### X axis (XY axis)

<table>
<thead>
<tr>
<th>Model</th>
<th>Material</th>
<th>Guiding</th>
<th>Table Size (mm)</th>
<th>Travel Stroke (mm)</th>
<th>Load Capacity (kgf)</th>
<th>Repeatability Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>AX6020-A2/HP</td>
<td>Aluminum alloy</td>
<td>Crossed roller</td>
<td>60X70</td>
<td>20</td>
<td>5</td>
<td>±0.3μm</td>
</tr>
<tr>
<td>AX6030-A2/HP</td>
<td>Stainless steel</td>
<td>Linear ball</td>
<td>60X70</td>
<td>30</td>
<td>10</td>
<td>±0.5μm</td>
</tr>
<tr>
<td>AX7050-S2/HP</td>
<td>Stainless steel</td>
<td>Crossed roller</td>
<td>70X110</td>
<td>50</td>
<td>10</td>
<td>±0.5μm</td>
</tr>
</tbody>
</table>

**Slide wedge driven horizontal elevator Z axis**

<table>
<thead>
<tr>
<th>Model</th>
<th>Material</th>
<th>Guiding</th>
<th>Table Size (mm)</th>
<th>Travel Stroke (mm)</th>
<th>Load Capacity (kgf)</th>
<th>Repeatability Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ7010-A6/HP</td>
<td>Stainless steel</td>
<td>Crossed roller</td>
<td>60X88</td>
<td>10</td>
<td>10</td>
<td>±0.5μm</td>
</tr>
<tr>
<td>AZA65/HP</td>
<td>Stainless steel</td>
<td>Linear ball</td>
<td>70X76</td>
<td>4</td>
<td>8</td>
<td>±0.5μm</td>
</tr>
</tbody>
</table>

**Table 1 (Slide wedge driven horizontal elevator Z axis)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Material</th>
<th>Guiding</th>
<th>Table Size (mm)</th>
<th>Travel Stroke (mm)</th>
<th>Load Capacity (kgf)</th>
<th>Repeatability Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ7010-A6/HP</td>
<td>Stainless steel</td>
<td>Crossed roller</td>
<td>60X88</td>
<td>10</td>
<td>10</td>
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</tr>
<tr>
<td>AZA65/HP</td>
<td>Stainless steel</td>
<td>Linear ball</td>
<td>70X76</td>
<td>4</td>
<td>8</td>
<td>±0.5μm</td>
</tr>
</tbody>
</table>

**Electrical Specification Page**

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>C129–130</td>
</tr>
</tbody>
</table>

**Electrical Specification Page**

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>C133–134</td>
</tr>
<tr>
<td>C135–136</td>
</tr>
</tbody>
</table>
This product is precision products. There are precautions in specifications or other aspects. To use the product correctly, please be familiar with the precautions in advance.

Before unpacking, check the appearance for damage, loose screws and loose components. If there are concerns about structure and appearance, please take photos as evidence and E-mail them to the responsible business unit.

When the shipment arrives, make sure that the specifications and contents are consistent with the order, and check whether any peripheral parts are missing.

For any questions, please contact the original business unit.

---

**Unpacking Precautions**

Before unpacking, check the appearance for damage, loose screws and loose components. If there are concerns about structure and appearance, please take photos as evidence and E-mail them to the responsible business unit.

When the shipment arrives, make sure that the specifications and contents are consistent with the order, and check whether any peripheral parts are missing.

For any questions, please contact the original business unit.

---

**Installation Precautions**

When abnormal issue (such as abnormal sound, abnormal vibration) arises, please immediately stop the machine.

CAUTION: Violation may result in personal injury or product damage.

Do not forcibly pull or bend any electric wires and follow the wiring diagram for correct wiring.

CAUTION: Violation may result in personal injury or product damage.

When tightening screws, please torque wrench according to the specifications of screws.

CAUTION: Violation may cause loosening.

Please do not allow mechanical setting over maximum speed to cause mechanical instability (avoiding extreme change of setting or parameters).

CAUTION: Violation may result in personal injury or product damage.

When malfunction or damage arises, please do not continue the use.

CAUTION: Violation may result in personal injury or product damage.

Make sure wiring and connection of electric equipment is secured. Make sure parameter setting is correct.

CAUTION: Violation may cause fire, electric shock, personal injury or product damage.

---

**Environment Precaution**

Foreign object such as dust, metal powder entering screw or slide rail may reduce life and cause excess wear.

If concerns exist, please implement dust prevention measures.

If the product is used as mechanical processing standard, it may affect life, performance and precision.

If the situation exists, please have installation on the base with reliable rigidity.

The product is designed and planned according to the direction specified in the catalog. Please check with GMT if other direction is used.

If the direction is other than horizontal direction, it will reduce life and increase probability of malfunction.

Before installation of our product, please make sure that the installation surface has no unnecessary object, and use alcohol to clean and prevent loss of installation precision.

Violation may cause the product installation precision unable to meet the catalog specification.

Do not apply inappropriate force and strike to the product to prevent damage and loss of precision and warranty.

Violation may cause product damage or precision unable to meet catalog specification.

---

**Safety Precautions**

Before placement and use, make sure that there is sufficient working space around to prevent the danger of falling and rolling.

CAUTION: Violation may result in personal injury or product damage.

For installation and operation, please follow electrical safety instructions. Do not use in explosive atmosphere, flammable environment, corrosive environment, easily wet and humid environment or near flammable materials. Otherwise, there is risk of fire, electric shock and injury.

CAUTION: Violation may result in serious personal injury or product damage.

In operation, please check if there is enough movement space around the motor and mechanism to prevent any part of the body and clothing accessories from entering the stage or coming close to the working range of stage or any danger of rolling, pinching or pulling.

CAUTION: Violation may result in personal injury or product damage.

Turn off the power before maintenance to prevent danger of electric shock.

CAUTION: Violation may result in serious personal injury or product damage.

When the product is used in the vertical direction of Z axis, please use safety device for prevention (natural slide or power interruption due to overload).

CAUTION: Violation may result in personal injury or product damage.

---

**For Further Information**

- GMT Global Inc.
  - Call: GMT
  - +886-476-883-20
  - sales@gmtglobalinc.com

- GMT Global Inc. (www.gmtlinear.com)

- GMT Global Inc. (www.gmtlinear.com)
**Precautions for product use environment:**

- **Environment gas:** indoor (not contain corrosive gas, flammable gas, oil mist and dust)
- **Shipping temperature:** -10°C ~ 70°C
- **Shipping humidity:** below 90%RH (non-condensing)
- **Installation temperature:** 0°C ~ 40°C
- **Installation humidity:** below 20% ~ 80%RH (non-condensing)

**Installation Precautions**

1. Make sure that installation surface does not have any flash, dust or dent.
2. Please put the product on the installation surface.
3. Please adjust according to installation hole position (aiming screw hole).
4. It is suggested to use the screws in compliance with standard specifications.
5. Use torque wrench to tighten screw.

**Precautions for product use environment:**

- **Violation may result in personal injury or product damage.** When turning the knob in the back of motor, please do not overuse the travel stroke.
- **Violation may result in personal injury or product damage.** During installation of peripheral mechanism on product upper board/ lower board, please keep the stage in horizontal position with fixation. (Make sure the platform installation flatness is within 0.01mm and the stage installation inclination angle is below 1° to prevent poor precision due to stage deformation.)
- **Violation may result in personal injury or product damage.** Do not remove any parts of the precision motorized stage arbitrarily to prevent loss of precision and warranty. If service is needed, please contact salesperson.
- **Violation may cause product damage or precision unable to meet catalog specification.** If screw hole does not fit or additional screw hole is needed, please contact salesperson; do not handle it by yourself to prevent loss of precision and warranty.
- **Violation may cause product damage or precision unable to meet catalog specification.** Accessories and parts of the product are not water-proof or dust-proof; please do not use the product directly in oil misty, dusty or humid environment.
- **Violation may cause product damage or precision unable to meet catalog specification.** Do not remove any parts of the precision motorized stage arbitrarily to prevent loss of precision and warranty. If service is needed, please contact salesperson.

**Installation procedures:**

1. Make sure that installation surface does not have any flash, dust or dent.
2. Please put the product on the installation surface.
3. Please adjust according to installation hole position (aiming screw hole).
4. It is suggested to use the screws in compliance with standard specifications.
5. Use torque wrench to tighten screw.

**System Configuration Diagram**

- For detailed specifications, please read the description for the stage and connecting cable on page E1 ~ E2.
- For selection of driver, please refer to the cross-reference table on page E3 for the motor/driver of the precision motorized stage or the GMT motor and driver catalog.
- The most preferred driver is recommended to be specified by GMT as considerations. For different needs, please choose the suitable driver based on real functional needs.
GMT has defined different axes as the following figuration according to the movement direction:

- Horizontal movement direction is X and Y axis.
- Vertical movement direction is Z axis.
- Movement around X, Y, Z axis is defined to α axis, β axis, and θ axis.

Green arrows present the specified axis movement direction.

### Axis Definition

<table>
<thead>
<tr>
<th>X axis</th>
<th>AX</th>
<th>XY axis</th>
<th>AY</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="X_axis.png" alt="Image" /></td>
<td><img src="AX.png" alt="Image" /></td>
<td><img src="XY_axis.png" alt="Image" /></td>
<td><img src="AY.png" alt="Image" /></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Z axis</th>
<th>AZL</th>
<th>AZV</th>
<th>AZ</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="Z_axis.png" alt="Image" /></td>
<td><img src="AZL.png" alt="Image" /></td>
<td><img src="AZV.png" alt="Image" /></td>
<td><img src="AZ.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>XZ axis</th>
<th>AXZ</th>
<th>XYZ axis</th>
<th>AXYZ</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="XZ_axis.png" alt="Image" /></td>
<td><img src="AXZ.png" alt="Image" /></td>
<td><img src="XYZ_axis.png" alt="Image" /></td>
<td><img src="AXYZ.png" alt="Image" /></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>α axis</th>
<th>AXG</th>
<th>αβ axis</th>
<th>AYG</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="alpha_axis.png" alt="Image" /></td>
<td><img src="AXG.png" alt="Image" /></td>
<td><img src="alpha_beta_axis.png" alt="Image" /></td>
<td><img src="AYG.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>θ axis</th>
<th>AR</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="theta_axis.png" alt="Image" /></td>
<td><img src="AR.png" alt="Image" /></td>
</tr>
</tbody>
</table>

**Warranty Instructions**

- Within warranty period, if any failures occured under normal usage without human negligence, our company will be responsible for the repair.
- Warranty period is one year, starting from the time the product is delivered to the designated place.
- If anything below occurs, it will not be covered under warranty:
  1. Failure that occurs when the product is not used in specified environment and method.
  2. Failure that occurs when the product is modified or repaired without authorization.
  3. Failure that occurs due to natural disaster or misuse.
  4. Fault or damage after customer purchase due to fall or impact during shipping or movement.
  5. Malfunction or damage due to connection to other machine.
  6. Violation to the above instructions and precautions on the manual will cause malfunction or damage.

**Troubleshooting Suggestions**

- After the motor or mechanism is hit by external force, please check whether screw function affects stage.
- Please do not arbitrarily adjust left and right limit position and origin position to prevent machine collision and loss of warranty.
- Limit switch must have secured wires and receptacles and be prevented from loosen.
- Do not arbitrarily lose coupling and transmission structure to assure precision and warranty.
- When unusual noise or vibration occurs in the operation of machine, please turn off power before inspection.
- For Q&A regarding stage, please check GMT website.
### Model description

#### AX series

<table>
<thead>
<tr>
<th>AX series</th>
<th>Model Number</th>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy level</th>
<th>Wiring method</th>
<th>Motor model</th>
<th>Connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AX40-A2PR-CD</td>
<td>A</td>
<td>Ball screw</td>
<td>P (Precision grade)</td>
<td>R (Right wiring)</td>
<td>5-phase stepper</td>
<td>D-SUB15 (VGA)</td>
</tr>
<tr>
<td></td>
<td>AX60-A2PR-CD</td>
<td>A</td>
<td>Ball screw</td>
<td>P (Precision grade)</td>
<td>L (Left wiring)</td>
<td>5-phase stepper</td>
<td>D-SUB15 (VGA)</td>
</tr>
<tr>
<td></td>
<td>AX80-A2PR-CD</td>
<td>A</td>
<td>Ball screw</td>
<td>P (Precision grade)</td>
<td>R (Right wiring)</td>
<td>5-phase stepper</td>
<td>D-SUB15 (VGA)</td>
</tr>
<tr>
<td></td>
<td>AX100-A2PR-CD</td>
<td>A</td>
<td>Ball screw</td>
<td>P (Precision grade)</td>
<td>L (Left wiring)</td>
<td>5-phase stepper</td>
<td>D-SUB15 (VGA)</td>
</tr>
<tr>
<td></td>
<td>AX120-A2PR-CD</td>
<td>A</td>
<td>Ball screw</td>
<td>P (Precision grade)</td>
<td>R (Right wiring)</td>
<td>5-phase stepper</td>
<td>D-SUB15 (VGA)</td>
</tr>
</tbody>
</table>

#### Table size

- **AX40-A2PR-CD**: 40*40 mm
- **AX60-A2PR-CD**: 60*60 mm
- **AX80-A2PR-CD**: 80*80 mm
- **AX100-A2PR-CD**: 100*100 mm
- **AX120-A2PR-CD**: 120*120 mm

#### Wiring method

- **R (Right wiring)**
- **L (Left wiring)**

#### Motor model

- **5-phase stepper**

#### Connector type

- **D-SUB15**

#### Driver (optional)

- **Blank**
- **Not equipped**

#### Connecting cable (optional)

- **2m cable**
- **4m cable**
- **6m cable**

#### Motor model

- **5-phase stepper**

#### Connector type

- **(VGA)**

#### AX series

**Model Number**: AX40-A2PR-CD, AX60-A2PR-CD, AX80-A2PR-CD, AX100-A2PR-CD, AX120-A2PR-CD

### Mechanical specifications

#### Table size

- **AX40**: 40*40 mm
- **AX60**: 60*60 mm
- **AX80**: 80*80 mm
- **AX100**: 100*100 mm
- **AX120**: 120*120 mm

#### Weight

- **AX40**: 0.37 Kg
- **AX60**: 0.64 Kg
- **AX80**: 1.2 Kg
- **AX100**: 2.1 Kg
- **AX120**: 2.5 Kg

#### Resolution (pulse)

- **Full ( Half)**: 2 μm / 1 μm

#### Accuracy level

- **P (Precision grade)**

#### Wiring method

- **R (Right wiring)**

#### Repeatability precision

- **±0.5 μm**

#### Maximum speed (Full step)

- **10 mm / sec**

#### Motor

- **Type/Shaft numbers**: 5-phase stepper / (728 double shafts)

#### Equipment

- **Device**: Photoelectric sensor EE-SX4134

### Electrical specifications

#### Power voltage

- **24V±10%**

#### Control output

- **NPN open collector output under 24V 8mA**

#### Output control

- **Testing (sensing)**: output transistor OFF (closed)

---

*Images and diagrams not included in the text.*
Precision Motorized X axis Linear-motion Stage  Crossed-roller guiding

AX80-A2PR-CD

AX100-A2PR-CD

AX120-A2PR-CD
## Model Description

### AY series

<table>
<thead>
<tr>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy Level</th>
<th>Wiring Method</th>
<th>Motor Model</th>
<th>Connector Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>Precision grade</td>
<td>Right wiring</td>
<td>5-phase stepper</td>
<td>D-SUB15 (VGA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Left wiring</td>
<td>Not equipped</td>
<td></td>
</tr>
</tbody>
</table>

**AY series**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Table size</th>
<th>Travel stroke</th>
<th>Drive type</th>
<th>Accuracy Level</th>
<th>Table size</th>
<th>Travel stroke</th>
<th>Drive type</th>
<th>Accuracy Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>AY40-A2PR-CD</td>
<td>40X40 mm</td>
<td>15 mm</td>
<td>Ball screw Ø8 lead 1mm</td>
<td>X</td>
<td>Precision grade</td>
<td>40X40 mm</td>
<td>15 mm</td>
<td>Ball screw Ø8 lead 1mm</td>
</tr>
<tr>
<td>AY60-A2PR-CD</td>
<td>60X60 mm</td>
<td>20 mm</td>
<td>Ball screw Ø8 lead 1mm</td>
<td>X</td>
<td>Precision grade</td>
<td>60X60 mm</td>
<td>20 mm</td>
<td>Ball screw Ø8 lead 1mm</td>
</tr>
<tr>
<td>AY80-A2PR-CD</td>
<td>80X80 mm</td>
<td>30 mm</td>
<td>Ball screw Ø8 lead 1mm</td>
<td>X</td>
<td>Precision grade</td>
<td>80X80 mm</td>
<td>30 mm</td>
<td>Ball screw Ø8 lead 1mm</td>
</tr>
<tr>
<td>AY100-A2PR-CD</td>
<td>100X100 mm</td>
<td>40 mm</td>
<td>Ball screw Ø8 lead 1mm</td>
<td>X</td>
<td>Precision grade</td>
<td>100X100 mm</td>
<td>40 mm</td>
<td>Ball screw Ø8 lead 1mm</td>
</tr>
<tr>
<td>AY120-A2PR-CD</td>
<td>120X120 mm</td>
<td>70 mm</td>
<td>Ball screw Ø8 lead 1mm</td>
<td>X</td>
<td>Precision grade</td>
<td>120X120 mm</td>
<td>70 mm</td>
<td>Ball screw Ø8 lead 1mm</td>
</tr>
</tbody>
</table>

### Electrical Specifications

<table>
<thead>
<tr>
<th>Motor Type/Shaft numbers</th>
<th>Driver</th>
<th>Connecting cable (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-phase stepper / /28 double shafts</td>
<td>Blank</td>
<td>Blank</td>
</tr>
<tr>
<td></td>
<td>Not equipped</td>
<td>Not equipped</td>
</tr>
<tr>
<td></td>
<td>2m cable*1</td>
<td>2m cable*1</td>
</tr>
<tr>
<td></td>
<td>4m cable*1</td>
<td>4m cable*1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**AY40-A2PR-CD**

- **Table Size**: 40X40 mm
- **Travel Stroke**: 15 mm
- **Drive Type**: Ball screw Ø8 lead 1mm
- **Accuracy Level**: Precision grade
- **Motor**: 5-phase stepper
- **Motor Model**: Sanyo / SH5281-7211
- **Sensor**: Photoelectric sensor
- **Origin Approximation Sensor**: EE-SX4134
- **Limit Sensor**: Photoelectric sensor EE-SX612-R
- **Power Voltage**: 24V±10%
- **Control Output**: NPN open collector output under 24V 8mA
- **Output Control**: 24V±10%

**AY60-A2PR-CD**

- **Table Size**: 60X60 mm
- **Travel Stroke**: 20 mm
- **Drive Type**: Ball screw Ø8 lead 1mm
- **Accuracy Level**: Precision grade
- **Motor**: 5-phase stepper
- **Motor Model**: Sanyo / 103F5510-8211
- **Sensor**: Photoelectric sensor
- **Origin Approximation Sensor**: EE-SX4134
- **Limit Sensor**: Photoelectric sensor EE-SX612-R
- **Power Voltage**: 24V±10%
- **Control Output**: NPN open collector output under 24V 8mA
- **Output Control**: 24V±10%
Precision Motorized XY axis Linear-motion Stage  •  Crossed-roller guiding

AY series

AY80-A2PR-CD

AY100-A2PR-CD

AY120-A2PR-CD
### Model description

**AZL40-A2PR-CD**

<table>
<thead>
<tr>
<th>Table size</th>
<th>40x40 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive type</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Accuracy level</td>
<td>Precision grade</td>
</tr>
<tr>
<td>Resolution (pulse)</td>
<td>Full / Half</td>
</tr>
<tr>
<td>Load capacity</td>
<td>4 Kg</td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>2 μm</td>
</tr>
</tbody>
</table>

**AZL60-A2PR-CD**

<table>
<thead>
<tr>
<th>Table size</th>
<th>60x60 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive type</td>
<td>Ball screw Ø6 lead 1mm</td>
</tr>
<tr>
<td>Accuracy level</td>
<td>Precision grade</td>
</tr>
<tr>
<td>Repeatability precision</td>
<td>±0.5 μm</td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>2 μm</td>
</tr>
</tbody>
</table>

### Electrical specifications

**Motor Type/Shaft numbers**

- 5-phase stepper / 128 double shafts

**Connector Type**

- 15-pin male end connector + the other side with discrete wirings

**Connecting Cable (Optional)**

1. Blank
2. 2m cable
3. 4m cable
4. 6m cable

**Driver (Optional)**

- Not equipped
- Standard specified by GMT

**Connecting Cable (Optional)**

- 2m cable
- 4m cable
- 6m cable

**Material**

- Aluminum alloy / Black anodized

**Origin sensor**

- Photoelectric sensor EE-SX4134

**Limit sensor**

- Photoelectric sensor EE-SX912-R

**Power voltage**

- 24V ±10%

### Mechanical specifications

**Stage material/Surface treatment**

- Crossed-roller guiding

**Wiring method**

- Right wiring

### Positioning Precision

- ±0.5 μm

### Missed step

- 5 μm

### Dynamic straightness

- 6.6 μm

### Dynamic parallelism

- 2 μm

### Rail

- Aluminum alloy / Black anodized

**Crossed-roller guiding**

- **AZL series**

---

*Right wiring is defined as Z-axis of the product photo.*
Precision Motorized Z axis Linear-motion Stage  Crossed-roller guiding

AZL series

AZL80-A2PR-CD

AZL100-A2PR-CD

AZL120-A2PR-CD
**Model description**

**AXZ series**

---

**AXZ 40 - A2PL - CD - 2C**

---

**Table size**
- AXZ40-A2PL-CD: 40*40 mm
- AXZ60-A2PL-CD: 60*60 mm
- AXZ80-A2PL-CD: 80*80 mm
- AXZ100-A2PL-CD: 100*100 mm
- AXZ120-A2PL-CD: 120*120 mm

---

**Wiring method**
- Full wire
- Half wire

---

**Motor model**
- C: 5-phase stepper
- X: Not equipped

---

**Controller side connector**
- 15-pin male end connector D-SUB
- 15-pin female end connector D-SUB (optional)

---

**Stage material/Surface treatment**
- Aluminum alloy / Black anodized

---

**Origin approximation sensor**
- Photoelectric sensor EE-SX134

---

**Control output**
- NPN open collector output under 24V 3mA

---

**Output control**
- Testing (sensing): output transistor OFF (closed)

---

**Connectors**
- D-SUB 15-pin female connector + the other side with discrete wirings

---

**Driver (optional)**
- Blank: Not equipped
- Standard specified by GMT

---

**Model Number**
- AXZ40-A2PL-CD
- AXZ60-A2PL-CD
- AXZ80-A2PL-CD
- AXZ100-A2PL-CD
- AXZ120-A2PL-CD

---

**Precision specifications**
- Load capacity: 4 Kgf, 12 Kgf, 10 Kgf, 14 Kgf
- Accuracy level: 1 μm, 2 μm
- Dynamic parallelism: 10 μm, 2 μm
- Dynamic straightness: 6.6 μm
- Maximum speed (full step): 25 mm / sec, 20 mm / sec
- Repeatability precision: ±0.5 μm

---

**Electrical specifications**
- Motor Type/Shaft numbers: 5-phase stepper / 2C double shafts
- Controller side connector: 15-pin female end connector D-SUB (optional)
- Limit sensor: Photoelectric sensor EE-SX134
- Power voltage: 24V±10%

---

**Other specifications**
- Please refer to motor / driver cross-reference table (page E3)
- *Left wiring is defined as Z-axis of the product photo.*
Precision Motorized XZ axis Linear-motion Stage  Crossed-roller guiding

AXZ series

AXZ80-A2PL-CD

AXZ100-A2PL-CD

AXZ120-A2PL-CD
### Model Number

<table>
<thead>
<tr>
<th>Model Number</th>
<th>AXYZ40-A2PL-CD</th>
<th>AXYZ60-A2PL-CD</th>
<th>AXYZ80-A2PL-CD</th>
<th>AXYZ100-A2PL-CD</th>
<th>AXYZ120-A2PL-CD</th>
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<td>Ball screw</td>
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<tr>
<td>Rail</td>
<td>1.21 Kg</td>
<td>2.29 Kg</td>
<td>5.52 Kg</td>
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<td>9.44 Kg</td>
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<td>P : Precision grade</td>
<td>P : Precision grade</td>
<td>P : Precision grade</td>
<td>P : Precision grade</td>
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<td>Resolution (pulse)</td>
<td>2 μm / 1 μm</td>
<td>5 μm / 1 μm</td>
<td>10 μm / 1 μm</td>
<td>5 μm / 1 μm</td>
<td>10 μm / 1 μm</td>
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<tr>
<td>Maximum speed (full step)</td>
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<td>5 μm / 1 μm</td>
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<tr>
<td>Repeatability precision</td>
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<td>±1 μm</td>
<td>±1.5 μm</td>
<td>±1 μm</td>
<td>±1.5 μm</td>
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<tr>
<td>Dynamic straightness</td>
<td>6.6 μm</td>
<td>10 μm</td>
<td>15 μm</td>
<td>10 μm</td>
<td>15 μm</td>
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<td>2 μm</td>
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<td>15 μm</td>
<td>10 μm</td>
<td>15 μm</td>
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</table>

### Electrical specifications

- **Motor Type/Shaft numbers**: 5-phase stepper / 32 double shafts
- **Connecter**: 15-pin female end connector D-SUB (optional)
- **Driver (optional)**: Sanyo / SH5281-7211
- **Driver brand/Model**: Please refer to motor / driver cross-referencce table (page E3)
- **Controller side connector**: 15-pin female end connector D-SUB (optional)
- **Origin sensor**: Photoelectric sensor EE-SX4134
- **Limit sensor**: Photoelectric sensor EE-SX912-R
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Testing (sensing) - output transistor OFF (closed)

