

T50N81K13 Motorized Optical Mount

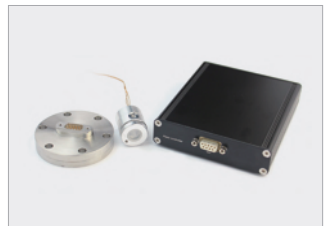
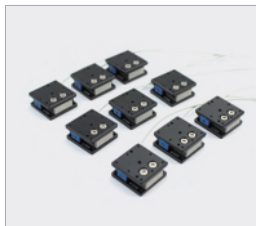
User Manual

Version: V1.0



This document describes the following products:

- T50N81K13



DECLARATION

Thank you for choosing Coremorrow's products!

This user manual is applicable to T50N81K13 motorized optical mount. For your smooth and correct use of this product, please read this manual carefully before use. Please follow the instructions in the manual installation and use procedures. Improper operation may cause injury to the operator or damage to the product. Therefore, the entire installation and operation process should be completed by a professional with a certain foundation and understanding of the product principle, or under the guidance of a professional.

If the product is disassembled or modified without permission, our company will not be responsible for any consequences arising therefrom.

It is illegal to change the product model and other false sales of our products. Users are advised to be vigilant. Once you find out or be deceived, contact us directly, we will crack down on illegal activities and prevent deception and economic losses. CoreMorrow will certainly investigate legal responsibility of the illegal subject and related parties.

With the continuous development and innovation of technology, we will add the latest information to the manual as needed without notice. Please contact us if you need any information.

Contents

1. Introduction	2
1.1 Purpose and content	2
1.2 Symbol and meaning.....	2
1.3 Expected reader.....	2
1.4 Manual lost replacement	2
2. Safety Guide.....	3
3. Product Overview	4
3.1 Product Introduction	4
3.2 Product Features	4
3.3 Motion direction	4
4. Operating environment	5
5. Installation and operation.....	5
5.1 Installation and connection.....	5
5.2 Load	6
5.3 Operating.....	8
6. Transportation and inspection	9
6.1 Transportation.....	9
6.2 Unpacking inspection.....	9
7. Maintenance and processing.....	10
7.1 Problem Processing	10
7.2 Daily maintenance	10
8.Customer Service	11
9.Contact us.....	11

1. Introduction

1.1 Purpose and content

- ▶ The manual is mainly for your smooth and correct use of T50N81K13.
- ▶ The manual contains all necessary information for T50N81K13.
- ▶ The manual describes the precautions during installation and use.

1.2 Symbol and meaning



DANGER: Improper handling may could cause injury to the operator.



Attention: Improper handling can cause damage to the equipment.

- ▶ No order between items.

1. Please operating in order.
- 2.

1.3 Expected reader

The manual default user has knowledge of piezo products, and has a basis for its installation and use.

1.4 Manual lost replacement

If the manual is accidentally lost, please contact our customer service department, we will send you the latest version of user manual.

2. Safety Guide

T50N81K13 motorized optical mount is designed with advanced technology and safety standards, for safety and proper use of the product, please pay attention to following points when using:



Temperature changed and pressure will charge the motorized optical mount. It will remain charged for a period of time disconnected from the controller, so the operator should pay attention when using it:

- ▶ Do not disassemble T50N81K13;
- ▶ Discharge T50N81K13 before installation, it could be achieved by connecting to the controller;
- ▶ Do not pull out the controller during operation;
- ▶ Before using, please check whether the connecting wire of the product is in good condition, whether the product and the controller are effectively protected from grounding, in case of danger, please strictly regulate the operation during operation, do not touch it (up to 150V voltage) after power on.



