Thank you for purchasing an IAI product.

Assemble your product correctly by referring to these Assembly Procedures.
Caution: ● Although each part has been chamfered to remove sharp edges, exercise due caution during the assembly to prevent injury. If necessary, wear gloves or other protective gears. ● Exercise due caution during the assembly to prevent pinching of hands and fingers.

1. [Tools] Allen wrench, spanner wrench
   In the case of configuration direction types 2 to 4, the actuator and bracket directions are different.
   Track mounting bracket
   Parallel pin (2 pcs)

2. Track mounting bracket
   X-axis: ISPA
   Y-axis: SPA
   Track mounting bracket: (Already attached to LSA)

   X-axis: Joint of the motor and encoder cables on LSA side and the cable connectors coming out of the X-axis cable track (on the back side)
   X-axis motor and encoder cables
   Guide the cable to other side through the hole.
   Parallel pin Hexagonal socket
   Hexagonal socket head bolt M8=40
   High-tension washer + hexagonal nut (4 sets)

   Make a cross cut.

   X-axis motor and encoder cables
   Guide the cables through the cable track mounting bracket.
   Make a cut in the film on the grommet to put through the cables, and then attach it to the track mounting bracket.
   Hexagonal socket head bolt M3=40
   10mm 36.7kgf
   Hexagonal socket head bolt M4=10
   10mm 18.0kgf
   Hexagonal socket head bolt M4=10
   10mm 18.0kgf

3. [Installation of box cover [8] on connector box [4]]
   Hexagonal socket head bolt M3=30
   Thin-head bolt M3=6
   [Installation of metal cover [10] on track mounting bracket]
   Connector joint for cable inside track and controller-actuator cable
   Connector joint for cable inside track and controller-actuator cable

   Hexagonal socket head bolt M4=10
   Hexagonal socket head bolt M4=10
   Hexagonal socket head bolt M4=10
   Hexagonal socket head bolt M4=10
   Hexagonal socket head bolt M4=10
   Hexagonal socket head bolt M4=10
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   Hexagonal socket head bolt M4=10
   Hexagonal socket head bolt M4=10

   Connector joint for cable inside track and controller-actuator cable

   Secure the cables using wraps.

   [Installation of cable track [3] on track mounting bracket]

   Guide the cables to the track mounting bracket.
   Secure the cables using wraps.

   Secure the wires to prevent the cables and connectors from contacting each axis when the axis is moved over its entire stroke.

   When manually moving the actuator with brake, connect the controller, supply the power, and then release the brake release switch (by turning the switch to the RLS side).

   The cables for X-axis (axis 1) and Y-axis (axis 2) are placed in tracks. Insert each cable correctly.
   [Cable markings]
   X-axis (axis 1): 1
   Y-axis (axis 2): 2

   Caution: Since the hexagonal holes in thin-head bolts are small, the hexagonal holes may be damaged depending on the tightening method. Exercise due caution when tightening thin-head bolts.

   Make sure the numbers on the connectors be connected match.

   * This assembly procedure applies to configuration direction 1. If other configuration direction such as 2, 3 or 4 is used, the actuator and bracket directions vary. However, you can still use this assembly drawing as a reference.
**Caution:** Although each part has been chamfered to remove sharp edges, exercise due caution during the assembly to prevent injury. If necessary, wear gloves or other protective gears.

### [Tools] Allen wrench, spanner wrench

- **Track mounting plate**
- **Parallel pin** (1 pc or 2 pcs)

**Note:** To ensure squariness between the X-axis and Y-axis, insert one parallel pin. Adjust the angle between the X-axis and Y-axis to the right angle, and then mount the hexagonal bolts.