**Notes:*
- Left wiring is defined as Z-axis of the product photo.
Precision Motorized XYZ axis Linear-motion Stage  Crossed-roller guiding

AXYZ series

AXYZ80-A2PL-CD

AXYZ100-A2PL-CD

AXYZ120-A2PL-CD
### AXL series

#### Model Number

<table>
<thead>
<tr>
<th>Model Number</th>
<th>AXL4015-A2PR-CD</th>
<th>AXL6020-A2PR-CD</th>
<th>AXL8030-A2PR-CD</th>
<th>AXL10040-A2PR-CD</th>
<th>AXL12050-A2PR-CD</th>
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<tbody>
<tr>
<td>Table size</td>
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<td>60X60 mm</td>
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<td>Ball screw</td>
</tr>
<tr>
<td>Rail</td>
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<td>2.3 Kg</td>
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<td>Aluminum alloy / Black anodized</td>
<td>Aluminum alloy / Black anodized</td>
<td>Aluminum alloy / Black anodized</td>
<td>Aluminum alloy / Black anodized</td>
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<tr>
<td>Motor model</td>
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<td>5-phase stepper</td>
<td>5-phase stepper</td>
<td>5-phase stepper</td>
<td>5-phase stepper</td>
</tr>
<tr>
<td>Motor type/Shaft numbers</td>
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<td>5-phase stepper / 28 double shafts</td>
<td>5-phase stepper / 28 double shafts</td>
<td>5-phase stepper / 28 double shafts</td>
<td>5-phase stepper / 28 double shafts</td>
</tr>
</tbody>
</table>

#### Electrical specifications

- **Motor**: 5-phase stepper / 28 double shafts
- **Driver**: Sanyo / SH5281-7211
- **Connector**: 15-pin male end connector D-SUB
- **Controller side connector**: 15-pin female end connector D-SUB (optional)
- **Origin sensor**: Photoelectric sensor EE-SX4134
- **Limit sensor**: NPN open collector output under 24V, 8mA
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V, 8mA
- **Output control**: Teasing (sensing) / output transistor OFF (closed)

#### Precision specifications

- **Mechanical specifications**: Crossed-roller guiding
- **Positioning precision**: ±2 μm / ±1 μm
- **Repeatability precision**: ±0.5 μm
- **Load capacity**: 4 Kgf
- **Parallelism**: ±0.5 μm
- **Dynamic straightness**: ±0.5 μm
- **Dynamic parallelism**: ±0.5 μm

#### Mechanical specifications

- **Material**: Aluminum alloy
- **Drive type**: Ball screw Ø6 lead 1mm
- **Table size**: 40X40 mm, 60X60 mm, 80X80 mm, 100X100 mm, 120X120 mm
- **Table series**: X axis
- **Travel stroke**: 15 mm, 20 mm, 30 mm, 40 mm, 50 mm
- **Wiring method**: Right wiring (R)
- **Wiring grade**: P
- **Wiring specification**: D-SUB15 (VGA)
- **Cable type**: Blank
- **Driver type**: Blank

#### X axis

AXL4015-A2PR-CD

AXL6020-A2PR-CD

### AXL series

#### Model description

**Material**: Aluminum alloy

**Drive type**: Ball screw

**Accuracy level**: Precision grade

**Wiring method**: Right wiring

**Motor model**: 5-phase stepper

**Connector type**: D-SUB15 (VGA)

**Table size**

<table>
<thead>
<tr>
<th>Table size</th>
<th>40X40 mm</th>
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<th>80X80 mm</th>
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<tr>
<td>Rail</td>
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<td>5-phase stepper / 28 double shafts</td>
<td>5-phase stepper / 28 double shafts</td>
<td>5-phase stepper / 28 double shafts</td>
<td>5-phase stepper / 28 double shafts</td>
</tr>
</tbody>
</table>

#### Electrical specifications

- **Motor**: 5-phase stepper / 28 double shafts
- **Driver**: Sanyo / SH5281-7211
- **Connector**: 15-pin male end connector D-SUB
- **Controller side connector**: 15-pin female end connector D-SUB (optional)
- **Origin sensor**: Photoelectric sensor EE-SX4134
- **Limit sensor**: NPN open collector output under 24V, 8mA
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V, 8mA
- **Output control**: Teasing (sensing) / output transistor OFF (closed)
Low-profile Precision Motorized X axis Linear-motion Stage  Crossed-roller guiding

AXL series

AXL8030-A2PR-CD

AXL10040-A2PR-CD

AXL12050-A2PR-CD

AXL12050-A2PR-CD

www.gmtlinear.com
AYL series

Model description

<table>
<thead>
<tr>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy level</th>
<th>Wiring method</th>
<th>Motor model</th>
<th>Connector type</th>
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<tr>
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### AYL4015-A2PR-CD

<table>
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### AYL6020-A2PR-CD

<table>
<thead>
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<tr>
<td>100 x 100 mm</td>
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</tr>
<tr>
<td>120 x 120 mm</td>
<td>50 mm</td>
<td>Not equipped</td>
<td>Blank</td>
</tr>
</tbody>
</table>

### XY axis

- Rail: Crossed-roller guiding
- Stage material/Surface treatment: Aluminum alloy / Black anodized
- Main unit weight: 0.46 Kg / 0.8 Kg / 1.4 Kg / 2.6 Kg / 4.8 Kg
- Accuracy level: Precision grade
- Wiring method: Left & Right wiring
- Resolution (pulse): Full / Half
- Maximum speed (full step): 2 μm / 1 μm
- Positioning precision: ±0.5 μm
- Load capacity: 3.5 Kg / 4.5 Kg / 6.5 Kg / 9.5 Kg / 14.5 Kg
- Missed step: 1 μm
- Parallellism: 20 μm
- Dynamic straightness: 6.6 μm
- Dynamic parallelism: 10 μm
- Motor: 5-phase stepper / (4 phases double shafts)
- Connector: 15-pin male end connector (optionally specified by GMT)

### Connector

- Stage side connector: 15-pin male end connector D-SUB
- Controller side connector: 15-pin female end connector D-SUB (optionally specified by GMT)

### Sensor

- Origin sensor: Photoelectric sensor EE-SX4134
- Limit sensor: Not equipped
- Origin approximation sensor: NPN open collector output under 24V 5mA
- Control output: Not equipped
- Output control: Not equipped

### Power voltage

- 24V±10%
Low-profile Precision Motorized XY axis Linear-motion Stage  

AYL series

AYL8030-A2PR-CD

AYL0040-A2PR-CD

AYL12050-A2PR-CD
# Hollow-profile Precision Motorized X axis Linear-motion Stage

- **Model number**: AXC6020-A2PR-CD
- **Table size**: 60X60 mm
- **Travel stroke**: 20 mm, 30 mm
- **Material**: Aluminum alloy
- **Drive type**: Ball screw
- **Accuracy level**: P (Precision grade)
- **Wiring method**: Right wiring
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15 (VGA)

## Specifications

### Description

- **Material**: Aluminum alloy / Black anodized
- **Motor Type/Shaft numbers**: Sanyo / SH5281-7211
- **Sensor**: Photoelectric sensor EE-SX4134
- **Sensor Origin approximation sensor**: NPN open collector output under 24V
- **Sensor Limit sensor**: 24V/10%
- **Sensor Control output**: NW (Negative Wired)
- **Sensor Output control**: 24V, 5 mA

### Mechanical specifications

- **Table size**: 60X60 mm, 80X80 mm, 100X100 mm, 120X120 mm
- **Drive type**: Ball screw Ø6 lead 1mm
- **Stage material/Surface treatment**: Crossed-roller guiding
- **Material**: Aluminum alloy / Black anodized
- **Wiring method**: Right wiring
- **Driver (optional)**: Blank / Not equipped

### Electrical specifications

- **Type**: 5-phase stepper / C38 double shafts
- **Power voltage**: 24V
- **Limit sensor**: NPN open collector output under 24V
- **Control output**: NW (Negative Wired)
- **Output control**: 24V, 5 mA

### Model description

<table>
<thead>
<tr>
<th>Model Number</th>
<th>AXC6020-A2PR-CD</th>
<th>AXC8030-A2PR-CD</th>
<th>AXC10040-A2PR-CD</th>
<th>AXC12050-A2PR-CD</th>
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<tbody>
<tr>
<td>Table size</td>
<td>60X60 mm</td>
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</tr>
<tr>
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<td>30 mm</td>
<td>40 mm</td>
<td>50 mm</td>
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<tr>
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<td>5-phase stepper</td>
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<td>P (Precision)</td>
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<td>Right wiring</td>
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<td>Load capacity</td>
<td>5 Kgf</td>
<td>7 Kgf</td>
<td>10 Kgf</td>
<td>15 Kgf</td>
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<td>6.6 μm</td>
<td>10 μm</td>
<td>10 μm</td>
<td>10 μm</td>
</tr>
</tbody>
</table>

**Note**: D-SUB 15 pin male end connector + the other side with discrete wirings.
Hollow-profile Precision Motorized X axis Linear-motion Stage • Crossed-roller guiding

AXC series

AXC8030-A2PR-CD

AXC10040-A2PR-CD

AXC12050-A2PR-CD
Model description

AYC series

Material
- Aluminum alloy

Drive type
- Ball screw

Accuracy level
- Precision grade

Wiring method
- Right wiring

Motor model
- 5-phase stepper

Connector type
- D-SUB15 (VGA)

Travel stroke
- 20mm, 30mm, 40mm, 50mm

XY axis
- 60X60mm, 80X80mm, 100X100mm, 120X120mm

Connect cable (optional)
- Blank, 2m cable, 4m cable

Driver (optional)
- Blank, Not equipped

AYC6020-A2PR-CD

AYC series

Specifications

- Model: AYC6020-A2PR-CD
- Table size: 60*60mm
- Travel stroke: 20mm
- Wiring method: Right wiring
- Motor model: 5-phase stepper
- Connector type: D-SUB15 (VGA)
- Accuracy level: Precision grade

Additional details:
- Material: Aluminum alloy
- Drive type: Ball screw
- Table size: 60*60mm, 80*80mm, 100*100mm, 120*120mm
- Travel stroke: 20mm, 30mm, 40mm, 50mm
- Accuracy level: Precision grade
- Wiring method: Right wiring
- Motor model: 5-phase stepper
- Connector type: D-SUB15 (VGA)
- Connect cable (optional): Blank, 2m cable, 4m cable
- Driver (optional): Blank, Not equipped

Hollow-profile Precision Motorized X axis Linear-motion Stage: Crossed-roller guiding

AYC series

XY axis

AYC6020-A2PR-CD
### Model Description

**AXW series**

- **Material**: Carbon steel (F)
- **Drive type**: Ball screw (2)
- **Accuracy level**: Precision grade (P)
- **Wiring method**: Left wiring (L)
- **Motor model**: 5-phase stepper (C)
- **Connector type**: D-SUB15 (D)

---

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Table size</th>
<th>Travel stroke</th>
<th>Connecting cable</th>
<th>Driver</th>
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</thead>
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<td>30 mm</td>
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<td>Not equipped</td>
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<tr>
<td>AXW10040-F2PL-CD</td>
<td>100*100 mm</td>
<td>40 mm</td>
<td>3m cable*1</td>
<td>Not equipped</td>
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<tr>
<td>AXW12050-F2PL-CD</td>
<td>120*120 mm</td>
<td>50 mm</td>
<td>4m cable*1</td>
<td>Not equipped</td>
</tr>
</tbody>
</table>

*1 (D-SUB 15 pin female connector + the other side with discrete wirings)

---

**Electrical Specifications**

<table>
<thead>
<tr>
<th>Motor Type/Shaft numbers</th>
<th>Controller side connector</th>
<th>Origin approximation sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-phase stepper / 32 double shafts</td>
<td>15-pin female end connector D-SUB</td>
<td>Photoelectric sensor EE-SX4134</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Power supply</th>
<th>Control output</th>
<th>Output control</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V±10%</td>
<td>NPN open collector output under 24V 8mA</td>
<td>Testing (sensing) / output transistor OFF (closed)</td>
</tr>
</tbody>
</table>

---

**X axis**

- **Material**: Carbon steel / Electroless nickel plating
- **Stage material/Surface treatment**: Carbon steel / Electroless nickel plating
- **Main unit weight**: 4.8 Kg / 8.4 Kg
- **Accuracy level**: Precision grade (P)
- **Wiring method**: Left wiring (L)
- **Coupling**: FAMCS16-5*5
- **Main unit weight**: 2.8 Kg / 4.8 Kg / 6 Kg
- **Dynamic parallelism**: ±0.5 μm / 2 μm / 5 μm
- **Positioning precision**: ±0.5 μm / 2 μm / 5 μm
- **Driving precision**: 10 μm / 10 μm / 20 μm
- **Resolution (pulse)**: Full / Half: 2 μm / 1 μm / 0.5 μm
- **Maximum speed (full step)**: 2 mm / 1 mm / 0.5 mm

---

**X series**

- **Connecting cable (optional)**: 2m cable*1
- **Driver (optional)**: Blank / Not equipped

---

* Left wiring of this model is defined to regard the motor structure assembled on the stage mechanical left side.
**Model description**

**AYW series**

<table>
<thead>
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<th>Model Number</th>
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</thead>
<tbody>
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<td>50mm</td>
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<tr>
<td>Table size</td>
<td>80x80mm</td>
<td>100x100mm</td>
<td>120x120mm</td>
</tr>
</tbody>
</table>

**AYW8030-F2PN-CD**

- **Motor model**: 5-phase stepper
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Drive type**: Ball screw Ø8mm lead 1mm
- **Table size**: 80x80mm
- **Travel stroke**: 30mm
- **Accuracy level**: P / Precision grade
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Material**: Carbon steel / Electroless nickel plating
- **Motor type/Shaft numbers**: 5-phase stepper / 1/2 42 double shafts
- **Sensor**: Photoelectric sensor EE-SX4134
- **Power voltage**: 24V ±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Photoelectric sensor EE-SX4134

**AYW10040-F2PN-CD**

- **Motor model**: 5-phase stepper
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Drive type**: Ball screw Ø8mm lead 1mm
- **Table size**: 100x100mm
- **Travel stroke**: 40mm
- **Accuracy level**: P / Precision grade
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Material**: Carbon steel / Electroless nickel plating
- **Motor type/Shaft numbers**: 5-phase stepper / 1/2 42 double shafts
- **Sensor**: Photoelectric sensor EE-SX4134
- **Power voltage**: 24V ±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Photoelectric sensor EE-SX4134

**AYW12050-F2PN-CD**

- **Motor model**: 5-phase stepper
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Drive type**: Ball screw Ø8mm lead 1mm
- **Table size**: 120x120mm
- **Travel stroke**: 50mm
- **Accuracy level**: P / Precision grade
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Material**: Carbon steel / Electroless nickel plating
- **Motor type/Shaft numbers**: 5-phase stepper / 1/2 42 double shafts
- **Sensor**: Photoelectric sensor EE-SX4134
- **Power voltage**: 24V ±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Photoelectric sensor EE-SX4134

---

**XY axis**

**Heavy-loading Precision Motorized XY axis Linear-motion Stage**

- **Crossed-roller guiding**
- **AYW series**

---

**AYW8030-F2PN-CD**

- **Motor model**: 5-phase stepper
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Drive type**: Ball screw Ø8mm lead 1mm
- **Table size**: 80x80mm
- **Travel stroke**: 30mm
- **Accuracy level**: P / Precision grade
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Material**: Carbon steel / Electroless nickel plating
- **Motor type/Shaft numbers**: 5-phase stepper / 1/2 42 double shafts
- **Sensor**: Photoelectric sensor EE-SX4134
- **Power voltage**: 24V ±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Photoelectric sensor EE-SX4134

---

**AYW10040-F2PN-CD**

- **Motor model**: 5-phase stepper
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Drive type**: Ball screw Ø8mm lead 1mm
- **Table size**: 100x100mm
- **Travel stroke**: 40mm
- **Accuracy level**: P / Precision grade
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Material**: Carbon steel / Electroless nickel plating
- **Motor type/Shaft numbers**: 5-phase stepper / 1/2 42 double shafts
- **Sensor**: Photoelectric sensor EE-SX4134
- **Power voltage**: 24V ±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Photoelectric sensor EE-SX4134

---

**AYW12050-F2PN-CD**

- **Motor model**: 5-phase stepper
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Drive type**: Ball screw Ø8mm lead 1mm
- **Table size**: 120x120mm
- **Travel stroke**: 50mm
- **Accuracy level**: P / Precision grade
- **Wiring method**: GMT Standard 15-pin D-SUB (VGA)
- **Material**: Carbon steel / Electroless nickel plating
- **Motor type/Shaft numbers**: 5-phase stepper / 1/2 42 double shafts
- **Sensor**: Photoelectric sensor EE-SX4134
- **Power voltage**: 24V ±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Photoelectric sensor EE-SX4134
Model description

CXS50□_series

<table>
<thead>
<tr>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy level</th>
<th>Wiring method</th>
<th>Motor model</th>
<th>Connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Ball screw</td>
<td>Precision</td>
<td>GMT Standard</td>
<td>5-phase stepper</td>
<td>D-SUB15 (VGA)</td>
</tr>
</tbody>
</table>

- **CXS 50 20 - S2PN-CD**
- **CXS 50 30 - S2PN-CD**

- **Table size**: 50x50 mm
- **Travel stroke**: 20 mm, 30 mm
- **Connecting cable (optional)**
  - 2m cable*1
  - 4m cable*1

- **Driver (optional)**
- ** 控制器侧端子**
- **直线导轨**
- **Stainless steel / Electroless nickel plating**

---

**Electrical specifications**

- **Motor Type/Shaft numbers**: 5-phase stepper / C28 double shafts
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Transparency sensor - output transistor OFF (closed)

---

* GMT Standard wiring is defined as the product photo, and not optional available.
**Model description**

**CXS60□**

- **Material**: Stainless steel
- **Drive type**: Ball screw
- **Accuracy level**: Precision grade
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15 (VGA)

### Model Number

<table>
<thead>
<tr>
<th>CXS6020-S2PN-CD</th>
<th>CXS6030-S2PN-CD</th>
<th>CXS6050-S2PN-CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table size</td>
<td>60X60 mm</td>
<td>60X60 mm</td>
</tr>
<tr>
<td>Travel stroke</td>
<td>20 mm</td>
<td>30 mm</td>
</tr>
<tr>
<td>Drive type</td>
<td>Ball screw</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Stage material</td>
<td>Stainless steel</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Mass unit weight</td>
<td>0.75 Kg</td>
<td>1.11 Kg</td>
</tr>
<tr>
<td>Resolution (pulse):</td>
<td>Full / Half</td>
<td>2 μm / 1 μm</td>
</tr>
<tr>
<td>Repeatability precision</td>
<td>±0.5 μm</td>
<td>±0.5 μm</td>
</tr>
<tr>
<td>Load capacity</td>
<td>7 Kg</td>
<td>7 Kg</td>
</tr>
<tr>
<td>Parallelism</td>
<td>20 μm</td>
<td>20 μm</td>
</tr>
<tr>
<td>Dynamic straightness</td>
<td>2 μm</td>
<td>2 μm</td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>10 μm</td>
<td>10 μm</td>
</tr>
</tbody>
</table>

### Motor

- **Type/Shaft numbers**: 5-phase stepper / 72 double shafts
- **Brand/Model**: Sanyo / SHS281-7211
- **Driver brand/model**: Please refer to motor / driver cross-reference table (page E3)
- **Connector**
  - Stage side connector: 15-pin male end connector D-SUB
  - Controller side connector: 15-pin female end connector D-SUB (optional)

### Sensor

- **Origin sensor**: Photoelectric sensor EE-SX4134
- **Limit sensor**: N / A
- **Origin approximation sensor**: N / A
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Testing (sensing) / output transistor OFF (closed)

### Wiring method

- GMT Standard

### Drive type

- Ball screw

### Rail

- Linear ball guiding

### Table size

- 60X60 mm

### Travel stroke

- 20 mm
- 30 mm
- 50 mm

### Accuracy level

- Precision grade

### Longitudinal precision

- ±0.5 μm

### Motor model

- 5-phase stepper

### X axis

- Precision Motorized X axis Linear-motion Stage

**CXS60□**

**Series**

**Model Number**

- CXS6020-S2PN-CD
- CXS6030-S2PN-CD
- CXS6050-S2PN-CD

**Table size**

- 60X60 mm

**Travel stroke**

- 20 mm
- 30 mm
- 50 mm

**Accuracy level**

- Precision grade

**Wiring method**

- GMT Standard

**Motor model**

- 5-phase stepper

**Connector type**

- D-SUB15 (VGA)

**Motor**

- Sanyo / SHS281-7211

**Drive type**

- Ball screw

**Stage material/Surface treatment**

- Stainless steel / Electroless nickel plating

**Main unit weight**

- 0.75 Kg

**Resolution (pulse)**

- 2 μm / 1 μm

**Repeatability precision**

- ±0.5 μm

**Load capacity**

- 7 Kg

**Parallelism**

- 20 μm

**Dynamic straightness**

- 2 μm

**Dynamic parallelism**

- 10 μm

**Origin sensor**

- Photoelectric sensor EE-SX4134

**Limit sensor**

- N / A

**Origin approximation sensor**

- N / A

**Power voltage**

- 24V±10%

**Control output**

- NPN open collector output under 24V 8mA

**Output control**

- Testing (sensing) / output transistor OFF (closed)

---

**Note**: GMT Standard wiring is defined as the product photo, and not optional available.

---

**Model Number**

- CXS6020-S2PN-CD
- CXS6030-S2PN-CD
- CXS6050-S2PN-CD

**Table size**

- 60X60 mm

**Travel stroke**

- 20 mm
- 30 mm
- 50 mm

**Accuracy level**

- Precision grade

**Wiring method**

- GMT Standard

**Motor model**

- 5-phase stepper

**Connector type**

- D-SUB15 (VGA)

---

**Motor**

- Sanyo / SHS281-7211

**Drive type**

- Ball screw

**Stage material/Surface treatment**

- Stainless steel / Electroless nickel plating

**Main unit weight**

- 0.75 Kg

**Resolution (pulse)**

- 2 μm / 1 μm

**Repeatability precision**

- ±0.5 μm

**Load capacity**

- 7 Kg

**Parallelism**

- 20 μm

**Dynamic straightness**

- 2 μm

**Dynamic parallelism**

- 10 μm

**Origin sensor**

- Photoelectric sensor EE-SX4134

**Limit sensor**

- N / A

**Origin approximation sensor**

- N / A

**Power voltage**

- 24V±10%

**Control output**

- NPN open collector output under 24V 8mA

**Output control**

- Testing (sensing) / output transistor OFF (closed)

---

**Note**: GMT Standard wiring is defined as the product photo, and not optional available.

---

**Model Number**

- CXS6020-S2PN-CD
- CXS6030-S2PN-CD
- CXS6050-S2PN-CD

**Table size**

- 60X60 mm

**Travel stroke**

- 20 mm
- 30 mm
- 50 mm

**Accuracy level**

- Precision grade

**Wiring method**

- GMT Standard

**Motor model**

- 5-phase stepper

**Connector type**

- D-SUB15 (VGA)

---

**Motor**

- Sanyo / SHS281-7211

**Drive type**

- Ball screw

**Stage material/Surface treatment**

- Stainless steel / Electroless nickel plating

**Main unit weight**

- 0.75 Kg

**Resolution (pulse)**

- 2 μm / 1 μm

**Repeatability precision**

- ±0.5 μm

**Load capacity**

- 7 Kg

**Parallelism**

- 20 μm

**Dynamic straightness**

- 2 μm

**Dynamic parallelism**

- 10 μm

**Origin sensor**

- Photoelectric sensor EE-SX4134

**Limit sensor**

- N / A

**Origin approximation sensor**

- N / A

**Power voltage**

- 24V±10%

**Control output**

- NPN open collector output under 24V 8mA

**Output control**

- Testing (sensing) / output transistor OFF (closed)
### Precision Motorized X axis Linear-motion Stage • Linear ball guiding

**CXS80□ series**

#### Model description

<table>
<thead>
<tr>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy level</th>
<th>Wiring method</th>
<th>Motor model</th>
<th>Connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless steel</td>
<td>Ball screw</td>
<td>P</td>
<td>GMT Standard</td>
<td>5-phase stepper</td>
<td>D-SUB15 (VGA)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table size</th>
<th>Travel stroke</th>
<th>Connecting cable (optional)</th>
<th>Driver (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 80*80mm</td>
<td>20mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>80 80*80mm</td>
<td>30mm</td>
<td>2m cable*1</td>
<td>Blank</td>
</tr>
<tr>
<td>80 80*100mm</td>
<td>50mm</td>
<td>4m cable*2</td>
<td>Blank</td>
</tr>
</tbody>
</table>

* GMT Standard wiring is defined as the product photo, and not optional available.

