

LABORATORY ANIMAL ANESTHESIA SYSTEM



HUM BUG 50/60 Hz HUMBUG NOISE ELIMINATOR



PROGRAMMABLE SYRINGE PUMPS



PATCH CLAMP AMPLIFIER



McILWAIN TISSUE CHOPPER



POWER 1401 DATA ACQUISITION UNIT



KF Technology

L I F E S C I E N C E T O O L S

GENERAL CATALOGUE 3rd Ver.

info@kftechnology.it - www.kftechnology.it

PC-10 PULLER



MED64 SYSTEM MULTI-ELECTRODE ARRAY



VIBRATION CONTROL & FARADAY CAGE



THERMOCLAMP INLINE HEATER



PERFUSION SYSTEMS



BRAIN SLICE CHAMBER



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NEW ERA PUMP SYSTEMS...

PRECISE, COST-EFFECTIVE AND FULLY PROGRAMMABLE FLUID HANDLERS

NE-1000 PROGRAMMABLE SYRINGE PUMP



This is a high-precision fully-programmable infusion/withdrawal syringe pump designed to be the most functional and cost effective pump on the market today.

Its versatile and easy to use interface allows the NE-1000 to be configured for many diverse applications. Even special applications such as the teamwork of two NE-1000 pumps synchronized with a link cable.

The NE-1000's extremely versatile design features include preset volume dispense on trigger and variable withdrawal or infuse flow rates. Flow rates can range from 0.001 $\mu\text{L/hr}$ with a 0.5 μL syringe to 2120 $\mu\text{L/hr}$ with 60 cc syringe.

DUAL-NE-1000X Dual Pump System For Continuous Infusion



- For use with our continuous infusion system or dual infusion system
- Provides a dual check valve for two syringes, withdrawal will pull fluid from a reservoir and infusion will output into a separate line
- The kit is pre-assembled, all you need to do is plug in the syringes
- Each dual check valve uses 6" of 1/8" tubing to connect to a Y connector, one for reservoir and one for output; each Y-connector has 5' of tubing to make connections to your application. Two 50 mL Norm-Ject® Luer Lock Inert syringes are included
- Individual parts are also available

NE-500 OEM PROGRAMMABLE SYRINGE PUMP



Specially designed for the OEM market, the high precision NE-500 allows for easy system integration and control via RS-232 COM port. The NE-500 can network up to 100 pumps for infusion or withdrawal. Stand alone operation is achieved by pre-programming the pump with a dispensing program to operate from an attached foot switch, button or I/O controller.

With the addition of a starter kit the NE-500 can run as fully functional, stand alone pump similar to the NE-1000.



OTHER MODELS & UPGRADES

- NE-501, NE-510, NE-511, NE-4501
- NE-501L, NE-510L, NE-511L, NE-4501L (long chassis)
- FW-5-X firmware with linear/gradient flow rate ramping and additional advanced programming
- FW-5-X2 firmware includes X upgrade plus increased programmable phases to 340

SYRINGE PUMP SOFTWARE

SyringePumpPro
Control Software for Syringe Pumps

Takes your Pump Control to the Next Level!

Syringe Pump Software enables you to connect multiple pumps to your computer and control them individually or as a group. You can automatically monitor all pump parameters without having to enter any commands. You can configure and control multi-pump protocols, log pump activity and send commands to selected pumps. Get to your results faster.

COMPUTER INTERFACE SOFTWARE

- Pump Terminal Emulator simplifies pump programming
- Pump Program Generator has drop-down menus to guide you along required parameters



NEW ERA PUMP SYSTEMS...

PRECISE, COST-EFFECTIVE AND FULLY PROGRAMMABLE FLUID HANDLERS

NE-4000 PROGRAMMABLE SYRINGE PUMP



2 Channel

- Holds 2 Syringes up to 60 mL each, can be different sizes
- Infusion rates from 1.436 $\mu\text{L/hr}$ (1 mL syringe) to 7515 mL/hr (60 mL syringe)
- Easy-to-use keypad interface
- Space Saving Chassis: Foot print size of only 5 3/4" x 8 3/4"
- Won't take up unnecessary space on your laboratory or production bench
- Includes all the advanced functions and programming features of the NE-1000 series
- Disposable, Glass, Stainless Steel Syringes and Plumbing Supplies are sold separately.

