

XENOWORKS™ MICROINJECTION SYSTEM



XenoWorks™ is a modular microinjection system designed to meet a wide variety of application needs. Our experience with precision motor control has culminated in this state-of-the-art system.

The **XenoWorks Micromanipulator** uses a classic inverted joystick design for excellent ergonomics, intuitively linking the user with the micropipette. Combined with our smooth, responsive stepper-motor drives, the **XenoWorks Manipulator** provides exceptional mechanical stability, sensitivity, and range of movement.

The **XenoWorks Digital Microinjector** was designed for precision manipulation of cells via an easy-to-use interface. The **Digital Microinjector** employs a self-contained vacuum channel for gentle suspension-cell holding applications. A second channel is available for both high-pressure injection and gentle positive/negative pressure for transfer of embryonic stem cells. Both injection duration and pressure are easily selectable using rotary knobs on the remote interface. The internal low-speed compressor removes the need for an external pressure supply.

The **XenoWorks** family also includes the **Analog Microinjector** for simple cell holding and transfer applications, which incorporates the same smooth response and ergonomic design of our other **XenoWorks** products.

TYPICAL APPLICATIONS

- Pronuclear microinjection of DNA into mouse zygote
- Embryonic stem cell transfer into blastocysts
- Somatic cell nuclear transfer
- Intracytoplasmic sperm injection (ICSI)
- Piezo-assisted sperm-mediated transgenesis and nuclear transfer
- Contact Sutter for suitability of XenoWorks for applications not listed here

SYSTEM FEATURES > XENOWORKS

MICROMANIPULATOR

Exceptionally smooth and responsive micropipette movement

Six movement sensitivities

Height- and tension-adjustable inverted joystick for optimal ergonomics

Up to 25mm of movement in three axes

User defined "Work" and z-axis limit

DIGITAL MICROINJECTOR

Independent "hold" and inject/transfer channels

Up to 5,600 hPa of injection pressure

Remote keypad with rotary controls and high-visibility LED displays

ANALOG MICROINJECTOR

Coarse and fine control

Use with a variety of hydraulic fluids, including oil, air and water

Interchangeable syringes allow sensitivity to be modified

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****INPUT DEVICE**

Height- and resistance-adjustable inverted joystick with integral declutch, 6 position rotary range control, low-profile base, y-axis lockout switch

RANGE SETTINGS

(ONE FULL JOYSTICK SWING)
12.7mm, 3.3mm, 880um, 400um, 200um, 100um

MICROPIPETTE POSITION MEMORY

1 user-defined set-point – “Work”
1 user-defined z-axis limit – “Floor”
2 preset points – “Home” and “Setup”

MAXIMUM MOTOR SPEED / TRAVEL RANGE

5.5mm/s / 25mm

MICROPIPETTE HOLDER GRIP

4mm outer diameter

ELECTRICAL

115/230 Volts
50/60 Hertz

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

Hold, Inject, Transfer, Clear

PRESSURE CHANNELS

1 “Hold”, 1 Inject/Transfer

PRESSURE RANGE

Hold: -350 to +350 hPa, 7hPa steps
Inject: 0 – 5,600 hPa, 7hPa steps
Transfer: -175 to +175 hPa, 7hPa steps

INJECTION DURATION

Variable: 0.01 – 10s in 0.1s increments

INJECTION ACTIVATION

Hand- or foot-switch

MICROPIPETTE COMPATIBILITY

1mm O.D. capillary glass

ELECTRICAL

110 or 220 Volts (please specify)
50/60 Hertz

SPECIFICATIONS**> XENOWORKS ANALOG MICROINJECTOR****COARSE:FINE CONTROL RATIO**

10:1

INTERCHANGEABLE SYRINGE RESERVOIR

1000µl, 500µl, 100µl

FLUID DISPLACEMENT / TURN

500µl syringe – 5.2µl coarse, 0.5µl fine
1000µl syringe – 10.4µl coarse, 1.04µl fine

MICROPIPETTE COMPATIBILITY

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

ACCESSORIES**> XENOWORKS**

Spare tubing for microinjectors is available, as are adaptors for the following microscopes:

Nikon TMD, Diaphot/Eclipse TE200/300, TE2000
Zeiss Axiovert 100/135, Axiovert 200
Leica DM IL, DM- RB/E/IRE2, DMI-4/5/6000
Olympus IX-50/70, IX-51/71/81

US PRICES**> 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

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-Y50

OLYMPUS IX50/70 ADAPTER

BR-Y51

OLYMPUS IX51/71/81 ADAPTER

BR-Z30

AXIOVERT 100/135 ADAPTER

BR-Z35

AXIOVERT 200 ADAPTER

ACCESSORIES**BR-AT**

XENOWORKS ANALOG TUBING KIT

BR-DT

XENOWORKS DIGITAL TUBING KIT

BR-MH

XENOWORKS MICROPIPETTE HOLDER

BR-OIL

XENOWORKS HYDRAULIC OIL FOR ANALOG INJECTOR