                           |                               | 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

| Model                             |                               | CR_UGD4MINI_R_TS                                    | CR_UGD4MINI_NR_TS         |
|-----------------------------------|-------------------------------|-----------------------------------------------------|---------------------------|
| 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>                               |                           |
| θ axis maximum torque             |                               | According to the servo motor                        | -                         |
| 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 (Stainless steel + Titanium)                   |                           |
| 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.

## Delta robot XXL

| Model                            |                              |          | CR_UGD4_XXLH_R                                         | CR_UGD4_XXLH_NR | CR_UGD4_XXL1300H_R                                     | CR_UGD4_XXL1300H_NR          |
|----------------------------------|------------------------------|----------|--------------------------------------------------------|-----------------|--------------------------------------------------------|------------------------------|
| 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 815 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                 |          | ±1 mm                                                  |                 |                                                        |                              |
|                                  | θ axis                       |          | ±0.3 deg                                               | -               | ±0.3 deg                                               | -                            |
| Maximum payload                  |                              |          | 8 kg                                                   |                 |                                                        |                              |
| Maximum through-put <sup>3</sup> |                              |          | 80 CPM <sup>4</sup>                                    |                 | 90 CPM <sup>4</sup>                                    |                              |
| θ axis maximum torque            |                              |          | According to the servo motor                           |                 | -                                                      | According to the servo motor |
| User tubing (outer diameter)     |                              |          | Ø 8 <sup>5</sup>                                       |                 |                                                        |                              |
| Travel limit                     |                              |          | 1. Soft limit, 2. Mechanical stopper (X, Y, Z axis)    |                 |                                                        |                              |
| Noise level                      |                              |          | < 70 dB (A)                                            |                 | < 68 dB (A)                                            |                              |
| Ambient temperature              |                              |          | 5°C to 45°C                                            |                 |                                                        |                              |
| Relative humidity                |                              |          | Max. 90%                                               |                 |                                                        |                              |
| Protection class                 |                              |          | IP65                                                   |                 |                                                        |                              |
| Weight                           |                              |          | 115 kg                                                 |                 | 90 kg                                                  |                              |

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

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

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

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

<sup>5</sup>5. Only for the air suctioning. The air injection is not allowed.

## Delta robot XL

| Model                            |                              | CR_UGD4_XL_R                                           | CR_UGD4_XL_NR    |
|----------------------------------|------------------------------|--------------------------------------------------------|------------------|
| Working volume                   | X, Y axis (stroke)           | Ø 1,300 mm                                             |                  |
|                                  | Z axis (stroke) <sup>1</sup> | 250 mm (maximum Ø 1,300 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                                               | 1,000 W          |
|                                  | Rotational axis 4            | Model                                                  | R88M-K1K030T-BS2 |
|                                  |                              | Capacity                                               | 1,000 W          |
| Repeatability <sup>2</sup>       | X, Y, Z axis                 | ±0.2 mm                                                |                  |
|                                  | θ axis                       | ±0.3 deg                                               | -                |
| Maximum payload                  |                              | 2 kg                                                   |                  |
| Maximum through-put <sup>3</sup> |                              | 120 CPM <sup>4</sup>                                   |                  |
| θ axis maximum torque            |                              | According to the servo motor                           | -                |
| 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                                                  |                  |

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

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

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

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

<sup>5</sup>5. Only for the air suctioning. The air injection is not allowed.

## Delta robot

| Model                             |                               | CR_UGD4_R                                              | CR_UGD4_NR       |
|-----------------------------------|-------------------------------|--------------------------------------------------------|------------------|
| Working volume                    | X, Y axis (stroke)            | Ø 1,100 mm                                             |                  |
|                                   | Z axis (stroke) <sup>*1</sup> | 250 mm (maximum Ø 1,100 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                                               | 1,000 W          |
|                                   | Rotational axis 4             | Model                                                  | R88M-K1K030T-BS2 |
|                                   |                               | Capacity                                               | 1,000 W          |
| Repeatability <sup>*2</sup>       | X, Y, Z axis                  | ±0.3 mm                                                |                  |
|                                   | θ axis                        | ±0.4 deg                                               |                  |
| Maximum payload                   |                               | 2 kg                                                   |                  |
| Maximum through-put <sup>*3</sup> |                               | 150 CPM <sup>*4</sup>                                  |                  |
| θ axis maximum torque             |                               | According to the servo motor                           | -                |
| 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.

## Mini Delta robot

| Model                             |                               | CR_UGD4MINI_R                                       | CR_UGD4MINI_NR            |
|-----------------------------------|-------------------------------|-----------------------------------------------------|---------------------------|
| 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>                               |                           |
| θ axis maximum torque             |                               | According to the servo motor                        | -                         |
| 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                            |                               | 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.