In order to prevent damage to the product caused by improper operation, please pay attention to following points when using:

- ▶ T50N81K13 is used as much as possible in dust-free, oil-free, lubricant-free environments;
- ▶ Since the product adopts flexible structure design, it is recommended that the load not exceed the bearing capacity of the product. Pay attention to the torque when loading. Do not twist or twist the load surface to avoid damage to the structure;
- ▶ Do not disassemble the product to avoid product damage;
- ▶ Avoid stretching and bending the cable interface to prevent damage to the cable;
- ▶ Please use the dedicated cable provided by us to connect T50N81K13 and piezo controller;
- ▶ Please do not use cable extension wire, if need longer cable, please contact us.

3. Product Overview

3.1 Product Introduction

T50N81K13 motorized optical mount has the following advantages:

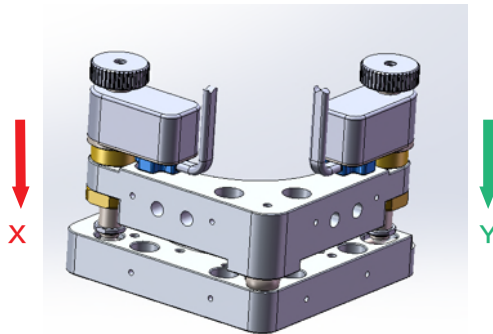
The piezo actuator is driven by a high reliability actuator. It adopts a fully insulated structure, so its performance and service life are far superior to the traditional actuator. The insulation layer can effectively prevent the failure of the piezo actuator due to moisture. Therefore, the stability of the piezo actuator can also be guaranteed in extreme environments.

T50N81K13 motorized optical mount is specially designed for automatic angular deflection of large mirror. It has two linear actuation points for two-dimensional θ_x θ_y deflection motion adjustment of the mirror.

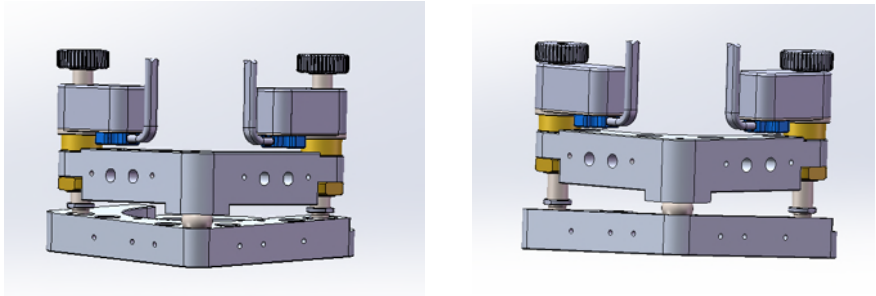
3.2 Product Features

- ▶ Two-dimensional deflection motion
- ▶ Sub-micro-radian angular resolution
- ▶ Power-off self-locking
- ▶ Suitable for large lenses
- ▶ More flexible with motorized operation

3.3 Motion direction



(a) Piezo motor driven linear actuator motion direction



(b)Motorized optical mount motion direction

Figure1. T50N81K13 motion direction

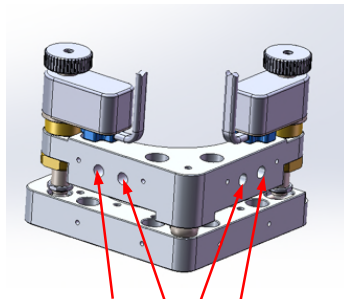
4. Operating environment

- ▶ Operating temperature: 10~40°C
- ▶ Environment free of dust, clean, and non-corrosive substances
- ▶ Relative humidity: <60%

5. Installation and operation

Before installation, first check the safety, such as whether the cable is damaged or broken, and whether the power supply has grounding protection.

5.1 Installation and connection



Fixed mounting(M4), 4pcs in total, 2pcs on either side

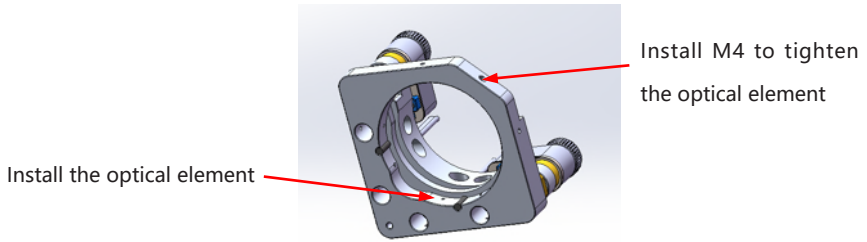


Figure2. T50N81K13 installation diagram

5.2 Load

When installing the load, ensure that the load mass is less than the max load of T50N81K13, and install the load as much as possible at the center of the moving surface.

The correct placement of the load is shown below:

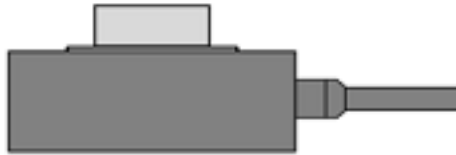


Figure3. Load applied to the center of the motorized optical mount

For protection, we don't recommend the load is too high. If it is used a higher load, please reduce the position center of the load gravity. The error placement method is as follows:

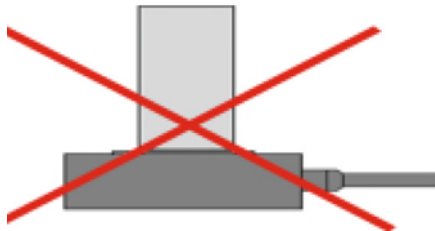


Figure4. Try not to let the load center of gravity exceed the motorized optical mount

It is forbidden to load the load on one side of the motorized optical mount, which would cause serious damage to the product, as shown in the following figure:

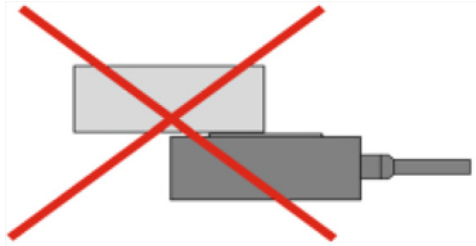


Figure5. Do not load longer loads and add to the side of the motorized optical mount

If the screws used in tightening and connecting are too long, the screws will not be installed or some of screws will leak out, which will scratch the motorized optical mount and affect the motion accuracy. If the screws are too short, the connection will not be compact and easy to loosen. Looseness could damage the internal structure of the motorized optical mount.

We recommend using the connection method shown below:

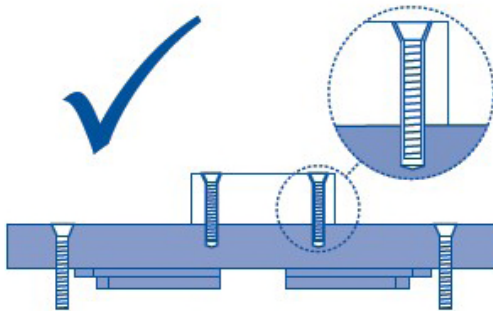


Figure6. Correct connection

Please do not connect as shown below:

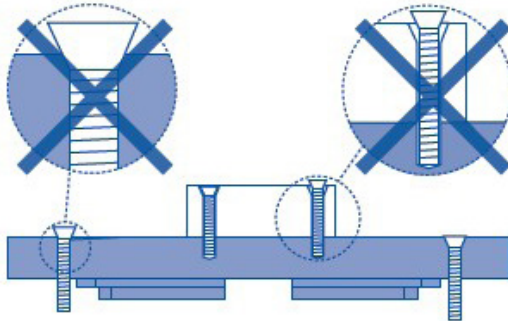


Figure7. Incorrect connection

Note:

- ▶ Slowly tighten the load when installing it, and the torque should not be too large to avoid damage to mechanism;
- ▶ Avoid stretching and bending cables;
- ▶ Please connect T50N81K13 and controller with special cable provided by CoreMorrow;
- ▶ Please do not extend the cable without authorization, please contact us if you need a longer cable.

