

MP-225 MOTORIZED MICROMANIPULATOR



The **MP-225** is one of the newer products in the Sutter Instrument micromanipulator line. Production and design changes have allowed us to produce a motorized manipulator that is a more affordable alternative to the industry standard **MP-285**. While the **MP-225** feature set is less comprehensive than the **MP-285**, it includes the most popular features with a simpler user interface. The mechanical design utilizes a miniature stepper motor and integral anti-backlash gear head. Pre-loaded ball bearing slides provide smooth movement throughout the 25mm of travel. The controller uses low-noise, linear-drive output circuitry identical to that found in the **MP-285**. The methodology for mounting pipette holders and headstages used with the **MP-285** has been maintained in the **MP-225** to allow for cross compatibility.

The **MP-225** is designed primarily for positioning patch and intracellular recording pipettes. We have retained and refined the features most desired for this type of work. An extended version of the popular rotary optical encoder (ROE) is the sole input device available with the **MP-225**. Like the **MP-285**, the manipulator has a synthetic 4th axis for diagonal advancement of the pipette; 16 different angles are selectable via DIP switches. Speed and resolution of movement are easily selected with a multiple position thumbwheel, allowing fast/course movement and slow/ultra-fine movement in 10 increments. Two commonly used robotic movements have been incorporated for user convenience. A single button press can initiate a move to a Home position for pipette exchange or to a user defined Work position for quick location of the pipette

near the recording location. A display on the ROE gives position location. As all controls are located on the ROE, the controller can be moved to a less accessible area of your setup and does not need to occupy prime space in an equipment rack.

As always, our technical support team is available to address your particular needs and answer all questions before and after your purchase.

FEATURES**> MP-225**

Highly stable for experiments intolerant of pipette drift

Submicron (62.5nm) minimal resolution for fine movement

Convenient thumbwheel selects resolution/speed of movement

25mm of motorized travel on all three axes

4th axis for coaxial movement of pipette, angle selected by DIP switches on ROE

ROE button press actuates move to Home position for pipette exchange

ROE button press actuates move to Work position near recording location

Continuous display (in microns) of axes positions located on ROE

DIP switches on ROE select direction of movement produced by turn of ROE knob

Modularized, compact design easily adaptable to your setup

Universal mounting system for headstage or pipette holder

Mounting adapters included with manipulator

SPECIFICATIONS**> MP-225****Travel**

25mm on all three axes

Resolution

Six microstep sizes selectable ($\mu\text{m}/\text{ustep}$): 0.0625, 0.125, 0.25, 0.5, 1.0 and 2.0

Finer movement settings use the 62.5nm microstep size but fewer microsteps are commanded per encoder knob turn

Maximum Speed

2.0mm/sec

Long Term Stability

1-2 $\mu\text{m}/\text{hour}$ maximum

Drive Mechanism

Integral miniature stepper motor anti-backlash gearhead

Dimensions

Mechanical: 4in x 5.5in x 6in
10cm x 15cm x 15.5cm

Controller: 4in x 16in x 12.25in
10cm x 40.5cm x 31cm

Weight

Manipulator: 2.95lbs /1.3kg

Controller: 10lb 11oz/4.5kg

Electrical

115/230 Volts

50/60 Hertz power line

