

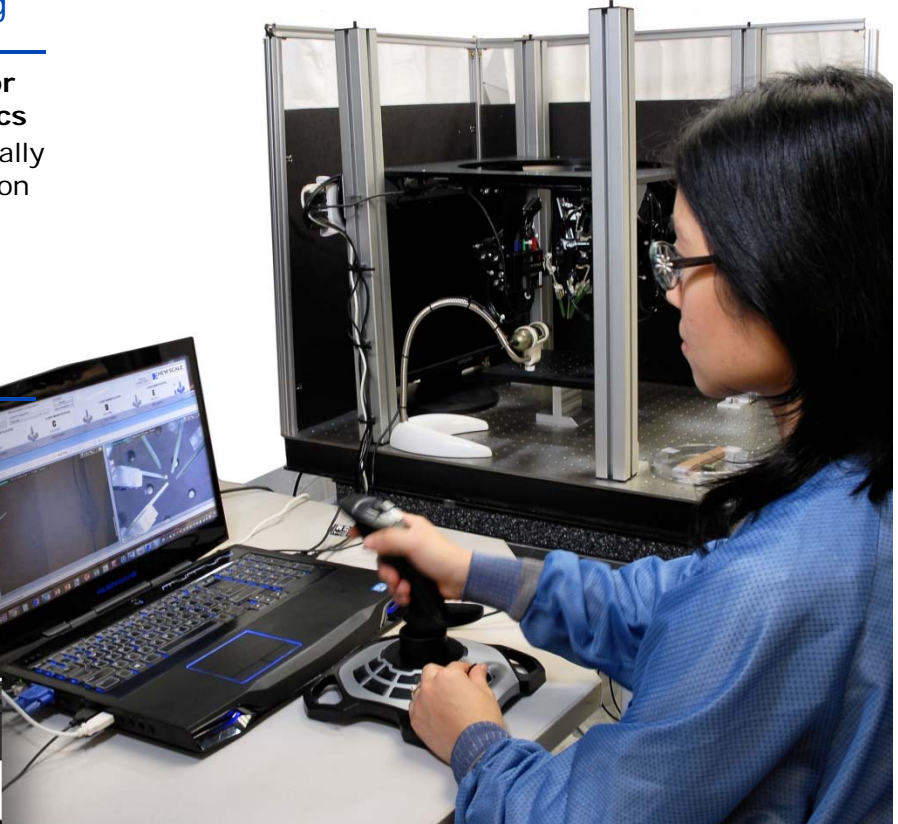
MPM

Multi-Probe Micromanipulator System

Maximize your productivity and precision during acute in-vivo recording

Automated probe positioning for electrophysiology & optogenetics

- Five probes (15 axes) automatically positioned from one PC application
- Fully engineered apparatus space-optimized for upright or inverted experiments
- Optional probe mounting kits
- Optional joystick control



Created with Scientists, for Scientists

The MPM Multi-Probe Micromanipulator System provides convenient, automated positioning of multiple neural probes for acute in-vivo recording. It is the first micromanipulator designed specifically for use with silicon probes.

The MPM System is simple to set up and operate. The compact design allows for independent positioning of up to five probes in the smallest space, with ample clear area for a virtual task environment.

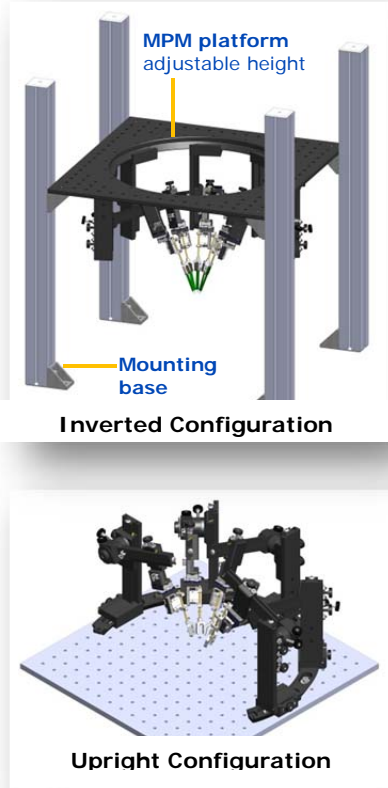
Each probe arm has four degrees of freedom for initial pre-adjustment, along with three axes of motion for automated positioning. The motorized positioners allow precise control of x-y location and z insertion depth, automatically and independently moving each probe to the optimum location in the brain.

All five micropositioners – a total of 15 axes of automated motion – are controlled from a single PC screen using the fully-integrated motion control software included with the system.

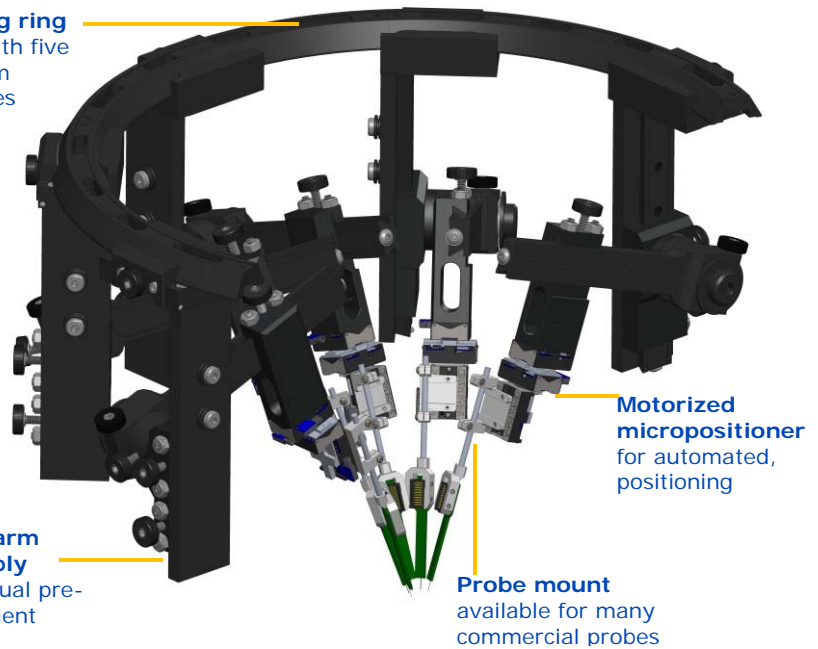
In addition to silicon probes with hundreds of channels, the MPM System is compatible with tetrodes and other probes. It can be used to simultaneously position optical waveguides or optical fibers for research combining electrophysiology with optogenetic stimulation.

Rapid and Accurate Positioning of Multiple Neural Probes

A mounting ring allows five probe arm assemblies to be positioned around the target. The ring mounts to standard laboratory tables with imperial or metric hole patterns. Alternatively, it can be mounted to an elevated platform to maximize space below the probes for animal interaction with a virtual task environment.



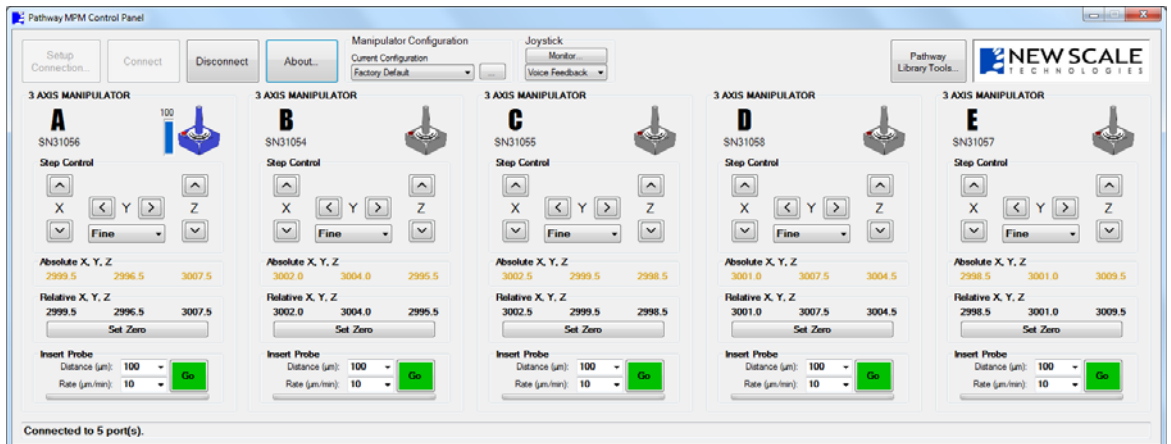
Mounting ring
Shown with five probe arm assemblies



Intuitive PC Control Application

A single USB connects all manipulators to a PC. New Scale software allows all five three-axis motorized micromanipulators – 15 motorized axes – to be independently controlled from one screen. Use standard point and click commands or an optional joystick controller.

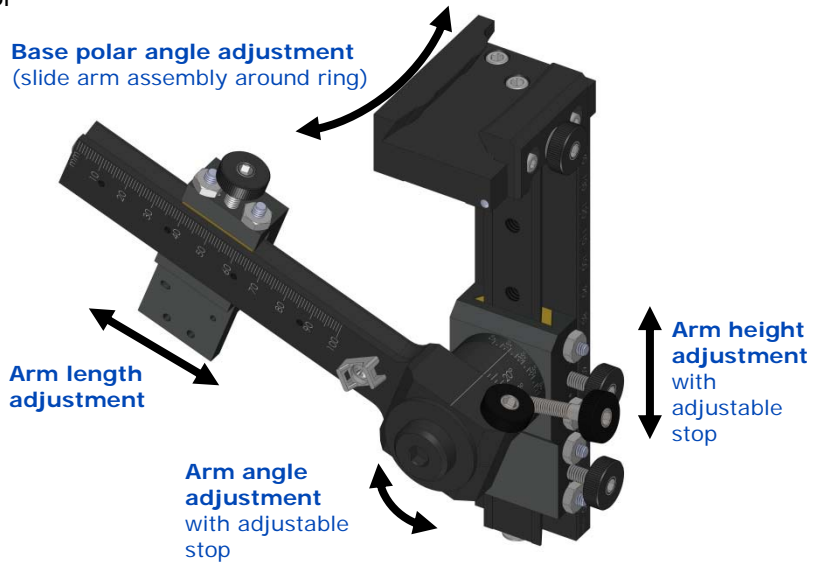
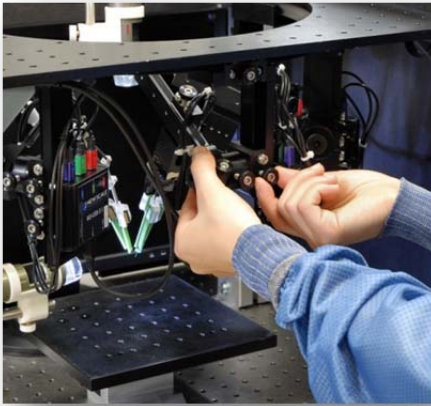
Choose from coarse, fine and insertion step modes. See the display of absolute axis positions as well as configurable relative axis positions. The automated probe insertion mode provides very slow z-axis motion, letting you set the speed and distance, while disabling motion for the x and y axes.