NE-1600 PROGRAMMABLE SYRINGE PUMP



6 Channel

- Holds 2, 4, or 6 syringes of up to 140 mL each
- Infusion rates from 0.452 $\mu\text{L/hr}$ (1 mL syringe) to 1451 mL/hr (60 mL syringe)
- Easy-to-use keypad interface
- Higher flow rate models available
- Includes all the advanced functions and programming features of the NE-1000 series
- Disposable, Glass, Stainless Steel Syringes and Plumbing Supplies are sold separately.

NE-1800 PROGRAMMABLE SYRINGE PUMP



8 Channel

- Holds 2, 4, 6, or 8 syringes of up to 10 mL each
- Infusion rates from 0.452 $\mu\text{L/hr}$ (1 mL syringe) to 415.9 mL/hr (10 mL syringe)
- Easy-to-use keypad interface
- Higher flow rate models available
- Includes all the advanced functions and programming features of the NE-1000 series
- Disposable, Glass, Stainless Steel Syringes and Plumbing Supplies are sold separately.

NE-1200 PROGRAMMABLE SYRINGE PUMP



12 Channel

- Holds 2, 4, 6, 8, 10 or 12 syringes of up to 3 mL each
- Infusion rates from 0.45 $\mu\text{L/hr}$ (1 mL syringe) to 153.2 mL/hr (3 mL syringe)
- Easy-to-use keypad interface
- Higher flow rate models available
- Includes all the Features of the NE-1000 Series of Syringe Pumps
- Includes all the advanced functions and programming features of the NE-1000 series
- Disposable, Glass, Stainless Steel Syringes and Plumbing Supplies are sold separately.

Multi-Channels Available in Higher Speeds :

NE-1660
6 Channel

NE-1860
8 Channel

NE-1260
12 Channel

NEW ERA PUMP SYSTEMS...

PRECISE, COST-EFFECTIVE AND FULLY PROGRAMMABLE FLUID HANDLERS

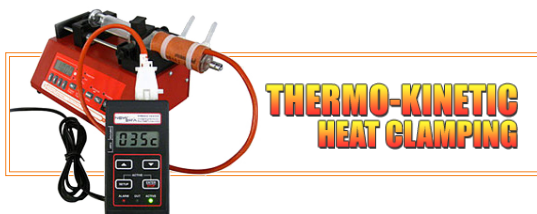
NE-1002X PROGRAMMABLE MICROFLUIDICS SYRINGE PUMP



Smoothest Microfluid Syringe Pump Available

- Holds 1 syringe up to 60 mL (140 mL partially filled)
- Infusion rates from 0.008 nL/hr (0.5 µL syringe) to 2545 µL/min (140 mL syringe)
- Available in 2 channel version (Model NE-4002X)
- Easy-to-use keypad interface
- Space Saving Chassis: Foot print size of only 5 3/4" x 8 3/4"
- Won't take up unnecessary space on your laboratory or production bench
- Dispensing accuracy of +/- 0.5% and reproducibility of +/- 0.2%
- Includes all the advanced functions and programming features of the 1000 Series
- Includes the X Upgrade Smooth Linear/Gradient increasing and decreasing pumping feature
- Disposable, Glass, Stainless Steel Syringes and Plumbing Supplies are sold separately

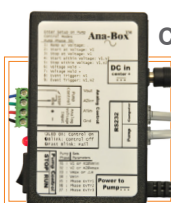
SYRINGE HEATERS KIT



- Maximum temperature of 185°C
- Constantly monitors and displays temperature of the primary heating pad
- Precision control of temperature set point

ANA-BOX™

Closed Loop Analog Sensor Interface



- Vary the pumping rate in proportion to a variable voltage input
- Start or stop the pump at set voltages
- Vary the pumping rate to maintain a voltage window-ie.

NE-9000 PROGRAMMABLE PERISTALTIC PUMPS



Peristaltic pumps have few moving parts. Their lack of valves, seals and glands make them inexpensive to maintain - especially with our interchangeable heads and tubes. Fluids can be kept more clean and sterile than other pumping methods.