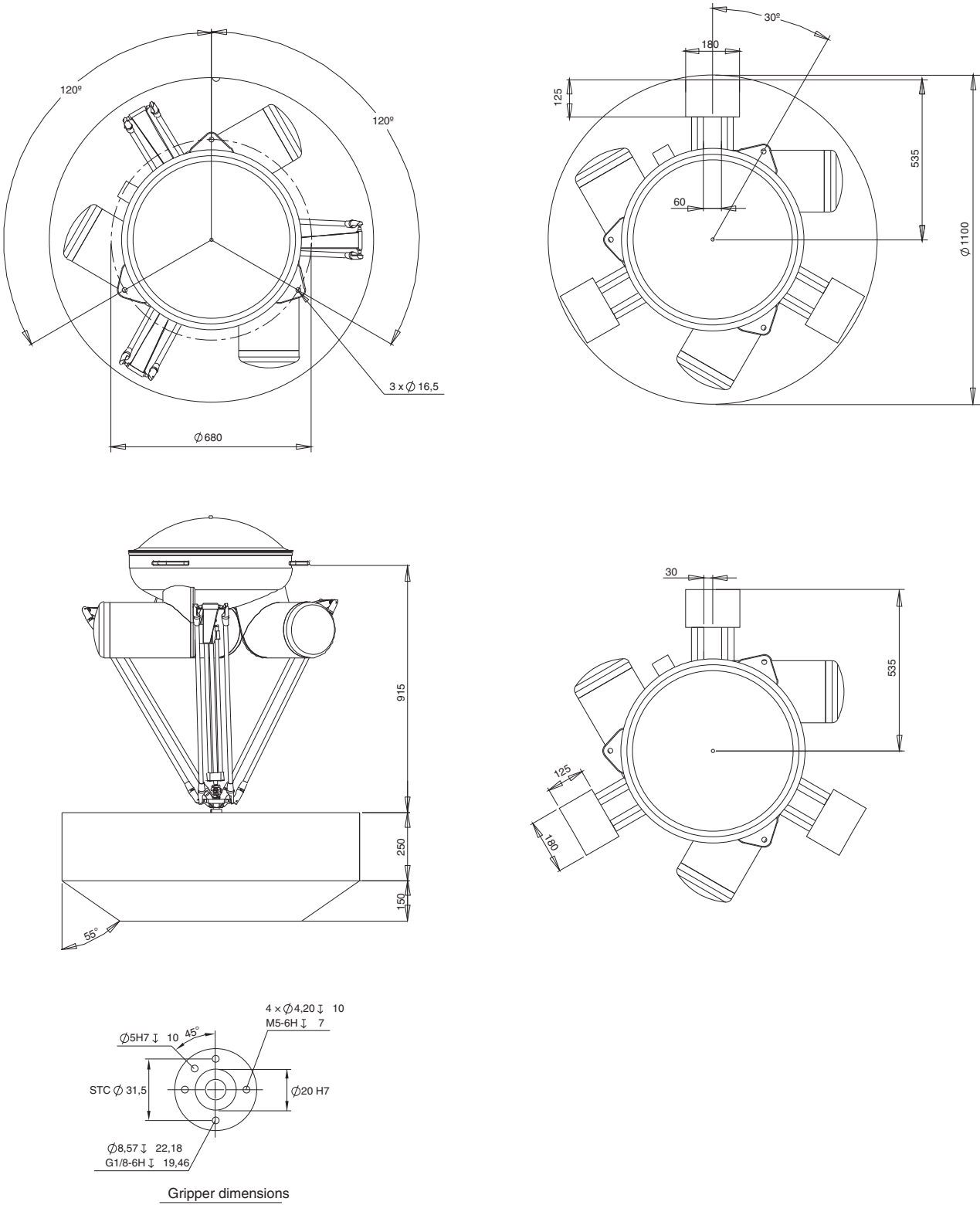
\*4. CPM: Cycle per minutes. Check the note 3 for the cycle definition.

