



# User's Manual For MC1000e-J

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## Motion Controller



## Service Information

Please call, email, or fax in your questions to Siskiyou Corporation at:

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For a mailing address, refer to page 9.

## Product Warranty

Siskiyou Corporation products carry the following warranty, effective for a period of one year from the original invoice date unless otherwise stated in the product literature:

- Siskiyou Corporation products will be free of defects in material and workmanship.
- Siskiyou Corporation products will meet the specifications stated in this catalog.

If you find any defects in material or workmanship, or a failure to meet specifications within the warranty period, return the product to us clearly marked with a Return Authorization (RA) number and we will either repair or replace it at our discretion. Call our toll free telephone number and ask for the service department to request RA numbers.

Our warranty excludes products that have been improperly installed or maintained, modified or misused. Notification of claim must occur within the warranty period. Siskiyou Corporation's liabilities are limited as set forth in our STANDARD TERMS AND CONDITIONS, copies of which are available upon request.

Siskiyou Corporation products unused and undamaged may be returned to Siskiyou Corporation within 30 days of the initial invoice date (60 days outside of the US), but are subject to a 25% restocking fee.

## Warranty Repairs

Before shipping a part to Siskiyou Corporation, a Return Authorization (RA) number must be obtained by calling our service department at our toll free telephone number. The product must be shipped prepaid in the original or equivalent packing with the RA number clearly marked on the outside of the box. Pack carefully to prevent damage. Place actuators, stages, manipulators, and controllers in a clean plastic bag to prevent contamination from packing materials. Siskiyou Corporation cannot be responsible for any damage occurring in transit to us. Products are not accepted without a Return Authorization number on the outside of the shipping carton.

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## Introduction:

**This manual describes the operation of Siskiyou's Model MC1000e-J 3 axis joystick motion controller.**

## Specifications:

Input Power Requirements: 90-264VAC, 47-63Hz  
via included power supply adapter  
Output: 18VDC / 2.5A

## Inspection / Items Included:



Siskiyou products are shipped in sturdy, cushioned boxes. Please inspect the instrument immediately and notify the carrier if damage is obvious. Remove all items from packing materials and confirm that all items listed in the table below are available.

DESCRIPTION	QUANTITY
MC1000e 3 AXIS JOYSTICK CONTROLLER	1
MC1000e 3 AXIS JUNCTION BOX with mounting hardware	1
POWER SUPPLY ADAPTER	1
POWER CABLE	1

## Description:

The MC1000e-J is a force sensitive 3 axis joystick controller with micron positioning capability that is compatible with our 100cri, 200cri, 800 and 7000 series actuators, manipulators, and stages.

The MC1000e-J controller is a closed loop controller that enables the user to consistently perform smooth joy-stick motion as small as 1  $\mu\text{m}$ .

A two-position rocker switch is located on the top of the controller. The rapid  setting is set to maximize speed (1.7 mm/second) when the joystick is moved to its farthest position from center. The slow  setting is set to maximize resolution (0.2  $\mu\text{m}$ ) but still allow coarse positioning (20  $\mu\text{m}$ /second).

Reverse polarity switches are included for each motion direction of the MC1000e-J. By switching the polarity, the direction of motion relative to the joystick is reversed.

The MC1000e-J uses a universal switching power supply adapter as its source for clean DC power. All cables are shielded and a central ground lug is located on the junction box to ensure noise-free operation during sensitive electrophysiology experiments.

