

Micromanipulator

MS-320D/MS-320U



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Introduction

The advanced Micromanipulator System is a cutting-edge solution for precise IVF procedures including IMSI, ICSI, and PGT biopsy. Engineered for exceptional precision, it features high-resolution motor modules with movement accuracy under $1\mu\text{m}$ and step accuracy below 20nm. The system prioritizes safety and efficiency with innovative features like automatic needle tip tracking during angle adjustments and a customized 4x objective that eliminates the need for constant refocusing. Enhanced user comfort is achieved through an ergonomic controller design with a 9° tilt and intuitive joystick control for fine/coarse 3D manipulation. Compatible with both oil and pneumatic injectors in single and dual-stage configurations, this system delivers the perfect balance of precision, safety, and user-friendly operation for modern IVF laboratories.



Motor module



Microinjector(oil & pneumatic)

Product Features

1. Safe

- No need to re-find the needle tip in the microscope while adjusting the angles
- Avoiding micropipettes break by using 4x auxiliary objective

2. Precise

- Motor module with $1\mu\text{m}$ movement precision and 20nm step size (computational resolution) $1\mu\text{l}$ and $10\mu\text{l}$ tuning resolution for oil microinjector and pneumatic microinjector respectively

3. Convenient

- 4 different individual settings



Controller

-6 buttons for speed & positioning, switching for fine & coarse, raising the micropipette, counting and standby respectively.

-Two programmed positions and restrict the moving range of the tipsothers.

Technical Specifications



Controller model	MS-320D	MS-320U
Joystick type	Inverted	Upright
Control method	Dual-model of speed/position, one joystick for movement control in X-Y-Z axis	
Dimension(W*H*D)mm	202*270*225	200*275*130
Step size(computational resolution)	Less than 20nm	
Maximum speed	0~10,000μm/s	
Weight	1.85kg	1.65kg
Power	24VDC/40W	

Model module	
Travelling distance	20mm
Stepper motor	X,Y,Z module
Distance precision	less than 1μm
Dimensions	134mm*55.5mm*43mm
Direction of rotation	15-45°
Weight	2.6kg

Microinjector type	Senior oil microinjector MS-O-505D	Oil microinjector MS-O-505S	Senior pneumatic microinjector MS-A-520D	Pneumatic microinjector MS-A-520S	Pneumatic microinjector MS-A-330S
Moving distance	Maximum distance: 50mm	Distance of coarse adjustment per revolution: 0.5mm	Maximum distance: 50mm	Distance of coarse adjustment per revolution: 2mm	Maximum distance: 30mm; distance per revolution: 3mm
Maximum pressure	2 MPa		0.1 MPa		0.2 MPa
Cylinder volume	1ml		2.5ml		6ml
Volume change per revolution	10μl/1μ	10μ	100μl/10μ	100μl	600μl
Dimensions	265mm*60mm*85mm		265mm*60mm*85mm		225mm*60mm*85mm
Weight	1.85kg		1.75kg		1.5kg

Configuration	1*micromanipulator(2*controller+2*motor module+2*microinjector)
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