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

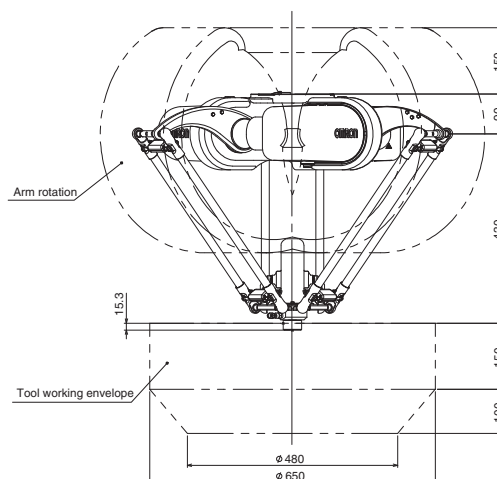
Dimensions

Washdown Delta robot IP69K

CR\_UGD4\_□R\_HD□





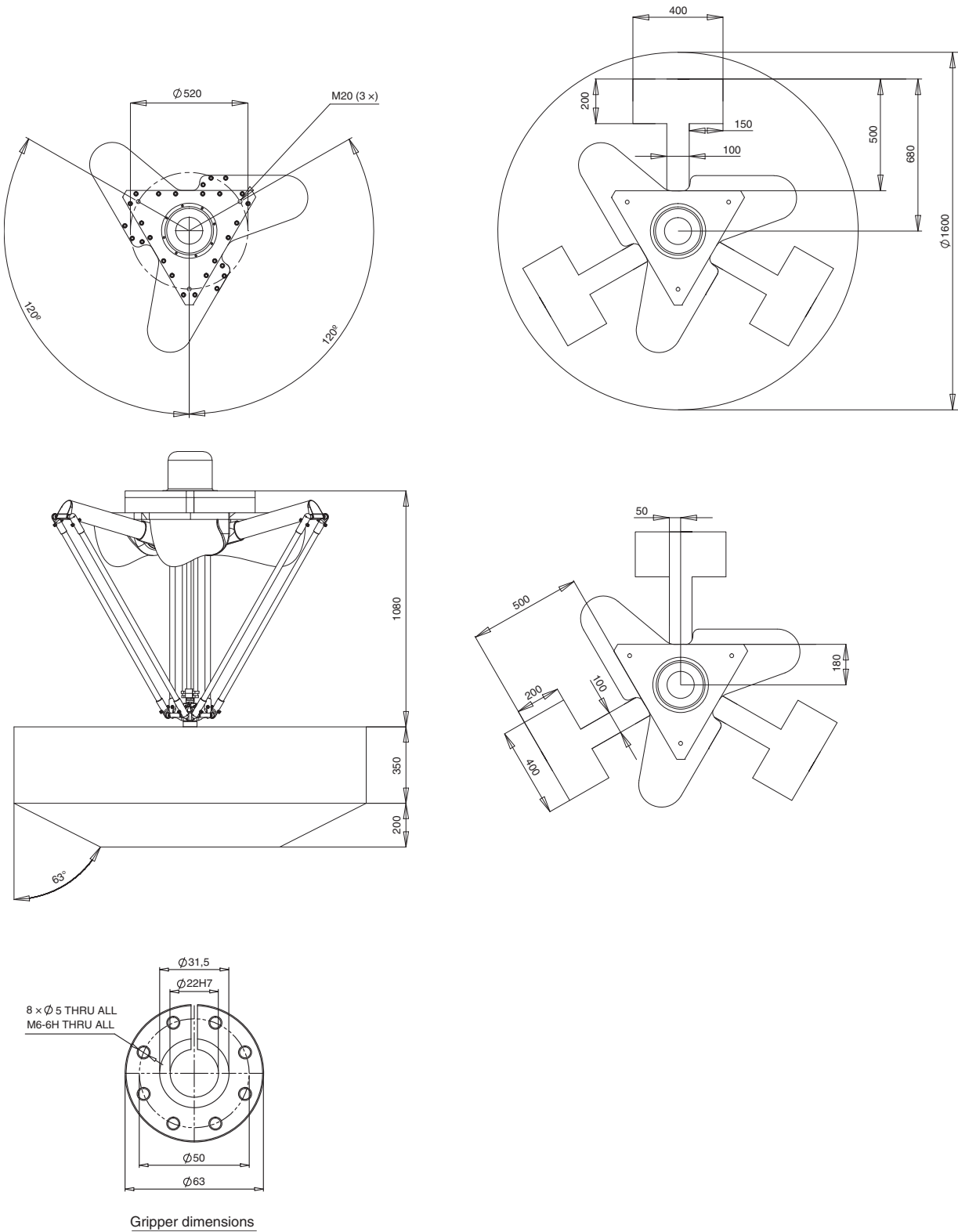


Robot

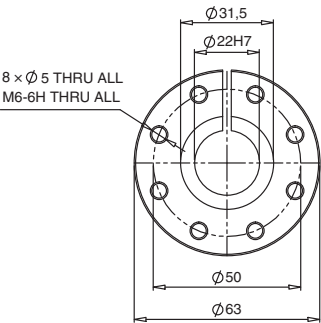
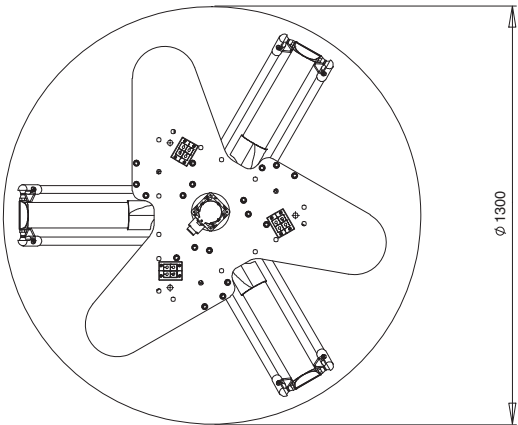
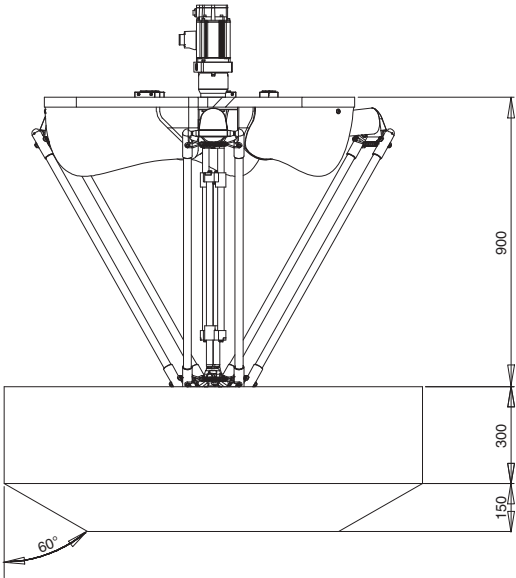
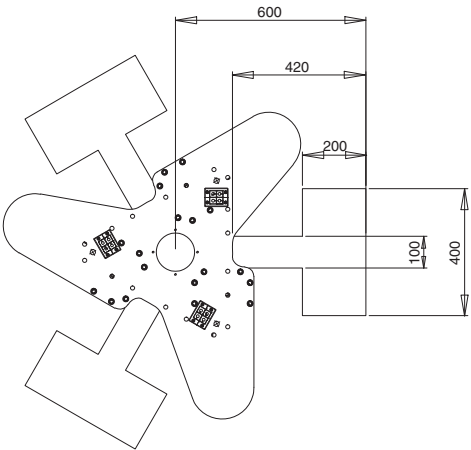
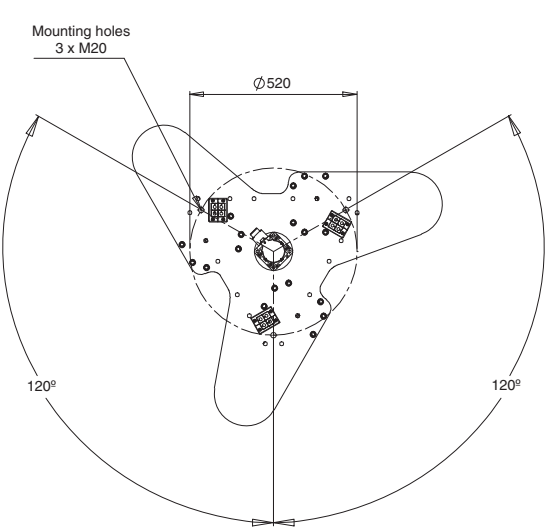


Delta robot XXL (1,600)