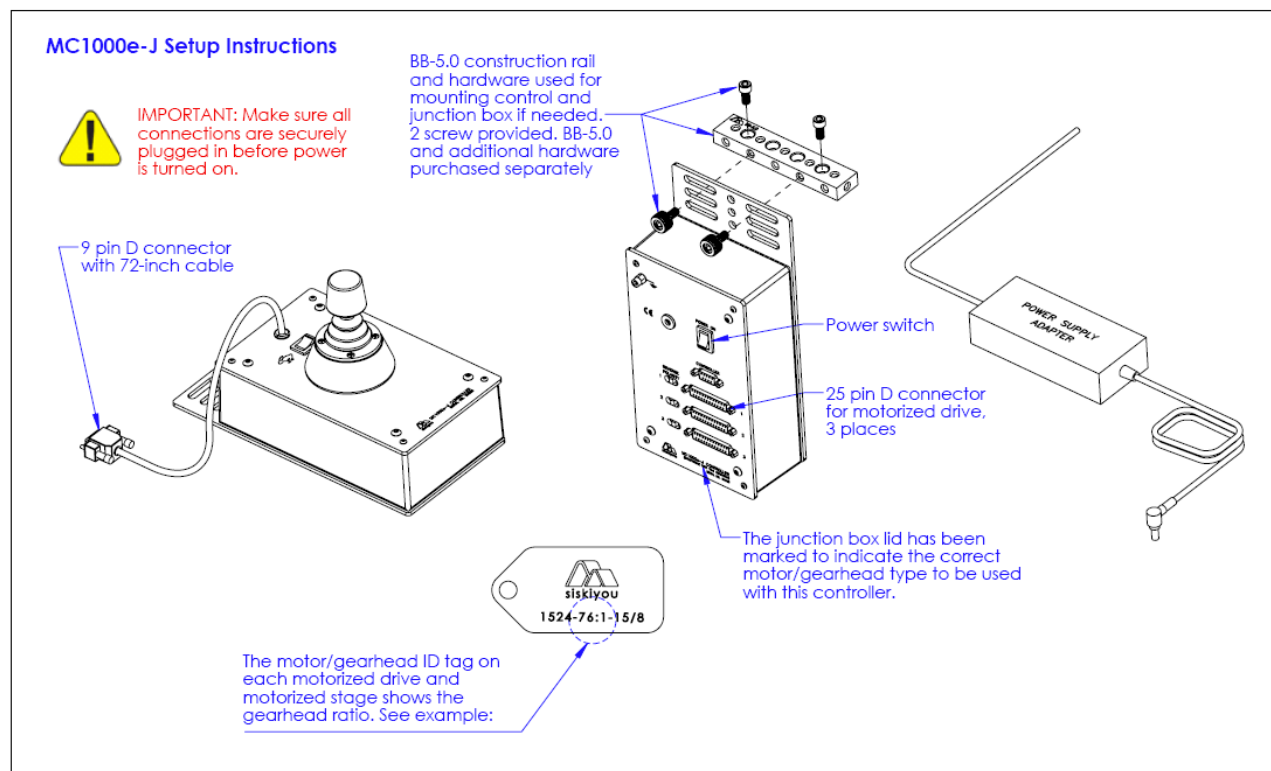


Figure 1: Interface

## Installation:



**CAUTION:** MAKE SURE ALL CONNECTORS ARE SECURELY PLUGGED IN BEFORE POWER IS TURNED ON. DO NOT REMOVE CONNECTORS WHILE POWER IS ON. FAILURE TO DO SO CAN RESULT IN A SHORT CIRCUIT AND PERMANENT DAMAGE TO THE SYSTEM.

To install the MC1000e-J, please refer to Figure 1: Interface or the supplied set up instructions. Supplied with the MC1000e-J are four ¼-20 screws that can be used to secure joystick control box and the junction box to the work station. It is also possible to use cable ties (not included) to mount the junction box.



It is advised to place the controller away from the experiment area. Any liquid that may come in contact with the controller can cause permanent damage to the system. It is also advised to add a ground wire onto the junction box and attach the free end of the wire to a metal surface outside of the system. The lug to use is labeled by the electrical symbol for “ground”:

## Interface:

### Junction Box

**Power In:** Using the supplied power adapter, the user can connect the power adapter to the junction box and supply power to the system.

**Power Switch:** The power switch turns on the junction box and the controller. This is required to be on in order to use the MC1000e-J. Turning off the power switch will cease all operations with manipulators remaining in place. The same applies to loss of power.

**Ground:** By attaching a wire from the ground lug to a metal surface (that is not part of the experimental system), the users helps prevent damage from static shock and to ensure noise-free operation while in use. The lug is represented by the electrical symbol for “ground”:



**Controller:** The 9 pin, male connector, is used for connecting the joystick controller to the junction box.

**1, 2, and 3 Ports:** The 25 pin, female connectors, are used for connecting the motor drive cables to the junction box.

**Reverse Polarity:** On the face of the junction box are three toggle/slide switches that are labeled 1 through 3 that correspond to the respective drive axes. By switching one of the toggle/slide switches, the user is able to change the direction the motor drive travels while still moving the joystick control in the same direction.

## Controller

**3 Axis Joystick:** Moving the joystick left and right will control movement to the motor drive that is connected to axis port 1. Moving the joystick up and down will move control the motor drive connected to axis port 2. Twisting the joystick knob clockwise or counterclockwise will control the motor drive axis connected to axis port 3.

**Low/High Speed:** The low/high speed switch is located on the top of the controller box and is labeled with a rabbit  on one side, and a turtle  on the opposite. When the switch is toward the turtle, the motor drive will move at a slower rate. When the switch is facing the rabbit, the motor drive will move at a faster rate.

## Operation:

When the MC1000e-J has been correctly installed, the user can begin use of the system. The operation may be bench tested prior to installing the unit to an experiment.

Moving the joystick left and right will control movement to the motor drive that is connected to axis port 1. Moving the joystick up and down will move control the motor drive connected to axis port 2. Twisting the joystick knob clockwise or counterclockwise will control the motor drive axis connected to axis port 3. The farther the joystick is moved, or the knob is twisted, from the center neutral position will result in a faster move of the stage(s).

Use the reverse polarity switches on the junction box to change the direction the motor drive travels while still moving the joystick control in the same direction.

## Maintenance and Service:

There are no user serviceable parts inside the controller or junction box. In the event of the need for service, call Siskiyou Corporation and ask to speak with technical support.

If the problem cannot be solved through telephone or email communication, an RA number will be provided to return the unit to Siskiyou Corporation.

## Related Products:

### Switching Box



ABCD switching box allows control of one to four 4-axis micromanipulators by one controller. The basis of the design is simple and requires only an extra controller junction box for each added micromanipulator or motor drive group (up to four per group). Junction boxes must be purchased separately.

### Digital Readout



The DR1000 Digital Readout provides an accurate, highly visible display for axis position. The digital readout may be installed on any of our *e* series controllers and is connected in series *via* a double-sided connector between the controller junction box and the device D connector.

## EU Declaration of Conformity

In accordance with EN 45014: 1998

Manufacturer: **Siskiyou Corporation**  
Address: **110 SW Booth Street**  
**Grants Pass, OR 97526-2410**  
**USA**

Declare that:

Equipment	Motion Controller
Model Name/Number	MC1000e Series
Serial Number	N/A

In accordance with the following directives:

2014/35/EU The Low Voltage Directive and its amending directives

2014/30/EU The Electromagnetic Compatibility Directive and its amending directives

2006/42/EC The Machinery Directive and its amending directives

2015/863/EU Restriction of use of certain hazardous substances (RoHS-3)

I hereby declare that the equipment above has been designed and found to comply with the relevant sections of the above referenced specifications. The unit complies with all essential requirements of the Directives.

Signed by:



Name: John Wingerd  
Position: Engineering  
Place: USA  
Date: February 15, 2019

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## Contact Information

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