

## MMO-202ND

Three-axis Hanging Joystick Oil Hydraulic Micromanipulator

### Three-dimensional joystick operations in an intuitive manner

The MMO-202ND micromanipulator features an oil hydraulic joystick enabling smooth three-dimensional movement. Since operation is intuitively done by joystick, it is suited for handling a drifting specimen. The hanging joystick allows users to maintain operation with their arms and hands placed comfortably on the table for longer periods. A coarse manipulator is also available for use in combination with this manipulator.

Accessories included	IP Iron Plate, UT-2 Universal Joint, Hex Wrench		
Movement range	Fine	X10 mm, Y10 mm, Z10 mm	Full rotation of knob 250 µm Minimum graduation 2 µm
		Joystick (for maximum movement in X-Y plane) 2 mm	
Dimensions/Weight	Control unit	W165 x D60 x H175 mm, 1.85 kg	Drive unit
	Drive unit	W40 x D46 x H87 mm, 180 g	
Hydraulic tube length	0.9 m		

\* Please contact your local Narishige representative for the model with full rotation of knob 500 µm (MMO-202ND-500).  
\* Select NRNR2 adaptor for mounting this manipulator in combination with MMN-1 coarse manipulator.



## MO-202U

Three-axis Joystick Oil Hydraulic Micromanipulator

### Upright joystick with excellent ease of use

The MO-202U micromanipulator can be operated smoothly by three-dimensional oil hydraulic joystick. Since operation is intuitively done by joystick, it is suited for handling a drifting specimen. The upright joystick with a hand rest permits more precise control. A coarse manipulator is also available for use in combination with this manipulator.

Accessories included	UT-2 Universal Joint, Hex Wrench		
Movement range	Fine	X10 mm, Y10 mm, Z10 mm	Full rotation of knob 500 µm Minimum graduation 4 µm
		Joystick (for maximum movement in X-Y plane) 2 mm	
Dimensions/Weight	Control unit	W130 x D130 x H220 mm, 1.86 kg	Drive unit
	Drive unit	W40 x D51 x H87 mm, 180 g	
Hydraulic tube length	0.9 m		

\* Please contact your local Narishige representative for the model with full rotation of knob 250 µm (MO-202U-250).  
\* Select NRNR2 adaptor for mounting this manipulator in combination with MMN-1 coarse manipulator.



## MMO-203

Three-axis Oil Hydraulic Micromanipulator

### Excellent operational linearity on each axis by knob

The MMO-203 micromanipulator provides hydraulic drive system with smooth, vibration-free, three-dimensional movements. As a successor to the vernier type, it features a big cylinder control unit which enables very fine operation and high reproduction of the linear position. A coarse manipulator is also available for use in combination with this manipulator.

Accessories included	B-8C Ball Joint, H-7 Pipette Holder		
Movement range	Fine	X10 mm, Y10 mm, Z10 mm Full rotation of knob 250 µm Minimum graduation 1 µm	
Dimensions/Weight	Control unit	W115 x D115 x H132 mm, 1.6 kg	
	Drive unit	W40 x D51 x H87 mm, 180 g	
Hydraulic tube length	0.9 m		



## MMO-220A

One-axis Oil Hydraulic Micromanipulator

### Fine movement in the pipette direction with three-dimensional manipulator

The MMO-220A micromanipulator features an add-on one-axis oil hydraulic model with which three-dimensional manipulator allows enhanced movement in the same direction of the pipette. The pipette movement in axial direction is able to minimize the chance of damaging the cell.

Movement range	Fine	10 mm Full rotation of knob 250 µm Minimum graduation 1 µm
Dimensions/Weight	Control unit	W70 x D115 x H100 mm, 1.15 kg
	Drive unit	W52 x D20 x H35 mm, 38 g
Hydraulic tube length	0.9 m	

