

XENOWORKS™ MICROINJECTION SYSTEM



XenoWorks™ is a microinjection system designed to meet a wide variety of applications including ICSI, ES Cell, Nuclear Transfer, and Pronuclear Injection. Our experience with precision motor control has culminated in this state-of-the-art system.

The **XenoWorks Micromanipulator** uses stepper motor control to provide exceptional mechanical stability and sensitivity. It has six speeds, work, home and Z-axis limit memory positions and uses an inverted joystick for excellent ergonomics.

The **XenoWorks Digital Microinjector** was designed for precision microinjection and manipulation of cells via an easy-to-use interface. The **Digital Microinjector** has two pressure ports; one is designed for holding suspended, non-adherent cells and a second port is available for both high-pressure injection or lower pressures required for embryonic stem cells or nuclear transfer. Injection duration and pressure are easily adjustable using the knobs on the remote interface. Our quite built-in compressor removes the need for an external pressure supply, making the system very portable.

The **XenoWorks** system also includes the **Analog Microinjector** which is used for simple cell holding and transfer applications, and low pressure microinjection.

APPLICATIONS

- Embryonic stem cell transfer into blastocysts (ES Cell)
- Mouse intracytoplasmic sperm injection (Piezo ICSI)
- Intracytoplasmic sperm injection (ICSI)
- Nuclear Transfer (NT)
- Pronuclear Injection
- Adherent Cell Microinjection
- Additional applications – Contact Sutter

SYSTEM FEATURES > XENOWORKS

MICROMANIPULATOR

- Exceptionally smooth and responsive micropipette movement
- Six speeds – course to fine
- Adjustable joystick (height and tension) for optimal ergonomics
- 25mm of movement in three axes
- Pure X movement (Y lock-out)
- Work, Home and Z-axis limit memory positions

DIGITAL MICROINJECTOR

- Built-in Compressor – very quiet
- Two pressure ports: “Hold” and Inject/Transfer
- Two injection modes – continuous and pulse
- 4 Transfer/Compensation Pressure Range settings – Low to High
- Up to 80 psi of injection pressure
- Remote keypad and foot switch
- Clear mode

ANALOG MICROINJECTOR

- Coarse and fine control
- Use with Air, Water or Oil
- Interchangeable syringes to modify sensitivity

XenoWorks should be used only for research purposes and in accordance with appropriate legislative requirements. Purchase of and use of a XenoWorks product does not convey a license to employ the applications mentioned here.

SUTTER INSTRUMENT

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SPECIFICATIONS**> XENOWORKS MICROMANIPULATOR****JOYSTICK CONTROL**

Inverted joystick with adjustable height and tension, 6 speeds: course to fine, touch sensitive declutch, Set-up feature, pure x-axis using y-axis lockout

SPEED SETTING – DISTANCE OF TRAVEL (ONE FULL JOYSTICK SWING)

(C) = 12.7mm, (1) = 3.3mm, (2) = 880um, (3) = 400um, (4) = 200um, (5) = 100um

MEMORY POSITIONS

“Setup” – system defined, places all 3 axes in an ideal starting position

“Work” – user defined

“Home” – system defined

“Floor” – user defined z-axis limit

MAXIMUM SPEED / TRAVEL RANGE

5.5mm/s / 25mm

ROD HOLDER

4mm outer diameter

CAPILLARY GLASS

1mm outer diameter

ELECTRICAL

115/230 Volts

50/60 Hertz

SPECIFICATIONS**> XENOWORKS DIGITAL MICROINJECTOR****FUNCTIONS**

Hold, Inject, Transfer, Clear

TWO PRESSURE CHANNELS

Hold and Inject/Transfer

INJECTION MODES

Pulse and Continuous

PRESSURE RANGE

Hold: -350 to +350 hPa (-5 to +5 psi), in 1hPa increments

Inject: 0 to 5,600 hPa (0-80 psi) in 7hPa increments

Transfer: -175 to +175 hPa (-2.5 to +2.5 psi) in 1hPa increments

INJECTION DURATION

0.01 to 10sec, adjustable in 0.01sec increments

INJECTION ACTIVATION

Remote user interface (keypad) or foot-switch

ELECTRICAL

110 or 220 Volts (*please specify*)

50/60 Hertz

SPECIFICATIONS**> XENOWORKS ANALOG MICROINJECTOR****RATIO OF COURSE: FINE CONTROL**

10:1

INTERCHANGEABLE SYRINGE

1000µl, 500µl, 250µl, 100µl, 50µl

FLUID DISPLACEMENT / TURN

500µl syringe – 5.2µl coarse, 0.5µl fine

1000µl syringe – 10.4µl coarse, 1.04µl fine

MICROPIPETTE (GLASS OUTER DIAMETER)**COMPATIBILITY**

1mm O.D. capillary glass / other sizes available upon request

ACCESSORIES**> XENOWORKS****ADAPTORS**

Available for the following microscopes (part numbers listed below):

- Nikon TMD, Diaphot/Eclipse TE200/300, TE2000, Ti
- Zeiss Axiovert 100/135, Axiovert 200, AxioObserver
- Leica DM IL, DM- RB/E/IRE2, DMI-4/5/6000
- Olympus IX50/70, IX51/71/81

SPARE PARTS

- Tubing, gaskets and ferrules
- Rod holders

PARTS NUMBERS**> XENOWORKS****INSTRUMENTS**

BRML	XENOWORKS MICROMANIPULATOR - LEFT
BRMR	XENOWORKS MICROMANIPULATOR - RIGHT
BRE110	XENOWORKS DIGITAL MICROINJECTOR 110V
BRE220	XENOWORKS DIGITAL MICROINJECTOR 220V
BRI	XENOWORKS ANALOG MICROINJECTOR

MOUNTING ADAPTERS

BR-L20	LEICA DMIRB/E/IRE2 ADAPTER
BR-L30	LEICA DM-IL ADAPTER (double-sided)
BR-L40	LEICA DMI-4/5/6000 ADAPTER
BR-N10	NIKON TMD ADAPTER
BR-N25	NIKON TE200/300 ADAPTER
BR-N27	NIKON TE2000 ADAPTER
BR-N29	NIKON Ti ADAPTER
BR-N29-M	NIKON Ti ADAPTER (for scopes with motorized stage)
BR-Y50	OLYMPUS IX50/70 ADAPTER
BR-Y51	OLYMPUS IX51/71/81 ADAPTER
BR-Z30	AXIOVERT 100/135 ADAPTER
BR-Z35	AXIOVERT 200 ADAPTER
BR-Z40	AXIO OBSERVER ADAPTER

ACCESSORIES

BR-AT	ANALOG TUBING KIT, XENOWORKS
BR-DT	DIGITAL TUBING KIT, XENOWORKS
BR-MH	MICROPIPETTE HOLDER, XENOWORKS
BR-OIL	HYDRAULIC OIL FOR ANALOG INJECTOR, XENOWORKS