### Specifications

<table>
<thead>
<tr>
<th><strong>Model Number</strong></th>
<th><strong>Brand/Model</strong></th>
<th><strong>Type/Shaft numbers</strong></th>
<th><strong>Driver brand/Model</strong></th>
<th><strong>Connector</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CXS8020-S2PN-CD</td>
<td>Sanyo / SHS281-7211</td>
<td>5-phase stepper / 128 double shafts</td>
<td>Please refer to motor / driver cross-reference table (page E3)</td>
<td>D-SUB15</td>
</tr>
<tr>
<td>CXS8030-S2PN-CD</td>
<td></td>
<td></td>
<td></td>
<td>D-SUB15</td>
</tr>
<tr>
<td>CXS8050-S2PN-CD</td>
<td></td>
<td></td>
<td></td>
<td>D-SUB15</td>
</tr>
</tbody>
</table>

### Mechanical specifications

<table>
<thead>
<tr>
<th><strong>Table size</strong></th>
<th><strong>Travel stroke</strong></th>
<th><strong>Motor voltage</strong></th>
<th><strong>Origin approximation sensor</strong></th>
<th><strong>Control output</strong></th>
<th><strong>Positioning precision</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>80 80*80mm</td>
<td>20mm</td>
<td>24V±10%</td>
<td>N/A</td>
<td>NPN open collector output under 24V 8mA</td>
<td>±0.5 μm</td>
</tr>
<tr>
<td>80 80*80mm</td>
<td>30mm</td>
<td></td>
<td></td>
<td></td>
<td>2 μm / 1 μm</td>
</tr>
<tr>
<td>80 80*100mm</td>
<td>50mm</td>
<td></td>
<td></td>
<td></td>
<td>2 μm / 1 μm</td>
</tr>
</tbody>
</table>

### Electrical specifications

<table>
<thead>
<tr>
<th><strong>Motor voltage</strong></th>
<th><strong>Origin approximation sensor</strong></th>
<th><strong>Control output</strong></th>
<th><strong>Positioning precision</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>24V±10%</td>
<td>N/A</td>
<td>NPN open collector output under 24V 8mA</td>
<td>±0.5 μm</td>
</tr>
</tbody>
</table>

### Linear ball guiding

**CXS80□-S2PN-CD**

**Dimensions:**
- **L:** 70mm
- **L1:** 80mm
- **L2:** 100mm

**Cable Lengths:**
- **4m cable**
- **2m cable**
- **6m cable**

**Accuracy Levels:**
- Precision grade P
- GMT Standard grade N

**Wiring Method:**
- GMT Standard*2

**Motor Model:**
- 5-phase stepper

**Controller Side Connector:**
- D-SUB15 (VGA)

**Drive Type:**
- Ball screw

**Stage Side Connector:**
- 15-pin male and connector D-SUB

**Main Unit Weight:**
- 1.2 Kg
- 1.35 Kg

**Material:**
- Stainless steel

**Table Size:**
- 80 80*80mm
- 80 80*100mm

**Travel Stroke:**
- 20mm
- 30mm
- 50mm

**Dynamic Straightness:**
- 10 μm

**Dynamic Parallelism:**
- 2 μm

**Positioning Precision:**
- ±0.5 μm

**Missed Step:**
- 2 μm

**Parallelism:**
- 2 μm

**Load Capacity:**
- 8 Kgf

**Resolution (pulse):**
- 2 μm / 1 μm

**Maximum Speed (full step):**
- 20 mm / sec

**Accuracy Level:**
- Precision grade P
- GMT Standard grade N

**Wiring Method:**
- GMT Standard*2

**Coupling:**
- Linear ball guiding

**Stage Material/Surface Treatment:**
- Stainless steel / Electroless nickel plating

**Main Unit Weight:**
- 1.15 Kg
- 1.2 Kg
- 1.35 Kg

**Connecting Cable (optional):**
- Blank
- 2m cable
- 4m cable

**Driver (optional):**
- Blank
- Not equipped

**X axis**

---

* GMT Standard wiring is defined as the product photo, and not optional available.
### Model Description

**CYS50 Series**

<table>
<thead>
<tr>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy level</th>
<th>Wiring method</th>
<th>Motor model</th>
<th>Connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>S - Stainless steel</td>
<td>2 - Ball screw</td>
<td>P - Precision grade</td>
<td>N - GMT Standard</td>
<td>C - 5-phase stepper</td>
<td>X - Not equipped</td>
</tr>
</tbody>
</table>

**CYS50**

- **Table Size:** 50mm
- **Travel Stroke:** 20 mm, 30 mm
- **Connecting Cable:** (optional)
  - Blank: Not equipped
  - 2: 2m cable**1**
  - 4: 4m cable**2**
  - 6: 6m cable*1

**Driver (optional):**
- Blank: Not equipped
- C: Standard specified by GMT

#### XY Axis

- **Model Number:** CYS50-20-S2PN-CD
- **Model Description:** Precision Motorized XY axis Linear-motion Stage
- **Drive Type:** Linear ball guiding

### Electrical Specifications

<table>
<thead>
<tr>
<th>Motor Type/Shaft numbers</th>
<th>Driver brand/Model</th>
<th>Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-phase stepper / 128 double shafts</td>
<td>Sanyo / SH5281-7211</td>
<td>Photoelectric sensor EE-SX4134</td>
</tr>
</tbody>
</table>

### Mechanical Specifications

<table>
<thead>
<tr>
<th>Table Size</th>
<th>Stroke</th>
<th>Load Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>50mm</td>
<td>20 mm</td>
<td>5 Kgf</td>
</tr>
<tr>
<td>50mm</td>
<td>30 mm</td>
<td>5 Kgf</td>
</tr>
</tbody>
</table>

### Other Specifications

- **Positioning precision:** ±0.5 μm
- **Parallelism:** 1 μm
- **Dynamic parallelism:** 2 μm
- **Rail:** Stainless steel / Electroless nickel plating
- **Linear ball guiding**

---

**Notes:**
- GMT Standard wiring is defined as the product photo, and not optional available.
- **www.gmtlinear.com**

---

**Table:**

<table>
<thead>
<tr>
<th>Table Size</th>
<th>Stroke</th>
<th>Load Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>50mm</td>
<td>20 mm</td>
<td>5 Kgf</td>
</tr>
<tr>
<td>50mm</td>
<td>30 mm</td>
<td>5 Kgf</td>
</tr>
</tbody>
</table>

---

**Contact Information:**
- GMT Global, Inc.
- 1347 C47
- www.gmtlinear.com
Precision Motorized XY axis Linear-motion Stage  ●  Linear ball guiding

CYS60□ series

Model description

- Material: Stainless steel
- Drive type: Ball screw
- Accuracy level: Precision grade
- Wiring method: GMT Standard
- Motor model: 5-phase stepper
- Connector type: D-SUB15 (VGA)

**Model Number**

<table>
<thead>
<tr>
<th>Table size</th>
<th>CYS6020-S2PN-CD</th>
<th>CYS6030-S2PN-CD</th>
<th>CYS6050-S2PN-CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table size</td>
<td>60 60 mm</td>
<td>60 60 mm</td>
<td>60 80 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>20 mm</td>
<td>30 mm</td>
<td>50 mm</td>
</tr>
<tr>
<td>Drive type</td>
<td>Ball screw</td>
<td>Ball screw</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Stage material</td>
<td>Stainless steel</td>
<td>Electroless nickel plating</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Main unit weight</td>
<td>1.5 Kg</td>
<td>1.8 Kg</td>
<td>3.22 Kg</td>
</tr>
<tr>
<td>Coupling</td>
<td>FAMCS10-5/5</td>
<td>FAMCS10-5/5</td>
<td>FAMCS10-5/5</td>
</tr>
<tr>
<td>Resolution (pulse)</td>
<td>2 μm / 1 μm</td>
<td>2 μm / 1 μm</td>
<td>2 μm / 1 μm</td>
</tr>
<tr>
<td>Maximum speed (full step)</td>
<td>20 mm / sec</td>
<td>20 mm / sec</td>
<td>20 mm / sec</td>
</tr>
<tr>
<td>Positioning precision</td>
<td>±0.5 μm</td>
<td>±0.5 μm</td>
<td>±0.5 μm</td>
</tr>
<tr>
<td>Load capacity</td>
<td>9 Kg</td>
<td>9 Kg</td>
<td>9 Kg</td>
</tr>
<tr>
<td>Mixed step</td>
<td>1 μm</td>
<td>1 μm</td>
<td>1 μm</td>
</tr>
<tr>
<td>Parallelism</td>
<td>20 μm</td>
<td>20 μm</td>
<td>20 μm</td>
</tr>
<tr>
<td>Dynamic straightness</td>
<td>2 μm</td>
<td>2 μm</td>
<td>2 μm</td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>10 μm</td>
<td>10 μm</td>
<td>10 μm</td>
</tr>
<tr>
<td>Motor</td>
<td>SANYO / SHS281/7211</td>
<td>SANYO / SHS281/7211</td>
<td>SANYO / SHS281/7211</td>
</tr>
<tr>
<td>Type / Shaft numbers</td>
<td>5-phase stepper / 128 double shafts</td>
<td>5-phase stepper / 128 double shafts</td>
<td>5-phase stepper / 128 double shafts</td>
</tr>
<tr>
<td>Controller side connector</td>
<td>15-pin female connector D-SUB (optional)</td>
<td>15-pin female connector D-SUB (optional)</td>
<td>15-pin female connector D-SUB (optional)</td>
</tr>
<tr>
<td>Limit sensor</td>
<td>Photoelectric sensor EE-SX4134</td>
<td>Photoelectric sensor EE-SX4134</td>
<td>Photoelectric sensor EE-SX4134</td>
</tr>
<tr>
<td>NEMA 17</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* GMT Standard wiring is defined as the product photo, and not optional available.
### Model description

**CYS80□ series**

<table>
<thead>
<tr>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy level</th>
<th>Wiring method</th>
<th>Motor model</th>
<th>Connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless steel</td>
<td>Ball screw</td>
<td>Precision grade</td>
<td>GMT Standard</td>
<td>5-phase stepper</td>
<td>D-SUB15 (VGA)</td>
</tr>
</tbody>
</table>

#### Motor model:
- CYS8020-S2PN-CD
- CYS8030-S2PN-CD
- CYS8050-S2PN-CD

#### Table size:
- 80x80mm
- 80x100mm

#### Travel stroke:
- 20mm
- 30mm
- 50mm

#### Wiring method:
- GMT Standard

#### Drive type:
- 5-phase stepper

#### Coupling:
- Linear ball guiding

#### Connector type:
- D-SUB15

#### Shaft numbers:
- 12-M4x5.5L
- 4-M3x5.5L

#### Drawn end:
- Ø20

#### Table size:
- 80x80mm

#### Motor specifications:
- Model Number: CYS80□-S2PN-CD
- Table size: 80x100mm
- Travel stroke: 20mm, 30mm, 50mm
- Drive type: Ball screw Ø8 lead 1mm
- Linear ball guiding
- Stage material/Surface treatment:
  - Stainless steel / Electroless nickel plating
- Main unit weight:
  - 2.3 kg
  - 2.6 kg
- Creasing:
  - Non-applicable
- Accuracy level:
  - Precision grade: 2 μm / 1 μm
- Wiring method:
  - GMT Standard

#### Mechanical specifications:
- Motor type/Shaft numbers:
  - 5-phase stepper / Ø12 double shafts
- Driver brand/Model:
  - SHS5281-7211
- Connector:
  - D-SUB15
- Stage side connector:
  - 15-pin male end connector D-SUB
- Controller side connector:
  - 15-pin female end connector D-SUB (optional)
- Origin sensor:
  - Photoelectric sensor EE-SS4134
- Limit sensor:
  - N/A
- Power voltage:
  - 24V±10%
- Control output:
  - NPN open collector output under 24V 8mA
- Output control:
  - Texting (sensing) / output transistor OFF (closed)

#### Electrical specifications:
- Resolution (pulse):
  - Full / Half: 2 μm / 1 μm
  - Maximum speed (full step): 20 mm / sec
- Positioning precision:
  - 5 μm
- Load capacity:
  - 7 kgf
- Missed step:
  - 1 μm
- Parallelism:
  - 20 μm
- Dynamic straightness:
  - 2 μm
- Dynamic parallelism:
  - 5 μm

#### Linear ball guiding

---

**Note:** GMT Standard wiring is defined as the product photo, and not optional available.

---

**XY axis**

### CYS80□-S2PN-CD

**CYS80□-S2PN-CD**

- Linear ball guiding

---

**XY axis**
CZLS50 ½ series

**Model Number**
- CZLS5020-S2PN-CD
- CZLS5030-S2PN-CD

<table>
<thead>
<tr>
<th>Model Number</th>
<th>CZLS5020-S2PN-CD</th>
<th>CZLS5030-S2PN-CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table size</td>
<td>50X50 mm</td>
<td>50X50 mm</td>
</tr>
<tr>
<td>Travel stroke</td>
<td>20 mm</td>
<td>30 mm</td>
</tr>
<tr>
<td>Drive type</td>
<td>Ball screw</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Linear ball guiding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage material</td>
<td>Stainless steel</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Surface treatment</td>
<td>Electroless nickel plating</td>
<td>Electroless nickel plating</td>
</tr>
<tr>
<td>Unit weight</td>
<td>0.84 Kg</td>
<td>0.79 Kg</td>
</tr>
<tr>
<td>Coating</td>
<td>FAMCGS10-5/5</td>
<td></td>
</tr>
<tr>
<td>Coating precision</td>
<td>5 μm</td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.5 μm</td>
<td>±0.5 μm</td>
</tr>
<tr>
<td>Load capacity</td>
<td>4 Kg</td>
<td></td>
</tr>
<tr>
<td>Mixed step</td>
<td>1 μm</td>
<td></td>
</tr>
<tr>
<td>Parallelism</td>
<td>15 μm</td>
<td></td>
</tr>
<tr>
<td>Dynamic straightness</td>
<td>2 μm</td>
<td></td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>5 μm</td>
<td></td>
</tr>
</tbody>
</table>

**Motor**
- Type/Shaft numbers: 5-phase stepper / C28 double shafts
- Brand/Model: Sanyo / SH5281-7211

**Connector**
- Stage side connector: D-SUB (optional)
- Controller side connector: D-SUB (optional)
- Limit sensor: Photoelectric sensor EE-544/134

**Sensor**
- Origin approximation sensor: N/A
- Power voltage: 24V±10%
- Control output: NPN open collector output under 24V 8mA
- Output control: Two terminal sensing / output transistor OFF (closed)

**Z axis**
- Load capacity: 4Kgf
- Travel stroke: 20 mm
- Table size: 50X50 mm
- Drive type: Ball screw Ø8 lead 1mm
- Linear ball guiding
- Stage material: Stainless steel / Electroless nickel plating
- Surface treatment: Electroless nickel plating
- Unit weight: 0.84 Kg
- Coating: FAMCGS10-5/5
- Coating precision: 5 μm
- Repeatability precision: ±0.5 μm
- Load capacity: 4 Kg
- Mixed step: 1 μm
- Parallelism: 15 μm
- Dynamic straightness: 2 μm
- Dynamic parallelism: 5 μm

**Driver (optional)**
- Blank
- Not equipped
- Standard specified by GMT

**Connecting cable (optional)**
- Blank
- Not equipped
- GMT Standard C

**Model description**
- Material: Stainless steel
- Drive type: Ball screw
- Accuracy level: Precision grade
- Wiring method: GMT Standard C
- Motor model: 5-phase stepper
- Connector type: D-SUB15 (VGA)

**Z axis**
- Drive type: Ball screw
- Accuracy level: Precision grade
- Wiring method: GMT Standard C
- Motor model: 5-phase stepper
- Connector type: D-SUB15 (VGA)
Precision Motorized Z axis Linear-motion Stage  ■ Linear ball guiding

**Model description**

**CZLS60□ series**

- **Material**: Stainless steel
- **Drive type**: Ball screw
- **Accuracy level**: Precision grade
- **Wiring method**: GMT Standard C
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15 (VGA)

**Axis & serial numbers**

- CZLS
- Z axis

**Table size**

<table>
<thead>
<tr>
<th>Table size</th>
<th>Travel stroke</th>
<th>Connecting cable (optional)</th>
<th>Driver (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 60*60mm</td>
<td>20mm</td>
<td>Blank</td>
<td>Blank</td>
</tr>
<tr>
<td>60 60*80mm</td>
<td>30mm</td>
<td>2m cable&lt;sup&gt;*&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>60 50*50mm</td>
<td>50mm</td>
<td>4m cable&lt;sup&gt;**&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

**Model Number**

- CZL6020-S2PN-CD
- CZL6030-S2PN-CD
- CZL6050-S2PN-CD

**Resolution (pulse)**

- Full / Half: 2 μm / 1 μm
- Maximum speed (full step): 20 mm / sec
- Positioning precision: ±0.5 μm
- Load capacity: 5 kgf
- Mated step: 1 μm
- Parallelism: 20 μm
- Dynamic straightness: 2 μm
- Dynamic parallelism: 10 μm

**Motor Type/Shaft numbers**

- Type: 5-phase stepper / 28 double shafts
- Brand Model: Sanyo / SH5281-7211

**Electrical specifications**

- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA

**Mechanical specifications**

- **Table size**: 60 60*60mm 60 60*80mm 60 50*50mm
- **Travel stroke**: 20mm 30mm 50mm

**Dimensions (mm)**

- 53.5 L x 60.5 H

* GMT Standard wiring is defined as the product photo, and not optional available.

---

**Z axis**

**Connecting cable**

<sup>*</sup> D-SUB 15-pin female connector + the other side with discrete wiring

---

**Table size**

- L1: 60
- L2: 50
- L3: 60
- H: 50

---

**Dimensions (mm)**

- Stroke: 20 30 50
- Table size: L1 L2 H L1 L2 H L1 L2 H
- 60: 131 161 194 60 141 194 101.5 80 214
**Model description**

**CZLS80**

- **Material**: Stainless steel
- **Drive type**: Ball screw
- **Accuracy level**: Precision grade
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15 (VGA)

### Table size

- **CZLS8020-S2PN-CD**: 80X80 mm
- **CZLS8030-S2PN-CD**: 80X100 mm
- **CZLS8050-S2PN-CD**: 80X150 mm

### Travel stroke

- 20 mm, 30 mm, 50 mm

### Wiring method

- GMT Standard

### Motor model

- 5-phase stepper

### Connector

- D-SUB15

### Driver (optional)

- Blank

### Connecting cable (optional)

- Blank

**Model Number**

- CZLS8020-S2PN-CD
- CZLS8030-S2PN-CD
- CZLS8050-S2PN-CD

**Motor Type/Shaft numbers**

- 5-phase stepper / 128 double shafts

**Controller side connector**

- D-SUB15 (optional)

**Driver Model**

- Please refer to motor / driver cross-reference table (page E3)

**Origin sensor**

- Photoelectric sensor EE-SX4134

**Power voltage**

- 24V±10%

**Control output**

- NPN open collector output under 24V 8mA

**Output control**

- Testing (sensing) / output transistor OFF (closed)

---

* GMT Standard wiring is defined as the product photo, and not optional available.

---

**Z axis**

**CZLS80□-S2PN-CD**

- Linear ball guiding

**Model Number**

- CZLS80□-S2PN-CD

**Motor Model**

- Sanyo / SH5281-7211

**Photoelectric sensor**

- EE-SX4134

**Power voltage**

- 24V±10%

**Control output**

- NPN open collector output under 24V 8mA

**Output control**

- Testing (sensing) / output transistor OFF (closed)
**Model description**

**CXZS50□ series**

- **Material**: Stainless steel
- **Drive type**: Ball screw
- **Accuracy level**: Precision grade
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15 (VGA)
- **Axis & serial numbers**: CXZS
- **Table size**: 50 x 50 mm
- **Travel stroke**: 20 mm
- **Connecting cable (optional)**: Blank
- **Driver (optional)**: Blank

**Technical specifications**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>CXZS5020-S2PN-CD</th>
<th>CXZS5030-S2PN-CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table size</td>
<td>50 x 50 mm</td>
<td>50 x 50 mm</td>
</tr>
<tr>
<td>Travel stroke</td>
<td>20 mm</td>
<td>30 mm</td>
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<tr>
<td>Drive type</td>
<td>Ball screw</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Rail</td>
<td>Linear ball guiding</td>
<td>Linear ball guiding</td>
</tr>
<tr>
<td>Stage material/Surface treatment</td>
<td>Stainless steel / Electroless nickel plating</td>
<td>Stainless steel / Electroless nickel plating</td>
</tr>
<tr>
<td>Main unit weight</td>
<td>1.21 Kg</td>
<td>1.91 Kg</td>
</tr>
<tr>
<td>Coupling</td>
<td>FAMCS10-5/5</td>
<td></td>
</tr>
<tr>
<td>Resolution (pulse)</td>
<td>Full / Half</td>
<td></td>
</tr>
<tr>
<td>Maximum speed (full step)</td>
<td>2 μm / 1 μm</td>
<td>2 μm / 1 μm</td>
</tr>
<tr>
<td>Positioning precision</td>
<td>5 μm</td>
<td>5 μm</td>
</tr>
<tr>
<td>Load capacity</td>
<td>4 Kg/1 μm</td>
<td>4 Kg/1 μm</td>
</tr>
<tr>
<td>Mixed step</td>
<td>1 μm</td>
<td>1 μm</td>
</tr>
<tr>
<td>Parallelism</td>
<td>15 μm</td>
<td>15 μm</td>
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<tr>
<td>Dynamic straightness</td>
<td>2 μm</td>
<td>2 μm</td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>10 μm</td>
<td>10 μm</td>
</tr>
<tr>
<td>Motor Type/Shaft numbers</td>
<td>5-phase stepper / 32R double shafts</td>
<td></td>
</tr>
<tr>
<td>Motor/Driver/Model</td>
<td>Please refer to the motor / driver cross-reference table (page E3)</td>
<td></td>
</tr>
<tr>
<td>Controller side connector</td>
<td>15-pin female end connector D-SUB (optional)</td>
<td></td>
</tr>
<tr>
<td>Origin sensor</td>
<td>Photoelectric sensor EE-SX4134</td>
<td></td>
</tr>
<tr>
<td>Power voltage</td>
<td>24V±10%</td>
<td></td>
</tr>
<tr>
<td>Control output</td>
<td>NPN open collector output under 24V 8mA</td>
<td></td>
</tr>
<tr>
<td>Output control</td>
<td>Testing (sensing) - output transistor OFF (closed)</td>
<td></td>
</tr>
</tbody>
</table>

**Note**: GMT Standard wiring is defined as the product photo, and not optional available.

---

**Image Description**

- **Model**: CXZS50□-S2PN-CD
- **Description**: Precision Motorized XZ axis Linear-motion Stage
- **Rail**: Linear ball guiding
- **Connecting cable (optional)**: Blank
- **Driver (optional)**: Blank
- **Dimensions**:
  - Table size: 50 x 50 mm
  - Stroke: 20 mm
  - Maximum speed: 20 mm/sec
  - Accuracy: ±0.5 μm
  - Load capacity: 4 Kg/1 μm
  - Mixed step: 1 μm
  - Parallelism: 15 μm
  - Dynamic straightness: 2 μm
  - Dynamic parallelism: 10 μm
- **Sensor**: Photoelectric sensor EE-SX4134
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Testing (sensing) - output transistor OFF (closed)

---

**Detailed Specifications**

- **Material**: Stainless steel
- **Drive type**: Ball screw
- **Accuracy level**: Precision grade
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15 (VGA)
- **Axis & serial numbers**: CXZS
- **Table size**: 50 x 50 mm
- **Travel stroke**: 20 mm
- **Connecting cable (optional)**: Blank
- **Driver (optional)**: Blank

---

**Note**:

- GMT Standard wiring is defined as the product photo, and not optional available.
- www.gmtlinear.com
### Model description

**CXZS60□ series**

<table>
<thead>
<tr>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy level</th>
<th>Wiring method</th>
<th>Motor model</th>
<th>Connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless steel</td>
<td>Ball screw</td>
<td>Precision</td>
<td>GMT Standard</td>
<td>5-phase stepper</td>
<td>D-SUB15 (VGA)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table size</th>
<th>Travel stroke</th>
<th>Connecting cable (optional)</th>
<th>Driver (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 60*60mm</td>
<td>20 mm</td>
<td>Blank</td>
<td>Blank</td>
</tr>
<tr>
<td>60 60*60mm</td>
<td>30 mm</td>
<td>Not equipped</td>
<td>Not equipped</td>
</tr>
<tr>
<td>60 60*80mm</td>
<td>50 mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Drive type**
- Ball screw

**Wiring method**
- GMT Standard
- Not equipped

**Motor model**
- 5-phase stepper

**Connector type**
- D-SUB15 (VGA)

**Connecting cable (optional)**
- Blank
- Not equipped

**Driver (optional)**
- Blank

**Model Number**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Table size</th>
<th>Travel stroke</th>
<th>Connector Stage side connector</th>
<th>Controller side connector</th>
<th>Origin approximation sensor</th>
<th>Limit sensor</th>
<th>Power voltage</th>
<th>Control output</th>
<th>Output control</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXZS60□-S2PN-CD</td>
<td>60 60*60mm</td>
<td>20 mm</td>
<td>15-pin male end connector D-SUB</td>
<td>15-pin female end connector D-SUB (optional)</td>
<td>Photointerrupter sensor EE-SX4134</td>
<td>N/A</td>
<td>24V±10%</td>
<td>NPN open collector output under 24V 8mA</td>
<td>Texting (sensing) ; output transistor OFF (closed)</td>
</tr>
</tbody>
</table>

**Model description**

**Material**
- Stainless steel

**Drive type**
- Ball screw

**Accuracy level**
- Precision

**Wiring method**
- GMT Standard

**Motor model**
- 5-phase stepper

**Connector type**
- D-SUB15 (VGA)

**Connecting cable (optional)**
- Blank

**Driver (optional)**
- Blank

**Model Number**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Table size</th>
<th>Travel stroke</th>
<th>Connector Stage side connector</th>
<th>Controller side connector</th>
<th>Origin approximation sensor</th>
<th>Limit sensor</th>
<th>Power voltage</th>
<th>Control output</th>
<th>Output control</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXZS60□-S2PN-CD</td>
<td>60 60*60mm</td>
<td>20 mm</td>
<td>15-pin male end connector D-SUB</td>
<td>15-pin female end connector D-SUB (optional)</td>
<td>Photointerrupter sensor EE-SX4134</td>
<td>N/A</td>
<td>24V±10%</td>
<td>NPN open collector output under 24V 8mA</td>
<td>Texting (sensing) ; output transistor OFF (closed)</td>
</tr>
</tbody>
</table>
Precision Motorized XZ axis Linear-motion Stage  •  Linear ball guiding

**CXZS80□ series**

**Model description**

- **Material**: Stainless steel
- **Drive type**: Ball screw
- **Accuracy level**: Precision grade
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15 (VGA)

**CXZS 80 20 - S2PN - CD - 2C**

**Axis & serial numbers**

<table>
<thead>
<tr>
<th>CXZS</th>
<th>XZ axis</th>
</tr>
</thead>
</table>

**Table size**

<table>
<thead>
<tr>
<th>Table size</th>
<th>80 x 80 mm</th>
<th>80 x 100 mm</th>
</tr>
</thead>
</table>

