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# **MHW-103** Three-axis Water Hydraulic Micromanipulator

#### For patch clamping in a wide driving range.

Liquid hydraulic micromanipulators developed for patch clamping generally use the 5:1 cartridge system to solve the problem of drifting. Since this can limit their driving range to as little as 2mm, customers who want a wide driving range are recommended to choose this product, which uses a 1:1 cartridge. The drum type control unit has a large handle for precise operation and high linear repeatability. The water hydraulic system is less prone to drift caused by changes in temperature than an oil hydraulic system, and is thus more suitable for patch clamping. A coarse manipulator is not mounted, so must be purchased separately.



- \* For attachment to the microscope, a coarse manipulator and suitable mounting adaptor are required (sold separately).
- \* Select TypeB adaptor for mounting this manipulator in combination with  $\underline{\mathsf{MMN-1}}$  coarse manipulator.



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### Specification

Accessories included		<u>B-8C</u> Ball Joint <u>H-7</u> Pipette Holder Hex Wrench
Movement range	Fine	X10mm, Y10mm, Z10mm Full rotation of knob 250µm Minimum graduation 1µm
Dimensions/Weight	Control unit	W115 × D115 × H132mm, 1.6kg
	Drive unit	W40 × D51 × H87mm, 180g
Hydraulic tube length		0.9m

### System Diagram



refers to the model itself with standard attachments

refers to attachable main accessories

refers to types of mounting adaptors

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