5.3 Operating

Please confirm the following information before starting the power supply:

- ▶ T50N81K13 has been grounded;
- ▶ The environment meets requirements of T50N81K13 working environment;
- ▶ The fixing screws must be tightened;

The above information is determined to perform controller related operations:

1. Please carefully read piezo controller user manual before operating, then start the controller;
2. Set the piezo controller to zero;

3. After checking for no abnormalities, input voltage values according to requirements (keyboard or analog control);
4. It could work normally within the rated voltage range of piezo actuator;
5. Please set the piezo controller to zero after used.

Please do not touch the product during the operation, avoid affecting the motorized optical mount performance or even damage it.

The resolution of piezo ceramic is not limited. It depends on the performance of piezo controller. In order to better achieve the motion accuracy, it is recommended to use CoreMorrow piezo controller. For the operation of piezo controller, please refer to piezo controller usual manual.

Note:

- ▶ Please do not remove the grounding protection during operation. If it needs to be temporarily removed, reconnect the grounding protection before starting again.
- ▶ If abnormal noise or oscillation occurs during operating, immediately turn off the power check parameter setting.

6. Transportation and inspection

6.1 Transportation

T50N81K13 is packed in carton. The transportation is carried out under the condition of packaging. This product can be transported by various means of transportation under normal conditions. During transportation, it should avoid direct rain and snow, avoid contact with corrosive substances, and avoid strong collision, try to avoid improper behavior such as squeezing, irregular placement.

6.2 Unpacking inspection

Please check below information:

- ▶ Before opening the package, please carefully check the packaging for damage, bruising, wetting, moisture, deformation, etc.;

- ▶ Please check the parts on a case-by-case basis based on the supply contract and the packing list;
- ▶ Whether there is obvious damage on the surface of the product;
- ▶ Whether the product identification is clear and complete;
- ▶ Whether the connector is loose, the connection line is broken or not, etc.;

If any of the above occurs, please make a detailed record and take a photo, and please contact us immediately.

Precautions:

- ▶ Please handle gently when unpacking to avoid permanent damage to the products caused by bumps;
- ▶ Please do not use heavy tools or use rough methods to open them;
- ▶ Please do not discard all packaging materials for return shipments.

7. Maintenance and processing

7.1 Problem Processing

If the user has problems that could not be solved. Please record the fault situation and contact with us. The professional technical engineer would help solve the problem.

Problems caused by improper operation are not covered by the warranty;

CoreMorrow is not responsible for any problems caused by dismantling the products without permission.

7.2 Daily maintenance

If the motorized optical mount is not used for a long time, please store it in a room environment with no dust, good ventilation, clean and non-corrosive substances.

Please do not loosen the screws on the stage structure, avoiding to affect the accuracy of the stage.

Daily cleaning:

Please disconnect the motorized optical mount to controller, then clean the surface of it.

When cleaning, first wipe a small amount of detergent with a towel and gently wipe the

surface of the motorized optical mount, then wash it with alcohol. Please do not use ultrasonic waves for cleaning.

When cleaning the surface, try not to pick up the product. If it is necessary to pick up, please place a sponge under the motorized optical mount for protection, the motorized optical mount should not be too high from the sponge to prevent the motorized optical mount from falling off.

8. Customer Service

If you have questions about the products you are currently using, please let us know the following information:

- ▶ Product model number and related number
- ▶ Controller model for this product
- ▶ Software driver version for this product
- ▶ Computer operating system for installing supporting software

9. Contact us

CoreMorrow Ltd.

Tel: +86-451-86268790

Email: info@coremorrow.com

Website: www.coremorrow.com

Address: Building I2, No.191 Xuefu Road, Nangang District, Harbin, HLJ, China

CoreMorrow Official and CTO WeChat are below:

