

# “Highly Recommendable” Products for Patch Clamp Recording

## For use with Nikon TE2000

In recent years, motorized manipulators have come into wide use, while its automatic manipulation system is not easily adaptable to diverse objects. To the contrary, hydraulic and manually controlled manipulators permit precise maneuver by the operator’s hand, which contributes to increased success rate and keeps the operator from missing target cells. That’s exactly the technology Narishige has proven over the years.

### Water Hydraulic System MHW-3

Remote controlled water hydraulic system free from hands movement. The time-proven manipulator widely supported by many users

### Manually-Operated NMN-21

Free from drift occurrence and electrical noise. Albeit manually operated, the special mechanism makes hand vibration hardly detectable. Available at an affordable price.

#### Typical Combinations

	Example 1 Standard Combination	Example 2 Reasonable Combination	Example 3 Drift-free Combination
Mounting Adaptor	NN-L3 x 1	NN-L3x 2	NN-L3 x 1
Micromanipulator for recording	MHW-3	MHW-3	NMN-21
Micromanipulator for stimulating	MHW-3	NMN-21	NMN-21
Patch Clamp Headstage Holder	For connecting to a patch amplifier, use a separately available patch clamp headstage holder adaptable to each headstage model.		

#### NN-L3

Permits either front-mounted or rear-mounted on the stage.

##### Stage Rear Mount

Double-railed mounting adaptor to install the remote-control MLW-3

##### Stage Front Mount

To make NMN-21 easy to operate

#### MHW-3

1. Using water in place of oil reduces the expansion factor to approx. 1/4↘
2. The use of 1:5 cartridges reduces drift to approx. 1/5↘

**All this adds up to reduce the rate of drift occurrence to about 1/20↘ as compared to conventional oil hydraulic system.**

#### MHW-3 Controller

Remote control system allows hand vibration-free operation without having to touch the microscope. Controllers can be placed in an easy-to-operate position.

#### NMN-21

Drift-free manual control. The special mechanism helps absorb hands shaking into the main body and thus hand vibration is hardly detectable even under high magnification.