### [Installation of X-axis: LSA on XY bracket [1]]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M6×10</td>
<td>15 (2 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M8×15</td>
<td>25 (2 pcs)</td>
</tr>
</tbody>
</table>

### [Installation of guide rail [2] on track mounting bracket [14]]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M8×15</td>
<td>25 (2 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M8×15</td>
<td>15 (2 pcs)</td>
</tr>
</tbody>
</table>

### [Installation of connector box 2 [16] on track mounting bracket 2 [14]]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M6×15</td>
<td>12 (6 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M6×15</td>
<td>12 (6 pcs)</td>
</tr>
</tbody>
</table>

### [Installation of cable track 1 [3] on track mounting bracket [1]]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M6×15</td>
<td>12 (6 pcs)</td>
</tr>
<tr>
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<td>12 (6 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M6×15</td>
<td>12 (6 pcs)</td>
</tr>
</tbody>
</table>

### [Installation of track support bracket [13] on XY bracket [1]]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M4×6</td>
<td>12 (6 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M4×6</td>
<td>12 (6 pcs)</td>
</tr>
</tbody>
</table>

### [Installation of track support metal [13] on track mounting plate [12]]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M4×6</td>
<td>12 (6 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M4×6</td>
<td>12 (6 pcs)</td>
</tr>
</tbody>
</table>

### [Installation of track mounting plate [12] on Y-axis: ISPA]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M4×6</td>
<td>12 (6 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M4×6</td>
<td>12 (6 pcs)</td>
</tr>
</tbody>
</table>

### [Installation of connector box 2 [16] on track mounting bracket 2 [14]]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M5×5</td>
<td>15 (2 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M5×5</td>
<td>15 (2 pcs)</td>
</tr>
</tbody>
</table>

### [Installation of connector box 1 [4] on XY bracket [1]]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M5×5</td>
<td>15 (2 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M5×5</td>
<td>15 (2 pcs)</td>
</tr>
</tbody>
</table>

### [Installation of track mounting bracket 2 [14] on YZ plate [11]]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M5×5</td>
<td>15 (2 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M5×5</td>
<td>15 (2 pcs)</td>
</tr>
</tbody>
</table>

### [Installation of connector box 1 [4] on YZ plate [11]]

<table>
<thead>
<tr>
<th>Tool</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagonal socket head bolt M5×5</td>
<td>15 (2 pcs)</td>
</tr>
<tr>
<td>Hexagonal socket head bolt M5×5</td>
<td>15 (2 pcs)</td>
</tr>
</tbody>
</table>

* This assembly procedure applies to configuration direction 1. If other configuration direction such as 2, 3 or 4 is used, the actuator and bracket directions vary. However, you can still use this assembly drawing as a reference.
**Caution:** Although each part has been chamfered to remove sharp edges, exercise due caution during the assembly to prevent pinching of hands and fingers.

**Tools** Allen wrench, spanner wrench

In the case of configuration direction types 2 to 4, the actuator and bracket directions are different.

<table>
<thead>
<tr>
<th><strong>Parallel pin (2 pcs)</strong></th>
<th><strong>Hexagonal socket head bolt M6-35 + flat washer (4 pcs)</strong></th>
</tr>
</thead>
</table>

Z-axis: ISPA

**Parallel pin (2 pcs)**

Hexagonal socket head bolt M6-35 + flat washer (4 pcs)


<table>
<thead>
<tr>
<th>Parallel pin</th>
<th>Hexagonal bolt</th>
<th>Tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>a6h7/15</td>
<td>M6-35</td>
<td>11.7kgfcm/1489Ncm</td>
</tr>
</tbody>
</table>

**Installation of Z-axis: ISPA on YZ bracket** [11]

<table>
<thead>
<tr>
<th>Parallel pin</th>
<th>Hexagonal bolt</th>
<th>Tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>a6h7/15</td>
<td>M6-35</td>
<td>30.8kgfcm/2997Ncm</td>
</tr>
</tbody>
</table>

* This assembly procedure applies to configuration direction 1. If other configuration direction such as 2, 3 or 4 is used, the actuator and bracket directions vary. However, you can still use this assembly drawing as a reference.
**X-axis Linear Servo Type Cartesian Robot – High-precision 3-axis Specification, Z Slider Mount**