CR\_UGD4\_XXLH\_□R

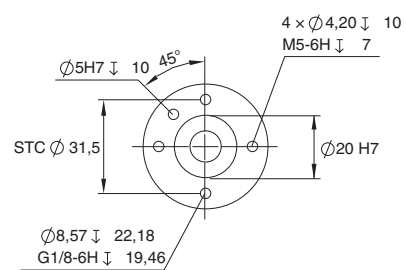
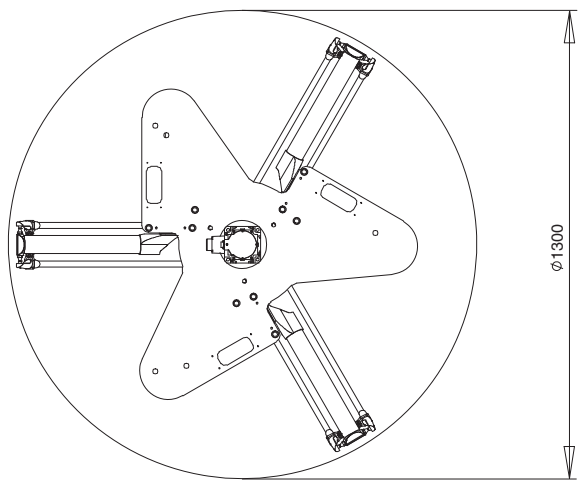
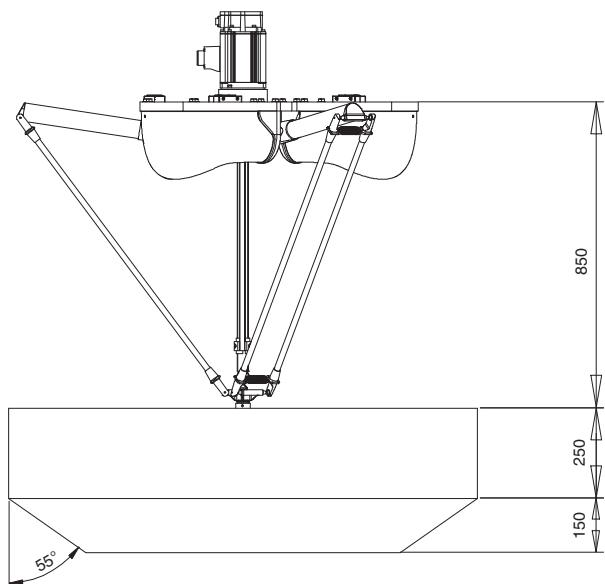
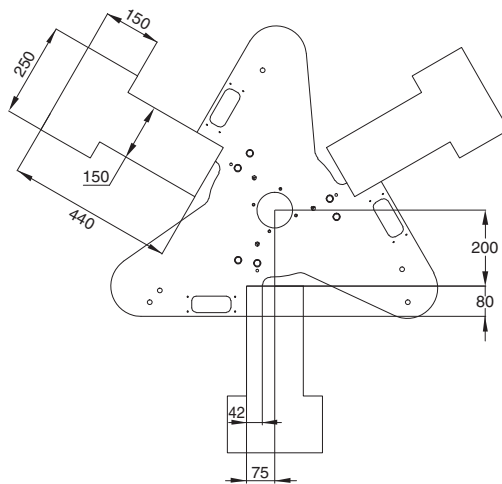
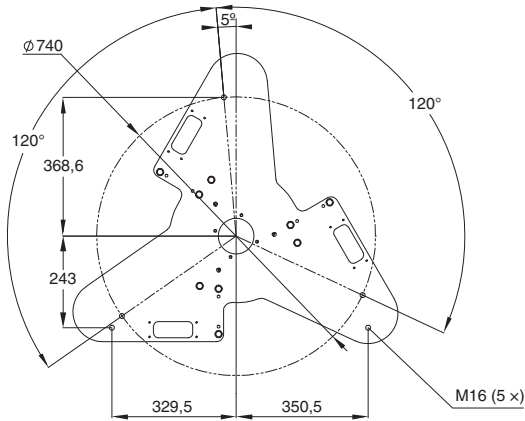


Delta robot XXL (1,300)  
CR\_UGD4\_XXL1300H\_□R



Gripper dimensions

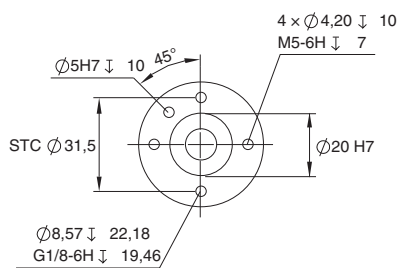
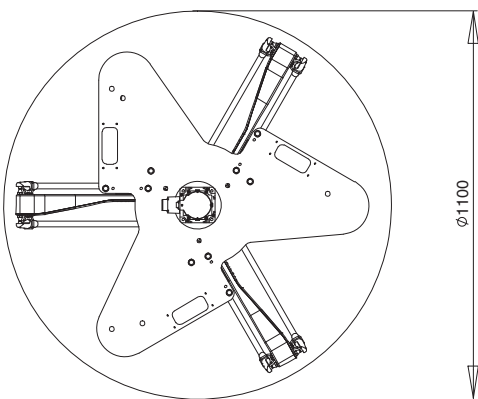
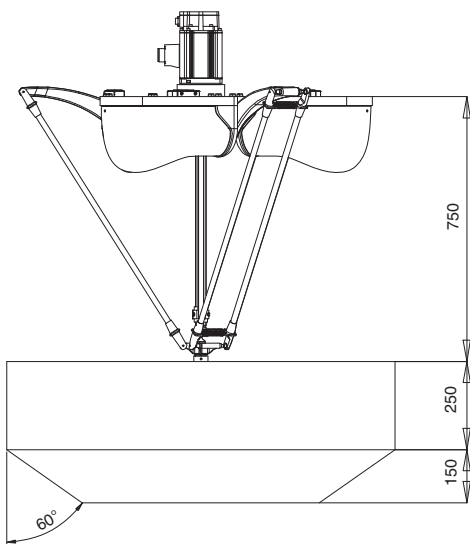
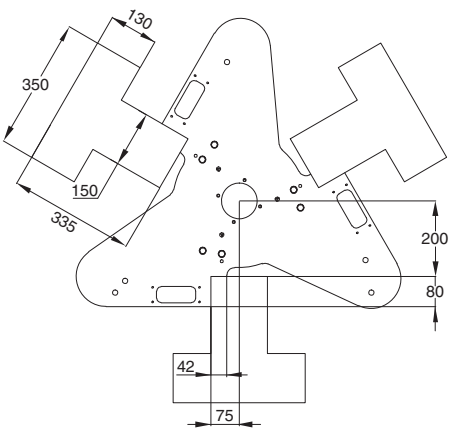
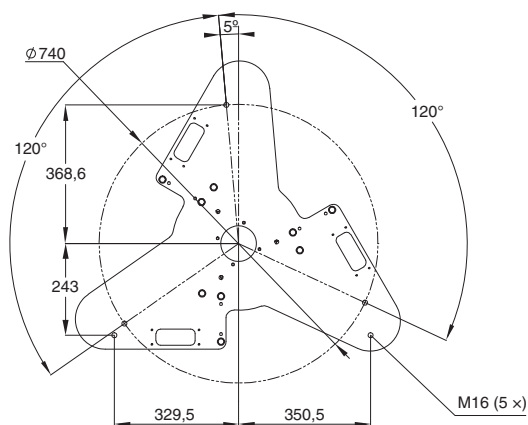
Delta robot XL  
CR\_UGD4\_XL\_□R



Gripper dimensions

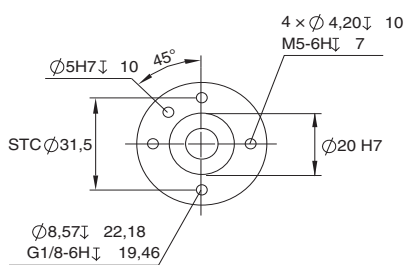
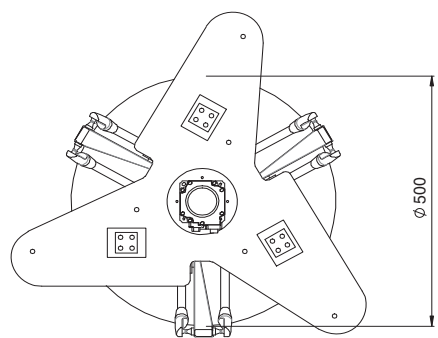
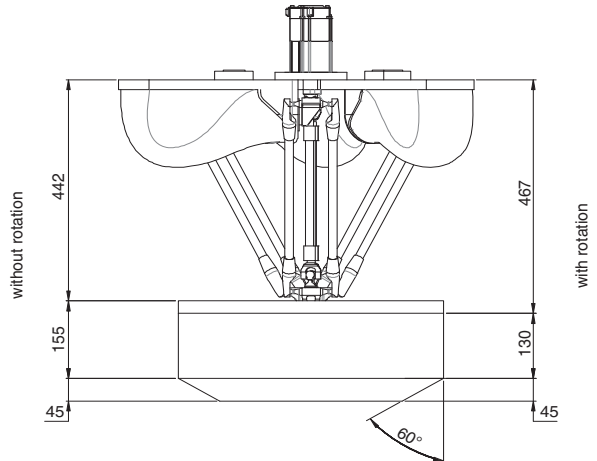
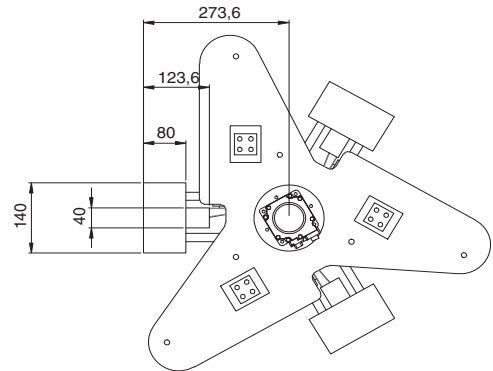
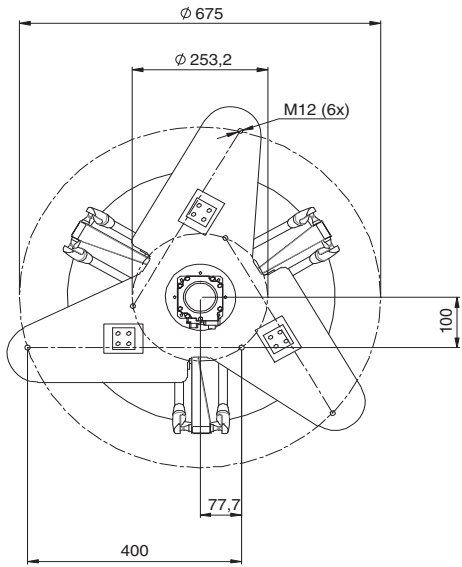
Delta robot

CR\_UGD4\_□R



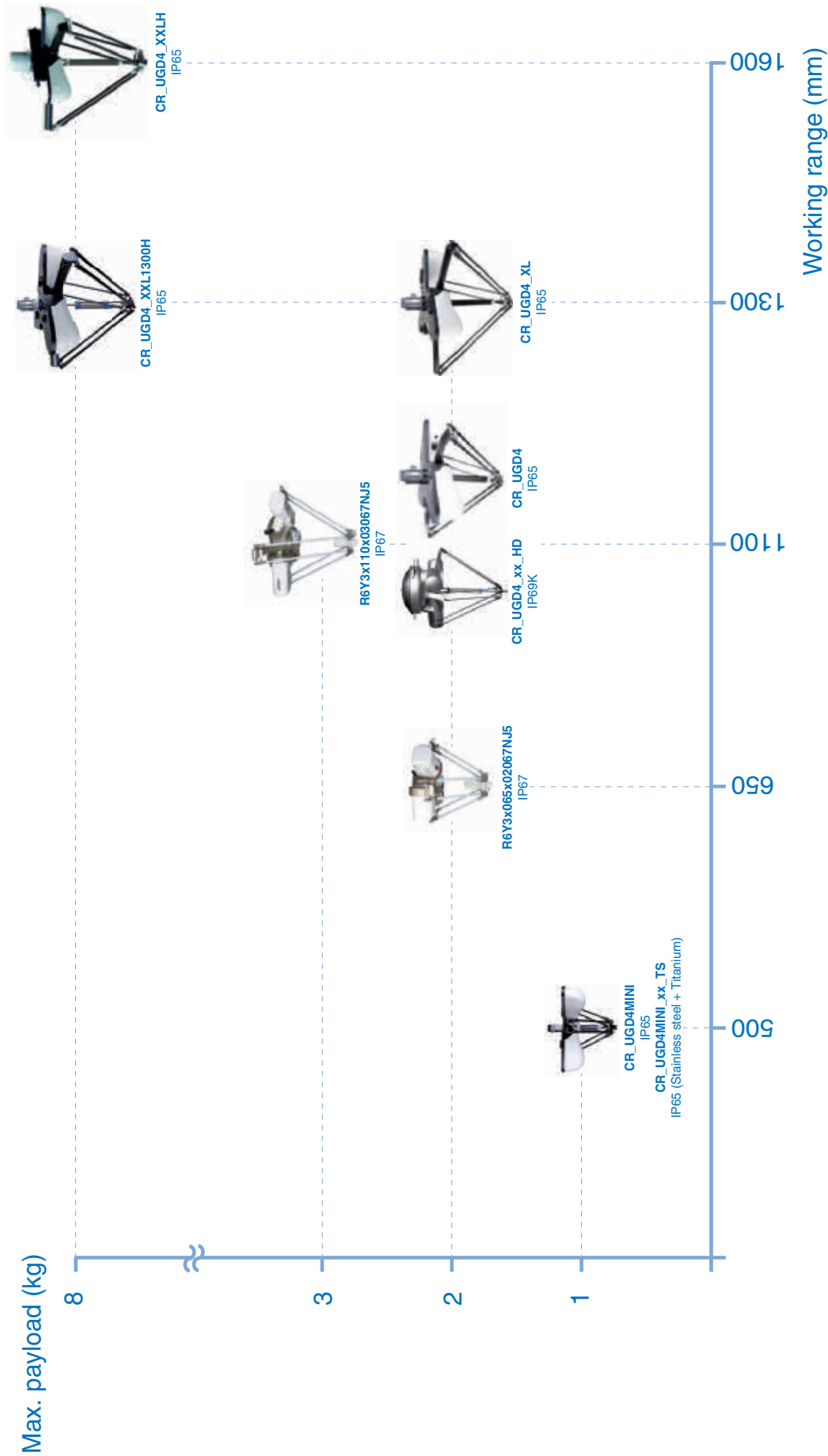
Gripper dimensions

Washdown Mini Delta robot IP65 / Mini Delta robot  
CR\_UGD4MINI\_□R□

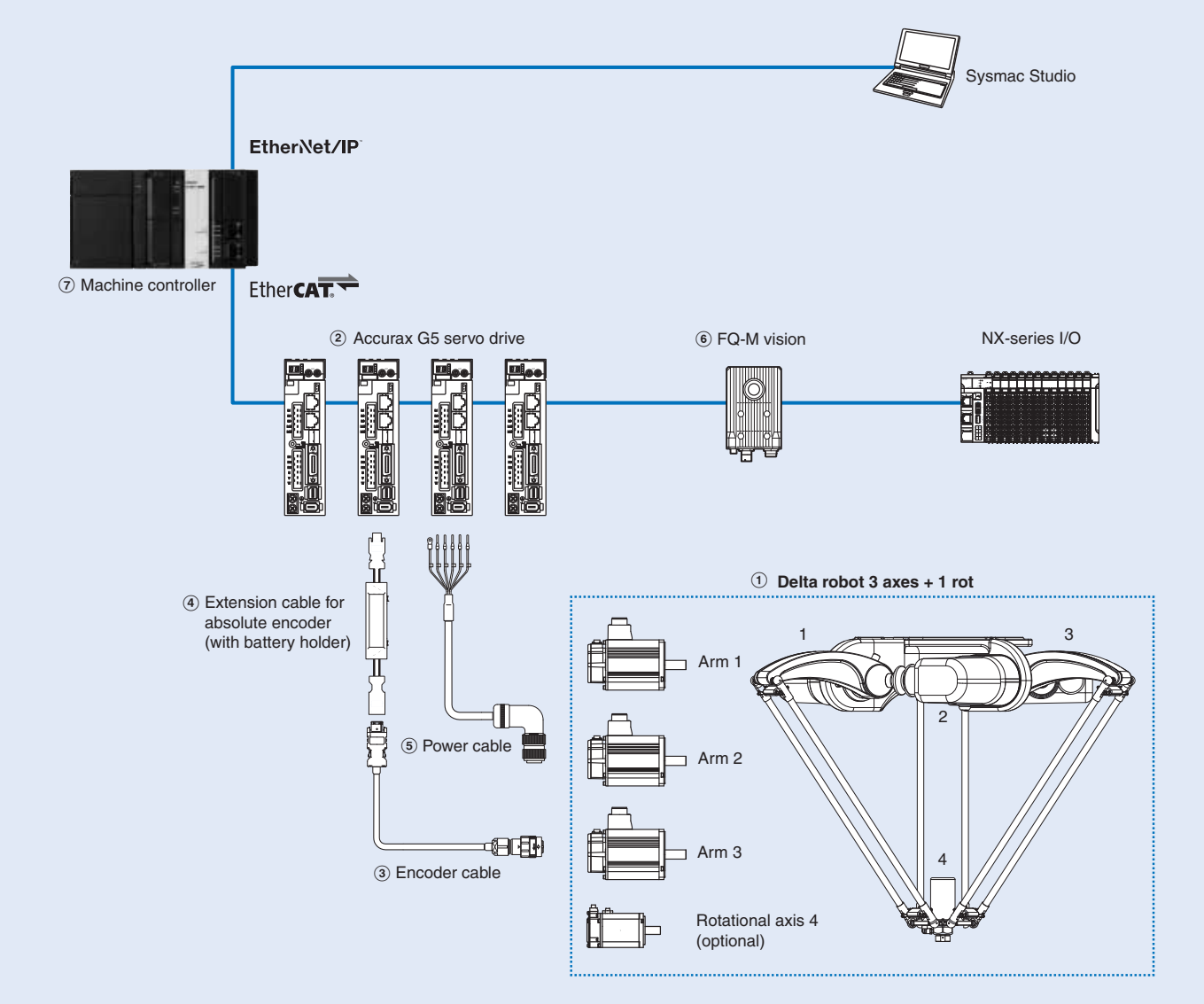


Gripper dimensions

Selection table



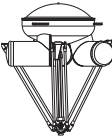
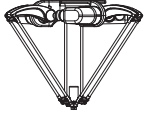
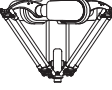
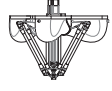
Ordering information



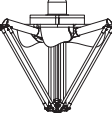
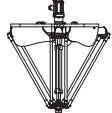
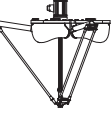