The fluid goes through the tube and never comes in contact with the pump - no damage from abrasive, corrosive or viscous liquids.

- Dispense a set volume from a reservoir
- Dispensing and withdrawal pumping
- Additional pumping heads available for quick change between fluids - improves productivity
- Time saving Learn and Repeat™ mode
- Slow down and anti-drip modes improve dispensing accuracy
- Calibration mode improves instrument repeatability
- Fully programmable with computer interface for more advanced applications
- Store and select from up to 40 dispenses
- Easy-to-use keypad interface
- Available in 3/16" or 1/16" pump heads

Models & Accessories



- NE-9000 Peristaltic Pump for large volume dispensing
- NE-9000G Peristaltic Pump designed for precision with lower flow rates and small dispense volumes
- PERI-HEAD-KIT-YB2 includes blue, 2-roller head, 4 ft. 3/16" ID industrial grade tubing, 4 nylon clamp ties and vial of lubricant
- PERI-HEAD-KIT-YG4 includes green, 4-roller head, 4 ft. 3/16" ID industrial grade tubing, 4 nylon clamp ties, 4 reduction couplers and vial of lubricant

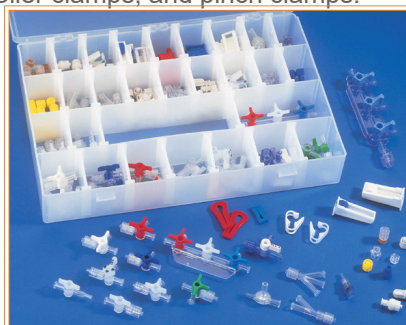
LUER VALVE ASSORTMENT KIT

A useful kit (above) for building your own liquid flow experiment.

It provides the means to start, stop, add, divide and control a flow of liquid or gas. Included in the kit are over 200 assorted parts such as one-way and three-way stopcocks, manifolds, Y-connectors, injection sites, male and female luer caps, check valves, syringe-activated check valves, slide clamps, roller clamps, and pinch clamps.

All (except clamps) have a luer fitting for quick and easy connecting and disconnecting.

Includes assorted luer fittings for use with flexible tubing.



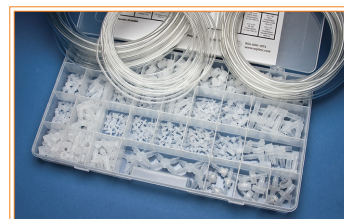
Luer Valve Assortment Kit

14011

- Over 300 assorted parts
- Luer fittings for quick and easy connect and disconnect

BARB-TO-TUBING COUPLER ASSORTMENT KIT

Barb-to-Tubing Assortment Kit (at left) includes three different sizes of tubing and two boxes with different fittings, T-connectors, elbow connectors, check valves and plugs.



PERI-STAR™ PRO

High performance digital peristaltic pump at an affordable price!

- Display either rotation Speed (RPM) or flow rate (mL/min)
- Wide flow range: 0.01 - 280 mL/min
- Accuracy of flow rate: 0.5% using self calibration function
- Accuracy of speed: 0.1 rpm
- Large backlit digital LCD display
- Programmable for all tubing sizes between 0.8 mm and 6.4 mm ID
- Easy and fast tubing replacement using snap-on cartridges
- Membrane keypad allows easy programming while protecting controls from fluid entry
- Actively driven rollers by planetary gears for long lasting tubing life.



AVAILABLE IN 2, 4 AND 8 CHANNEL VERSIONS

PERI - STAR™ PRO SPECIFICATIONS

	Peri-Star Pro 2H / 4H (High Rate)	Peri-Star Pro 4L / 8L (Low Rate)
NUMBER OF ROLLERS	4	8
NUMBER OF CHANNELS	2 - 4	4 - 8
ROTOR SPEED RANGE	1-100 rpm	1-100 rpm
FLUID FLOW RANGE	0.8-280 mL/min #17 Tubing: 3.5-280 mL/min	0.01-80 mL/min #14 Tubing: 0.2-18 mL/min
TUBING RANGE	3.1-6.4 mm ID	0.5-2.4 mm ID
SELF-CALIBRATION	Yes	Yes
WORKING ENVIRONMENT	0-45° C, Humidity <80%	0-45° C, Humidity <80%
POWER	110 V or 220 V AC, 50,60 Hz	110 V or 220 V AC, 50,60 Hz
DIMENSIONS	190 x 162 x 275 mm	190 x 162 x 275 mm
SHIPPING WEIGHT	11 lb / 5 kg	11 lb / 5 kg



