USB 4D-Stage

Features

- Compact four dimensional (X, Y, Z, R) Stage for use with the OpenSPIM system.
- Powered and controlled from USB with the use of an externally powered USB 4-port Hub.
- Miniature (Size-8) stepper motors, with integrated control electronics.
- Linear (X, Y, Z) range of about 9 mm (~0.35").
- Linear (X, Y, Z) resolution of 1.5 microns/Step.
- Rotational (R) resolution of 720 step/rev (0.5 deg/step).
- Includes Sample-Arm with pulleys and belt to hold and rotate a 7-mm Sample-Tube.
- Power efficient, holds position with no power.
- Built-in magnetic (Hall effect) home sensors for the linear (X, Y, and Z) motors.
- PC Windows based user interface included for easy "out of the box" motion control.
- Dynamic Linkable Library (DLL) included for custom automated applications.
- Can be manually controlled with a SpaceMouse from 3Dconnexion (not included).

($4,885 single piece price)

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Software Interface

The USB 4D-Stage is a motorized precision motion control system used with the OpenSpim system (www.openspim.org). It is powered and controlled solely with USB ports. This system provides the method of automated control that is unmatched in size, simplicity, and ease of use.

The USB 4D-Stage application software runs on any standard PC with Windows-XP (or higher) with a USB port. This user interface provides for velocity (step speed), and positional (step) control. All linear position movements are relative to the home (fully retracted) position. Built-in magnetic (Hall) sensors are used to establish this home position.

To the right is a screen shot of the main control panel that is provided with the USB 4D-Stage system. This software is obtained by downloading it from our website.

It operates on any standard PC with a Windows-XP (or higher) operating system that has a USB port.

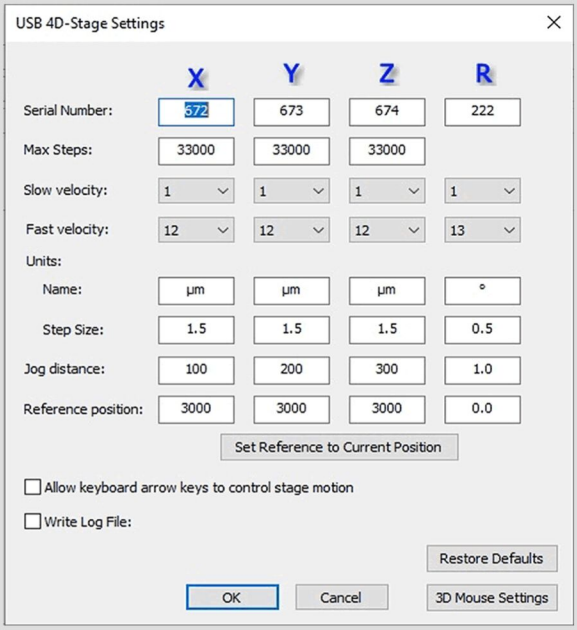
After the software has been successfully installed, simply click the 4D-Stage icon on the desktop.

The software will auto-detect the USB connections and display the Status of each axis and if properly connected, allow you to begin controlling the Stage.

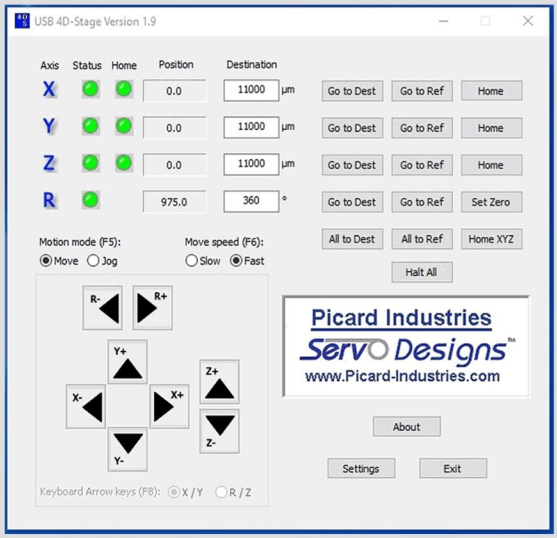
To be properly connected, the included 4-port USB Hub will need to be connected to an AC power source and its USB cable to the Hub is connected to the PC's USB port.

Use the "Change Parameter" button to set the proper motor parameters.

Any parameter change should be followed initializing the Stage by clicking the "All Home" button.



Parameter Screen



Description

The Parameter screen to the left is used to set each of the motor's serial numbers so that the application knows which motor to control for each axis.

Other motor control parameters like speed, step resolution and jog distance are also set in this screen.

Once set, they will be saved and will remain even after closing and reopening the application.

There is a click box for setting features used with the SpaceMouse control of the Stage.