**Note:** Servo motors included in the Delta robot.

## Delta robot 3 axes + 1 rot series

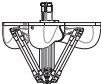
### Washdown Delta robot series

| Symbol                                                                                                            | Model                                                                                     | Cable length                       | Max. payload | Working range                  | Description                                                            | Axis                                    | ②Applicable servo drive                                              |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------|--------------|--------------------------------|------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------|
| ①<br><br>Delta robot IP69K       | CR_UGD4_R_HD3<br>CR_UGD4_R_HD5<br>CR_UGD4_R_HD10<br>CR_UGD4_R_HD15<br>CR_UGD4_R_HD20      | 3 m<br>5 m<br>10 m<br>15 m<br>20 m | 2 kg         | Ø 1,100 x 250 mm<br>(Max. 400) | 3 + 1 axes<br>Hygienic Design<br>(only this robot includes the cables) | Arm 1<br>Arm 2<br>Arm 3<br>Rotational 4 | R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN08H-ECT |
|                                                                                                                   | CR_UGD4_NR_HD3<br>CR_UGD4_NR_HD5<br>CR_UGD4_NR_HD10<br>CR_UGD4_NR_HD15<br>CR_UGD4_NR_HD20 | 3 m<br>5 m<br>10 m<br>15 m<br>20 m |              |                                | 3 axes<br>Hygienic Design<br>(only this robot includes the cables)     | Arm 1<br>Arm 2<br>Arm 3                 | R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT                   |
| ①<br><br>Delta robot IP67        | R6Y31110H03067NJ5                                                                         |                                    | 3 kg         | Ø 1,100 x 300 mm<br>(Max. 450) | 3 + 1 axes<br>(high inertia rotational axis)                           | Arm 1<br>Arm 2<br>Arm 3<br>Rotational 4 | R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN01H-ECT |
|                                                                                                                   | R6Y31110L03067NJ5                                                                         |                                    |              |                                | 3 + 1 axes<br>(low inertia rotational axis)                            | Arm 1<br>Arm 2<br>Arm 3<br>Rotational 4 | R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN01H-ECT |
|                                                                                                                   | R6Y30110S03067NJ5                                                                         |                                    |              |                                | 3 axes                                                                 | Arm 1<br>Arm 2<br>Arm 3                 | R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT                   |
| ①<br><br>Mini Delta robot IP67   | R6Y31065H02067NJ5                                                                         |                                    | 2 kg         | Ø 650 x 150 mm<br>(Max. 250)   | 3 + 1 axes<br>(high inertia rotational axis)                           | Arm 1<br>Arm 2<br>Arm 3<br>Rotational 4 | R88D-KN04H-ECT<br>R88D-KN04H-ECT<br>R88D-KN04H-ECT<br>R88D-KN01H-ECT |
|                                                                                                                   | R6Y31065L02067NJ5                                                                         |                                    |              |                                | 3 + 1 axes<br>(low inertia rotational axis)                            | Arm 1<br>Arm 2<br>Arm 3<br>Rotational 4 | R88D-KN04H-ECT<br>R88D-KN04H-ECT<br>R88D-KN04H-ECT<br>R88D-KN01H-ECT |
|                                                                                                                   | R6Y30065S02067NJ5                                                                         |                                    |              |                                | 3 axes                                                                 | Arm 1<br>Arm 2<br>Arm 3                 | R88D-KN04H-ECT<br>R88D-KN04H-ECT<br>R88D-KN04H-ECT                   |
| ①<br><br>Mini Delta robot IP65 | CR_UGD4MINI_R_TS                                                                          |                                    | 1 kg         | Ø 500 x 130 mm<br>(Max. 175)   | 3 + 1 axes                                                             | Arm 1<br>Arm 2<br>Arm 3<br>Rotational 4 | R88D-KN04H-ECT<br>R88D-KN04H-ECT<br>R88D-KN04H-ECT<br>R88D-KN04H-ECT |
|                                                                                                                   | CR_UGD4MINI_NR_TS                                                                         |                                    |              | Ø 500 x 155 mm<br>(Max. 200)   | 3 axes                                                                 | Arm 1<br>Arm 2<br>Arm 3                 | R88D-KN04H-ECT<br>R88D-KN04H-ECT<br>R88D-KN04H-ECT                   |



### Delta robot series

| Symbol                                                                                                              | Model               | Cable length | Max. payload | Working range                  | Description | Axis                                    | ②Applicable servo drive                                              |
|---------------------------------------------------------------------------------------------------------------------|---------------------|--------------|--------------|--------------------------------|-------------|-----------------------------------------|----------------------------------------------------------------------|
| ①<br><br>Delta robot XXL (1,600) | CR_UGD4_XXLH_R      |              | 8 kg         | Ø 1,600 x 350 mm<br>(Max. 550) | 3 + 1 axes  | Arm 1<br>Arm 2<br>Arm 3<br>Rotational 4 | R88D-KN30F-ECT<br>R88D-KN30F-ECT<br>R88D-KN30F-ECT<br>R88D-KN15F-ECT |
|                                                                                                                     | CR_UGD4_XXLH_NR     |              |              |                                | 3 axes      | Arm 1<br>Arm 2<br>Arm 3                 | R88D-KN30F-ECT<br>R88D-KN30F-ECT<br>R88D-KN30F-ECT                   |
| ①<br><br>Delta robot XXL (1,300) | CR_UGD4_XXL1300H_R  |              | 8 kg         | Ø 1,300 x 300 mm<br>(Max. 450) | 3 + 1 axes  | Arm 1<br>Arm 2<br>Arm 3<br>Rotational 4 | R88D-KN30F-ECT<br>R88D-KN30F-ECT<br>R88D-KN30F-ECT<br>R88D-KN15F-ECT |
|                                                                                                                     | CR_UGD4_XXL1300H_NR |              |              |                                | 3 axes      | Arm 1<br>Arm 2<br>Arm 3                 | R88D-KN30F-ECT<br>R88D-KN30F-ECT<br>R88D-KN30F-ECT                   |
| ①<br><br>Delta robot XL          | CR_UGD4_XL_R        |              | 2 kg         | Ø 1,300 x 250 mm<br>(Max. 400) | 3 + 1 axes  | Arm 1<br>Arm 2<br>Arm 3<br>Rotational 4 | R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT |
|                                                                                                                     | CR_UGD4_XL_NR       |              |              |                                | 3 axes      | Arm 1<br>Arm 2<br>Arm 3                 | R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT                   |
| ①<br><br>Delta robot             | CR_UGD4_R           |              | 2 kg         | Ø 1,100 x 250 mm<br>(Max. 400) | 3 + 1 axes  | Arm 1<br>Arm 2<br>Arm 3<br>Rotational 4 | R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT |
|                                                                                                                     | CR_UGD4_NR          |              |              |                                | 3 axes      | Arm 1<br>Arm 2<br>Arm 3                 | R88D-KN15H-ECT<br>R88D-KN15H-ECT<br>R88D-KN15H-ECT                   |



