

Oil-hydraulic Micromanipulators

3D Hydraulic Micromanipulator NT-88-V3

Combined 3D motor-driven coarse control micromanipulator and the 3D hydraulic fine micromanipulator realize remarkably compact and stable design.

- Less than half the size of a conventional model—minimal length tubes and cords—the manipulator fits easily into the incubator.
- Closer-to-the-center settings are possible, while reduced distance from manipulator mount to microelectrode tip increases stability.
- X-axis control knobs are located symmetrically on opposite sides of the joystick to eliminate left side/right side positioning problems.
- 10mm X-Y operating range provides versatility in manipulation at lower magnifications.
- A "resume" feature returns the pipette to the original position after the pipette has been raised for quicker, easier Petri dish changes.
- The universal joint is outfitted with an angle gauge, which ensures accurate-angle operation. The forward-mounted return mechanism facilitates Petri dish changing.
- Permits one-touch installation on an inverted microscope.



Hanging joystick design for optimal ergonomics and user comfort during long periods of use.

Hydraulic Fine Micromanipulator		
Working range	Control Knob operation	Max. 10mm
	Joystick operation	Max. 2mm
Displacement by Control Knob rotation	Full turn of knob	250µm
	Minimum graduation	2µm
Motorized Coarse Manipulator		
Working range		Max. 22mm

3D Hydraulic Micromanipulator (Single-hand type) NT-88-V3SH

Suitable for experiments that do not require the holding side's pipette, such as the microinjection or microdissection to an adherent cell.



3D Hydraulic Micromanipulator (Manual Single-hand type) NT-88-V3MSH

A manual 3D coarse positioning manipulator allows you to quickly move the micro-pipette to the ideal position. And the compact design allows you to position it closer to you with the control knob in easy reach.



Universal Joint UJ-V3

Universal Joint UJ-V3 allows the pipette holder to be moved in a single direction. The angle can be adjusted for both vertical and horizontal directions via two separate control knobs. The forward-mounted return mechanism facilitates changing the petri dish while the built-in angle gauge ensures accurate-angle operation. Moreover, because the UJ-V3 is mountable from above, unlike the conventional type, attachment and removal is much easier.



Oil-type Microinjector IM-9B Pneumatic Injector IM-9C

These injectors provide smoother and more stable maneuverability by applying a new mechanism to minimize backlashes. Also, its 53mm working distance, large-volume syringe and just-the-right-size control knob with graduated scales all contribute to easy control of the injection. The IM-9B has a finely-ground metal syringe for smoother movement, while its new tube connector with a multi-purpose valve makes for easier filling of oil without generating air bubbles.



	IM-9B	IM-9C
Movement distance		
Movement range	53mm	53mm
Full rotation of knob	500µm	6mm
Minimum graduation	10µm	120µm
Control value		
Full rotation of knob	10µl	480µl
Minimum graduation	0.2µl	9.6µl
Syringe	1.1cc metal type	4.2cc glass type

Pipette Holder HI-7 with Rotating Mechanism HIR



The HI-7 pipette holder provides improved protection against oil leaks. Alignment of the pipette tip in the microscope field is now a simple procedure with the rotating mechanism HIR.

Microscope Adapters for NT-88-V3

Various adapters are available for use with Nikon microscopes. As both adapters and manipulators are compact, attaching them is very easy.



NS-TEV3
Mounting Adapter to use with inverted microscope TE2000

NS-T1
Mounting Adapter to use with inverted microscope TS100

NS-SMV3
Mounting Adapter to use with stereoscopic microscope SM2 series. It can be adapted to the diascopic stand of the SM2 series.

NS-FNV3
Mounting Adapter to use with fixed stage microscope FN1. Two adapters are necessary when mounting a micro-manipulator on both sides.