**ICSPA3-B1L:HS3M**

**Drawing No:** GMM07-069 2/2

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**6**

- [3] Cable track 1
  - X-axis: ISPA
  - Hexagonal socket head bolt M4-8 (2 pcs)
  - Hexagonal socket head bolt MiK-12 (2 pcs)
  - Hexagonal socket head bolt MiK-12 (2 pcs)
  - Y-axis: ISPA

- [16] Cable track 2
  - Hexagonal socket head bolt M4-8 (2 pcs)
  - Hexagonal socket head bolt MiK-12 (2 pcs)
  - Hexagonal socket head bolt MiK-12 (2 pcs)

- [1] XY bracket

---

**7**

- [10] Metal cover

- [17] Connector box 2
  - Hexagonal socket head bolt M4-12 (4 pcs)
  - M4-6mm 36.7kgfcm/289N·cm

- [18] Box cover 2
  - Hexagonal socket head bolt M4-12 (8 pcs)
  - M4-6mm 36.7kgfcm/289N·cm

- [8] Grommet with film

- [19] Joint cover 2

---

**8**

- [15] Track mounting bracket 3
  - KR5G5 tie-mount (by HellermannTyton)
  - Hexagonal socket head button bolt M4-1 (2 sets)

- [14] Track mounting bracket 2
  - KR5G5 tie-mount (by HellermannTyton)
  - Hexagonal socket head button bolt M4-1 (2 sets)
  - Y-axis: ISPA

- [13] Track support bracket

---

**9**

- [15] Track mounting bracket 3
  - Z-axis: ISPA
  - 12mm 5.51kgfcm/344N·cm

- [16] Box cover 2
  - Hexagonal socket head bolt M3-12 (8 pcs)
  - M3-4mm 7.15kgfcm/509N·cm

- [17] Connector box 2

---

**X-axis, Y-axis cables**

- Secure the cables using wraps.

- Wire the cable in a manner preventing contact with the Z-axis.
- Secure the cables using wraps.

**Cable connector connection**

- [10] Metal cover

- [4] Connector box 1
  - Hexagonal socket head bolt M4-12 (6 pcs)
  - M4-6mm 36.7kgfcm/289N·cm

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**Z-slide X-axis Linear Servo Type Cartesian Robot – High-precision 3-axis Specification, Z Slider Mount**

**ICSPA3-B1L:HS3M**

**Drawing No:** GMM07-069 2/2

---

- Secure the cables using wraps.

- Secure the wires to prevent the cables and connectors from contacting each axis when the axis is moved over its entire stroke.

  When manually moving the actuator with brake, connect the controller, supply the power, and then release the brake release switch (by turning the switch to the RLS side).
Caution: Although each part has been chamfered to remove sharp edges, exercise due caution during the assembly to prevent injury. If necessary, wear gloves or other protective gears.

Exercise due caution during the assembly to prevent pinching of hands and fingers.

1. **[Tools]** Allen wrench, spanner wrench
   - **Assembly of Y1-axis side**
     - Hexagonal socket head bolt M8x40 + high-tension washer (4 sets)
     - Parallel pin (2 pcs)
     - X-axis: LSA
     - Y1-axis: ISPA
   - **Installation of X-axis: LSA on XY bracket [1]**
   - **Installation of Y1-axis: ISPA on XY bracket [1]**

2. **Assembly of Y2-axis side**
   - Hexagonal socket head bolt M10x10 (2 sets)
   - Parallel pin Hexagonal socket head bolt (2 sets)
   - X-axis: LSA
   - Y2-axis: ISPA
   - **Installation of X-axis: LSA on XY bracket [1]**
   - **Installation of Y1-axis: ISPA on XY bracket [1]**
   - **Installation of guide rail [3] and wiring box bracket [6]**

3. **Affixing positions of guide rail [3], cable track [4] and wiring box bracket [6]**
   - Hexagonal socket head bolt M4x10 (2 pcs)
   - Parallel pin Hexagonal socket head bolt (2 sets)
   - X-axis: LSA
   - Y2-axis: ISPA
   - **Installation of cable track [4] on track mounting bracket**
   - **Installation of guide rail [3]**

   In this assembly procedure, the controller-actuator cable is taken out from the wiring box in the direction shown above. The cable can also be taken out in the directions shown below:

   - **Cable markings**

   * The direction is different on the Y2-axis side. Note: To ensure squareness between the X-axis and Y-axis, insert one parallel pin.