**Travel stroke**

<table>
<thead>
<tr>
<th>Stroke</th>
<th>20 mm</th>
<th>30 mm</th>
<th>50 mm</th>
</tr>
</thead>
</table>

**Connecting cable (optional)**

- Blank
- Not equipped
- 2m cable
- 4m cable

**Driver (optional)**

- Blank
- Not equipped

**Linear motion specification**

<table>
<thead>
<tr>
<th>Table size</th>
<th>CXZS8000-S2PN-CD</th>
<th>CXZS8030-S2PN-CD</th>
<th>CXZS8050-S2PN-CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table size</td>
<td>800 x 80 mm</td>
<td>800 x 100 mm</td>
<td></td>
</tr>
<tr>
<td>Travel stroke</td>
<td>20 mm</td>
<td>30 mm</td>
<td>50 mm</td>
</tr>
<tr>
<td>Drive type</td>
<td>Ball screw</td>
<td>Ball screw</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Material</td>
<td>Stainless steel</td>
<td>Stainless steel</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Stage material/ Surface treatment</td>
<td>Stainless steel / Electroless nickel plating</td>
<td>Stainless steel / Electroless nickel plating</td>
<td>Stainless steel / Electroless nickel plating</td>
</tr>
<tr>
<td>Main unit weight</td>
<td>2.9 Kg</td>
<td>3.9 Kg</td>
<td></td>
</tr>
<tr>
<td>Resolution (pulse)</td>
<td>Full / Half</td>
<td>2 μm / 1 μm</td>
<td>2 μm / 1 μm</td>
</tr>
<tr>
<td>Accuracy level</td>
<td>Precision grade</td>
<td>±0.5 μm</td>
<td>±0.5 μm</td>
</tr>
<tr>
<td>Power voltage</td>
<td>24V ±10%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Electrical specification**

- **Motor Type/Shaft numbers**: 5-phase stepper / 28 double shafts
- **Driver specifications**
  - Please refer to motor / driver cross-reference table (page E3)

**Technical specifications**

- **Load capacity**: 6 Kgf
- **Positioning precision**: 1 μm
- **Repeatability precision**: 2 μm
- **Dynamic straightness**: 2 μm
- **Parallelism**: 3 μm
- **Dynamic parallelism**: 3 μm

**Accessories**

- 4m cable

Note: GMT Standard wiring is defined as the product photo, and not optional available.
### Model description

**CXYZS60□ series**

<table>
<thead>
<tr>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy level</th>
<th>Wiring method</th>
<th>Motor model</th>
<th>Connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Stainless steel</td>
<td>2 Ball screw</td>
<td>P Precision grade</td>
<td>GMT Standard</td>
<td>5-phase stepper</td>
<td>□ D-SUB15 (VGA)</td>
</tr>
</tbody>
</table>

**Table size**

<table>
<thead>
<tr>
<th>Table size</th>
<th>Travel stroke</th>
<th>Connecting cable (optional)</th>
<th>Driver (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60x60mm</td>
<td>20mm</td>
<td>Blank</td>
<td>Blank</td>
</tr>
<tr>
<td>60x60mm</td>
<td>30mm</td>
<td>Not equipped</td>
<td></td>
</tr>
<tr>
<td>60x80mm</td>
<td>50mm</td>
<td>Not equipped</td>
<td></td>
</tr>
</tbody>
</table>

**Wiring method**

<table>
<thead>
<tr>
<th>Wiring method</th>
<th>Not equipped</th>
<th>GMT Standard*2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2m cable*1</td>
<td>Not equipped</td>
<td>GMT Standard*2</td>
</tr>
<tr>
<td>4m cable*1</td>
<td>Not equipped</td>
<td>GMT Standard*2</td>
</tr>
</tbody>
</table>

**Motor model**

- 5-phase stepper

**Material**

- Stainless steel / Electroless nickel plating

**Main unit weight**

- 2.63 Kg
- 2.98 Kg
- 3.72 Kg

**Stage material/Surface treatment**

- Stainless steel / Electroless nickel plating

**Resolution (pulse)**

- 2 µm / 1 µm

**Maximum speed (full step)**

- 20 mm / sec

**Positioning precision**

- 5 µm

**Repeatability precision**

- ±0.5 µm

**Load capacity**

- 9 Kg

**Mixed step**

- 1 µm

**Parallelism**

- 20 µm

**Dynamic straightness**

- 2 µm

**Dynamic parallelism**

- 10 µm

**Sensor**

- Photoelectric sensor EE-SX4134

**Driver (optional)**

- Blank

**Connecting cable (optional)**

- D-SUB15 (VGA)

**Drive type**

- Ball screw / Ø8 lead 1mm

**Stage size**

- 60x60x80mm

**Motor**

- 5-phase stepper / 28 double shafts

**Power voltage**

- 24V ±10%

**Table size**

- 60x60x60mm

**Wiring method**

- NPN open collector output under 24V 8mA

**Testing**

- Output transistor OFF (closed)

---

* GMT Standard wiring is defined as the product photo, and not optional available.

---

* GMT Standard wiring is defined as the product photo, and not optional available.

---

* GMT Standard wiring is defined as the product photo, and not optional available.

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* GMT Standard wiring is defined as the product photo, and not optional available.

---

* GMT Standard wiring is defined as the product photo, and not optional available.
CXYZS80□ series

Material: Stainless steel
Drive type: Ball screw
Accuracy level: Precision grade
Wiring method: GMT Standard
Motor model: 5-phase stepper
Connector type: D-SUB15 (VGA)

Axis & serial numbers
- CXYZS
- 80 20 - S 2 P N - C D - 2 C

Model description

- The model number CXYZS80□ indicates the series of the machine.
- The model number includes the table size (80), travel stroke (20mm), and additional specifications.

Table size
- 80 X 80 mm
- 80 X 100 mm

Travel stroke
- 20 mm
- 30 mm
- 50 mm

Connecting cable (optional)
- Blank
- 2m cable
- 4m cable

Driver (optional)
- Blank
- Not equipped

Model Number
- CXYZS8020-2PN-CD
- CXYZS8030-2PN-CD
- CXYZS8050-2PN-CD

Table size
- 80 X 80 mm
- 80 X 100 mm

Travel stroke
- 20 mm
- 30 mm
- 50 mm

Connecting cable (optional)
- 2m cable
- 4m cable

Driver (optional)
- Blank
- Not equipped

Model Number
- CXYZS80□-2PN-CD

Table size
- 80 X 80 mm
- 80 X 100 mm

Travel stroke
- 20 mm
- 30 mm
- 50 mm

Wiring method
- GMT Standard

Motor model
- 5-phase stepper / 28 double shafts
- Sanyo / SH5281-7211
- Photoelectric sensor EE-SX4134

Sensor
- Origin sensor: Photoelectric sensor EE-SV4134
- Power voltage: 24V±10%
- Control output: NPN open collector output under 24V 8mA
- Output control: Testing (sensing) - output transistor OFF (closed)

Accuracy level
- P: Precision grade

Wiring method
- GMT Standard

** GMT Standard wiring is defined in the product photo, and not optional available.**

Please refer to motor / driver cross-reference table (page E3)

** GMT Standard wiring is defined as the product photo, and not optional available.**

www.gmtlinear.com
Precision Motorized X axis Linear-motion Stage  ◆  Circular Linear ball guiding

CXN50□ / CXC50□ series

**Model description**

- **Material**: Stainless steel
- **Drive type**: Ball screw
- **Accuracy level**: Precision grade
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15 (VGA)

**Model Number**

- CXN 50 30 - S2PN-CD-P1 - 2 C
- CXC 50 30 - S2PN-CD-P1 - 2 C

**Axis & serial numbers**

- Table size: 50x50 mm
- Stroke: 30, 50, 75 mm
- Ball screw pitch: P1, 1mm; P2, 2mm
- Connecting cable (optional): Blank, Not equipped
- Driver (optional): Blank, Not equipped

**Mechanical specifications**

- **Resolution (pulldown)**: Full step, 2 μm / 1 μm, 4 μm / 2 μm
- **Maximum speed (full step)**: 20 mm / sec, 40 mm / sec, 20 mm / sec, 40 mm / sec
- **Positioning precision**: 5 μm, 7 μm
- **Load capacity**: 10 Kgf
- **Missed step**: 1 μm
- **Parallelism**: 10 μm
- **Dynamic straightness**: 2 μm
- **Dynamic parallelism**: 10 μm

**Precision specifications**

- **Rail**: Circular Linear ball guiding
- **Material**: Stainless steel / Electroless nickel plating
- **Wiring method**: GMT Standard C

**Connectors**

- **Connector side connector**: 15-pin female end connector D-SUB (optional)
- **Controller side connector**: 15-pin male end connector D-SUB (optional)

**Motor**

- **Type/Shaft numbers**: 5-phase stepper / 128 double shafts

**Driver**

- **Driver brand/Model**: Sanyo / SH5281-7211
- **Please refer to motor / driver cross-reference table (page E3)**

**Sensor**

- **Origin sensor**: Photoelectric sensor EE-SX4134
- **Limit sensor**: N/A
- **Origin approximation sensor**: N/A
- **Power voltage**: 24V ± 10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Testing (sensing); output transistor OFF (closed)

---

* GMT Standard wiring is defined as the product photo, and not optional available.

---

**Photoelectric sensor EE-SX4134**

- **24V±10%**
- **N/A**

---

**5-phase stepper / 28 double shafts**

- **Sanyo / SH5281-7211**
Model description

**CXN50 □ / CXC50 □ series**

**Material**
- Stainless steel

**Drive type**
- Ball screw

**Accuracy level**
- Precision grade

**Wiring method**
- GMT Standard

**Motor model**
- 5-phase stepper

**Connector type**
- D-SUB15

**Axis & serial numbers**
- CXN 50
- CXC 50

**Table size**
- 50 mm x 50 mm

**Stroke**
- 100 mm

**Ball screw pitch**
- P1 1 mm

**Connecting cable (optional)**
- Blank

**Driver (optional)**
- Not equipped

**Drive type**
- Ball screw

**Material**
- Stainless steel

**Driver (optional)**
- Blank

**CNC motorized X axis linear-motion stage**

**Circular Linear ball guiding**

**Model Number**

<table>
<thead>
<tr>
<th>Table size</th>
<th>50 mm x 50 mm</th>
<th>100 mm x 100 mm</th>
<th>200 mm x 200 mm</th>
</tr>
</thead>
</table>

**Mechanical Specifications**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>±2 μm</td>
</tr>
<tr>
<td>Speed</td>
<td>4 μm/1 μm</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.5 μm</td>
</tr>
<tr>
<td>Load capacity</td>
<td>10 Kg</td>
</tr>
<tr>
<td>Parallelism</td>
<td>15 μm</td>
</tr>
<tr>
<td>Dynamic straightness</td>
<td>6 μm</td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>15 μm</td>
</tr>
</tbody>
</table>

**Electrical Specifications**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control output</td>
<td>NPN open collector output</td>
</tr>
<tr>
<td>Power consumption</td>
<td>24V ±10%</td>
</tr>
<tr>
<td>Control voltage</td>
<td>24 V ±10%</td>
</tr>
<tr>
<td>Output control</td>
<td>Testing (sensing)</td>
</tr>
</tbody>
</table>

**Sensor**
- Photoelectric sensor EE-SX4134

**Motor**
- 5-phase stepper / 32R double shafts

**Connector**
- 15-pin female end connector D-SUB

**Model Description**

**CXN50 □-S2PN-CD-P1**

**CXC50 □-S2PN-CD-P1**

**Stroke**
- 100 mm
- 150 mm
- 200 mm

**Connecting Cable**
- 4m cable
- 2m cable
- 6m cable

**Additional Notes**
- GMT Standard wiring is defined as the product photo, and not optional available.
- www.gmtlinear.com
**Model description**

**CXN60□ / CXC60□ series**

**Material**
- Stainless steel

**Drive type**
- Ball screw

**Accuracy level**
- Precision grade

**Wiring method**
- GMT Standard

**Motor model**
- 5-phase stepper

**Connector type**
- D-SUB15

**Table size**
- 60 60*60mm

**Table size**
- 30 30*30mm

**Stroke**
- P1: 1mm
- P2: 2mm

**Ball screw pitch**
- Ø4.5; Ø8

**Connecting cable (optional)**
- Optional

**Driver (optional)**
- Not equipped

**Axis & serial numbers**
- CXN
  - X axis (with cover)
- CXC
  - X axis (without cover)

**Accuracy level**
- P

**Wiring method**
- GMT Standard

**Motor model**
- 5-phase stepper

**Connector type**
- D-SUB15

**Material**
- Stainless steel

**Driver (optional)**
- Blank

**Connecting cable (optional)**
- Blank

**Motor model**
- 5-phase stepper

**Sensor**
- Photoelectric sensor

**Power voltage**
- 24V±10%

**Control output**
- NPN open collector output under 24V 8mA

**Output control**
- Testing (sensing) / output transistor OFF (closed)

**X axis**

**Stroke**
- L: 30 120 209 50
- L1: 30 120 209 50
- P: 1 25
- N: 1
- P1: 25

**Model Number**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Stroke (L)</th>
<th>Stroke (L1)</th>
<th>P</th>
<th>N</th>
<th>P1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXN60□-S2PN-CD-P1</td>
<td>30</td>
<td>120</td>
<td>209</td>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td>CXC60□-S2PN-CD-P1</td>
<td>50</td>
<td>140</td>
<td>229</td>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td>CXN60□-S2PN-CD-P2</td>
<td>75</td>
<td>165</td>
<td>254</td>
<td>50</td>
<td>3</td>
</tr>
</tbody>
</table>

* GMT Standard wiring is defined as the product photo, and not optional available.

---

**Precision Motorized X axis Linear-motion Stage**

**Circular Linear ball guiding**

**Mechanical specifications**
- Table size: 60X60 mm
- Travel stroke: 30 mm
- Stroke: 50 mm
- Diameter: 76 mm
- Ball screw lead: 1mm
- Ball screw Ø8 lead 2mm

**Precision specifications**
- Positioning precision: ±2 μm
- Load capacity: 14 Kg
- Missed step: 2 μm
- Dynamic straightness: 2 μm
- Dynamic parallelism: 10 μm

---

**Sensor**
- Photoelectric sensor

**Power voltage**
- 24V±10%

**Control output**
- NPN open collector output under 24V 8mA

**Output control**
- Testing (sensing) / output transistor OFF (closed)
## Precision Motorized X axis Linear-motion Stage

**Model Number:**
- CXN60\□ / CXC60\□ series

### Model Description

<table>
<thead>
<tr>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy level</th>
<th>Wiring method</th>
<th>Motor model</th>
<th>Connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Ball screw</td>
<td>Precision</td>
<td>GMT Standard</td>
<td>Syphon stepper</td>
<td>D-SUB15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>grade</td>
<td></td>
<td>Not equipped</td>
<td>(VGA)</td>
</tr>
</tbody>
</table>

### Mechanical Specifications

<table>
<thead>
<tr>
<th>Table size</th>
<th>Stroke 100</th>
<th>Stroke 150</th>
<th>Stroke 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>60\×60 mm</td>
<td>100 mm</td>
<td>150 mm</td>
<td>200 mm</td>
</tr>
</tbody>
</table>

### Electrical Specifications

<table>
<thead>
<tr>
<th>Power voltage</th>
<th>24V±10%</th>
</tr>
</thead>
</table>

### Optical Specifications

<table>
<thead>
<tr>
<th>Positioning precision</th>
<th>10 μm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic straightness</td>
<td>4 μm</td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>10 μm</td>
</tr>
</tbody>
</table>

### Control Specifications

<table>
<thead>
<tr>
<th>Origin sensor</th>
<th>Photocell sensor EE-SX4134</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit sensor</td>
<td></td>
</tr>
</tbody>
</table>

### Wiring Method

- GMT Standard
- NPN open collector output under 24V 8mA

### Output Specifications

| Control output | 24Vdc/10mA |

### Model Number Table

<table>
<thead>
<tr>
<th>X axis (w/o cover)</th>
<th>X axis (w/cover)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXN</td>
<td>CXC</td>
</tr>
</tbody>
</table>

### Axis & Serial numbers

- CXN 60 100-S2PN-CD-P1-2C
- CXC 60 150-S2PN-CD-P2

### Motor Model

- 5-phase stepper

### Motor Options

- Blank
- Not equipped

### Connector Type

- D-SUB15 (VGA)

### Connection Cable

- 4m cable
- 2m cable
- 6m cable

### Material

- Stainless steel / Electroless nickel plating

### Origin sensor

- Sanyo / SHS281-7211

### Motor Conversion

- Sanjo / SH5281-7211

### Sensor Types

- 15-pin male end connector D-SUB (optional)

### Wiring Method

- GMT Standard

### Table Size

<table>
<thead>
<tr>
<th>Stroke</th>
<th>L</th>
<th>L1</th>
<th>P</th>
<th>N</th>
<th>P1</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>190</td>
<td>298.5</td>
<td>50</td>
<td>3</td>
<td>50</td>
</tr>
<tr>
<td>150</td>
<td>240</td>
<td>348.5</td>
<td>25</td>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td>200</td>
<td>290</td>
<td>398.5</td>
<td>50</td>
<td>5</td>
<td>N/A</td>
</tr>
</tbody>
</table>

---

* GMT Standard wiring is defined as the product photo, and not optional available.
### Model Description

**CXN60□ / CXC60□ Series**

**Model Number**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Table Size</th>
<th>Stroke</th>
<th>Ball Screw Pitch</th>
<th>Connecting Cable (optional)</th>
<th>Driver (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXN60□</td>
<td>60X60 mm</td>
<td>250 mm</td>
<td>P2</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>CXC60□</td>
<td>60X60 mm</td>
<td>250 mm</td>
<td>P2</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>CXN60□</td>
<td>60X60 mm</td>
<td>300 mm</td>
<td>P4</td>
<td>Blank</td>
<td>Standardspecifiedby GMT*2</td>
</tr>
<tr>
<td>CXC60□</td>
<td>60X60 mm</td>
<td>300 mm</td>
<td>P4</td>
<td>Blank</td>
<td>Standardspecifiedby GMT*2</td>
</tr>
</tbody>
</table>

**Accuracy Level**

- P: Precision grade

**Wiring Method**

- N: GMT Standard C

**Motor Model**

- 5-phase stepper

**X Not Equipped**

- D: Connector type (VGA)

**Material**

- Stainless steel

**Drive Type**

- Ball screw

**Table Size**

- 60X60 mm

**Axis & Serial Numbers**

- CXN: X-axis (w/o cover)
- CXC: X-axis (w/cover)

**Connecting Cable**

- Blank
- Not equipped

**Motor Type Numbers**

- 5-phase stepper / 230 double shafts

**Reference**

- GMT Standard wiring is defined as the product photo, and not optional available.

---

### Precision Motorized X Axis Linear-motion Stage

**Circular Linear Ball Guiding**

**CXN60□-S2PN-CD-P1**

**Stroke**

- 250 mm: 340 N/A
- 300 mm: 390 498.5 N/A

**Material**

- Stainless steel / Electroless nickel plating

**Positioning Precison**

- ±0.5 μm

**Load Capacity**

- 14 Kg

**Parallelism**

- 25 μm

**Dynamic Parallelism**

- 4 μm / 2 μm

**Dynamic Straightness**

- 4 μm / 8 μm

**Electrical Specifications**

- Power Voltage: 24V±10%

**Photoelectric Sensor**

- EE-SX4134

**Sensor**

- N/A

**Control Output**

- NPN open collector output under 24V 8mA

**Output Control**

- Testing (sensing): output transistor OFF (closed)

---

**Technical Specifications**

- GMT Standard wiring is defined as the product photo, and not optional available.
Precision Motorized X axis Linear-motion Stage ○ Circular Linear ball guiding

CXN80□ / CXC80□ series

Model description

CXN80□ / CXC80□ series

Material - Stainless steel
Drive type - Ball screw
Accuracy level - Precision grade
Wiring method - GMT Standard
Motor model - 5-phase stepper
Connector type - D-SUB15 (VGA)

<table>
<thead>
<tr>
<th>Axis &amp; serial numbers</th>
<th>Table size</th>
<th>Stroke</th>
<th>Ball screw pitch</th>
<th>Connecting cable (optional)</th>
<th>Driver (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXN</td>
<td>30mm</td>
<td>30mm</td>
<td>P1 1mm; P2 2mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>CXC</td>
<td>50mm</td>
<td>50mm</td>
<td>P1 1mm; P2 2mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td></td>
<td>75mm</td>
<td>75mm</td>
<td>P1 1mm; P2 2mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
</tbody>
</table>

* GMT Standard wiring is defined as the product photo, and not optional available.
*5 (D-SUB 15 pin female connector + the other side with discrete wirings)

<table>
<thead>
<tr>
<th>Table size</th>
<th>Stroke</th>
<th>L</th>
<th>L1</th>
<th>P</th>
<th>N</th>
<th>P1</th>
</tr>
</thead>
<tbody>
<tr>
<td>80x80 mm</td>
<td>30</td>
<td>140</td>
<td>229</td>
<td>70</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>50x50 mm</td>
<td>50</td>
<td>160</td>
<td>247.5</td>
<td>35</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>35x35 mm</td>
<td>75</td>
<td>185</td>
<td>272.5</td>
<td>35</td>
<td>4</td>
<td>35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Motor</th>
<th>Type/Shaft numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand/Model</td>
<td>Sanjo / SHS281-7211</td>
</tr>
</tbody>
</table>

** GMT Standard wiring is defined as the product photo, and not optional available.**
### CXN80 / CXC80 series

#### Model description

<table>
<thead>
<tr>
<th>Model Number</th>
<th>CXN80-S2PN-CD-P1</th>
<th>CXC80-S2PN-CD-P1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Stainless steel</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Drive type</td>
<td>Ball screw</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Accuracy level</td>
<td>Precision grade</td>
<td>Precision grade</td>
</tr>
<tr>
<td>Wiring method</td>
<td>GMT Standard</td>
<td>GMT Standard</td>
</tr>
<tr>
<td>Motor model</td>
<td>5-phase stepper</td>
<td>5-phase stepper</td>
</tr>
<tr>
<td>Connector type</td>
<td>D-SUB15 (10/6)</td>
<td>D-SUB15 (10/6)</td>
</tr>
</tbody>
</table>

#### Model Number

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Full</th>
<th>Half</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CXC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Mechanical specifications

<table>
<thead>
<tr>
<th></th>
<th>Full / Half</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table size</td>
<td>80 x 80 mm</td>
</tr>
<tr>
<td>Travel stroke</td>
<td>100 mm / 150 mm / 200 mm</td>
</tr>
<tr>
<td>Drive type</td>
<td>Ball screw / Ball screw / Ball screw</td>
</tr>
<tr>
<td>Rail</td>
<td>Circular Linear ball guiding</td>
</tr>
<tr>
<td>Stage material / Surface treatment</td>
<td>Stainless steel / Electroless nickel plating</td>
</tr>
<tr>
<td>Main unit weight</td>
<td>N : 2.02 Kg / C : 2.2 Kg</td>
</tr>
<tr>
<td>Coupling</td>
<td>FAMCS 10-9</td>
</tr>
<tr>
<td>Wiring method</td>
<td>GMT Standard</td>
</tr>
<tr>
<td>Wire thickness</td>
<td>0.5 mm</td>
</tr>
<tr>
<td>Resolution (full / half)</td>
<td>2 μm / 1 μm</td>
</tr>
<tr>
<td>Maximum speed (full / half)</td>
<td>20 mm / sec</td>
</tr>
<tr>
<td>Positioning precision</td>
<td>10 μm</td>
</tr>
<tr>
<td>Repeatability precision</td>
<td>±0.5 μm</td>
</tr>
<tr>
<td>Load capacity</td>
<td>16 Kg</td>
</tr>
<tr>
<td>Missed step</td>
<td>1 μm</td>
</tr>
<tr>
<td>Parallelism</td>
<td>20 μm</td>
</tr>
<tr>
<td>Dynamic straightness</td>
<td>4 μm</td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>10 μm</td>
</tr>
</tbody>
</table>

#### Precision specifications

<table>
<thead>
<tr>
<th></th>
<th>Full / Half</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor type / Shaft numbers</td>
<td>5-phase stepper / 2328 double shafts</td>
</tr>
<tr>
<td>Driver / Model</td>
<td>Sanyo / SH5281-7211</td>
</tr>
<tr>
<td>Connector side connector</td>
<td>15-pin male end connector D-SUB</td>
</tr>
<tr>
<td>Controller side connector</td>
<td>15-pin female end connector D-SUB (optional)</td>
</tr>
<tr>
<td>Sensor</td>
<td>Photoelectric sensor EE-SX4134</td>
</tr>
</tbody>
</table>

#### Electrical specifications

<table>
<thead>
<tr>
<th></th>
<th>Full / Half</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit sensor</td>
<td>N/A</td>
</tr>
<tr>
<td>Origin approximation sensor</td>
<td>N/A</td>
</tr>
<tr>
<td>Power voltage</td>
<td>24V ±10%</td>
</tr>
<tr>
<td>Control output</td>
<td>NPN open collector output under 24V 8mA</td>
</tr>
<tr>
<td>Output control</td>
<td>Testing (sensing) : output transistor OFF (closed)</td>
</tr>
</tbody>
</table>

* GMT Standard wiring is defined as the product photo, and not optional available.
Model description

Precision Motorized X axis Linear-motion Stage  ☑ Circular Linear ball guiding

CXN80 □ / CXC80 □ series

Table size
- 80x80mm (X axis (w/o cover))
- 300mm (X axis (w/cover))

Axis & serial numbers
- CXN
- CXC

Material
- Stainless steel

Drive type
- 2-phase stepper

Accuracy level
- Precision grade

Wiring method
- GMT Standard
- GMT Standard*2

Motor model
- 5-phase stepper

Motor
- Circular Linear ball guiding

Accurate positioning
- ±0.5 μm
- ±1 μm

Positioning precision
- 25 μm
- 1 μm

Repeatability precision
- ±0.5 μm
- ±1 μm

Missed step
- 2 μm

Dynamic straightness
- 25 μm

Dynamic parallelism
- 25 μm

Motor
- 5-phase stepper / 2-phase double shafts
- Sanyo / SH5281-7211

Driver/brand/model
- Please refer to motor / driver cross-reference table (page E3)

Controller side connector
- 15-pin male end connector C/D-SUB

Connector side connector
- 15-pin female end connector D-SUB (optional)

Origin sensor
- Photoelectric sensor EE-SX134

Limit sensor
- N/A

Origin approximation sensor
- N/A

Power voltage
- 24V±10%

Control output
- NPN open collector output under 24V 8mA

Output control
- Testing (sensing) : output transistor OFF (closed)

Jogging
- Jogging: 4 μm / 2 μm
- 8 μm / 4 μm

Stroke
- 250 mm
- 300 mm

Model Number
- CXN80 250-S2PN-CD-P2-2C
- CXC80 250-S2PN-CD-P2-2C

Wiring method
- GMT Standard*2
- GMT Standard wiring is defined as the product photo, and not optional available.
**Model description**

**CYN50□ / CYC50□ series**

**Material**
- Stainless steel (S)

**Drive type**
- Ball screw (2)

**Accuracy level**
- Precision grade (P)

**Wiring method**
- GMT Standard (N)

**Motor model**
- 5-phase stepper (C)

**Connector type**
- Not equipped (X)

**Model Numbers**

<table>
<thead>
<tr>
<th>CYN50□-S2PN-CD-P1</th>
<th>CYC50□-S2PN-CD-P1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYN50□-S2PN-CD-P1</td>
<td>CYC50□-S2PN-CD-P1</td>
</tr>
<tr>
<td>CYN50□-S2PN-CD-P1</td>
<td>CYC50□-S2PN-CD-P1</td>
</tr>
<tr>
<td>CYN50□-S2PN-CD-P1</td>
<td>CYC50□-S2PN-CD-P1</td>
</tr>
<tr>
<td>CYN50□-S2PN-CD-P1</td>
<td>CYC50□-S2PN-CD-P1</td>
</tr>
</tbody>
</table>

**Table size**
- 50 x 50 mm

**Ball screw pitch**
- P1: 1 mm
- P2: 2 mm

**Connecting cable (optional)**
- Blank (1)
- Not equipped (2)

**Driver (optional)**
- Blank (3)
- Standard specified by GMT (4)

**Servo Motor**
- 5-phase stepper (C)

**Motor model**
- Not equipped (X)

**Connector type**
- D-SUB (6)

**Connecting cable**
- 4 m cable (1)
- 2 m cable (2)
- 6 m cable (3)

**Accuracy level**
- Precision grade (W)

**Wiring method**
- GMT Standard (N)

**Material**
- Stainless steel (S)

**Driver (optional)**
- Blank (C)

**Precision Motorized XY axis Linear-motion Stage**

**Technical specifications**

<table>
<thead>
<tr>
<th>XY axis</th>
<th>L</th>
<th>L1</th>
<th>P</th>
<th>N</th>
<th>P1</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>110</td>
<td>197.5</td>
<td>40</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>50</td>
<td>120</td>
<td>217.5</td>
<td>40</td>
<td>3</td>
<td>N/A</td>
</tr>
<tr>
<td>75</td>
<td>145</td>
<td>242.5</td>
<td>40</td>
<td>3</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Precision specifications of double axis with stroke length in 100mm, 150mm, 200mm, 250mm, and 300 mm will be different from single axis. Please consult to regional sales for more detail information.

** Please consult to regional sales for more detail information.**

** GMT Standard wiring is defined as the product photo, and not optional available.**
### Model description

**CYN60□ / CYC60□ series**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>CYN60□-S2PN-CD-P1</th>
<th>CYC60□-S2PN-CD-P1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table size</td>
<td>60 60*60mm</td>
<td>60 60*60mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>50 mm</td>
<td>50 mm</td>
</tr>
<tr>
<td>Ball screw pitch</td>
<td>P1: 1mm, P2: 2mm</td>
<td>P1: 1mm, P2: 2mm</td>
</tr>
<tr>
<td>Connecting cable (optional)</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>Driver (optional)</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>Material</td>
<td>Stainless steel</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Drive type</td>
<td>Ball screw</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Accuracy level</td>
<td>Precision grade</td>
<td>GMT Standard</td>
</tr>
<tr>
<td>Wiring method</td>
<td>C</td>
<td>D-SUB15 (Y/GA)</td>
</tr>
<tr>
<td>Motor model</td>
<td>5-phase stepper</td>
<td>5-phase stepper</td>
</tr>
<tr>
<td>Connector type</td>
<td>Not equipped</td>
<td>D-SUB15 (Y/GA)</td>
</tr>
</tbody>
</table>

### Mechanical specifications

- **Stroke**: 30, 50, 75, 120, 140, 165, 209, 229, 254, 50, 50, 50, 1, 25
- **Positioning precision**: ±0.5 μm
- **Repeatability precision**: 7 μm
- **Load capacity**: 10 Kg
- **Missed step**: 5 μm
- **Parallelism**: 7 μm
- **Dynamic straightness**: 2 μm
- **Dynamic parallelism**: 10 μm
- **Motor**: 5-phase stepper / 528 double shafts
- **Controller side connector**: 15-pin male end connector C-SUB
- **Driver side connector**: 15-pin female end connector D-SUB (optional)
- **Sensor**: Photoelectric sensor EE-SX4134
- **Origin approximation sensor**: N/A
- **Power voltage**: 24Vdc ±10%
- **Control output**: NPN open collector output under 24V 8mA

*Precision specifications of double axes with stroke length in 100mm, 150mm, 200mm, 250mm, and 300 mm will be different from single axis.*

Please consult regional sales for more detail information.

---

* GMT Standard wiring is defined as the product photo, and not optional available.

* GMT Standard wiring is defined as the product photo, and not optional available.

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* GMT Standard wiring is defined as the product photo, and not optional available.

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* GMT Standard wiring is defined as the product photo, and not optional available.

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* GMT Standard wiring is defined as the product photo, and not optional available.
Precision Motorized XY axis Linear-motion Stage • Circular Linear ball guiding

**Model description**

**CYN80 □ / CYC80 □ series**

- **Material**: Stainless steel
- **Drive type**: Ball screw
- **Accuracy level**: Precision grade
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15 (15A)

### Table size

<table>
<thead>
<tr>
<th>Table size</th>
<th>80 80*80mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>30 30mm</td>
</tr>
<tr>
<td></td>
<td>50 50mm</td>
</tr>
<tr>
<td></td>
<td>75 75mm</td>
</tr>
</tbody>
</table>

### Ball screw pitch

<table>
<thead>
<tr>
<th>Ball screw pitch</th>
<th>P1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>3mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Motor model

<table>
<thead>
<tr>
<th>Motor model</th>
<th>S2PN-CD-P1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Driver (optional)

<table>
<thead>
<tr>
<th>Driver</th>
<th>Blank</th>
<th>Not equipped</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Connecting cable (optional)

<table>
<thead>
<tr>
<th>Connecting cable</th>
<th>Blank</th>
<th>Not equipped</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table size

<table>
<thead>
<tr>
<th>Table size</th>
<th>80 80*80mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>30 30mm</td>
</tr>
<tr>
<td></td>
<td>50 50mm</td>
</tr>
<tr>
<td></td>
<td>75 75mm</td>
</tr>
</tbody>
</table>

### Motor Type/Shaft numbers

- **30mm**: 5-phase stepper / 32±2 double shafts
- **50mm**: 5-phase stepper / 32±2 double shafts
- **75mm**: 5-phase stepper / 32±2 double shafts

### Sensor

- **Origin sensor**: Photoelectric sensor EE-SX4134
- **Limit sensor**: N/A
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA

### Electrical specifications

- **Wiring method**: GMT Standard*2
- **Controller side connector**: Connector type D-SUB (optional)
- **Stage side connector**: 15-pin female end connector D-SUB (optional)

### Mechanical specifications

- **Load capacity**: 14 Kg
- **Parallelism**: 1 μm
- **Dynamic parallelism**: 2 μm
- **Dynamic straightness**: 10 μm

### Motor Specifications

- **Type/Shaft numbers**: 5-phase stepper / 32±2 double shafts
- **Brand Model**: Sanjo / 5H281-7211
- **Driver brand/model**: Please refer to motor / driver cross-reference table (page E3)
- **Controller side connector**: 15-pin female end connector D-SUB (optional)

### Mechanical specifications

- **Load capacity**: 14 Kg
- **Parallelism**: 1 μm
- **Dynamic parallelism**: 2 μm
- **Dynamic straightness**: 10 μm

### Motor Specifications

- **Type/Shaft numbers**: 5-phase stepper / 32±2 double shafts
- **Brand Model**: Sanjo / 5H281-7211
- **Driver brand/model**: Please refer to motor / driver cross-reference table (page E3)
- **Controller side connector**: 15-pin female end connector D-SUB (optional)

### Electrical specifications

- **Wiring method**: GMT Standard*2
- **Controller side connector**: Connector type D-SUB (optional)
- **Stage side connector**: 15-pin female end connector D-SUB (optional)

### Mechanical specifications

- **Load capacity**: 14 Kg
- **Parallelism**: 1 μm
- **Dynamic parallelism**: 2 μm
- **Dynamic straightness**: 10 μm

### Motor Specifications

- **Type/Shaft numbers**: 5-phase stepper / 32±2 double shafts
- **Brand Model**: Sanjo / 5H281-7211
- **Driver brand/model**: Please refer to motor / driver cross-reference table (page E3)
- **Controller side connector**: 15-pin female end connector D-SUB (optional)

### Electrical specifications

- **Wiring method**: GMT Standard*2
- **Controller side connector**: Connector type D-SUB (optional)
- **Stage side connector**: 15-pin female end connector D-SUB (optional)

### Mechanical specifications

- **Load capacity**: 14 Kg
- **Parallelism**: 1 μm
- **Dynamic parallelism**: 2 μm
- **Dynamic straightness**: 10 μm

### Motor Specifications

- **Type/Shaft numbers**: 5-phase stepper / 32±2 double shafts
- **Brand Model**: Sanjo / 5H281-7211
- **Driver brand/model**: Please refer to motor / driver cross-reference table (page E3)
- **Controller side connector**: 15-pin female end connector D-SUB (optional)

### Electrical specifications

- **Wiring method**: GMT Standard*2
- **Controller side connector**: Connector type D-SUB (optional)
- **Stage side connector**: 15-pin female end connector D-SUB (optional)

### Mechanical specifications

- **Load capacity**: 14 Kg
- **Parallelism**: 1 μm
- **Dynamic parallelism**: 2 μm
- **Dynamic straightness**: 10 μm

### Motor Specifications

- **Type/Shaft numbers**: 5-phase stepper / 32±2 double shafts
- **Brand Model**: Sanjo / 5H281-7211
- **Driver brand/model**: Please refer to motor / driver cross-reference table (page E3)
- **Controller side connector**: 15-pin female end connector D-SUB (optional)

### Electrical specifications

- **Wiring method**: GMT Standard*2
- **Controller side connector**: Connector type D-SUB (optional)
- **Stage side connector**: 15-pin female end connector D-SUB (optional)

### Mechanical specifications

- **Load capacity**: 14 Kg
- **Parallelism**: 1 μm
- **Dynamic parallelism**: 2 μm
- **Dynamic straightness**: 10 μm

### Motor Specifications

- **Type/Shaft numbers**: 5-phase stepper / 32±2 double shafts
- **Brand Model**: Sanjo / 5H281-7211
- **Driver brand/model**: Please refer to motor / driver cross-reference table (page E3)
- **Controller side connector**: 15-pin female end connector D-SUB (optional)

### Electrical specifications

- **Wiring method**: GMT Standard*2
- **Controller side connector**: Connector type D-SUB (optional)
- **Stage side connector**: 15-pin female end connector D-SUB (optional)

### Mechanical specifications

- **Load capacity**: 14 Kg
- **Parallelism**: 1 μm
- **Dynamic parallelism**: 2 μm
- **Dynamic straightness**: 10 μm

### Motor Specifications

- **Type/Shaft numbers**: 5-phase stepper / 32±2 double shafts
- **Brand Model**: Sanjo / 5H281-7211
- **Driver brand/model**: Please refer to motor / driver cross-reference table (page E3)
- **Controller side connector**: 15-pin female end connector D-SUB (optional)
Precision Motorized Z axis Linear-motion Stage Circular Linear ball guiding

**Model description**

CZLN50 / CZLC50 series

- **Material**: Stainless steel
- **Drive type**: Ball screw
- **Accuracy level**: Precision grade
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15

**Model Number**

- **CZLN5050-S2PN-CD-P1-2C**
- **CZLC5050-S2PN-CD-P1-2C**
- **CZLN7550-S2PN-CD-P1-2C**
- **CZLC7550-S2PN-CD-P1-2C**

**Mechanical specifications**

- **Table size**: 50x50 mm
- **Stroke**: 50 mm / 75 mm
- **Ball screw pitch**: P1 1mm, P2 2mm
- **Connecting cable (optional)**: Blank
- **Driver (optional)**: Not equipped

**Precision specifications**

- **Resolution (pulse)**: Full / Half
- **Maximum speed (full step)**: 2 µm / 1 µm
- **Positioning precision**: ±0.5 µm
- **Load capacity**: 7 Kg
- **Dynamic straightness**: 2 µm
- **Dynamic parallelism**: 55 µm

**Electrical specifications**

- **Motor Type/Shaft numbers**: 5-phase stepper / 2 double shafts
- **Brand/Model**: Sanyo / SH5281-7211
- **Controller side connector**: 15-pin female end connector D-SUB (optional)
- **Sensor**: Photoelectric sensor EE-SX4134

**Accuracy level**

- P: Precision grade

**Wiring method**

- GMT Standard

**Sensor**

- Origin approximation sensor: N/A
- Limit sensor: N/A
- Power voltage: 24V ±10%
- Control output: NPN open collector (output under 24V 8mA)
- Output control: Testing (sensing); output transistor OFF (closed)

**Connecting cable (optional)**

- Blank
- D-SUB15

* GMT Standard wiring is defined as the product photo, and not available optional.

www.gmtlinear.com
**Model description**

**Precision Motorized Z axis Linear-motion Stage**

- **Circular Linear ball guiding**

**CZLN60** / **CZLC60** series

---

**Model numbers**

- **CZLN6050-S2PN-CD-P1**
- **CZLC6050-S2PN-CD-P1**
- **CZLN6075-S2PN-CD-P1**
- **CZLC6075-S2PN-CD-P1**

**Mechanical specifications**

- **Table size**: 60 x 60 mm
- **Travel stroke**: 50 mm, 75 mm
- **Drive type**: Ball screw Ø8 lead 1mm, Ball screw Ø8 lead 2mm
- **Rail**: Circular Linear ball guiding
- **Stage material/surface treatment**: Stainless steel / Electroless nickel plating
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Accurancy level**: Precision grade
- **Wiring method**: GMT Standard

**Connector specifications**

- **Connector type**: D-SUB15 (JGA)
- **Wiring method**: GMT Standard

---

**Electrical specifications**

- **Drive type**: Ball screw
- **Material**: Stainless steel, Not equipped
- **Driver (optional)**: Blank, C

---

**Connecting cable (optional)**

- **Blank cable**: 4m cable
- **Not equipped**: 2m cable, 6m cable

---

**Precision specifications**

- **Positioning precision**: ±0.5 μm
- **Repeatability precision**: ±0.5 μm
- **Load capacity**: 9 Kg
- **Missed step**: 1 μm
- **Parallelism**: 20 μm
- **Dynamic straightness**: 2 μm
- **Dynamic parallelism**: 50 μm

**Motor specifications**

- **Type/Shaft numbers**: 5-phase stepper/128 double shafts
- **Brand/Model**: Sanyo / SHS81-7211

**Connector specifications**

- **Stage side connector**: 15-pin male end connector D-SUB
- **Controller side connector**: 15-pin female end connector D-SUB (optional)

**Sensor specifications**

- **Origin sensor**: Photoelectric sensor EE-SX4134
- **Limit sensor**: Not equipped
- **Origin approximation sensor**: Not equipped
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Testing (sensing): output transistor OFF (closed)

---

**Z axis**

**CZLN60□-S2PN-CD-P1**

---

**Z axis**

**CZLC60□-S2PN-CD-P1**
**Model description**

**CZLN80** / **CZLC80** series

**Table size**

<table>
<thead>
<tr>
<th>Series</th>
<th>Table size</th>
<th>Stroke</th>
<th>Ball screw pitch</th>
<th>Connecting cable</th>
<th>Driver</th>
</tr>
</thead>
<tbody>
<tr>
<td>CZLN80</td>
<td>80 X 80 mm</td>
<td>50 mm</td>
<td>1 mm</td>
<td>Not equipped</td>
<td>Blank</td>
</tr>
<tr>
<td>CZLC80</td>
<td>80 X 80 mm</td>
<td>75 mm</td>
<td>2 mm</td>
<td>Not equipped</td>
<td>Blank</td>
</tr>
</tbody>
</table>

*Not equipped: Blank is not equipped."

**Motor model**

- **CZLN8050-S2PN-CD-P1**
- **CZLC8050-S2PN-CD-P1**
- **CZLN8075-S2PN-CD-P1**
- **CZLC8075-S2PN-CD-P1**

**Z axis (w/o cover)**

- **CZLN8075-S2PN-CD-P2**
- **CZLC8075-S2PN-CD-P2**

**Z axis (w/cover)**

- **CZLN8050-S2PN-CD-P2**
- **CZLC8050-S2PN-CD-P2**

**Accuracy level**

- **P**: Precision grade

**Wiring method**

- **N**: GMT Standard C

**Motor model**

- **S**-phase stepper

**Material**

- Stainless steel

**Driver (optional)**

- Blank

**Connecting cable (optional)**

- Blank

**Z-axis (w/o cover)**

- 50 mm
- 75 mm

**Z-axis (w/cover)**

- 50 mm
- 75 mm

**Motor model**

- 5-phase stepper

**Coupling**

- Stainless steel / Electroless nickel plating

**Origin sensor**

- Photoelectric sensor EE-SX4134

**Power voltage**

- 24V ±10%

**Control output**

- NPN open collector output under 24V 8mA

**Output control**

- Testing (sensing): output transistor OFF (closed)

---

**Technical specifications**

**Drive type**

- Ball screw

**Accuracy level**

- Precision grade

**Wiring method**

- GMT Standard C

**Motor model**

- 5-phase stepper

**Material**

- Stainless steel / Electroless nickel plating

---

**Precision specifications**

**Accuracy level**

- **P**: Precision grade

**Wiring method**

- GMT Standard C

**Motor model**

- 5-phase stepper / 2-phase double shafts

---

**Electrical specifications**

**Motor type/Shaft numbers**

- 5-phase stepper / 2-phase double shafts

**Driver brand/Model**

- Sanyo / SH5281-7211

---

**Model Number**

- C98
- C97

---

**Z axis**

- **CZLN80-S2PN-CD-P1**
- **CZLC80-S2PN-CD-P1**
**Model description**

**CXZN50 / CXZC50 series**

### Material
- Stainless steel

### Drive type
- Ball screw

### Accuracy level
- Precision grade P

### Wiring method
- GMT Standard

### Motor model
- 5-phase stepper

### Connector type
- Not equipped

---

**Table size**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Table size</th>
<th>Stroke</th>
<th>Ball screw pitch</th>
<th>Connecting cable (optional)</th>
<th>Driver (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXZN5050-S2PN-CD-P1</td>
<td>50X50 mm</td>
<td>50 mm</td>
<td>Ball screw Ø8 lead 1 mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>CXZN5050-S2PN-CD-P2</td>
<td>75 mm</td>
<td>75 mm</td>
<td>Ball screw Ø8 lead 2 mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>CXZC5050-S2PN-CD-P1</td>
<td>50 mm</td>
<td>50 mm</td>
<td>Ball screw Ø8 lead 1 mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>CXZC5050-S2PN-CD-P2</td>
<td>75 mm</td>
<td>75 mm</td>
<td>Ball screw Ø8 lead 2 mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
</tbody>
</table>

---

**Accuracy level**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Accuracy level</th>
<th>Wiring method</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXZN5050-S2PN-CD-P1</td>
<td>Precision grade P</td>
<td>GMT Standard</td>
</tr>
<tr>
<td>CXZN5050-S2PN-CD-P2</td>
<td>Precision grade P</td>
<td>GMT Standard</td>
</tr>
<tr>
<td>CXZC5050-S2PN-CD-P1</td>
<td>Precision grade P</td>
<td>GMT Standard</td>
</tr>
<tr>
<td>CXZC5050-S2PN-CD-P2</td>
<td>Precision grade P</td>
<td>GMT Standard</td>
</tr>
</tbody>
</table>

---

**Drive type**

- Ball screw

**Material**

- Stainless steel

**Driver (optional)**

- Blank

---

**Precision specifications**

### Load capacity
- 9 Kg

### Repeatability precision
- ±0.5 μm

### Positioning precision
- 5 μm

### Dynamic straightness
- 2 μm

### Dynamic parallelism
- 10 μm

### Motor

- 5-phase stepper / 28 double shafts

**Sensor**

- Photoelectric sensor EE-SX4134

**Electrical specifications**

- Power voltage: 24V±10%

**Motor model**

- 5-phase stepper

**Controller side connector**

- 15-pin female end connector D-SUB (optional)

**Origin approximation sensor**

- N/A

**Output control**

- Testing (sensing): output transistor OFF (closed)

---

** Remarks**

- GMT Standard wiring is defined as the product photo, and not optional available.

---

**C99**

---

**C100**
### Model Description

**CXZN60** / **CXZC60** series

- **Material**
  - Stainless steel

- **Drive type**
  - Ball screw

- **Accuracy level**
  - P: Precision grade

- **Wiring method**
  - GMT Standard

- **Motor model**
  - 5-phase stepper

- **Connector type**
  - D-SUB15 (15-pin)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Table Size</th>
<th>Stroke</th>
<th>Ball Screw Pitch</th>
<th>Connecting Cable (optional)</th>
<th>Driver (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXZN6050-S2PN-CD-P1</td>
<td>60x60 mm</td>
<td>50 mm</td>
<td>P1: 1 mm</td>
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<td>Not equipped</td>
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<tr>
<td>CXZN6050-S2PN-CD-P2</td>
<td>60x60 mm</td>
<td>75 mm</td>
<td>P2: 2 mm</td>
<td>Blank</td>
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</tr>
<tr>
<td>CXZN6075-S2PN-CD-P1</td>
<td>60x60 mm</td>
<td>50 mm</td>
<td>P1: 1 mm</td>
<td>Blank</td>
<td>Standard specified by GMT</td>
</tr>
<tr>
<td>CXZN6075-S2PN-CD-P2</td>
<td>60x60 mm</td>
<td>75 mm</td>
<td>P2: 2 mm</td>
<td>Blank</td>
<td>Standard specified by GMT</td>
</tr>
<tr>
<td>CXZN6075-S2PN-CD-P1</td>
<td>60x60 mm</td>
<td>50 mm</td>
<td>P1: 1 mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>CXZC6050-S2PN-CD-P1</td>
<td>60x60 mm</td>
<td>50 mm</td>
<td>P1: 1 mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>CXZC6050-S2PN-CD-P2</td>
<td>60x60 mm</td>
<td>75 mm</td>
<td>P2: 2 mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>CXZC6075-S2PN-CD-P1</td>
<td>60x60 mm</td>
<td>50 mm</td>
<td>P1: 1 mm</td>
<td>Blank</td>
<td>Standard specified by GMT</td>
</tr>
<tr>
<td>CXZC6075-S2PN-CD-P2</td>
<td>60x60 mm</td>
<td>75 mm</td>
<td>P2: 2 mm</td>
<td>Blank</td>
<td>Standard specified by GMT</td>
</tr>
</tbody>
</table>

**Electrical Specifications**

- **Motor Type/Shaft numbers**
  - 5-phase stepper / 2 phase double shafts

- **Sensor**
  - Origin sensor
  - Photoelectric sensor EE-SX4134

- **Motor Type/Shaft numbers**
  - 5-phase stepper / 2 phase double shafts

- **Driver brand/Model**
  - Sanyo / SH5281-7211

- **Controller side connector**
  - 15-pin female end connector D-SUB (optional)

- **Origin approximation sensor**
  - N/A

- **Power voltage**
  - 24V ±10%

- **Control output**
  - NPN open collector output under 24V 8mA

- **Output control**
  - Testing (sensing) : output transistor OFF (closed)

**Mechanical Specifications**

- **Table size**
  - 60x60 mm

- **Stroke**
  - 50 mm

- **Ball screw pitch**
  - P1: 1 mm

- **Connecting cable (optional)**
  - Blank

- **Material**
  - Stainless steel

- **Finish**
  - Electroless nickel plating

**Circular Linear ball guiding**

- **Drive type**
  - Ball screw Ø8 lead 1mm

- **Accuracy level**
  - P: Precision grade

- **Wiring method**
  - GMT Standard

**Precision Motorized XZ axis Linear-motion Stage**

- **Type**
  - Precision Motorized XZ axis Linear-motion Stage

- **Sex**
  - Circular Linear ball guiding

**CXZN60□-S2PN-CD-P1**

**CXZC60□-S2PN-CD-P1**

**CXZN60□-S2PN-CD-P2**

**CXZC60□-S2PN-CD-P2**

**CXZN60□-S2PN-CD-P1**

**CXZC60□-S2PN-CD-P1**

**CXZN60□-S2PN-CD-P2**

**CXZC60□-S2PN-CD-P2**

**CXZN60□ / CXZC60□ series**

**Model Number**

- CXZN6050-S2PN-CD-P1
- CXZN6050-S2PN-CD-P2
- CXZN6075-S2PN-CD-P1
- CXZN6075-S2PN-CD-P2
- CXZC6050-S2PN-CD-P1
- CXZC6050-S2PN-CD-P2
- CXZC6075-S2PN-CD-P1
- CXZC6075-S2PN-CD-P2

