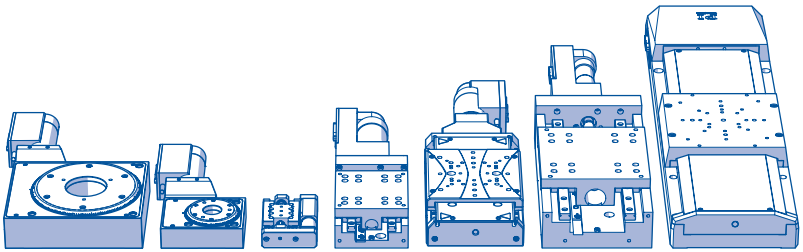
Positioners with Electric Motors

Short Instructions

M-06x / M-11x / M-12x / M-4xx / M-5xx / M-605



User Information

These short instructions contain an overview of the most important safety and handling instructions for installing and operating positioners with electric motors with the product codes given above (x: any number).

Subject to change. These short instructions are superseded by any new release. The latest respective release is available for download on our website.

Downloading and Reading the Manual

The actions during installation, startup, operation, and maintenance require additional information from the manuals of the positioner and/or the electronics.

Manuals may be titled as follows: "User Manual", "Technical Note".

Downloading the Manuals from the Website

1. Open the website **www.pi.ws**.
2. Search the website for the product number (e.g., C-663.12) or the product family (e.g., PICMA® Bender).
3. Click the corresponding product to open the product detail page.
4. Click **Downloads**.
   The manuals are shown under **Documentation**.
5. Click the desired manual and fill out the enquiry form.
   The download link will then be sent to the email address entered.

If you cannot find the manual you are looking for or if you have any questions: Contact our customer service department via service@pi.de.

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Safety

Intended Use

The positioner is a laboratory device as defined by DIN EN 61010-1. It is intended for indoor use and use in an environment that is free of dirt, oil, and lubricants.

In accordance with its design, the positioner is intended for positioning loads at various velocities. The positioner is not intended for applications in areas where failure would be a considerable risk for people or the environment.

The intended use of the positioner is only possible when completely installed and connected, and in conjunction with suitable electronics. The positioner may only be installed, operated, maintained, and cleaned by authorized and appropriately qualified personnel.

Installation

If the drive screw of the positioner is not covered, there is a risk of serious injury from entangled hair, jewelry or clothing.

- ▶ Make sure that areas with rotating components are shielded.
- ▶ Do **not** work on the unprotected positioner with loose hair, hanging jewelry or loose clothing.

Risk of minor injury from crushing between the moving parts of the positioner or the load and a fixed part or obstacle.

- ▶ Use safeguards to protect limbs in areas where they could be caught by moving parts.
- ▶ Maintain safety distances according to DIN EN ISO 13857.

Mechanical forces can damage or misalign the positioner.

- ▶ Maintain the maximum permissible forces (see manual).
- ▶ The calculations must also include the masses of positioners moved in multi-axis systems.

Manually moving the platform can cause increased wear on positioners with a gearhead.

- ▶ Move the platform of positioners with gearhead by hand only if it cannot be moved in any other way.

Collisions can damage the positioner, the load to be moved, and the surroundings.

- ▶ Mount the positioner and the load so that the load cannot get jammed or blocked, or collide with objects in the workspace.

Unsuitable mounting can warp the positioner and reduce the accuracy.

- ▶ Mount the positioner on a flat surface with similar thermal expansion properties (see manual for recommended flatness).

A cable break leads to failure of the positioner.

- ▶ Install the positioner so that the cable cannot be bent too strongly or crushed during operation.

Heat produced during operation can affect your application.

- ▶ Install the positioner so that the application is not affected by dissipating heat.

Startup

Excessively high or incorrectly connected operating voltages can cause damage to the positioner.

- ▶ Use compatible electronics only.
- ▶ Pay attention to the operating voltage range of the positioner (see manual).
- ▶ Pay attention to the correct pin assignment (see manual).

Unintentional motion of the positioner is possible when it is connected to the electronics.

- ▶ Before connecting the positioner, check whether a macro is defined as the startup macro in the electronics and if necessary, cancel the selection.

If the positioner is equipped with a brake, unintentional motion can occur when the brake is deactivated.

- ▶ Secure the positioner against unintentional motion before you deactivate the brake.