4-DOF Manual Pre-Adjustment plus 3-Axis Motorized Positioning

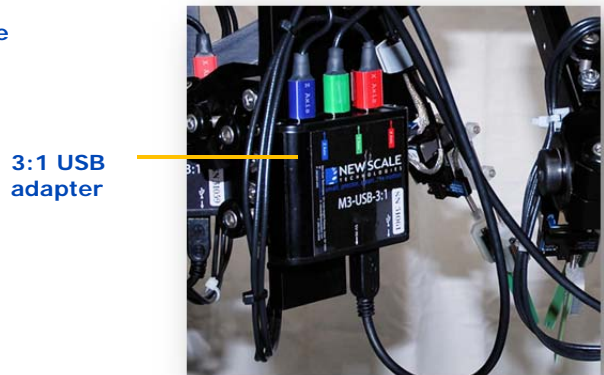
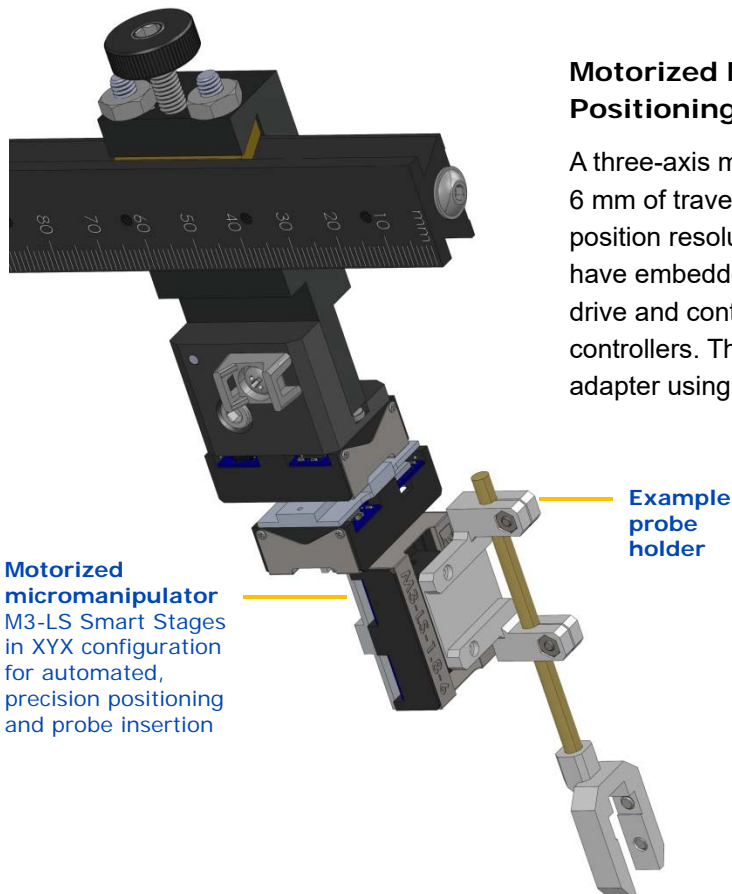
Probe Arm Assembly for Manual Pre-Adjustment (BPM-4 DOF ARM)

Five or more probe arm assemblies can be positioned around the mounting ring. The arm length, height and angle are adjustable, with adjustable stops for repeatable positioning.



Motorized Micromanipulator for Automated Positioning (M3-LS-1.8-6-XYZ)

A three-axis motorized stage assembly on each arm provides 6 mm of travel along each axis with 0.5 micron closed-loop position resolution. New Scale's M3-LS Linear Smart Stages have embedded SQUIGGLE piezoelectric motors along with all drive and control electronics, eliminating the bulk of separate controllers. The three stages on each arm connect to a 3:1 USB adapter using clearly marked connectors.



Fully Configurable, Fully Integrated

MPM Systems are fully configurable for number of probe arms, inverted or upright position, and type of probe holders.

Each system is complete and easy to assemble with the tools and hardware provided. All cables and connectors are labeled including standard USB cables to the PC. The MPM software installs on your Windows PC in minutes.

Note: It is possible to install more than five probes in the apparatus by using additional ring arcs. However, each MPM software screen is limited to five probes. Multiple screens must be opened for more than five probes. Please contact us for special instructions.

Ordering information

Components	Description
<i>Items Needed for Each MPM System</i>	
MPM-System Kit	Kit includes mechanical hardware, instructions, USB Hub, USB cables, and MPM Software.
MPM-Ring-72-DEG	Mounting Ring for 72-Degree Section Minimum required: ONE for 1-2 probes, TWO for 3-4 probes, THREE for 5 probes.
MPM-Platform (Optional)	Inverted platform for mounting rings and MPM micromanipulators.
MPM-Joystick (Optional)	Joystick with USB connection to operate MPM software.
<i>Items Needed for Each Probe</i>	
MPM-4 DOF ARM-X	MPM Four-DOF manual positioner Specify inverted or upright configuration (X = UPRIGHT or X=INVERTED)
M3-LS-1.8-6-XYZ	Three-axis motorized micromanipulator. Includes: (3) M3-LS-1.8-6 Linear Smart Stages (3) M3-CAB-1.8-6-2 Cables (1) M3-USB-3:1 Adapter All assembled into X-Y-Z configuration
MPM-Probe Mount-X (Optional)	Mounting bracket and kit for specific probes Contact us for standard and custom options.

Additional information

Visit the website for videos and more information, or call us to configure an integrated MPM system for your research lab.



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