



OPTIMIZED FOR SINGLE CHANNEL RECORDING

HIGHLY STABLE FOR EXPERIMENTS INTOLERANT
OF PIPETTE DRIFT

SUB-MICRON RESOLUTION AND INTEGRATED
COARSE POSITIONING

1 INCH OF MOTORIZED TRAVEL ON ALL THREE AXES

VIRTUAL 4TH AXIS CAN BE SET WITHOUT NEED OF
EXTERNAL COMPUTER OR SOFTWARE

ADJUSTABLE SPEED AND RESOLUTION ALLOWS
OPTIMIZATION FOR YOUR EXPERIMENTAL SETUP

PROGRAMABLE ROBOTICS FOR COMPLEX MOTION SEQUENCES

CONTINUOUS DISPLAY (IN MICRONS) OF AXES POSITIONS

SWITCH BETWEEN CONTINUOUS OR SINGLE STEP MOVEMENT

ABSOLUTE AND RELATIVE ORIGINS



MP-285 ROBOTIC MICROMANIPULATOR

One of the first in our line of precision motorized micromanipulators, the **MP-285** is affordable yet offers advanced features found in manipulators costing thousands more. Custom engineered stepping motors, precision cross-roller bearing slides and proprietary worm gear capstan drives form the basis of the watch-like mechanical system. The controller provides power to the stage motors with a quiet linear power supply to minimize electrical noise radiation in your setup. Pipette holders and headstages are securely mounted to the **MP-285** with one of our several unique and rigid mounting systems.

The **MP-285** was designed to meet a wide variety of positioning needs for the scientific community and is suitable for patch clamp experiments, extracellular recording, microinjection, intra-cellular recording and precision robotic positioning applications. An outstanding feature of this system is the unique definable 4th axis for diagonal advancement of the pipette. You select the angle, then activate the 4th axis. As with the other three axes, you may move

with adjustable coarse or ultrafine resolution, select the movement speed, and move continuously or in single step increments. To quickly reposition the pipette, simply select the HOME function. Axes positions are continuously shown in relative and absolute scales, and are easily readable on the vacuum fluorescent display.

The extremely low backlash of the **MP-285** removes traditional drawbacks of "open loop" technology and eliminates drift. This allows submicron resolution down to 0.2 microns in the coarse range and down to 40 nanometers in the fine range. With over 1 inch of motorized travel on all three axes, and a user designated 4th axis, the **MP-285** allows tremendous range of motion while maximizing resolution.

In all our manipulators, the 4th axis can be set up and changed without the need to connect an external computer and download and configure software. Unlike other designs, the virtual 4th axis in the **MP-285** can comprise any two axes — conventional X-Z to approach along the pipette

axis, Y-Z used when the manipulator is rotated 90 degrees, and you can even set up a virtual diagonal in the X-Y plane: useful when the manipulator is set up as a 3DMS (3D movable stage) and one wants to quickly move along the diagonal between two points on a horizontal specimen.

Available with a table-top or rack-mounted controller, our manipulator fits in seamlessly with your other components while the compact design and assignable axes of the **MP-285** allow you to easily integrate it into your setup at any orientation. To add to its practicality, the rotary optical encoder (ROE), assures a comfortable experimentation environment, customized to the scientist. Turning one of three 2-inch knobs produces a movement along one axis proportional to the amount and speed of the turn. Buttons allow the activation of "4th axis", change of movement resolution, HOME return function, and toggle between continuous pulse movements.

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SUTTER INSTRUMENT



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For users who require repeatable motion sequences, the **MP-285** features easily programmed robotic control from the keypad, or via a remote computer. The system can store up to 500 position instructions, including pauses, and will execute the instruction set once, continuously, or in reverse.

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

- MP-285/R**

Includes manipulator, rack mount controller unit, rotary optical encoder, cables, rod holder, hinged headstage mount, 4 inch dovetail extension, mounting adapter plate, choice of input device, power cord, and manual
- MP-285/T**

Includes manipulator, table top controller unit, rotary optical encoder, cables, rod holder, hinged headstage mount, 4 inch dovetail extension, mounting adapter plate, choice of input device, power cord, and manual

When ordering the MP-285, the handedness must be specified. Please list as separate item with no cost.

Select the manipulator handedness

- Right-handed setup
- RIGHT**
- Left-handed setup
- LEFT**

ACCESSORIES

- 285204**

4 inch dovetail extension
- 285210¹**

Mounting adapter plate
- 285RBI**

Rotating base for MP-285
- 285300**

Right angle adapter
- 285305**

Z-axis vertical extension
- 285310**

Z-axis horizontal extension
- BR-AW**

Rod clamp for XenoWorks® injectors (for rod OD 2 mm to 4 mm)
- BR-AW-L**

Long rod clamp for XenoWorks injectors (for rod OD 2 mm to 4 mm)
- MP-CLIP²**

Rod holder (for rod OD 1 to 4.5 mm)
- MP-ROD**

Rod holder (for rod OD 6.25 mm or larger)
- 285HEA**

Hinged headstage mount
- M100106**

Flat side panel for controller (each)
- EHOLDER**

Micropipette holder – 1.0-1.5 mm glass

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

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

² Suitable for multi-electrode probes..

