

MICROFORGE

Microforge Model MF-830 and MF-900 resemble each other in appearance but you see a big difference between them. In this issue, we clarify such differences.

◆◆ Differences in Intended Use ◆◆

The biggest difference between MF-830 and MF-900 lies in their intended uses. MF-830 is intended for electrophysiological experiments, while MF-900 is intended for microinjection. Features vary depending on the intended use.



MF-830 Intended Use

This model is used exclusively for fire polishing the tip of a microelectrode to smooth it in order to avoid causing damage to a cell in patch clamp recording. High magnification microscope is provided to fire polish a microelectrode with its tip being 2 μm in diameter.



MF-900 Intended Use

This is a multifunctional general-purpose model that is capable of fabricating various kinds of micropipettes so as to be used for diverse applications. In addition to fire polishing, it permits cutting, bending and making a spike. Suitable for the fabrication of the tip of a micropipette.

◆◆ Differences in Features ◆◆

Model	Eyepiece		Objective			Total Magnifications	Microscope Drive Unit			Manipulator		Adaptable Glass Capillary
	x 10	x 15	x 5	x 10	x 35		Focus	Tilt	Swing	For Pipette	For Heater	
MF-900	○		○	○		50/100 times	○	○	○	X-Z Coarse	3-axis Coarse	O.D.1mm
MF-830		○	○		○	75/525 times	○			X-Z Coarse	3-axis Coarse + Z-axis Fine	O.D.1~1.5mm

★ Point of Difference 1 : Lens ★

MF-830 has a high power microscope of a magnification up to 525 times in order to fabricate the thin tip of a microelectrode, while MF-900 has a microscope of a magnification up to 100 times to fabricate the tip area of a micropipette. Optional lenses are available for MF-900 to raise the power.

★ Point of Difference 2 : Drive Unit ★

MF-830 has a heater manipulator with Z-axis fine movement to bring a microelectrode close to the heater, while MF-900 has the heater unit attached to its microscope which incorporates the swing and tilt mechanism to enable the operator to perform, at his fingertips, fabrication of micropipettes used for diverse applications.

★ Point of Difference 3 : Adaptable Glass Capillary ★

MF-830 can hold a φ 1-1.5mm glass capillary, while MF-900 is used exclusively for φ 1mm glass capillaries. If you want to allow the MF-900 to hold a glass capillary larger than φ 1mm, please consult us for advice.

<Bits of Knowledge>

There are two types of pipettes generally called "pipette". One is "called "microelectrode", the other is called "micropipette". Are you aware of the difference between them?

A "pipette" is originally one of the tools for analytical use in chemical experiments and used to measure or transfer precise volumes of a liquid by drawing the liquid up into the pipette. Therefore, the word "micropipette" is used in microinjection involving injection and aspiration of minute amounts of solution. On the other hand, the word "microelectrode" is used in electrophysiology when it is used for recording electric potential.