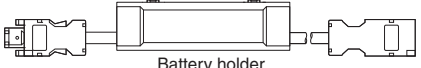

| Symbol                                                                                                            | Model          | Cable length | Max. payload | Working range                | Description | Axis         | ②Applicable servo drive |
|-------------------------------------------------------------------------------------------------------------------|----------------|--------------|--------------|------------------------------|-------------|--------------|-------------------------|
| ①<br><br><b>Mini Delta robot</b> | CR_UGD4MINI_R  | 1 kg         |              | Ø 500 x 130 mm<br>(Max. 175) | 3 + 1 axes  | Arm 1        | R88D-KN04H-ECT          |
|                                                                                                                   |                |              |              |                              |             | Arm 2        | R88D-KN04H-ECT          |
|                                                                                                                   |                |              |              |                              |             | Arm 3        | R88D-KN04H-ECT          |
|                                                                                                                   |                |              |              |                              |             | Rotational 4 | R88D-KN04H-ECT          |
|                                                                                                                   | CR_UGD4MINI_NR |              |              | Ø 500 x 155 mm<br>(Max. 200) | 3 axes      | Arm 1        | R88D-KN04H-ECT          |
|                                                                                                                   |                |              |              |                              |             | Arm 2        | R88D-KN04H-ECT          |
|                                                                                                                   |                |              |              |                              |             | Arm 3        | R88D-KN04H-ECT          |

### Encoder cables

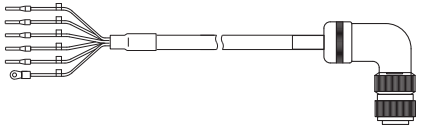
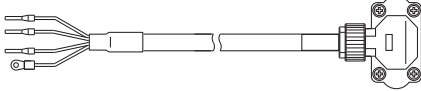

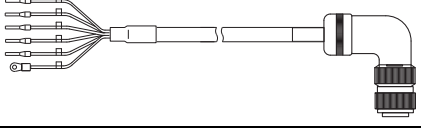

| Symbol | Applicable Delta robots                         | Model                    | Appearance                                                                          |
|--------|-------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|
| ③      | CR_UGD4_□_HD□ (Arm 1, 2, 3) <sup>*1</sup>       | 1.5 m R88A-CRKC001-5NR-E |  |
|        | R6Y3□110□03067NJ5                               | 3 m R88A-CRKC003NR-E     |                                                                                     |
|        | CR_UGD4_XXLH                                    | 5 m R88A-CRKC005NR-E     |                                                                                     |
|        | CR_UGD4_XXL1300H                                | 10 m R88A-CRKC010NR-E    |                                                                                     |
|        | CR_UGD4_XL                                      | 15 m R88A-CRKC015NR-E    |                                                                                     |
|        | CR_UGD4                                         | 20 m R88A-CRKC020NR-E    |                                                                                     |
|        | R6Y3□065□02067NJ5 (Rotational axis 4)           |                          |  |
|        | CR_UGD4_□_HD□ (Rotational axis 4) <sup>*1</sup> | 1.5 m R88A-CRKA001-5CR-E |                                                                                     |
|        | R6Y3□065□02067NJ5 (Arm 1, 2, 3)                 | 3 m R88A-CRKA003CR-E     |                                                                                     |
|        | CR_UGD4MINI_□_TS                                | 5 m R88A-CRKA005CR-E     |                                                                                     |
|        | CR_UGD4MINI                                     | 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 R88A-CRGD0R3C-E | <br>Battery holder |
|        |                                 | 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_□_HD□ <sup>*1</sup> | Arm 1, 2, 3<br>Power cable with brake          |  |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             | Rotational axis 4<br>Power cable without brake |  |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             | Brake cable                                    |  |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        | R6Y3□110□03067NJ5           | Arm 1, 2, 3<br>Power cable with brake          |  |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             | Rotational axis 4<br>Power cable without brake |  |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |
|        |                             |                                                |                                                                                       |

| Symbol | Applicable Delta robots          |                                   |                           | Model |                    | Appearance |
|--------|----------------------------------|-----------------------------------|---------------------------|-------|--------------------|------------|
| ⑤      | CR_UGD4_XXLH<br>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   |            |
|        | CR_UGD4_XL<br>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   |            |
|        | 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   |            |
|        |                                  | Arm 1, 2, 3                       | 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   |            |
|        | CR_UGD4MINI_□_TS<br>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   |            |
|        |                                  | Arm 1, 2, 3 and 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   |            |

\*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          |
|               |                   | Logic sequence, motion and robotics                      |                                                                                     | 64         | NJ501-4500          |
|               |                   |                                                          |                                                                                     | 32         | NJ501-4400          |
|               |                   |                                                          |                                                                                     | 16         | NJ501-4300          |
|               |                   | Control of one Delta robot                               | 16                                                                                  | NJ501-4310 |                     |
|               | Power supply unit |                                                          |                                                                                     |            | NJ-PA3001 (220 VAC) |
|               |                   |                                                          |                                                                                     |            |                     |

## Accessories

| Name                            | Applicable Delta robots                | Specifications                                         | Model     |
|---------------------------------|----------------------------------------|--------------------------------------------------------|-----------|
| Anti-collision detection option | R6Y3□110□03067NJ5<br>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.