H01 Piezo Fiber Stretcher
User Manual

Version: V1.0

This document describes the following products:

- H01.80
- H01.20
- H01.6

DECLARATION

Thank you for choosing CoreMorrow's products!

This user manual is applicable to H01 piezo fiber stretcher, for your smooth and correct use of this product, please read this manual carefully before using it. Please follow the instructions in the installation and use process. Improper operation may cause injury to the operator and/or damage to the product, so it is required that the entire installation and operation process should be completed by professionals with a certain foundation and a certain understanding of product principles, or under the guidance of a professional.

If you disassemble or transform the product without permission, our company will not be responsible for any consequences arising therefrom.

To change the product model and other false sales of our company's products are illegal, users should be vigilant. Once found, you should actively report or contact our company, jointly crack down on illegal acts, and prevent fraud and economic losses. CoreMorrow will investigate for the legal responsibility of the illegal subject and related party.

With the continuous development and innovation of technology, CoreMorrow will timely add the latest information to the manual as required. If you need, please contact us, or to our website www.coremorrow. com for download, we apologize for any inconvenience caused to you.

Contents

1. Introduction

1.1 Purpose and content

This manual is mainly for your smooth and correct use of H01 piezo fiber stretcher. The manual contains all the necessary information for the H01 piezo fiber stretcher. Introduction of 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 Users of this Manual

The default user of this manual has knowledge of piezoelectric products and controllers, and has a certain basis for their installation and use.

1.4 Manual Lost and Reissued

If this manual is lost, please contact CoreMorrow. We will send you the latest version of the user manual.

2. Safety Guidelines

H01 piezo fiber stretcher is designed with the most advanced technology and safety standards for your own safety and the correct use of the product, please observe the following points when in use.

⚠️ A change in temperature and pressure will charge the piezoelectric actuator, and the actuator will remain charged for a period of time when it is disconnected from the controller, so the operator should pay attention to when in use.

▷ Do not disassemble H01 piezo fiber stretcher;

▷ Discharge H01 before installation, which can be done by connecting to the controller;

▷ Do not unplug the wire connecting with controller during operation;

▷ Before use, check whether the connection wire of the product is in good condition and whether the product and the controller are effectively grounded. During operation, strictly standardize the operation. Do not touch the product (up to 150V voltage) with your hand when power on, in case of danger.

❗ In order to prevent damage to the product caused by improper operation, the following points should be paid attention to when in use.

▷ H01 piezo fiber stretcher should be used in a dust-free, oil-free and lubricant-free environment;

▷ As the product is designed with flexible structure, it is recommended that the load should not exceed load capacity of product. When loading, DO NOT apply torque force and DO NOT pry or twist the load surface, so as not to damage the structure;

▷ Recommended voltage range is 0~120V for long-term use and lifetime;

▷ Do not disassemble the product to avoid damage;

▷ Avoid stretching and bending the cable interface to prevent damage to the cable;

▷ Use the dedicated cable provided by CoreMorrow to connect H01 piezo fiber stretcher to controller;

▷ Do not connect via an extension cable casually, if you need a longer cable, please contact CoreMorrow.

3. Product Overview

3.1 Product Introduction

H01 piezo fiber stretcher has the following advantages:

▷ High performance piezo stack:

H01 piezo fiber stretcher is driven by a highly reliable ceramic actuator with a fully insulated structure, so its performance and service life are far better than the traditional actuator. The insulating layer can effectively prevent the piezoelectric ceramic from being damaged when exposed to moisture. Therefore, the stability of piezoelectric ceramics can be guaranteed under extreme circumstances. Compared with traditional driving mechanism, there are no transmission parts and friction. Therefore, ceramic actuator has the characteristics of no rebound, no maintenance, and no wear, etc.

▷ Flexible hinge structure:

H01 piezo fiber stretcher adopting flexible hinge mechanism has advantages of no friction, high positioning accuracy. Flexible hinge is an element not affected by static and dynamic friction, based on the elastic deformation of metal material (e.g., steel) , there is no rolling and sliding parts. Flexible unit has very high load capacity and stiffness. Hinge guide needs no maintenance and no wear and tear. Suitable for a wide range of temperatures, no lubricating oil is required.

The radial stroke of H01.80 piezo fiber stretcher is up to 80um, the stretching length of a circle of fiber is more than 500μm. The axial stiffness of H01.20 is 30N/μm. H01 features fast response speed, high repeated positioning accuracy, high flexibility and easy to operate, so it can meet different applications. This product can also be customized according to the needs.

3.2 Product Features

▷ Optional large stroke and large stiffness versions.;

▷ The product can be used statically or dynamically.
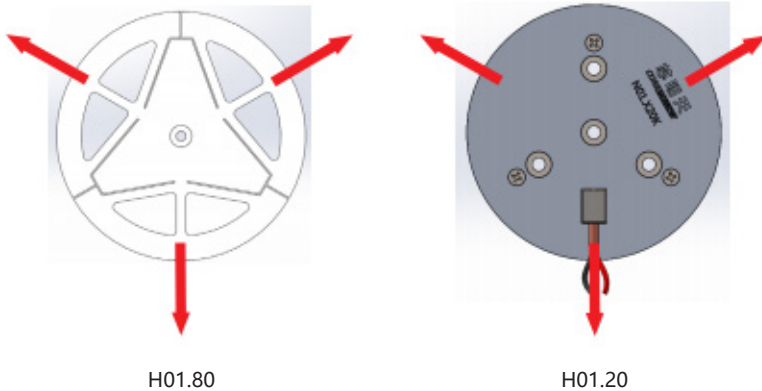
3.3 Motion direction

H01.80   H01.20

FIG.1 Motor direction of H01 piezo fiber stretcher

4. Operating environment

▷ Operating temperature: -20~80℃

▷ Environment free of dust, clean, and non-corrosive substances

▷ Relative humidity: <60%

▷ Recommended voltage between 0 and 120V for long-term and high-reliability operation.