**Table size**

- 60 X 60 mm

**Stroke**

- 50 mm

**Ball screw pitch**

- P1: 1 mm

**Connecting cable (optional)**

- Blank

**Material**

- Stainless steel

**Finish**

- Electroless nickel plating

**Motor model**

- 5-phase stepper

**Controller side connector**

- 15-pin female end connector D-SUB (optional)

**Origin approximation sensor**

- N/A

**Power voltage**

- 24V ±10%

**Control output**

- NPN open collector output under 24V 8mA

**Output control**

- Testing (sensing) : output transistor OFF (closed)

**Note:** GMT Standard wiring is defined as the product photo, and not optional available.
### Model description

**CXZN80 / CXZC80** series

#### Main components
- Precision Motorized XZ axis Linear-motion Stage
- Circular Linear ball guiding

#### Model Number

<table>
<thead>
<tr>
<th>Model Number</th>
<th>CXZN8050-S2PN-CD-P1</th>
<th>CXZN8050-S2PN-CD-P2</th>
<th>CXZN8075-S2PN-CD-P1</th>
<th>CXZN8075-S2PN-CD-P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table size</td>
<td>80X80 mm</td>
<td>80X80 mm</td>
<td>80X80 mm</td>
<td>80X80 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>50 mm</td>
<td>75 mm</td>
<td>75 mm</td>
<td>75 mm</td>
</tr>
<tr>
<td><strong>Material</strong></td>
<td>Stainless steel</td>
<td>Stainless steel</td>
<td>Stainless steel</td>
<td>Stainless steel</td>
</tr>
<tr>
<td><strong>Drive type</strong></td>
<td>Ball screw</td>
<td>Ball screw</td>
<td>Ball screw</td>
<td>Ball screw</td>
</tr>
<tr>
<td><strong>Accuracy level</strong></td>
<td>Precision grade</td>
<td>Precision grade</td>
<td>Precision grade</td>
<td>Precision grade</td>
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<tr>
<td><strong>Wiring method</strong></td>
<td>GMT Standard</td>
<td>GMT Standard</td>
<td>GMT Standard</td>
<td>GMT Standard</td>
</tr>
<tr>
<td><strong>Motor model</strong></td>
<td>5-phase stepper</td>
<td>5-phase stepper</td>
<td>5-phase stepper</td>
<td>5-phase stepper</td>
</tr>
<tr>
<td><strong>Connector type</strong></td>
<td>D-SUB15</td>
<td>D-SUB15</td>
<td>D-SUB15</td>
<td>D-SUB15</td>
</tr>
<tr>
<td><strong>Axis &amp; serial numbers</strong></td>
<td>CXZN8050</td>
<td>CXZN8075</td>
<td>CXZN8050</td>
<td>CXZN8075</td>
</tr>
<tr>
<td><strong>Table size</strong></td>
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<td>80X80 mm</td>
<td>80X80 mm</td>
<td>80X80 mm</td>
</tr>
<tr>
<td><strong>Stroke</strong></td>
<td>50 mm</td>
<td>75 mm</td>
<td>75 mm</td>
<td>75 mm</td>
</tr>
<tr>
<td><strong>Ball screw pitch</strong></td>
<td>P1 1mm</td>
<td>P2 2mm</td>
<td>P1 1mm</td>
<td>P2 2mm</td>
</tr>
<tr>
<td><strong>Connecting cable</strong></td>
<td>Blank</td>
<td>Blank</td>
<td>Blank</td>
<td>Blank</td>
</tr>
<tr>
<td><strong>Driver</strong></td>
<td>(optional)</td>
<td>(optional)</td>
<td>(optional)</td>
<td>(optional)</td>
</tr>
</tbody>
</table>

### Specifications

- **Material**: Stainless steel
- **Drive type**: Ball screw
- **Accuracy level**: Precision grade
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB15
- **Axis & serial numbers**: CXZN8050 / CXZN8075, CXZC8050 / CXZC8075

### Technical specifications

- **Table size**: 80X80 mm
- **Stroke**: 50 mm / 75 mm
- **Ball screw**: Ø8 lead 1mm / 2mm
- **Connecting cable (optional)**: Blank / Not equipped
- **Driver (optional)**: Standard specified by GMT

### Electrical specifications

- **Motor Type/Shaft numbers**: 5-phase stepper / 2-phase double shafts
- **Driver Brand/Model**: Sanyo / SH5281-7211
- **Connector Stage side connector**: 15-pin male end connector D-SUB
- **Controller side connector**: 15-pin female end connector D-SUB (optional)
- **Sensor Origin approximation sensor**: Photoelectric sensor EE-SX4134
- **Limit sensor**: N/A
- **Power output**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Testing (sensing) : output transistor OFF (closed)

### Additional notes

- GMT Standard wiring is defined as the product photo, and not optional available.
- GMT Linea.com

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### Diagrams

- Diagram of CXZN80-S2PN-CD-P1
- Diagram of CXZC80-S2PN-CD-P1

---

* GMT Standard wiring is defined as the product photo, and not optional available.
### Model Description

**Model Number:**
- CXYZN50/S2PN-CD-P1
- CXYZC50/S2PN-CD-P2

**Material:** Stainless steel

**Drive Type:**
- Ball screw

**Accuracy Level:** Precision grade

**Wiring Method:**
- GMT Standard

**Motor Model:**
- 5-phase stepper

**Connector Type:**
- D-SUB15

**Axis & Serial Numbers:**
- CXYZN
- CXYZC

**Table Size:** 50 mm x 50 mm

**Stroke:**
- P1: 1 mm
- P2: 2 mm

**Connecting Cable:**
- Blank

**Driver:** Not equipped

**Material:**
- Stainless steel

**Driver (optional):** Not equipped

**Standard Specified by GMT:**
- GMT Standard wiring is defined as the product photo, and not optional available.

**Wiring Method:**
- GMT Standard

**Connecting Cable:** (VGA)
- 2m cable
- 6m cable

**Related Information:**
- Please refer to motor/driver cross-reference table (page E3)
- Photoelectric sensor EE-SX4134

### Mechanical Specifications

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Table Size</th>
<th>Stroke</th>
<th>Ball Screw Pitch</th>
<th>Connecting Cable</th>
<th>Driver</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXYZN50/S2PN-CD-P1</td>
<td>50x50 mm</td>
<td>50 mm</td>
<td>P1: 1 mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
<tr>
<td>CXYZC50/S2PN-CD-P2</td>
<td>75 mm</td>
<td>75 mm</td>
<td>P2: 2 mm</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
</tbody>
</table>

**Drive Type:** Ball screw Ø8 lead 1mm

**Material:** Stainless steel / Electroless nickel plating

**Wiring Method:** GMT Standard

**Wiring Port:** 15-pin male end connector D-SUB (optional)

**Origin Sensor:** Photoelectric sensor EE-SX4134

**Limit Sensor:** N/A

**Power Voltage:** 24V±10%

**Control Output:** NP open collector output under 24V 8mA

**Output Control:** Testing (sensing) : output transistor OFF (closed)

**Connectors:**
- Stage side connector: 15-pin female end connector D-SUB (optional)
- Controller side connector: 15-pin female end connector D-SUB

**Origin Approximation Sensor:** N/A

**Motor Type/Shaft numbers:** 5-phase stepper / 5-phase double shafts

**Encoder:**
- Origin: 16-bit incremental encoder
- Incremental origin

**Controller:**
- Controller
- Siemens / SH5281-7211

**Driver:**
- 5-phase stepper

**Positioning Precision:** ±0.5 μm

**Repeatability Precision:** ±0.5 μm

**Load Capacity:** 7 Kg

**Missed Step:** 1 μm

**Parallelism:** 15 μm

**Dynamic Straightness:** 2 μm

**Dynamic Parallelism:** 15 μm

**Maximum Speed (Full Step):**
- 2 μm / 1 μm
- 4 μm / 2 μm

**Positioning Speed:**
- 20 mm / sec
- 40 mm / sec

**Resolution:** 2 μm / 1 μm

**Mechanical Endstop:**
- Circular Linear Ball Guiding

**Electrical Endstop:**
- Stainless steel / Electroless nickel plating

**Model Number:**
- CXYZN
- CXYZC

**Model Description:**
- CXYZN50 / CXYZC50 series

**Model Number:**
- CXYZN50/S2PN-CD-P1
- CXYZC50/S2PN-CD-P2

**Material:** Stainless steel

**Drive Type:** Ball screw

**Accuracy Level:** Precision grade

**Wiring Method:** GMT Standard

**Motor Model:** 5-phase stepper

**Connector Type:**
- D-SUB15

**Axis & Serial Numbers:**
- CXYZN
- CXYZC

**Table Size:** 50 mm x 50 mm

**Stroke:**
- P1: 1 mm
- P2: 2 mm

**Connecting Cable:**
- Blank

**Driver:** Not equipped

**Material:**
- Stainless steel

**Driver (optional):** Not equipped

**Standard Specified by GMT:**
- GMT Standard wiring is defined as the product photo, and not optional available.

**Wiring Method:**
- GMT Standard

**Connecting Cable:** (VGA)
- 2m cable
- 6m cable

**Related Information:**
- Please refer to motor/driver cross-reference table (page E3)
- Photoelectric sensor EE-SX4134

**Power Voltage:** 24V±10%

**Control Output:** NP open collector output under 24V 8mA

**Output Control:** Testing (sensing) : output transistor OFF (closed)

**Connectors:**
- Stage side connector: 15-pin female end connector D-SUB (optional)
- Controller side connector: 15-pin female end connector D-SUB

**Origin Approximation Sensor:** N/A

**Motor Type/Shaft numbers:** 5-phase stepper / 5-phase double shafts

**Encoder:**
- Origin: 16-bit incremental encoder
- Incremental origin

**Controller:**
- Controller
- Siemens / SH5281-7211

**Driver:**
- 5-phase stepper

**Positioning Precision:** ±0.5 μm

**Repeatability Precision:** ±0.5 μm

**Load Capacity:** 7 Kg

**Missed Step:** 1 μm

**Parallelism:** 15 μm

**Dynamic Straightness:** 2 μm

**Dynamic Parallelism:** 15 μm

**Maximum Speed (Full Step):**
- 2 μm / 1 μm
- 4 μm / 2 μm

**Positioning Speed:**
- 20 mm / sec
- 40 mm / sec

**Resolution:** 2 μm / 1 μm

**Mechanical Endstop:**
- Circular Linear Ball Guiding

**Electrical Endstop:**
- Stainless steel / Electroless nickel plating

**Model Number:**
- CXYZN
- CXYZC

**Model Description:**
- CXYZN50 / CXYZC50 series
Model description

**CXYZN80□/CXYZC80□ series**

**Model Number**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>CXYZN80S2PN-CD-P1</th>
<th>CXYZN80S2PN-CD-P2</th>
<th>CXYZN80S2PN-CD-P1</th>
<th>CXYZN80S2PN-CD-P2</th>
</tr>
</thead>
<tbody>
<tr>
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<td>80×80 mm</td>
<td>80×80 mm</td>
<td>80×80 mm</td>
<td>80×80 mm</td>
</tr>
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<td>Stroke</td>
<td>50 mm / 75 mm</td>
<td>50 mm / 75 mm</td>
<td>50 mm / 75 mm</td>
<td>50 mm / 75 mm</td>
</tr>
<tr>
<td>Ball screw pitch</td>
<td>P1 1mm</td>
<td>P2 2mm</td>
<td>P1 1mm</td>
<td>P2 2mm</td>
</tr>
<tr>
<td>Connecting cable</td>
<td>Blank</td>
<td>2m cable*2</td>
<td>Blank</td>
<td>2m cable*2</td>
</tr>
<tr>
<td>Driver</td>
<td>Blank</td>
<td>Not equipped</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
</tbody>
</table>

**Mechanical specifications**

- **Resolution (full / half):** 2 μm / 1 μm
- **Maximum speed (full step):** 4 μm / 2 μm

**Precision specifications**

- Positioning precision: ±0.5 μm
- Load capacity: 11 Kg
- Missed step: ±1 μm
- Parallelism: ±20 μm
- Dynamic straightness: 2 μm
- Dynamic parallelism: ±10 μm

**Motor**

- Type/Shaft numbers: 5-phase stepper / 200 double shafts

**Driver**

- Please refer to motor / driver cross-reference table (page E3)

**Controller**

- 15-pin female end connector D-SUB (optional)

**ARTICLE 】

**GMT Standard wiring is defined as the product photo, and not optional available.**

---

**CXYZN80□ / CXYZC80□ series**

**Model Number**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>CXYZN80S2PN-CD-P1</th>
<th>CXYZN80S2PN-CD-P2</th>
<th>CXYZN80S2PN-CD-P1</th>
<th>CXYZN80S2PN-CD-P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table size</td>
<td>80×80 mm</td>
<td>80×80 mm</td>
<td>80×80 mm</td>
<td>80×80 mm</td>
</tr>
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<td>Stroke</td>
<td>50 mm / 75 mm</td>
<td>50 mm / 75 mm</td>
<td>50 mm / 75 mm</td>
<td>50 mm / 75 mm</td>
</tr>
<tr>
<td>Ball screw pitch</td>
<td>P1 1mm</td>
<td>P2 2mm</td>
<td>P1 1mm</td>
<td>P2 2mm</td>
</tr>
<tr>
<td>Connecting cable</td>
<td>Blank</td>
<td>2m cable*2</td>
<td>Blank</td>
<td>2m cable*2</td>
</tr>
<tr>
<td>Driver</td>
<td>Blank</td>
<td>Not equipped</td>
<td>Blank</td>
<td>Not equipped</td>
</tr>
</tbody>
</table>

**Mechanical specifications**

- **Resolution (full / half):** 2 μm / 1 μm
- **Maximum speed (full step):** 4 μm / 2 μm

**Precision specifications**

- Positioning precision: ±0.5 μm
- Load capacity: 11 Kg
- Missed step: ±1 μm
- Parallelism: ±20 μm
- Dynamic straightness: 2 μm
- Dynamic parallelism: ±10 μm

**Motor**

- Type/Shaft numbers: 5-phase stepper / 200 double shafts

**Driver**

- Please refer to motor / driver cross-reference table (page E3)

**Controller**

- 15-pin female end connector D-SUB (optional)

**ARTICLE 】

**GMT Standard wiring is defined as the product photo, and not optional available.**

---
# AZV90□ series

**Model description**

## AZV90□ series

<table>
<thead>
<tr>
<th>Model Number</th>
<th>AZV9010-A8-PN-CD</th>
<th>AZV9020-A8-PN-CD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical specifications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Type/Shaft numbers</td>
<td>5-phase stepper / 42 double shafts</td>
<td>5-phase stepper / 42 double shafts</td>
</tr>
<tr>
<td>Brand/Model</td>
<td>Sanyo 103F5505-8211</td>
<td>Sanyo 103F5505-8211</td>
</tr>
<tr>
<td>Driver brand/Model</td>
<td>Please refer to motor / driver cross-reference table (page E3)</td>
<td>Please refer to motor / driver cross-reference table (page E3)</td>
</tr>
<tr>
<td>Connector</td>
<td>Stage side connector 15-pin male and connector D-SUB</td>
<td>Stage side connector 15-pin male and connector D-SUB</td>
</tr>
<tr>
<td></td>
<td>Controller side connector 15-pin female and connector D-SUB (optional)</td>
<td>Controller side connector 15-pin female and connector D-SUB (optional)</td>
</tr>
<tr>
<td>Sensor</td>
<td>Origin sensor</td>
<td>Photodiode sensor EE-SX4134</td>
</tr>
<tr>
<td></td>
<td>Limit sensor</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Origin approximation sensor</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Power voltage</td>
<td>24V±10%</td>
</tr>
<tr>
<td></td>
<td>Control output</td>
<td>NPN open collector output under 24V 8mA</td>
</tr>
<tr>
<td></td>
<td>Output control</td>
<td>Test (sensing) - output transistor OFF (closed)</td>
</tr>
</tbody>
</table>

**Mechanical specifications**

<table>
<thead>
<tr>
<th>Description</th>
<th>AZV9010-A8-PN-CD</th>
<th>AZV9020-A8-PN-CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table size</td>
<td>90x90 mm</td>
<td>100x100 mm</td>
</tr>
<tr>
<td>Drive type</td>
<td>Belt screw &amp; belt</td>
<td>Belt screw &amp; belt</td>
</tr>
<tr>
<td>Rail</td>
<td>Crossed roller guiding</td>
<td>Crossed roller guiding</td>
</tr>
<tr>
<td>Stage material/Surface treatment</td>
<td>Aluminum alloy / Black anodized</td>
<td>Aluminum alloy / Black anodized</td>
</tr>
<tr>
<td>Main unit weight</td>
<td>1.95 Kg</td>
<td>1.95 Kg</td>
</tr>
<tr>
<td>Coupling</td>
<td></td>
<td>Ball screw Ø8 lead 1mm &amp; belt</td>
</tr>
<tr>
<td>Positioning precision</td>
<td>1 μm</td>
<td>1 μm</td>
</tr>
<tr>
<td>Repeatability precision</td>
<td>1 μm</td>
<td>1 μm</td>
</tr>
<tr>
<td>Load capacity</td>
<td>5 Kgf</td>
<td>5 Kgf</td>
</tr>
<tr>
<td>Maximum speed (full step)</td>
<td>5 mm/sec</td>
<td>5 mm/sec</td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>30 μm</td>
<td>30 μm</td>
</tr>
<tr>
<td>Dynamic straightness</td>
<td>10 μm</td>
<td>10 μm</td>
</tr>
<tr>
<td>Stroke</td>
<td>10 mm</td>
<td>20 mm</td>
</tr>
<tr>
<td>Accuracy level</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Wiring method</td>
<td>GMT Standard*2</td>
<td>GMT Standard*2</td>
</tr>
<tr>
<td>Driver (optional)</td>
<td>Blank</td>
<td>Blank</td>
</tr>
<tr>
<td>Connector type</td>
<td>D-SUB15</td>
<td>D-SUB15</td>
</tr>
</tbody>
</table>

**Additional information**

- **Model Number**: AZV9010-A8-PN-CD, AZV9020-A8-PN-CD
- **Brand/Model**: Sanyo 103F5505-8211
- **Driver brand/Model**: Please refer to motor / driver cross-reference table (page E3)
- **Connector**: Stage side connector 15-pin male and connector D-SUB, Controller side connector 15-pin female and connector D-SUB (optional)
- **Sensor**: Origin sensor, Limit sensor, Origin approximation sensor
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA, Test (sensing) - output transistor OFF (closed)

* GMT Standard wiring is defined as the product photo, and not optional available.

---

**Production Serial Number**

- **Model**: AZV9010-A8-PN-CD, AZV9020-A8-PN-CD
- **Material**: 5-phase stepper / 42 double shafts
- **Drive type**: Sanyo 103F5505-8211
- **Wiring method**: Please refer to motor / driver cross-reference table (page E3)
- **Motor model**: 5-phase stepper / 42 double shafts
- **Sensor**: Photodiode sensor EE-SX4134
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Test (sensing) - output transistor OFF (closed)

---

**Table size**

<table>
<thead>
<tr>
<th>Description</th>
<th>AZV9010-A8-PN-CD</th>
<th>AZV9020-A8-PN-CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>90x90 mm</td>
<td>100x100 mm</td>
<td></td>
</tr>
</tbody>
</table>
**Model description**

**AR series**

- **Material**: Aluminum alloy
- **Drive type**: 5-phase stepper
- **Mounting type**: Horizontal
- **Accuracy level**: P
- **Wiring method**: GMT Standard
- **Motor model**: 5-phase stepper
- **Connector type**: D-SUB-15

**Axis & serial numbers**

- **Model Number**: AR 59 - A3VPN - C D - 2 C
- **Table size**: Ø59mm
- **Connecting cable (optional)**: 4m cable
- **Driver (optional)**: Blank

**Table size**

- **AR**: Ø39mm
- **AR 39-VPN**: Ø39mm
- **AR 59**: Ø59mm
- **AR 59-VPN**: Ø59mm
- **AR 79**: Ø79mm

**Connecting cable (optional)**

- **Blank**: Not equipped
- **2**: 2m cable
- **4**: 4m cable

**Driver (optional)**

- **Blank**: Not equipped

---

**Motor type/shaft numbers**

- **Motor**: 5-phase stepper
- **Type/Shaft numbers**: 360°

**Drive specifications**

- **Resolution (pulse)**: 0.006° / 0.003°
- **Maximum speed (full step)**: 30 deg / sec
- **Positioning precision**: 0.05°
- **Load capacity**: 3 Kg
- **Mixed step**: 0.05°
- **Parallelism**: 30 μm
- **Dynamic straightness**: 30 μm

**Electrical specifications**

- **Motor brand/model**: Sanyo / SH5281-7211
- **Controller side connector**: D-SUB
- **Controller side connector**: 5-pin female end connector (D-SUB option)
- **Origin sensor**: Photoelectric sensor EE-SX4134
- **Limit sensor**: N/A
- **Power voltage**: 24V ± 10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Testing (sensing) - output transistor OFF (closed)

---

**Model Number**

- **AR39-A3PN-CD**: 39
- **AR59-A3VPN-CD**: 59
- **AR79-A3PN-CD**: 79

---

**Motor model**: 5-phase stepper / ½ 28 double shafts / ½ 42 double shafts

**Accuracy level**: P

**Wiring method**: GMT Standard

**Motor**: Sanyo / SH5281-7211

**Sensor**: Photoelectric sensor EE-SX4134

**Power voltage**: 24V ± 10%

**Control output**: NPN open collector output under 24V 8mA

**Output control**: Testing (sensing) - output transistor OFF (closed)

---

**AR39-A**

**AR59-A**

---

**GMT Standard wiring is defined as the product photo, and not optional available.**

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---

**Please refer to motor/driver cross-refernce table (page E3).**

---

**Sensor**: Photoelectric sensor EE-SX4134

---

**asonic sensor originated with a small hole inside the motor (Sale)**

**N/A**

---

**20 deg / sec**

**25 deg / sec**

**25 deg / sec**

---

**GMT Standard wiring is defined as the product photo, and not optional available.**

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---

**Sensor**: Photoelectric sensor EE-SX4134

---

**asonic sensor originated with a small hole inside the motor (Sale)**

**N/A**

---

**20 deg / sec**

**25 deg / sec**

**25 deg / sec**

---

**GMT Standard wiring is defined as the product photo, and not optional available.**

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---

**Sensor**: Photoelectric sensor EE-SX4134

---

**asonic sensor originated with a small hole inside the motor (Sale)**

**N/A**

---

**20 deg / sec**

**25 deg / sec**

**25 deg / sec**

---

**GMT Standard wiring is defined as the product photo, and not optional available.**

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---

**Sensor**: Photoelectric sensor EE-SX4134

---

**asonic sensor originated with a small hole inside the motor (Sale)**

**N/A**

---

**20 deg / sec**

**25 deg / sec**

**25 deg / sec**

---

**GMT Standard wiring is defined as the product photo, and not optional available.**

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---

**Sensor**: Photoelectric sensor EE-SX4134

---

**asonic sensor originated with a small hole inside the motor (Sale)**

**N/A**

---

**20 deg / sec**

**25 deg / sec**

**25 deg / sec**

---

**GMT Standard wiring is defined as the product photo, and not optional available.**

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---

**Sensor**: Photoelectric sensor EE-SX4134

---

**asonic sensor originated with a small hole inside the motor (Sale)**

**N/A**

---

**20 deg / sec**

**25 deg / sec**

**25 deg / sec**

---

**GMT Standard wiring is defined as the product photo, and not optional available.**

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Precision Motorized θ axis Rotation Stage
Bearing guiding

AR59-A3V

AR79-A
## Model Description

### AR Series

**Model Number:** AR100-A, AR120-A, AR159-A, AR179-A

### Mechanical Specifications
- **Material:** Aluminum alloy
- **Drive type:** 5-phase stepper / half 42 double shafts
- **Encoder:** Sanyo / 103F5505-8211
- **Motor model:** 5-phase stepper
- **Connection type:** GMT Standard

### Electrical Specifications
- **Power voltage:** 24V\pm10%
- **Control output:** NPN open collector output under 24V 8mA
- **Output control:** Testing (sensing) / output transistor OFF (closed)

### Precision Specifications
- **Positioning precision:** ±0.005°
- **Missed step:** 0.05°
- **Dynamic parallelism:** 40 μm
- **Dynamic straightness:** 20 μm
- **Parallelism:** 50 μm
- **Max. speed (full step):** 20 deg / sec
- **Repeatability precision:** ±0.005°
- **Load capacity:** 15 KgF

### Load Capacity
- **Horizontal:** 60 KgF
- **Vertical:** 10 KgF

### Motor Model
- **Type/Shaft numbers:** 5-phase stepper / CF42 double shafts
- **Driver/Model:** Please refer to motor / driver cross-reference table (page E3)

### Stage size
- **Diameter:** Ø100mm, Ø120mm, Ø159mm, Ø179mm
- **Height:** 2.51 Kg, 2.56 Kg, 6.17 Kg, 6.63 Kg

### Resolution (pulse)
- 5-phase stepper / CD2 double shafts

### Accuracy Level
- **Grade:** P

### Wiring Method
- **Standard:** GMT Standard

### Axis & Serial Numbers
- **AR:** 6 axis

### Table Size
- **AR100-A:** Ø100mm
- **AR120-A:** Ø120mm
- **AR159-A:** Ø159mm
- **AR179-A:** Ø179mm

### Connecting Cable (Optional)
- **Cable Types:**
  - 2m cable
  - 4m cable
  - 6m cable

### Driver (Optional)
- **Model:** Blank

### Photoelectric Sensor
- **Model:** EE-SX912-R / EE-SX4134

### Table

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Table size</th>
<th>Motor Type/Shaft numbers</th>
<th>Drive type</th>
<th>Encoder</th>
<th>Motor model</th>
<th>Connection type</th>
<th>Power voltage</th>
<th>Control output</th>
<th>Output control</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR100-A</td>
<td>Ø100mm</td>
<td>5-phase stepper / CF42</td>
<td>Half 42</td>
<td>Sanyo</td>
<td>103F5505-8211</td>
<td>GMT Standard</td>
<td>24V±10%</td>
<td>N/A</td>
<td>24V±10%</td>
</tr>
<tr>
<td>AR120-A</td>
<td>Ø120mm</td>
<td>5-phase stepper / CF42</td>
<td>Half 42</td>
<td>Sanyo</td>
<td>103F5505-8211</td>
<td>GMT Standard</td>
<td>24V±10%</td>
<td>N/A</td>
<td>24V±10%</td>
</tr>
<tr>
<td>AR159-A</td>
<td>Ø159mm</td>
<td>5-phase stepper / CF42</td>
<td>Half 42</td>
<td>Sanyo</td>
<td>103F5505-8211</td>
<td>GMT Standard</td>
<td>24V±10%</td>
<td>N/A</td>
<td>24V±10%</td>
</tr>
<tr>
<td>AR179-A</td>
<td>Ø179mm</td>
<td>5-phase stepper / CF42</td>
<td>Half 42</td>
<td>Sanyo</td>
<td>103F5505-8211</td>
<td>GMT Standard</td>
<td>24V±10%</td>
<td>N/A</td>
<td>24V±10%</td>
</tr>
</tbody>
</table>

* GMT Standard wiring is defined as the product photo, and not optional available.

---

**Model Number Description:**
- **Model:** AR100-A3PN-CD, AR120-A3PN-CD, AR159-A3PN-CD, AR179-A3PN-CD
- **Table size:** Ø100, Ø120, Ø159, Ø179
- **Material:** Aluminum alloy
- **Drive type:** 5-phase stepper / CF42 double shafts
- **Encoder:** Sanyo / 103F5505-8211
- **Motor model:** 5-phase stepper
- **Connection type:** GMT Standard
- **Power voltage:** 24V\pm10%
- **Control output:** NPN open collector output under 24V 8mA
- **Output control:** Testing (sensing) / output transistor OFF (closed)
Precision Motorized α/αβ axis Goniometer Stage  ◇ Crossed-roller guiding

**AXG / AYG series**

**Model description**

### AXG / AYG series

#### AXG4-40VM-3PR-CD

- **Type**: θ
- **Drive type**: Warm & warm gear (Ratio 1 / 240)
- **Rail**: Crossed-roller guiding
- **Stage material/Surface treatment**: Aluminum alloy / Black anodized
- **Wiring method**: Right wiring
- **External power**
  - **Origin sensor**: 5-phase stepper
  - **Limit switch**: Photoelectric sensor EE-SX4134
  - **Power supply**: 24V ±10%
  - **Controller side connector**: 15-pin male end connector D-SUB (optional)
  - **Connector**: Blank 2-pin male connector*1 (D-SUB 15 pin female connector + the other side with discrete wirings)

#### AXG4-60VM-3PR-CD

- **Type**: θ
- **Drive type**: Warm & warm gear (Ratio 1 / 335)
- **Rail**: Crossed-roller guiding
- **Stage material/Surface treatment**: Aluminum alloy / Black anodized
- **Wiring method**: Right wiring
- **External power**
  - **Origin sensor**: 5-phase stepper
  - **Limit switch**: Photoelectric sensor EE-SX4134
  - **Power supply**: 24V ±10%
  - **Controller side connector**: 15-pin male end connector D-SUB (optional)
  - **Connector**: Blank 2-pin male connector*1 (D-SUB 15 pin female connector + the other side with discrete wirings)

*1 (D-SUB 15 pin female connector + the other side with discrete wirings)
AYG4-40VM-3PR-CD

Precision Motorized α/αβ axis Goniometer Stage  Crossed-roller guiding

AXG / AYG series
Precision Motorized α/αβ axis Goniometer Stage  ○ Crossed-roller guiding

AXG / AYG series

AXG 6-75 VM - 3 PR - CD - 2 C

Model description

AXG / AYG series

Model Number

<table>
<thead>
<tr>
<th>AXG6-75VM-3PR-CD</th>
<th>AXG6-100VM-3PR-CD</th>
<th>AYG6-75VM-3PR-CD</th>
</tr>
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<tbody>
<tr>
<td>Table size</td>
<td>±8°</td>
<td>±8°</td>
</tr>
<tr>
<td>Travel stroke</td>
<td>±8°</td>
<td>±8°</td>
</tr>
<tr>
<td>Motor type/Shaft numbers</td>
<td>S-phase stepper / 528 double shafts</td>
<td></td>
</tr>
<tr>
<td>Drive type</td>
<td>Warm &amp; warm gear (Ratio 1 / 224)</td>
<td>Warm &amp; warm gear (Ratio 1 / 292)</td>
</tr>
<tr>
<td>Stage material/Surface treatment</td>
<td>Aluminum alloy / Black anodized</td>
<td>Aluminum alloy / Black anodized</td>
</tr>
<tr>
<td>Mach weight</td>
<td>0.85 Kg</td>
<td>0.99 Kg</td>
</tr>
<tr>
<td>Accuracy grade</td>
<td>P : Precision grade</td>
<td></td>
</tr>
<tr>
<td>Wiring method</td>
<td>R : Right wiring</td>
<td></td>
</tr>
<tr>
<td>Resolution (pulse)</td>
<td>Full / Half</td>
<td>Full / Half</td>
</tr>
<tr>
<td>Full speed (full step)</td>
<td>0.0032° / Half</td>
<td>0.0032° / Half</td>
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<tr>
<td>Half speed (full step)</td>
<td>10.75 deg / sec</td>
<td>10.75 deg / sec</td>
</tr>
<tr>
<td>Repeatability precision</td>
<td>±0.003°</td>
<td>±0.003°</td>
</tr>
<tr>
<td>Load capacity</td>
<td>5.1 Kg</td>
<td>4.8 Kg</td>
</tr>
<tr>
<td>Missed step</td>
<td>0.01°</td>
<td></td>
</tr>
<tr>
<td>Dynamic straightness</td>
<td>75±0.15 mm</td>
<td>75±0.15 mm</td>
</tr>
<tr>
<td>Dynamic parallelism</td>
<td>0.01 mm</td>
<td>0.02 mm</td>
</tr>
<tr>
<td>Rail</td>
<td>Crossed-roller guiding</td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>24V±10%</td>
<td></td>
</tr>
<tr>
<td>Controller side connector</td>
<td>15-pin male end connector D-5SUB (optional)</td>
<td></td>
</tr>
<tr>
<td>Origin sensor</td>
<td>Photoelectric sensor EE-SX134</td>
<td></td>
</tr>
<tr>
<td>Origin approximation sensor</td>
<td>N / A</td>
<td></td>
</tr>
<tr>
<td>Power voltage</td>
<td>24V±10%</td>
<td></td>
</tr>
<tr>
<td>Control output</td>
<td>NPN open collector output under 24V 5mA</td>
<td></td>
</tr>
<tr>
<td>Output control</td>
<td>Testing (sensing) : output transistor OFF (closed)</td>
<td></td>
</tr>
</tbody>
</table>

AXG / AYG series

AXG6-75VM-3PR-CD

Precision Motorized α/αβ axis Goniometer Stage  ○ Crossed-roller guiding

AXG / AYG series

AXG6-75VM-3PR-CD

Motor

Type/Shaft numbers | S-phase stepper / DC28 double shafts |

Motor brand/Model | Please refer to motor / driver cross-reference table (page E3) |

Connector

Stage side connector | 15-pin male end connector D-5SUB |

Controller side connector | 15-pin female end connector D-5SUB (optional) |

Sensor

Origin sensor

Origin approximation sensor | N / A |

Power voltage | 24V±10% |

Control output | NPN open collector output under 24V 5mA |

Output control | Testing (sensing) : output transistor OFF (closed) |
Precision Motorized α/αβ axis Goniometer Stage  • Crossed-roller guiding

AXG6-100VM-3PR-CD

AYG6-75VM-3PR-CD
**Model description**

**AX / HP series**

**Material**
- A: Aluminum alloy
- X: Not equipped

**Drive type**
- 2: Ball screw
- 4: 4m cable*1
- 6: 6m cable*1

**Accuracy level**
- HP: High resolution grade

**Wiring method**
- GMT Standard

**Motor model**
- 5-phase stepper

**Connector type**
- D-SUB15 (VGA)

**AX 6020 - A2 HP N - HD - 2 C**

**Axis & serial numbers**
- AX: X-axis

**Table size / Travel stroke**
- 6020: 60X60 mm / 20 mm
- 6030: 60X70 mm / 30 mm

**Connecting cable (optional)**
- Blank
- 2m cable*1
- 4m cable*1
- 6m cable*1

**Drive (optional)**
- Blank
- C: Standard specified by GMT

**Material**
- 2: Aluminum alloy
- 4: 4m cable*1
- 6: 6m cable*1

**Driver (optional)**
- Blank

**Connecting cable (optional)**
- Blank
- 2m cable*1
- 4m cable*1
- 6m cable*1

**Model Number**
- AX6020-A2HPN-HD
- AX6030-A2HPN-HD

**Table size**
- 60X60 mm
- 60X70 mm

**Drive type**
- Ball screw Ø8 lead 1mm

**Stage material/Surface treatment**
- Aluminum alloy / Black anodized

**Material weight**
- 0.55 Kg

**Coupling**
- FAMMS12-4*5
- FAMMS12-5*5

**Positioning precision**
- ±1 μm

**Load capacity**
- 5 Kg

**Dynamic straightness**
- ±0.3 μm

**Parallelism**
- ±0.3 μm

**Dynamic parallelism**
- ±0.3 μm

**Resolution (pulse)**
- Full: 1 μm / 0.5 μm

**Power voltage**
- ±5 V

**Origin sensor**
- Hall sensor

**Limit sensor**
- N / A

**Sensor**
- Origin approximation sensor

**Output control**
- Texting (sensing) / output transistor OFF (closed)

**Hall sensor**
- NPN open collector output under 24V 16mA

**Testing (sensing)**
- Output transistor OFF (closed)

**Motor Type/Shaft numbers**
- 5-phase stepper / C390 double shafts

**Driver brand/Model**
- Sanyu / 103/6007/7010

**Controller side connector**
- 15-pin male end connector D-SUB (optional)

**Origin approximation sensor**
- N / A

**Power voltage**
- ±5 V

**Control output**
- NPN open collector output under 24V 16mA

**C129**

**X axis**

**AX6020-A2HPN-HD**

**AX6030-A2HPN-HD**

**C130**

**www.gmtlinea r.com**

**Hi-Resolution Precision Motorized X axis Linear-motion Stage Crossed-roller guiding**

**AX / HP series**

**Model Number**
- AX6020-A2HPN-HD
- AX6030-A2HPN-HD

**Table size**
- 60X60 mm
- 60X70 mm

**Drive type**
- Ball screw Ø8 lead 1mm

**Stage material/Surface treatment**
- Aluminum alloy / Black anodized

**Material weight**
- 0.55 Kg

**Coupling**
- FAMMS12-4*5
- FAMMS12-5*5

**Positioning precision**
- ±1 μm

**Load capacity**
- 5 Kg

**Dynamic straightness**
- ±0.3 μm

**Parallelism**
- ±0.3 μm

**Dynamic parallelism**
- ±0.3 μm

**Resolution (pulse)**
- Full: 1 μm / 0.5 μm

**Power voltage**
- ±5 V

**Origin sensor**
- Hall sensor

**Limit sensor**
- N / A

**Sensor**
- Origin approximation sensor

**Output control**
- Texting (sensing) / output transistor OFF (closed)

**Motor Type/Shaft numbers**
- 5-phase stepper / C390 double shafts

**Driver brand/Model**
- Sanyu / 103/6007/7010

**Controller side connector**
- 15-pin male end connector D-SUB (optional)

**Origin approximation sensor**
- N / A

**Power voltage**
- ±5 V

**Control output**
- NPN open collector output under 24V 16mA

**C129**

**Hi-Resolution Precision Motorized X axis Linear-motion Stage Crossed-roller guiding**

**AX / HP series**

**Model Number**
- AX6020-A2HPN-HD
- AX6030-A2HPN-HD

**Table size**
- 60X60 mm
- 60X70 mm

**Drive type**
- Ball screw Ø8 lead 1mm

**Stage material/Surface treatment**
- Aluminum alloy / Black anodized

**Material weight**
- 0.55 Kg

**Coupling**
- FAMMS12-4*5
- FAMMS12-5*5

**Positioning precision**
- ±1 μm

**Load capacity**
- 5 Kg

**Dynamic straightness**
- ±0.3 μm

**Parallelism**
- ±0.3 μm

**Dynamic parallelism**
- ±0.3 μm

**Resolution (pulse)**
- Full: 1 μm / 0.5 μm

**Power voltage**
- ±5 V

**Origin sensor**
- Hall sensor

**Limit sensor**
- N / A

**Sensor**
- Origin approximation sensor

**Output control**
- Texting (sensing) / output transistor OFF (closed)
Hi-Resolution Precision Motorized X axis Linear-motion Stage  O  Linear ball guiding

**AX / HP series**

**Model description**

**AX / HP series**

- **Material**: S (Stainless steel)
- **Drive type**: 2 (Ball screw)
- **Accuracy level**: HP (High resolution grade)
- **Wiring method**: R (Right wiring)
- **Motor model**: H (high resolution 5-phase stepper)
- **Connector type**: D (D-SUB15 (VGA))

**AX7050-S2HPR-HD**

- **Axis & serial numbers**: AX X axis
- **Table size / Travel stroke**: AX 7050 - 70x110mm / 50mm
- **Connecting cable (optional)**: Blank, 2m cable**, 4m cable**, 6m cable**
- **Driver (optional)**: Blank, C (Not equipped)

**Electrical specifications**

- **Resolution (pulse)**: Full / Half
- **Maximum speed (full step)**: 5 μm / 0.5 μm
- **Positioning precision**: 5 μm
- **Repeatability precision**: ±0.5 μm
- **Load capacity**: 10 Kgf
- **Dynamic straightness**: 2 μm
- **Dynamic parallelism**: 6.6 μm

**Mechanical specifications**

- **Stage material/Surface treatment**: Stainless steel / Nickel plating
- **Material**: 1.28 Kg
- **Rail**: Linear ball guiding
- **Base material**: Stainless steel / Nickel plating

**Precision specifications**

- **Positioning precision**: 5 μm
- **Repeatability precision**: ±0.5 μm
- **Load capacity**: 10 Kgf
- **Parallelism**: 15 μm
- **Surface parallelism**: 2 μm
- **Dynamic straightness**: 6.6 μm

**Motor specifications**

- **Motor Type/Shaft numbers**: S (Hi-Resolution 5-phase stepper) / C39 double shafts
- **Driver brand/Model**: Sanpin / 103-4007-7010
- **Connector**
  - **Stage side connector**: 15-pin male end connector D-SUB
  - **Controller side connector**: 15-pin female end connector D-SUB (optional)
  - **Origin sensor**: Photoelectric sensor EE-SX4134
  - **Limit sensor**: N / A
  - **Power voltage**: 24V±10%
  - **Control output**: NPN open collector output under 24V 8mA
  - **Output limit**: No limit (sensing) / output transistor OFF (closed)

---

*1 (D-SUB 15 pin female connector + the other side with discrete wirings)}
**Model description**

**AZ / HP series**

- **Model Number**: AZ7010-A6HPR-HD
- **Motor**: 5-phase stepper / ½ 39 double shafts
- **Brand/Model**: Sanyo / 103-4507-7010
- **Photoelectric sensor**: EE-SX498
- **Power voltage**: 24V±10%
- **Testing (sensing)**: Off (closed)

### Electrical specifications

- **Table size / Travel stroke**: 70*70mm / 10mm
- **Drive type**: Ball screw and Slide wedge
- **Stage material / Surface treatment**: Aluminum alloy / Black anodized
- **Motor model**: High resolution 5-phase stepper
- **Connector type**: D-SUB15 (VGA)
- **Wiring method**: Right wiring
- **Connecting cable (optional)**: Blank

### Mechanical specifications

- **Accuracy level**: HP
- **Wiring method**: R
- **Motor model**: High resolution 5-phase stepper
- **Connector type**: D-SUB15 (VGA)
- **Wiring method**: R
- **Motor model**: High resolution 5-phase stepper

### Precision specifications

- **Positioning precision**: ±0.5 μm
- **Missed step**: 5 μm
- **Parallelism**: ±20 μm
- **Dynamic straightness**: 20 μm
- **Dynamic parallelism**: 20 μm
- **Repeatability precision**: ±1 μm
- **Wiring method**: R

### Drive type

- **Motor model**: 5-phase stepper / C39 double shafts
- **Driver brand / Model**: Please refer to motor / driver cross-reference table (page E3)
- **Controller side connector**: 15-pin female connector D-SUB
- **Origin sensor**: Photoelectric sensor EE-SX498
- **Limit sensor**: N.A
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Testing (sensing) : output transistor OFF (closed)
- **Connecting cable (optional)**: Blank
- **Drive type**: Ball screw and Slide wedge
- **Material**: Aluminum alloy

---

**AZ / HP series**

**Model Number**: AZ7010-A6HPR-HD

**Table size / Travel stroke**: 70*70mm / 10mm

**Drive type**: Ball screw and Slide wedge

**Stage material / Surface treatment**: Aluminum alloy / Black anodized

**Motor model**: High resolution 5-phase stepper

**Connector type**: D-SUB15 (VGA)

**Wiring method**: Right wiring

**Connecting cable (optional)**: Blank

**Accuracy level**: HP

**Wiring method**: R

**Motor model**: High resolution 5-phase stepper

**Connector type**: D-SUB15 (VGA)

**Wiring method**: R

**Motor model**: High resolution 5-phase stepper

---

**Electrical specifications**

- **Table size / Travel stroke**: 70*70mm / 10mm
- **Drive type**: Ball screw and Slide wedge
- **Stage material / Surface treatment**: Aluminum alloy / Black anodized
- **Motor model**: High resolution 5-phase stepper
- **Connector type**: D-SUB15 (VGA)
- **Wiring method**: Right wiring
- **Connecting cable (optional)**: Blank

**Mechanical specifications**

- **Accuracy level**: HP
- **Wiring method**: R
- **Motor model**: High resolution 5-phase stepper
- **Connector type**: D-SUB15 (VGA)
- **Wiring method**: R

**Precision specifications**

- **Positioning precision**: ±0.5 μm
- **Missed step**: 5 μm
- **Parallelism**: ±20 μm
- **Dynamic straightness**: 20 μm
- **Dynamic parallelism**: 20 μm
- **Repeatability precision**: ±1 μm

**Drive type**

- **Motor model**: 5-phase stepper / C39 double shafts
- **Driver brand / Model**: Please refer to motor / driver cross-reference table (page E3)
- **Controller side connector**: 15-pin female connector D-SUB
- **Origin sensor**: Photoelectric sensor EE-SX498
- **Limit sensor**: N.A
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Testing (sensing) : output transistor OFF (closed)

---

**AZ / HP series**

**Model Number**: AZ7010-A6HPR-HD

**Table size / Travel stroke**: 70*70mm / 10mm

**Drive type**: Ball screw and Slide wedge

**Stage material / Surface treatment**: Aluminum alloy / Black anodized

**Motor model**: High resolution 5-phase stepper

**Connector type**: D-SUB15 (VGA)

**Wiring method**: Right wiring

**Connecting cable (optional)**: Blank

**Accuracy level**: HP

**Wiring method**: R

**Motor model**: High resolution 5-phase stepper

**Connector type**: D-SUB15 (VGA)

**Wiring method**: R

**Motor model**: High resolution 5-phase stepper

---

**Electrical specifications**

- **Table size / Travel stroke**: 70*70mm / 10mm
- **Drive type**: Ball screw and Slide wedge
- **Stage material / Surface treatment**: Aluminum alloy / Black anodized
- **Motor model**: High resolution 5-phase stepper
- **Connector type**: D-SUB15 (VGA)
- **Wiring method**: Right wiring
- **Connecting cable (optional)**: Blank

**Mechanical specifications**

- **Accuracy level**: HP
- **Wiring method**: R
- **Motor model**: High resolution 5-phase stepper
- **Connector type**: D-SUB15 (VGA)
- **Wiring method**: R

**Precision specifications**

- **Positioning precision**: ±0.5 μm
- **Missed step**: 5 μm
- **Parallelism**: ±20 μm
- **Dynamic straightness**: 20 μm
- **Dynamic parallelism**: 20 μm
- **Repeatability precision**: ±1 μm

**Drive type**

- **Motor model**: 5-phase stepper / C39 double shafts
- **Driver brand / Model**: Please refer to motor / driver cross-reference table (page E3)
- **Controller side connector**: 15-pin female connector D-SUB
- **Origin sensor**: Photoelectric sensor EE-SX498
- **Limit sensor**: N.A
- **Power voltage**: 24V±10%
- **Control output**: NPN open collector output under 24V 8mA
- **Output control**: Testing (sensing) : output transistor OFF (closed)
**Model description**

**AZ / HP series**

<table>
<thead>
<tr>
<th>Material</th>
<th>Drive type</th>
<th>Accuracy level</th>
<th>Wiring method</th>
<th>Motor model</th>
<th>Connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Ball screw and Slide wedge</td>
<td>HP</td>
<td>Right wiring</td>
<td>High resolution</td>
<td>D-D-SUB15 (VGA)</td>
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</table>

**AZ60-A6HPR-HD**

<table>
<thead>
<tr>
<th>Axis &amp; serial numbers</th>
<th>Table size</th>
<th>Connecting cable (optional)</th>
<th>Driver (optional)</th>
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<tbody>
<tr>
<td>AZ</td>
<td>60</td>
<td>607X7mm</td>
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<tr>
<td>Z axis (Elevator)</td>
<td>70</td>
<td>707X7mm</td>
<td>Not equipped</td>
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**AZ70-A6HPR-HD**

<table>
<thead>
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<th>AZ70-A6HPR-HD</th>
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<td>70X75 min</td>
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**Electrical specifications**

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<thead>
<tr>
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<th>AZ60-A6HPR-HD</th>
<th>AZ70-A6HPR-HD</th>
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<tbody>
<tr>
<td>Power voltage</td>
<td>24V±10%</td>
<td>-</td>
</tr>
</tbody>
</table>

**Precision specifications**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>AZ60-A6HPR-HD</th>
<th>AZ70-A6HPR-HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positioning precision</td>
<td>0.25 μm / 0.125 μm</td>
<td>-</td>
</tr>
<tr>
<td>Load capacity</td>
<td>8 Kg</td>
<td>-</td>
</tr>
<tr>
<td>Parallelism</td>
<td>20 μm</td>
<td>-</td>
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<tr>
<td>Dynamic parallelism</td>
<td>5 μm</td>
<td>-</td>
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</table>

<table>
<thead>
<tr>
<th>Model Number</th>
<th>AZ60-A6HPR-HD</th>
<th>AZ70-A6HPR-HD</th>
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</thead>
<tbody>
<tr>
<td>Motor Type/Shaft numbers</td>
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<td>-</td>
</tr>
<tr>
<td>Brand/Model</td>
<td>Sanyo / 103-4607/7101</td>
<td>-</td>
</tr>
<tr>
<td>Driver brand/Model</td>
<td>Please refer to motor / driver cross-reference table (page E3)</td>
<td>-</td>
</tr>
</tbody>
</table>

**Connecting cable (optional)**

<table>
<thead>
<tr>
<th>Cable length</th>
<th>2m</th>
<th>4m</th>
<th>6m</th>
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<tbody>
<tr>
<td>*1 (D-SUB 15 pin female connector + the other side with discrete wiring)</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

**Driver (optional)**

<table>
<thead>
<tr>
<th>Connector Stage side connector</th>
<th>Controller side connector</th>
<th>Origin approximation sensor</th>
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<tbody>
<tr>
<td>15-pin male end connector D-SUB</td>
<td>15-pin female end connector D-SUB (optional)</td>
<td>Photoelectric sensor EE-SXH48</td>
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**Sensor**

<table>
<thead>
<tr>
<th>Limit sensor</th>
<th>Power voltage</th>
<th>Control output</th>
<th>Output control</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>24V±10%</td>
<td>NPN open collector output under 24V 8mA</td>
<td>Testing (sensing) : output transistor OFF (closed)</td>
</tr>
</tbody>
</table>

**Hi-Resolution Precision Motorized Z axis Elevator Stage**

- Crossed-roller guiding & Slide wedge driven

---

**Model Number**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Model</th>
<th>Full / Half</th>
<th>Maximum speed (Full step)</th>
<th>Positioning precision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanyo</td>
<td>C396</td>
<td>2.5 mm / sec</td>
<td>0.25 μm / 0.125 μm</td>
<td>5 μm</td>
</tr>
</tbody>
</table>

**Table size**

<table>
<thead>
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**Hi-Resolution Precision Motorized Z axis Elevator Stage**

- Crossed-roller guiding & Slide wedge driven

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**Hi-Resolution Precision Motorized Z axis Elevator Stage**

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**Hi-Resolution Precision Motorized Z axis Elevator Stage**

- Crossed-roller guiding & Slide wedge driven

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<tbody>
<tr>
<td>Sanyo</td>
<td>C396</td>
<td>2.5 mm / sec</td>
<td>0.25 μm / 0.125 μm</td>
<td>5 μm</td>
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</table>
## Electrical Specifications