Uncontrolled oscillation can damage your application or the positioner.

- ▶ If oscillation occurs, switch off the servo mode of the electronics or stop the positioner immediately.
- ▶ Check the settings of the servo control parameters (see manual).

High accelerations can cause damage to or considerable wear on the mechanics.

- Stop the motion immediately if a controller malfunction occurs.
- Move to the end of the travel range at low velocity.

Mounting the Positioner and Load

NOTICE!

Damage due to improper mounting!

- Pay attention to the safety instructions in the "Installation" section.
- **Linear stage**: When the motion axis is oriented vertically, the load must be lower than the holding force of the drive (see manual).
- **Rotation stage:** When the positioner is mounted vertically, the load must be lower than the maximum torque of the drive (see manual).

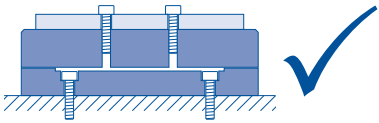
NOTICE!

Damage due to incorrectly inserted screws.

- Select the screw length according to the depth of the mounting holes.
- Do **not** allow screw heads to protrude.

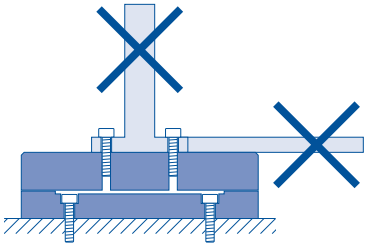
- Mount the positioner over the holes provided.
- Affix the load to the mounting holes provided.
- Check that the positioner and the load are fixed firmly.

Correct Mounting

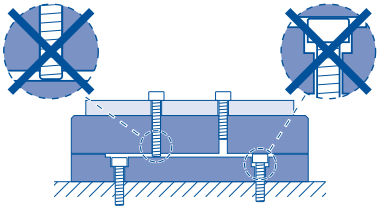


Mounting on an Uneven Surface

Incorrect Alignment of the Load



Incorrect Fitting of the Screws



Starting up the Positioner

The instructions required for startup and operation are in the manual for the electronics used.

Maintenance

NOTICE!

Damage due to improper maintenance.

- Unscrew only according to the instructions in the manual.

Regular maintenance runs are necessary to distribute the lubricant. The intervals between each maintenance run must be shortened if the positioner is moved over a short travel range during continuous operation (<20 % of the travel range).

- Do maintenance runs regularly (see manual for recommended intervals).

Under laboratory conditions, the positioner needs extra lubrication in exceptional cases only. For continuous industrial use, the lubrication intervals must be determined individually.

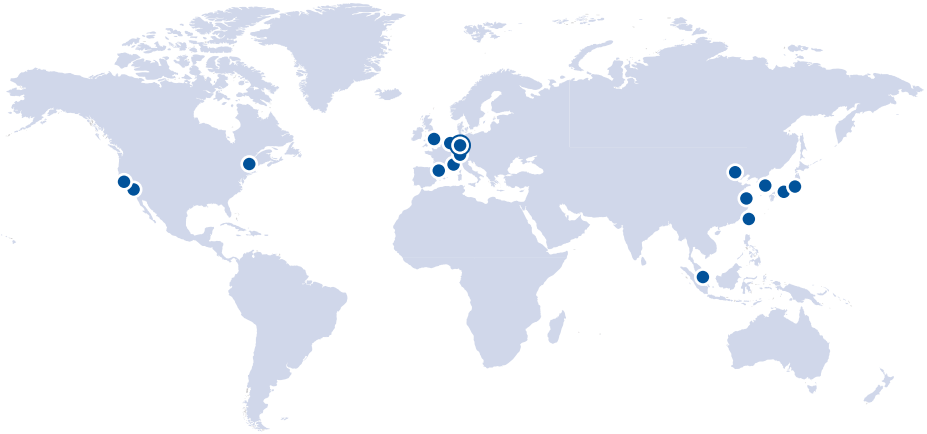
Old Equipment Disposal

In accordance with EU law, electrical and electronic equipment may not be disposed of in EU member states via the municipal residual waste.

Dispose of your old equipment according to international, national, and local rules and regulations.

PI undertakes environmentally correct and free disposal of all old PI equipment made available to the market after 13 August 2005.

If you have an old device from PI, you can send it to PI free of charge.



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