5. Installation and operation

Safety check should be carried out before installation, such as whether the connection wire is damaged or broken, whether the drive power supply is grounded, etc.

5.1 Installation and Precautions

Installation diagram of H01 is as follows:

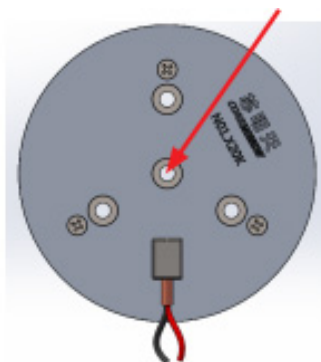Fixed hole φ3.2 through hole   4 fixed holes φ4.2 through hole

FIG.2 H01 Installation Diagram

1.Wrap the fiber neatly, evenly and closely in the groove.

2.Fix and tighten H01 with M3 or M4 screws.

3.Properly tighten the fixing screw.

4.Connect the product to the controller.

Notice:

▷ The inner of optical fiber is glass fiber. When winding the optical fiber, be careful not to touch the exposed optical fiber to avoid the fiber piercing the skin.

▷   When winding the fiber, the force should be used properly, and the fiber should be wound on the surface in a state of natural tension without sliding.

▷   When winding the fiber, the fiber should be arranged neatly, evenly and closely to facilitate the uniform stretching of the fiber.

▷ Use high strength epoxy resin adhesive, the amount of adhesive should be appropriate, which can fix the fiber without affecting the fiber's tensile.

▷ Avoid stretching and bending cables.

▷ Use the dedicated cable provided by CoreMorrow to connect H01 to controller;

5.2 Operating

Please reconfirm the following information before turning on the power:

▷ The operating environment meets the operating environment requirements of H01.

▷ Fixed screws must be tightened.

After the above information is confirmed, relevant controller operations can be carried out:

1.Please read the user manual of the controller carefully before operation, and then start the controller.

2.Set the controller'output voltage to zero first.

3.Check no abnormal phenomenon, then input voltage value (via keyboard or analog control) according to specified input voltage range.

4.Operating normally within the rated voltage range of piezoelectric ceramics (0~120V, maximum 150V).

5.After use, please carry out voltage reset operation.

Please take light steps when H01 in operation, do not knock the product, so as not to affect the use of the product or even damage the product.

In order to achieve better motion precision of H01, it is recommended to use our company's supporting controller. Please refer to the user manual of the controller for the specific operation to ensure correct operation before relevant operation.

Notice:

▷ The driving voltage shall not exceed the voltage range of H01.

▷ If any abnormal noise or oscillation occurs during use, turn off the power immediately and check the parameter setting.

6. Transportation and inspection

6.1 Transportation

This product is packed in cartons. Transportation is carried out under the packaging conditions. This product can be transported by various means of transport under normal circumstances. In the process of transportation, direct rain and snow, corrosive substances, strong collision, extrusion, irregular placement and other improper behaviors should be avoided as far as possible.

6.2 Open-Box Inspection

Inspection content:

▷ Before opening the package, please check the outer packing carefully to see if there is any breakage, wetting, dampness, deformation, etc.

▷ Please check the completeness of package contents one by one according to the supply contract and packing list.

▷ Check whether the surface of the product has obvious damage.

▷ Check whether the product identification is clear and complete.

▷ Check whether the connector is loose and the connector wire is broken or damaged.

In case of any of the above, please make a detailed record and take a photo of it. Meanwhile, please contact us for processing immediately.

Attention:

▷ Please handle with care when opening the package, so as not to knock against the product and cause permanent damage to it.

▷ Please do not use heavy tools or rough way to open.

▷ Please do not discard all the packaging materials which are needed for repair and return.

7.Maintenance and Treatment

7.1 Daily maintenance

If the product is not used for a long time, please store it in a dust-free, well-ventilated, clean and non-corrosive indoor environment after packaging.

In the daily maintenance, please do not loosen the bolts on the product structure, so as not to affect the movement accuracy of the product.

Daily cleaning:

Please disconnect the product from the controller before cleaning the surface of the product.

When cleaning, gently wipe the surface of the product with a towel dipped in a small amount of detergent, and then clean it with alcohol. Please do not use ultrasonic cleaner.

When cleaning the surface, try not to pick up the product. If you have to pick up the product, it is better to put the sponge under the product for protection. The product should not be too high from the sponge, in case the product falls off.

8.Customer Service

If you have any questions about the products currently in use, please let us know the following information:

▷　Product model and relevant number

▷　The controller model

▷　Software driver version

▷　Computer operating system that installs 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: