

MP-225

MOTORIZED MICROMANIPULATOR



FEATURES MP-225

- Highly stable for experiments intolerant of pipette drift
- Submicron (62.5nm) minimal resolution for fine movement
- Convenient toggle wheel 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



The MP-225 represents an economical alternative to the MP-285 and MPC-365. In 2002, production and design changes allowed us to produce this motorized manipulator as 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 an efficient 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 switch, allowing fast/coarse 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.



SPECIFICATIONS MP-225

■ Travel	1 inch – 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	<table> <tr> <td><i>Mechanical:</i></td><td><i>Controller:</i></td></tr> <tr> <td>4in x 5.5in x 6in</td><td>16in x 11in x 3.75in</td></tr> <tr> <td>10cm x 15cm x 15.5cm</td><td>40.6cm x 28cm x 9.6cm</td></tr> </table>	<i>Mechanical:</i>	<i>Controller:</i>	4in x 5.5in x 6in	16in x 11in x 3.75in	10cm x 15cm x 15.5cm	40.6cm x 28cm x 9.6cm
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■ Weight	<table> <tr> <td><i>Manipulator:</i></td><td><i>Controller:</i></td></tr> <tr> <td>2.95lbs /1.3kg</td><td>10lb 11oz/4.5kg</td></tr> </table>	<i>Manipulator:</i>	<i>Controller:</i>	2.95lbs /1.3kg	10lb 11oz/4.5kg		
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■ Electrical	115/230 Volts 50/60 Hertz power line						



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- **MP-225** Includes manipulator, table top controller unit, extended ROE, hinged headstage mount, cables, rod holder, 4in dovetail extension, mounting adapter plate, screws, hex wrench, power cord and manual*
- * Indicate right- or left-handed set-up when ordering.

ACCESSORIES MP-225

- **285204** 4 inch dovetail extension
- **285210¹** Mounting adapter plate
- **225RBI** Rotating base for MP-225
- **285300** Right angle adapter
- **285305** Z-axis vertical extension
- **285310** Z-axis horizontal extension
- **BR-AW** Rod holding clamp for XenoWorks® injectors
- **MP-ROD** Rod holder
- **285HEA** Hinged headstage mount
- **M100106** Flat side panel for controller (each)

For detailed information on mounting our micromanipulators, refer to the Mounting Systems section or phone for assistance.

¹ For use with MT and MD series stands and platforms, or any surface with 1 inch centered holes.



MECHANICAL DRAWINGS MP-225