### Models 40&60

<table>
<thead>
<tr>
<th>Models</th>
<th>AX, AY, AZL, AXZ, AXYZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIN layout &amp; definition</td>
<td>Male end connector</td>
</tr>
<tr>
<td>wiring diagram</td>
<td>AX &amp; AY &amp; AZL &amp; AXZ &amp; AXYZ</td>
</tr>
<tr>
<td>Stroke block</td>
<td>Stroke block</td>
</tr>
<tr>
<td>CCW limit</td>
<td>CCW limit</td>
</tr>
<tr>
<td>ORG sensor</td>
<td>ORG sensor</td>
</tr>
<tr>
<td>Motor reversed side</td>
<td>Motor reversed side</td>
</tr>
<tr>
<td>CW limit</td>
<td>CW limit</td>
</tr>
<tr>
<td>Mechanical limit</td>
<td>Mechanical limit</td>
</tr>
<tr>
<td>Origin point</td>
<td>Origin point</td>
</tr>
<tr>
<td>Origin reverse plane</td>
<td>Origin reverse plane</td>
</tr>
<tr>
<td>Motor lead A</td>
<td>Motor lead A</td>
</tr>
<tr>
<td>Motor lead B</td>
<td>Motor lead B</td>
</tr>
<tr>
<td>Motor lead C</td>
<td>Motor lead C</td>
</tr>
<tr>
<td>Motor lead D</td>
<td>Motor lead D</td>
</tr>
<tr>
<td>Motor lead E</td>
<td>Motor lead E</td>
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<td>Power input (DC24V)</td>
<td>Power input (DC24V)</td>
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<tr>
<td>Stage travel stroke ORG1 output</td>
<td>Stage travel stroke ORG1 output</td>
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<td>Power input (DC 0V)</td>
</tr>
<tr>
<td>Ground</td>
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| Models 80, 100&120

<table>
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<tr>
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<td>ORG sensor</td>
</tr>
<tr>
<td>Motor reversed side</td>
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</tr>
<tr>
<td>CW limit</td>
<td>CW limit</td>
</tr>
<tr>
<td>Mechanical limit</td>
<td>Mechanical limit</td>
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<td>Origin point</td>
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<td>Origin reverse plane</td>
<td>Origin reverse plane</td>
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<tr>
<td>Motor lead A</td>
<td>Motor lead A</td>
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<tr>
<td>Motor lead B</td>
<td>Motor lead B</td>
</tr>
<tr>
<td>Motor lead C</td>
<td>Motor lead C</td>
</tr>
<tr>
<td>Motor lead D</td>
<td>Motor lead D</td>
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<td>Motor lead E</td>
<td>Motor lead E</td>
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<td>Not used</td>
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<td>Power input (DC24V)</td>
<td>Power input (DC24V)</td>
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<tr>
<td>Stage travel stroke ORG1 output</td>
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</tr>
<tr>
<td>Power input (DC 0V)</td>
<td>Power input (DC 0V)</td>
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<tr>
<td>Ground</td>
<td>Ground</td>
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</table>
| Models 200&220

<table>
<thead>
<tr>
<th>Models</th>
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<td>PIN layout &amp; definition</td>
<td>Male end connector</td>
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<tr>
<td>wiring diagram</td>
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<td>Motor reversed side</td>
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<td>CW limit</td>
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<td>Origin point</td>
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<tr>
<td>Origin reverse plane</td>
<td>Origin reverse plane</td>
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<td>Motor lead A</td>
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<tr>
<td>Motor lead B</td>
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<td>Motor lead C</td>
<td>Motor lead C</td>
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<td>Motor lead D</td>
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<td>Power input (DC24V)</td>
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<td>Stage travel stroke ORG1 output</td>
<td>Stage travel stroke ORG1 output</td>
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<tr>
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<td>Ground</td>
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| Models 300&320

<table>
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<td>PIN layout &amp; definition</td>
<td>Male end connector</td>
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<tr>
<td>wiring diagram</td>
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<td>CCW limit</td>
</tr>
<tr>
<td>ORG sensor</td>
<td>ORG sensor</td>
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<td>Motor reversed side</td>
<td>Motor reversed side</td>
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<tr>
<td>CW limit</td>
<td>CW limit</td>
</tr>
<tr>
<td>Mechanical limit</td>
<td>Mechanical limit</td>
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<td>Origin point</td>
<td>Origin point</td>
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<td>Origin reverse plane</td>
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<tr>
<td>Motor lead B</td>
<td>Motor lead B</td>
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<tr>
<td>Motor lead C</td>
<td>Motor lead C</td>
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<tr>
<td>Motor lead D</td>
<td>Motor lead D</td>
</tr>
<tr>
<td>Motor lead E</td>
<td>Motor lead E</td>
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<td>Power input (DC24V)</td>
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<td>Stage travel stroke ORG1 output</td>
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<td>Power input (DC 0V)</td>
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<tr>
<td>Ground</td>
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### Wiring Diagram

- Male end connector PIN layout & definition
- Sequence diagram
- Stroke block
- CCW limit
- ORG sensor
- CW limit
- Motor reversed side
- Mechanical limit
- Origin point
- Origin reverse plane
- CW (forward limit)
- CCW (reverse limit)
- ORG1 output
- CWLS output
- CCWLS output
- Power input (DC 24V)
- Power input (DC 0V)
- Ground
- Models 40&60
- Models 80, 100&120
- Models 200&220
- Models 300&320

### Stage Sensor Location Diagram

- CW (forward limit)
- CCW (reverse limit)
- ORG1
- ORG2
- Motor
- CW
- CCW

### Electrical Specifications

- AX, AY, AZL, AXZ, AXYZ
- Models 40&60
- Models 80, 100&120
- Models 200&220
- Models 300&320

---

**References**

- GMT Global Inc.
- www.gmtlinear.com
### Electrical Specifications

#### Male end connector

**PIN layout & definition**

<table>
<thead>
<tr>
<th>Models</th>
<th>Stroke block</th>
<th>CCW limit</th>
<th>ORG sensor</th>
<th>Motor reversed side</th>
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</thead>
<tbody>
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<td>CXN, CYN, CZLN, CXZN, CYXZN</td>
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<td>CW</td>
<td>ORG</td>
<td>Motor reversed side</td>
</tr>
</tbody>
</table>

#### Wiring diagram

<table>
<thead>
<tr>
<th>Motor lead A</th>
<th>Motor lead B</th>
<th>Motor lead C</th>
<th>Motor lead D</th>
<th>Motor lead E</th>
<th>Not used</th>
<th>Not used</th>
<th>Not used</th>
<th>Not used</th>
<th>Ground</th>
<th>Stage travel stroke</th>
<th>ORG1 output</th>
<th>Power input (DC 24V)</th>
<th>Power input (DC 0V)</th>
<th>CWLS output</th>
<th>CCWLS output</th>
<th>Not used</th>
<th>Not used</th>
<th>Not used</th>
<th>Not used</th>
<th>Not used</th>
<th>Not used</th>
</tr>
</thead>
</table>

#### Sequence diagram

- Stroke block
- CCW limit
- ORG sensor
- Motor reversed side

#### Stage sensor location diagram

- CW (forward limit)
- CCW (reverse limit)
**Electrical Specifications**

### Male end connector PIN layout & definition

<table>
<thead>
<tr>
<th>Models</th>
<th>ORG sensor</th>
<th>Motor reversed side</th>
<th>Origin plane</th>
<th>Origin reverse plane</th>
<th>ORG sensor</th>
<th>Motor side</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Wiring diagram

#### Models 39&59 AR

- Motor lead A
- Motor lead B
- Motor lead C
- Motor lead D
- Motor lead E
- Not used
- Not used
- Not used
- Power input (DC24V)
- Stage travel stroke ORG1 output
- Power input (DC 0V)
- Ground
- Not used
- Not used
- Not used
- Ground
- Stage travel stroke ORG1 output
- Power input (DC 0V)
- Ground
- Not used
- Not used
- Not used
- Ground

#### Models 79&100&120 &159&179 AR

- Motor lead A
- Motor lead B
- Motor lead C
- Motor lead D
- Motor lead E
- Not used
- Not used
- Not used
- Not used
- Not used
- Not used
- Not used
- Not used
- CW limit
- Origin plane
- Origin reverse plane
- CCW limit
- Motor side
- CW limit
- Origin plane
- Origin reverse plane
- CCW limit
- Motor side
- CW (forward limit)
- ORG1
- CCW (reverse limit)
Electrical Specifications

Male end connector
PIN layout & definition

Wiring diagram

Models
AXG, AYG

Motor lead A
Motor lead B
Motor lead C
Motor lead D
Motor lead E
CWLS output
CCWLS output
Not used
Not used
Not used
Not used
Not used
Ground
Stage travel stroke ORG1 output
Power input (DC24V)
Power input (DC 0V)
CWLS output
CCWLS output
Not used
Not used
Not used
Not used
Not used
Ground
Stage travel stroke ORG1 output
Power input (DC24V)
Power input (DC 0V)

Sequence diagram
Stroke block
CCW limit
ORG sensor
Origin plane
Origin reverse plane
CCW mechanical limit
CW limit
Motor reversed side
Mechanical limit
Motor side

Stage sensor location diagram
CW (forward limit)
ORG1
CCW (reverse limit)

Models
6020 & 6030
&7050

AX / HP

Motor lead A
Motor lead B
Motor lead C
Motor lead D
Motor lead E
CWLS output
CCWLS output
Not used
Not used
Not used
Not used
Not used
Ground
Stage travel stroke ORG1 output
Power input (DC24V)
Power input (DC 0V)
CWLS output
CCWLS output
Not used
Not used
Not used
Not used
Not used
Ground
Stage travel stroke ORG1 output
Power input (DC24V)
Power input (DC 0V)

Sequence diagram
Stroke block
CCW limit
CCW limit
ORIGIN sensor
Origin plane
Origin reverse plane
CCW mechanical limit
CW limit
Motor reversed side
Mechanical limit
Motor side

Stage sensor location diagram
CW (forward limit)
Origin point
CCW (reverse limit)
**Electrical Specifications**

**Male end connector**

<table>
<thead>
<tr>
<th>PIN layout &amp; definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models: 7010</td>
</tr>
</tbody>
</table>

**Wiring diagram**

- Motor lead A
- Motor lead B
- Motor lead C
- Motor lead D
- Motor lead E
- CWLS output
- CCWLS output
- Not used
- Power input (DC 24V)
- Stage travel stroke ORG1 output
- Power input (DC 0V)
- Ground
- Stage travel stroke ORG1 output
- Power input (DC 0V)

**Stroke block**

- CCW limit
- ORG sensor
- Motor reversed side
- Mechanical limit
- Origin plane
- CW limit
- Motor side

**Sequence diagram**

- CW (forward limit)
- CCW (reverse limit)

**Stage sensor location diagram**

- CCW (reverse limit)
- ORG1
- CW (forward limit)

---

**Electrical Specifications**

**Male end connector**

<table>
<thead>
<tr>
<th>PIN layout &amp; definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models: 60&amp;70</td>
</tr>
</tbody>
</table>

**Wiring diagram**

- Motor lead A
- Motor lead B
- Motor lead C
- Motor lead D
- Motor lead E
- Not used
- Not used
- Not used
- Not used
- Not used
- Ground
- Stage travel stroke ORG1 output
- Power input (DC 24V)
- CCW limit
- ORG sensor
- Motor reversed side
- Mechanical limit
- Origin plane
- Origin reverse plane
- CW limit
- Motor side

**Sequence diagram**

- Stroke block
- CCW limit
- ORG sensor
- Origin plane
- Origin reverse plane
- CW limit
- Mechanical limit

**Stage sensor location diagram**

- CCW (reverse limit)
- ORG1
- CW (forward limit)
- ORG2

---

**www.gmtlinear.com**
Connecting cable

For GMT full-series motorized stage has been integrated D-SUB connector as default designed connector.

Standard connecting cable is corresponding connection type for stage side which is including single-sided connector in 2 m long with discrete 15 wires as common accessory stocked for optional purchasing.

D-SUB standard connecting cable, D-SUB TO HRS converting cable, D-SUB TO NJC converting cable are all optional accessories (sold separately).

If you use HRS/NJC originally, you can choose D-SUB TO HRS/D-SUB TO NJC converting cable for conversion.

When standard connecting cable is used, please make insulation treatment on the unused wires at the discrete wire end.

Minimum bendable radius of connecting cable is 5 times the cable diameter.

Connecting cable length over 6 m may cause abnormal operation.

If you use HRS/NJC originally, you can choose D-SUB TO HRS/D-SUB TO NJC converting cable for conversion.

Model: AW2C2L4-0.15 Unit: mm

<table>
<thead>
<tr>
<th>Stage side is D-SUB female end</th>
<th>D-SUB-15Pin male end</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor lead A</td>
<td>1</td>
</tr>
<tr>
<td>Motor lead B</td>
<td>2</td>
</tr>
<tr>
<td>Motor lead C</td>
<td>3</td>
</tr>
<tr>
<td>Motor lead D</td>
<td>4</td>
</tr>
<tr>
<td>Motor lead E</td>
<td>5</td>
</tr>
<tr>
<td>CWLS output</td>
<td>6</td>
</tr>
<tr>
<td>CCWLS output</td>
<td>7</td>
</tr>
<tr>
<td>Motor rotary ORG2 output</td>
<td>8</td>
</tr>
<tr>
<td>Power input (*1)</td>
<td>9</td>
</tr>
<tr>
<td>Stage travel stroke ORG1 output</td>
<td>10</td>
</tr>
<tr>
<td>Power input (*2)</td>
<td>11</td>
</tr>
<tr>
<td>Ground</td>
<td>12</td>
</tr>
<tr>
<td>Not used</td>
<td>13</td>
</tr>
<tr>
<td>Not used</td>
<td>14</td>
</tr>
<tr>
<td>Not used</td>
<td>15</td>
</tr>
</tbody>
</table>

Control side corresponding connection points

Control side single-sided discrete wires 15 wires

D-SUB TO HRS converting Cable

Model: AW2C2G0-0.15 Unit: mm

<table>
<thead>
<tr>
<th>Stage side is D-SUB female end</th>
<th>D-SUB-15Pin male end</th>
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<tbody>
<tr>
<td>Motor lead A</td>
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<tr>
<td>CWLS output</td>
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<td>10</td>
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<tr>
<td>Power input (*2)</td>
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<tr>
<td>Ground</td>
<td>12</td>
</tr>
<tr>
<td>Not used</td>
<td>13</td>
</tr>
<tr>
<td>Not used</td>
<td>14</td>
</tr>
<tr>
<td>Not used</td>
<td>15</td>
</tr>
</tbody>
</table>

Control side corresponding connection points

Control side single-sided discrete wires 15 wires
### Motor / Driver Comparison Table

#### Motor / Driver Comparison Table

<table>
<thead>
<tr>
<th>Motor manufacturer</th>
<th>Motor model</th>
<th>Rated current (±5-phase)</th>
<th>Rated current (±2-phase)</th>
<th>Size</th>
<th>Magnetizing maximum static torque</th>
<th>Rotor inertia (kg•m²)</th>
<th>Suggested driver</th>
<th>Brand/model (optional)</th>
<th>Applicable platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH5281-7211</td>
<td>AX60-A2P</td>
<td>0.75A</td>
<td>1.4A</td>
<td>28X32</td>
<td>0.044N•m</td>
<td>0.017N•m</td>
<td>TACH DENSISH KIKI</td>
<td>GTD-5D14C</td>
<td>Japanese brand</td>
</tr>
<tr>
<td>SH5285-7211</td>
<td>AX40-A2P</td>
<td>0.75A</td>
<td>1.4A</td>
<td>28X32</td>
<td>0.068N•m</td>
<td>0.017N•m</td>
<td>TACH DENSISH KIKI</td>
<td>GTD-5D14C</td>
<td>Japanese brand</td>
</tr>
<tr>
<td>103-4507-7101</td>
<td>AXG5-3P</td>
<td>0.75A</td>
<td>1.4A</td>
<td>28X32</td>
<td>0.127N•m</td>
<td>0.017N•m</td>
<td>TOHAN DENSHI KIKI</td>
<td>GMT / GTR15B</td>
<td>Japanese brand</td>
</tr>
<tr>
<td>103F550-8211</td>
<td>AXG6-3P</td>
<td>0.75A</td>
<td>1.4A</td>
<td>28X32</td>
<td>0.245N•m</td>
<td>0.017N•m</td>
<td>TOHAN DENSHI KIKI</td>
<td>GMT / GTR15B</td>
<td>Japanese brand</td>
</tr>
<tr>
<td>103F5550-8211</td>
<td>AXG7-3P</td>
<td>0.75A</td>
<td>1.4A</td>
<td>28X32</td>
<td>0.440N•m</td>
<td>0.017N•m</td>
<td>TOHAN DENSHI KIKI</td>
<td>GMT / GTR15B</td>
<td>Japanese brand</td>
</tr>
</tbody>
</table>

#### Driver description

- **Standard stepper motor driver V.S. micro stepper driver difference**
  1. Full-step driver: use rotor teeth to drive stator teeth
  2. Half-step driver: achieved by movement of teeth to teeth until teeth to the middle of two teeth
  3. Micro stepping driver: based on half-step technology, use electronic phase separation to achieve higher resolution.

- **Micro stepper driver V.S. half stepper driver**
  - Advantage: higher resolution
  - Shortcoming: unequal division of electronic sub-phase angle, higher temperature rise and higher driver price.

- **Micro stepper calculation equation: number of pulse required per revolution** :
  \[
  \text{Step angle (°) = (motor teeth × pulse) / motor teeth} \]

- **Suggested driver and Brand/model (optional)**
  - **Precision grade**
  - **2-phase stepper motor classification**
  - **3-phase stepper motor classification**

### Precision Motorized stage and suggested Servo motor/drive cross-reference table

<table>
<thead>
<tr>
<th>Replace equipped servo (optional)</th>
<th>Equipped motor classification</th>
<th>Motor brand</th>
<th>Voltage/Frame size</th>
<th>Motor models</th>
<th>Driver model</th>
</tr>
</thead>
<tbody>
<tr>
<td>D group / E group</td>
<td>MITSUBISHI</td>
<td>50W / 40</td>
<td>HS-K093</td>
<td>MR-J410A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PANASONIC</td>
<td>100W / 38</td>
<td>MSMD52G15S</td>
<td>MADH11505</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>100W / 40</td>
<td>MSMD12G15S</td>
<td>MADH11505</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- If it is replaced with servo motor, it must be custom project and note the following:
  1. The default designed stepper motor has to be 42 mm frame size which is available to be replaced by suggested servo motor.
  2. Need to clarify on issues such as the stage installation space, motor sliding out of installation surfaces etc.
  3. May need to add new worm screw or ball screw to connect to the coupling shaft.
  4. Need to replace motor mount or change motor installation method and sequence.
  5. Need to replace suitable coupling.
Electromagnetic Brake Type Stepper Motor Introduction

Power-off brake is mainly used when power is off, with or without load, and several internal springs provide braking force. Such structure provides good reliability. A typical application is Z-axis motorized stage to prevent slip and fall after power off.

<table>
<thead>
<tr>
<th>Specification introduction (for electromagnetic brake type stepper motor, please refer to GMT motor and driver catalog).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static friction torque (Kgm) (Nm)</td>
</tr>
<tr>
<td>Input power</td>
</tr>
<tr>
<td>Power (W) at 20 °C</td>
</tr>
</tbody>
</table>

Without electromagnetic brake mechanism:
If the mechanism is used in vertical direction, it may naturally slide down due to overload or power off.

With electromagnetic brake mechanism:
If the mechanism is used in vertical direction, using stepper motor with electromagnetic brake can prevent natural slide down due to overload or power off.

※ In use, please be careful that the driver does not produce torque after power is on. Please do not release brake until the motor maintains a torque.

In use, please be careful that the driver does not produce torque after power is on. Please do not release brake until the motor maintains a torque.

Stepper motor
Electromagnetic brake

Feedback Type Stepper Motor Introduction

- High precision feedback: Optical encoder adopted for feedback, equipped with sub-division technology to have resolution up to 10,000 counts per revolution.
- Rigid structure, minimum dimension: The smallest size in the market, common feedback type uses plug-in package with uniform size; compared to other brands, it is different in size, structure and function.
- Innovative closed-loop control: not limited by driver type, equipped with 2-phase, 3-phase and 5-phase stepper motors or other pulse type motor driver.
- Diversified configuration: equipped with i-Smart closed loop controller, without need to change program to be upgradeable to closed loop system, allowing flexibility in installation of feedback type package.

<table>
<thead>
<tr>
<th>Specification introduction (for selection of feedback type stepper motor, please refer to GMT motor and driver catalog.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
</tr>
<tr>
<td>Current</td>
</tr>
<tr>
<td>Signal</td>
</tr>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Output voltage</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Maximum output current</td>
</tr>
<tr>
<td>Maximum allowed rotation speed</td>
</tr>
<tr>
<td>Operation/storage temperature</td>
</tr>
<tr>
<td>Operation</td>
</tr>
<tr>
<td>Humidity</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Positioning precision (unit: μm)
Within predetermined testing range, from the starting position, move and position in a specific direction and measure the difference between actual value and target value. Use the maximum difference as positioning precision.

Repeatability positioning precision (unit: ±μm)
Use laser interferometer or Zeiss coordinate measuring machine (CMM) to repeat measurement for seven times. With half of the obtained maximum error from the error based on one direction to any point stop, measure in the middle point of movement distance and in the directions of two ends and obtain the maximum difference as the repeatability positioning precision.

Missed step (lost stroke at reverse rotation) (unit: μm)
Within predetermined testing range, from the origin, make movement positioning for any point from positive direction command, measure actual movement value; make negative direction command (same pulse number) for movement positioning and measure actual movement value; make positive direction (same pulse number) command for movement positioning and measure actual movement value. Make positive direction and negative direction movement seven times and measure the individual actual movement values. The average will be the missed step.

Dynamic parallelism (unit: μm)
Put the stage on granite workbench. Set micrometer on the workbench and measure on granite. The measured maximum difference is the Dynamic parallelism.
Dynamic straightness (unit: μm)

Within predetermined testing range, from the starting position of stage, move in a specific direction and use standard gauge block as basis to measure the difference between actual value and target value for horizontal straightness and vertical straightness. Use the maximum difference as Dynamic straightness.

One-way remove positioning precision (unit: μm)

Within predetermined testing range, from the starting position, move and position in a specific direction and measure the difference between actual value and target value. Use the maximum difference as positioning precision.

Repeated remove positioning precision (unit: μm)

Use laser interferometer or Zeiss coordinate measuring machine (CMM) to repeat measurement for seven times. With half of the obtained maximum error from the error based on one direction to any point stop, measure in the middle point of movement distance and in the directions of two ends and obtain the maximum difference as the repeated positioning precision.

Missed step (lost stroke at reverse rotation) (unit: μm)

Within predetermined testing range, from the origin, make movement positioning for any point from positive direction command, measure actual movement value; make negative direction command (same pulse number) for movement positioning and measure actual movement value; make positive direction (same pulse number) command for movement positioning and measure actual movement value. Make positive direction and negative direction movement seven times and measure the individual actual movement values. The average will be the missed step.
Dynamic parallelism (unit: μm)

Within predetermined testing range, from a stage starting position, move in a specific direction and measure the difference between actual value and target value. Use the maximum difference as Dynamic parallelism.

Dynamic vertical (unit: μm)

Put the stage on granite workbench. Set micrometer on the workbench and measure on the standard gauge block. The measured maximum difference is the Dynamic vertical.

Parallelism (unit: μm)

Put the stage on granite workbench. Use micrometer or Zeiss coordinate measuring machine (CMM) for measurement. At the middle of stage work area, use the measured maximum difference as the parallelism.
Testing Method

Goniometer Stage α axis

Positioning precision (unit: °)

Within predetermined testing range, from the starting position, move and position in a specific direction and measure the difference between actual value and target value. Use the maximum difference as positioning precision.

Repeated remove positioning precision (unit: ±°)

According to baseline, set testing standard angle for movement. In clockwise (counterclockwise) direction, fix the angle for positioning and repeat seven measurements. In the same direction, use the half of the maximum difference from any stop point as Repeatability positioning precision value.

Missed step (lost stroke at reverse rotation) (unit: °)

Select clockwise rotation for angle positioning and set the position x1. Continue counterclockwise rotation for angle positioning and set the position y1. Set arbitrary position for seven measurements. Measure in the middle of movement distance and in the direction of two ends. The obtained maximum is the missed step.

Missed step calculation:

$$\max \left( \frac{x_1 + x_2 + x_3 + \ldots + x_7}{7} - \frac{y_1 + y_2 + y_3 + \ldots + y_7}{7} \right)$$

Rotation center deflection precision (unit: mm)

Within predetermined testing range, from a starting position, move in a specific direction and measure and check if the actual circle center falls within target value, which is the rotation center deflection precision.
Testing Method
Rotation Stage θ axis

Testing equipment: CCD image detection system.
In testing, fix the stage bottom board and move the stage workbench.

One-way remove positioning precision (unit: °)
According to baseline, set standard angle position for movement plane and fix and position rotation angle in clockwise (counterclockwise) direction. Measure the difference between actual value and target value in 360° rotation. The obtained maximum is the positioning precision.

Repeatability positioning precision (unit: ±°)
Use any angle in clockwise (counterclockwise) direction as standard, measure deviation for stop angle for seven times. With half of the obtained maximum error, in the middle of movement distance and the direction of two ends, obtain the maximum value as the Repeatability positioning precision.

Missed step (lost stroke at reverse rotation) (unit: °)
Select clockwise rotation for angle positioning and set the position x1. Continue counterclockwise rotation for angle positioning and set the position y1. Set arbitrary position for seven measurements. Measure in the middle of movement distance and in the direction of two ends. The obtained maximum is the missed step.

Missed step calculation:
\[
\max \left( \frac{x_1 + x_2 + x_3 + \ldots + x_7}{7}, \frac{y_1 + y_2 + y_3 + \ldots + y_7}{7} \right)
\]

Parallelism (unit: μm)
Put the stage on granite workbench. Use micrometer or Zeiss coordinate measuring machine for measurement. At the middle of stage work area, use the measured maximum difference as the parallelism.

Dynamic parallelism (unit: μm)
Put the stage on granite workbench. Use micrometer on the stage workbench or Zeiss coordinate measuring machine for measurement. As the stage workbench makes one rotation, use the maximum measurement difference as the Dynamic parallelism.
Testing equipment: micrometer.
In testing, fix the stage bottom board and move the stage workbench.

Dynamic concentricity (unit: °)

Within predetermined testing range, from a starting position in the circumference, move in a specific direction and measure the maximum difference between actual value and target value as Dynamic concentricity.