Pump head for
PERIPRO-2H and
PERIPRO-2H-220
(2 channels, 4 rollers)



Pump head for
PERIPRO-4L and
PERIPRO-4L-220
(4 channels, 8 rollers)



Pump head for
PERIPRO-4H and
PERIPRO-4H-220
(4 channels, 4 rollers)



Pump head for
PERIPRO-8L and
PERIPRO-8L-220
(8 channels, 8 rollers)

NEW PERI-STAR PRO PUMPS

PERIPRO-2H	Peri-Star™Pro, 2-Channel, High Rate, Large Tubing
PERIPRO-2H-220	Peri-Star™Pro, 2-Channel, High Rate, Large Tubing (220V)
PERIPRO-4H	Peri-Star™Pro, 4-Channel, High Rate, Large Tubing
PERIPRO-4H-220	Peri-Star™Pro, 4-Channel, High Rate, Large Tubing (220V)
PERIPRO-4L	Peri-Star™Pro, 4-Channel, Low Rate, Small Tubing
PERIPRO-4L-220	Peri-Star™Pro, 4-Channel, Low Rate, Small Tubing (220V)
PERIPRO-8L	Peri-Star™Pro, 8-Channel, Low Rate, Small Tubing
PERIPRO-8L-220	Peri-Star™Pro, 8-Channel, Low Rate, Small Tubing (220V)

OPTIONAL ACCESSORIES

503049	Replacement Tubing Cartridge, Large
503050	Replacement Tubing Cartridge, Small
503022	Replacement Silicone Tubing, 1m, 1.6 mm I.D., #14, with stops
503023	Replacement Silicone Tubing, 1m, 6.4 mm I.D., #17

THERMOCLAMP™ 1

Accurate temperature control, rapid solution switching and fast wash-out



Heated Perfusion Pencil with Neoprene Sleeve Removed



ANIMAL TEMPERATURE CONTROLLER



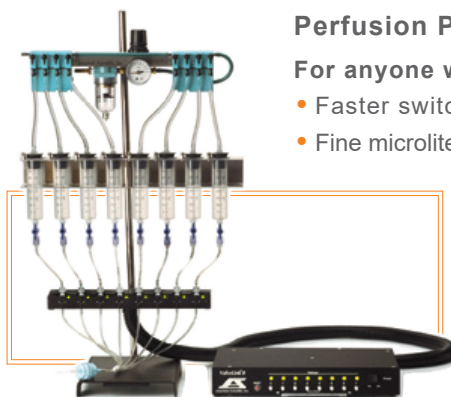
- Animal Temperature Controller with Adaptive mode—auto adjust PID regardless of animal size
- PID control for maximum temperature stability
- Low noise DC heater
- Three temperature sensor inputs
- Auto shutdown if the plate reaches 45°C

Specification

Resolution	0.1°C
Accuracy	±0.3°C
Rat Sensor	RTD Ø 2.0 mm tube with 3.5mm ball head
Maximum DC Output	10V, 3A
Temperature Range	Up to 45°C
Power	Universal AC adapter 90-264V Input, 12V@4.5A maximum output
Dimensions	3.47x8.21x10.85" (8.8x20.9x27.6cm)
Weight	11 lb. (5kg)

PERFUSION PRESSURE

Precise control for whole-cell or single-cell superfusion



Perfusion Pressure Upgrade

For anyone who needs:

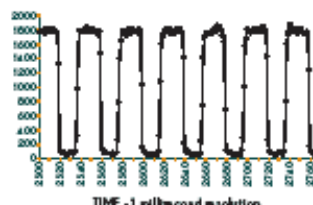
- Faster switching and steady flow
- Fine microliter perfusion and microinjecting

Ordering Information:

Perfusion Pressure Upgrade	
09-04	4 channelsi
09-08	8 channelsi
09-016	16 channelsi
Volatiles Pressure Upgrade	
09-04V	4 channelsi
09-08V	8 channelsi
09-016V	16 channelsi

Thile Lacoste

Materials Science Division,
Lawrence Berkeley National Laboratory



Liquid Switching in 3-4 msec.