   Adjust the angle between the X-axis and Y-axis to the right angle, and then mount the hexagonal bolts.

---

**Tightening torque**
- Hexagonal socket head bolt M4x10mm: 36.7kgfcm/359Ncm
- Hexagonal socket head bolt M8x40mm: 2997Ncm/359Ncm
- Hexagonal socket head bolt M10x10mm: 2997Ncm/359Ncm

---
Put the X-axis motor and encoder cables into the box through the opening.

**Caution:** The cables for X-axis slider on Y1-axis side (axis 1), Y1-axis (axis 2), X-axis slider on Y2-axis side (axis 3) and Y2-axis (axis 4) are placed in tracks. Install each cable correctly. (Cable markings)

- X-axis on Y1-axis side (axis 1): 1
- Y1-axis (axis 2): 2
- X-axis on Y2-axis side (axis 3): 3
- Y2-axis (axis 4): 4

Make sure the numbers on the connectors to be connected match.

Assemble the Y2-axis side by referring to the Y1-axis side.

Secure the cables using wraps.

**Caution:** Secure the wires to prevent the cables and connectors from contacting each axis when the axis is moved over its entire stroke. When manually moving the actuator with brake, connect the controller, supply the power, and then release the brake release switch (by turning the switch to the RLS side).

**Caution:** Since the hexagonal holes in thin-head bolts are small, the hexagonal holes may be damaged depending on the tightening method. Exercise due caution when tightening thin-head bolts.
Caution: Although each part has been chamfered to remove sharp edges, exercise due caution during the assembly to prevent injury. If necessary, wear gloves or other protective gears.

- Exercise due caution during the assembly to prevent pinching of hands and fingers.

### Assembly of Y1-axis side

1. **Tools** Allen wrench, spanner wrench

2. **Assembly of Y1-axis side**

   - **Parallel pin (2 pcs)**
   - **Hexagonal socket head bolt M8**
   - **High-tension washer (4 sets)**
   - **Hexagonal bolt M8-40**
   - **High-tension washer (4 sets)**
   - **Hexagonal bolt M8**

3. **Note:** To ensure squareness between the X-axis and Y-axis, insert one parallel pin. Adjust the angle between the X-axis and Y-axis to the right angle, and then mount the hexagonal bolts.

### Installation of X-axis: LSA on XY bracket [1]

- **Parallel pin**
- **Hexagonal bolt**
- **Tightening torque**

### Installation of Y1-axis: ISPA on XY bracket [1]

- **Parallel pin**
- **Hexagonal socket head bolt**
- **Tightening torque**

### X-axis Linear Servo Type Cartesian Robot – High-precision 6-axis Specification, Z Base Mount

- **ICSPA6-B2L1HB3H (M)**

### Attachment positions of guide rail [3], cable track 1 [4] and wiring box bracket [6]

- **Align the guide rail [3] surface with the end face of the base. (Same on the other side)**

- **Affix the wiring box bracket [6] using the holes on the inner side, and use the upper T-slot.**

- **Align the guide rail [3] surface with the end face of the base. (Same on the other side)**

- **Affixing positions of guide rail [3], cable track 1 [4] and wiring box bracket [6]**

- **Controller-actuator cable with cable fix cap (for axis 1, 2 or 3)**

- **Controller-actuator cable with cable fix cap (for axis 4, 5 or 6)**

### X-axis Linear Servo Type Cartesian Robot – High-precision 6-axis Specification, Z Base Mount

- **Hexagonal socket head bolt M4**
- **Flange socket (hexagonal socket head type) M4**
- **Hexagonal socket head bolt M4**

### Grommet with film

- **Controller-actuator cable with cable fix cap (for axis 4, 5 or 6)**
* The direction is different on the Z2-axis side. Assemble the parts by referring to the Z1-axis side.

**XY bracket**

- Z1-axis: ISPA
- Y1-axis: ISPA

**YZ plate**

- Hexagonal socket head bolt M8
- M8 dedicated washer (4 sets)
- Parallel pin (2 pcs)
- Parallel pin (1 pc)
- Hexagonal socket head bolt M8
- M8 flat washer (4 sets)


**Installation of Z1-axis: ISPA on YZ plate [11]**

**Track mounting plate**

- [12] Track mounting plate
- Hexagonal socket head bolt M4=8 (2 pcs)

**Installation of track mounting bracket 2 [14] on YZ plate [11]**

**Connector box**

- [16] Connector box
- M6×15mm

**Installation of connector box [16] on track mounting bracket 2 [14]**

**Cable track 2**

- [15] Cable track 2
- Hexagonal socket head bolt M4=12 (8 pcs)

**Installation of cable track 2 [15] on track support bracket [13]**

**Joint cover**

- M8×12mm
- 5.51kgf•cm/54N•cm

**Installation of connector box [16] on track mounting bracket 2 [14]**

**Cable connector connection**

- Connector joint for ISPA M cable and PG cable (LS cable)

**Installation of cable track 2 [15] on track support bracket [13]**

**Hexagonal socket head bolt**

- Tightening torque
  - M4×8mm: 36.7kgf•cm/359N•cm
  - M4×10mm: 36.7kgf•cm/359N•cm
  - M4×16mm: 36.7kgf•cm/359N•cm
  - M6×15mm: 126kgf•cm/1234N•cm
  - M3×12mm: 5.51kgf•cm/54N•cm

* The direction is different on the Z2-axis side. Assemble the parts by referring to the Z1-axis side.

---

X-axis Linear Servo Type Cartesian Robot – High-precision 6-axis Specification, Z Base Mount

ICSPA6-B2L1HB3H (M)

Drawing No. GMM07-071 2/4
Connector connection of cable inside cable track and controller-actuator cable

Installation of wiring box cover

Make sure the numbers on the connectors to be connected match.

X1-axis: ISPA
X-axis: LSA

Cable inside track

Connector joint for cable inside track and controller-actuator cable

Installation of wiring box cover

| Connector joint for ISPA M cable and PG cable (LS cable) |
| Hexagonal socket head bolt |
| M3-3.5 (4 pcs) |
| 15.8kgfcm/154Ncm |

Caution:
Since the hexagonal holes in thin-head bolts are small, the hexagonal holes may be damaged depending on the tightening method. Exercise due caution when tightening thin-head bolts.

Assemble the Y2-axis side by referring to the Y1-axis side.

X-axis motor and encoder cables

For X-axis slider on Y1-axis side (axis 1)

Y1-axis (axis 2)

Z1-axis (axis 3)

X-axis slider on Y2-axis side (axis 4)

Y2-axis (axis 5)

Z2-axis (axis 6)

Caution:
The cables for X-axis slider on Y1-axis side (axis 1), Y1-axis (axis 2), Z1-axis (axis 3), X-axis slider on Y2-axis side (axis 4), Y2-axis (axis 5) and Z2-axis (axis 6) are placed in tracks. Install each cable correctly.

[Cable markings]

Y1-axis: Connector joint for ISPA M cable and PG cable (LS cable)

Installation of tie-mount on track mounting bracket

Installation of connector cover on track mounting bracket

X-axis Linear Servo Type Cartesian Robot – High-precision 6-axis Specification, Z Base Mount
ICSPA6-B2L1HB3H (M)

Tightening torque

M3-4mm
7.12kgfcm/69.8Ncm

Make a cross cut.
Secure the cables using wraps.

* The direction is different on the Z2-axis side. Assemble the parts by referring to the Z1-axis side.

Caution: Secure the wires to prevent the cables and connectors from contacting each axis when the axis is moved over its entire stroke. When manually moving the actuator with brake, connect the controller, supply the power, and then release the brake release switch (by turning the switch to the RLS side).
Caution:
- Although each part has been chamfered to remove sharp edges, exercise due caution during the assembly to prevent injury. If necessary, wear gloves or other protective gears.
- Exercise due caution during the assembly to prevent pinching of hands and fingers.

1. Tools: Allen wrench, spanner wrench

Assembly of Y1-axis side

- [1] XY bracket
- Y1-axis: ISPA
- X-axis: LSA
- Parallel pin (2 pcs)
- Hexagonal socket head bolt M8-10 + hexagonal nut (2 sets)
- Track mounting bracket (Already attached before delivery)

Y1-axis: ISPA
X-axis: LSA

Note: To ensure squareness between the X-axis and Y-axis, insert one parallel pin. Adjust the angle between the X-axis and Y-axis to the right angle, and then mount the hexagonal bolts.

2. Flange socket (hexagonal socket head type) M4-10 + hexagonal nut (3 sets)

Y1-axis: ISPA
X-axis: LSA

3. Hexagonal socket head bolt M4-10 (2 pcs)

Track mounting bracket


In this assembly procedure, the controller-actuator cable is taken out from the wiring box in the direction shown above. The cable can also be taken out in the directions shown below.

Affix the wiring box bracket [6] using the holes on the inner side, and use the upper T-slot.

4. Parallel pin

X-axis base, reamed-hole side

[1] XY bracket


Parallel pin (1 pc or 2 pcs)

Hexagonal socket head bolt M8

+ high-tension washer (4 sets)

Parallel pin (1 pc or 2 pcs)

Hexagonal socket head bolt M8

+ high-tension washer (4 sets)

Y1-axis: ISPA

[8] Grommet with film


[9] Controller-actuator cable with cable fix cap (for axis 1, 2 or 3)


[9] Controller-actuator cable with cable fix cap (for axis 4, 5 or 6)

[8] Grommet with film


[9] Controller-actuator cable with cable fix cap (for axis 4, 5 or 6)

Wiring box

Align the guide rail [3] surface with the end face of the base. (Same on the other side)

X-axis: LSA

Affix the wire box bracket [6] using the holes on the inner side, and use the upper T-slot.

Note: To ensure squareness between the X-axis and Y-axis, insert one parallel pin. Adjust the angle between the X-axis and Y-axis to the right angle, and then mount the hexagonal bolts.

Installation of cable track 1 [4] on track mounting bracket

Hexagonal socket head bolt M4-10

+ hexagonal nut (2 sets)

Installation of cable track 1 [4] on track mounting bracket

Hexagonal socket head bolt M4-10

+ hexagonal nut (2 sets)


Flange socket (hexagonal socket head type) M4-10

+ hexagonal nut (3 sets)


Hexagonal socket head bolt M4-10

+ hexagonal nut (3 sets)

- **Parallel pin (2 pcs)**
- **Hexagonal bolt M8**
  - 35mm
  - 117kgf cm
- **Flat washer (4 sets)**

**Installation of Z1-axis: ISPA on YZ bracket [11]**

- **Hexagonal socket head bolt M8-16 (2 pcs)**
- **Hexagonal nut (2 sets)**

**Installation of track support bracket [13] on XY bracket [1]**

- **Hexagonal socket head bolt M6-12 (2 pcs)**
- **Hexagonal nut (2 sets)**

**Installation of track support bracket [13] and track mounting plate [12] on Y1-axis: ISPA**

- **Hexagonal socket head bolt M8-5 (4 pcs)**
- **Hexagonal socket head bolt M6-12 (2 pcs)**
- **Hexagonal nut (2 sets)**

**Installation of cable track 1 [4] on track support bracket [13]**

- **Hexagonal socket head bolt M4-12 (2 pcs)**
- **Hexagonal nut (2 sets)**

**Installation of cable track 2 [16] on track mounting bracket 3 [15]**

- **Hexagonal socket head bolt M6-8 (2 pcs)**
- **Hexagonal nut (2 sets)**

**Installation of cable track 1 [4] on XY bracket [1]**

- **Hexagonal socket head bolt M4-12 (2 pcs)**
- **Hexagonal nut (2 sets)**

**Installation of cable track 2 [16] on track mounting bracket 2 [14]**

- **Hexagonal socket head bolt M6-8 (2 pcs)**
- **Hexagonal nut (2 sets)**

**Installation of track mounting bracket 3 [15] on Z1-axis: ISPA**

- **Hexagonal socket head bolt M8-15 (2 pcs)**
- **Hexagonal nut (2 sets)**

**Installation of track mounting bracket 2 [14] on YZ bracket [11]**

- **Hexagonal socket head bolt M8-40 (4 pcs)**
- **Hexagonal nut (2 sets)**

**Installation of track mounting bracket 2 [14] on Y1-axis: ISPA**

- **Hexagonal socket head bolt M8**
  - 35mm
  - 117kgf cm

**Installation of cable track 2 [16] on track mounting bracket 3 [15]**

- **Hexagonal socket head bolt M8-15 (2 pcs)**
- **Hexagonal nut (2 sets)**

**Installation of cable track 1 [4] on track mounting bracket 2 [14]**

- **Hexagonal socket head bolt M4-6mm**
  - 36.7kgf cm/399N cm

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*The direction is different on the Z2-axis side. Assemble the parts by referring to the Z1-axis side.*
**Installation of tie-mount on track mounting bracket**

- **Y1-axis:** Connector joint for ISPA M cable and PG cable (LS cable)
- **Y-axis:** Actuator cable

---

**Installation of connector cover [5] on track mounting bracket**

- **Y1-axis:** ISPA
- **X-axis:** LSA

---

**Connector connection of cable inside cable track and controller-actuator cable**

- Assemble the Y2-axis side by referring to the Y1-axis side.

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**Connector connection of ISPA, IS cable and PG cable (LS cable)**

- **Y1-axis:** Connector joint for ISPA M cable and PG cable (LS cable)
- **X-axis:** Actuator cable

---

**Tightening torque**

<table>
<thead>
<tr>
<th>Thin-head bolt</th>
<th>M3</th>
<th>5mm</th>
<th>15.8kgf cm/154Ncm</th>
</tr>
</thead>
</table>
| **Caution:** Since the hexagonal holes in thin-head bolts are small, the hexagonal holes may be damaged depending on the tightening method. Exercise due caution when tighten
ing thin-head bolts. |

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**Grommet with film**

- **[5] Connector cover**
- **[8] Grommet with film**

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**Cable Connector Joints**

- Assemble the Y2-axis side by referring to the Y1-axis side.
**Z1-axis cables**

- Track mounting bracket 3
  - KR5G5 tie-mount (by HellermannTyton)
  - Hexagonal socket head button bolt M4x4 (2 sets)

- X-axis, Y1-axis cables
  - KR5G5 tie-mount (by HellermannTyton)
  - Hexagonal socket head button bolt M4x4 (1 set)

- Y1-axis: ISPA
  - Tie-mount KR5G5 (by HellermannTyton)
  - Hexagonal socket head button bolt M4x4 (2 sets)

- Table:
<table>
<thead>
<tr>
<th>Hexagonal socket head button bolt</th>
<th>Tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4x4mm</td>
<td>11.7kg/cm/114Ncm</td>
</tr>
</tbody>
</table>

**X-axis, Y1-axis, Z1-axis cables**

- Secure the cables using wraps.

- Wire the cable in a manner preventing contact with the Z-axis.

**X-axis, LSA**

- Secure the cables using wraps.

**Caution:**
- Secure the wires to prevent the cables and connectors from contacting each axis when the axis is moved over its entire stroke.
- When manually moving the actuator with brake, connect the controller, supply the power, and then release the brake release switch (by turning the switch to the RLS side).