- Fast Flow Rhodamine B
- Fluorescence Switching - 40ms period using the AutoMate Scientific
- Pressurized Perfusion System at 2 psi

SMARTSQUIRT® MICRO-PERFUSION SYSTEM



- Deliver microliter volumes starting with as little as 100 microliters of precious drugs. Switch between eight solutions in milliseconds from a single tip.
- Minimize cross-contamination with BackStop™ back-flow prevention. Special 3-way relief valve design stops liquid flow quickly.

- Valves and pressure controls in a small box near microscope - no stand necessary. Includes pressurized large-volume reservoir for buffer.

Specification

Pneumatic Valve Switching Speed	Approx. 10-20 ms.
Starting Volume	Approx. 100 microliters
Flow Rates	Depend on removable tip size
Filter	5 micron filter included on air inlet
Regulator & Gauge	0-15 psi
Air Inlet Requirements	30-100 psi of any gas
Tubing	360µm I.D. PTFE-lined polyimide 30 cm long

DRY STERILIZER

Sterilize your microdissecting and tissue culture instruments, Thoroughly and conveniently, in seconds.

No chemicals. No flames. No risk of burns.

No disinfectant fluids. Glass beads heated to 260°C kills all viruses, aerobic and anaerobic bacteria, yeasts and spores. (1.5 mm lead-free glass beads included.)

Specification

O.D. 17.1 x 13.3 x 12.9 cm
(63/4 x 51/4 x 51/16 in.)

I.D. 5.1 x 10.2 cm
(2 x 4 in.)

WEIGHT 2.3 kg (5 lb.)

14404 Dry Sterilizer (110V)

500121 Dry Sterilizer (220V)

14405 Extra Glass Beads



VAPORGUARD™ ACTIVATED CHARCOAL FILTER

100% Containment of Waste Anesthetic Gases

A common hazard of inhalation anesthesia is the release of waste anesthetic gases into the breathing environment of the personnel.

In a recent independent study, VetEquip's VaporGuard filter was shown to be the only filter that prevented waste anesthetic gas break-through when used as directed.



- Activated charcoal filter proven more effective than others on the market
- Effective in any position or orientation
- Seamlessly incorporate into your existing SOP

PICOSPRITZER® III

Pressure Systems for Ejection of Picolitre Volumes in Cell Research

The PicoSpritzer® III is a self-contained rackmountable system which supplies repeatable pressure pulses. Intracellular applications range from femtolitre ejections of RNA into 50µm diameter cells, up to nanolitre ejections into oocytes.



Extracellular applications range from delivery of picolitre volumes of neuroactive substances to neurons during intracellular recording up to chemical stimulus delivery to complete organisms.

TABLE TOP LABORATORY ANIMAL ANESTHESIA SYSTEM

Suitable for Models: Mouse Rat Hamster Rabbit Ferret Guinea Pig Cat Dog Small Swine.

Complete systems include a precision, agent-specific vaporizer; oxygen flowmeter; oxygen flush valve; non-rebreathing circuit; mouse and ratsized nosecones; induction chamber; waste gas filters; and oxygen supply hose. You need to add oxygen, anesthetic agent and models.



VIBRATING MICROTOMES



- The Campden 7000smz vibrating microtome, for the finest preparations for visual patch clamping.
- Sub-micron z-axis error at all speeds and amplitudes
- Visual patching of neurological tissue, heart, and lung have all been published on the previous generation machine. The new machine is better!

9100 SERIES VIBRAPLANE WORKSTATIONS...

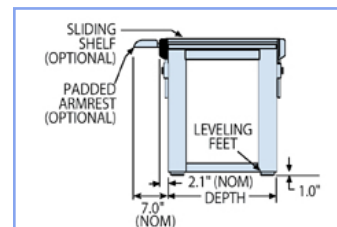
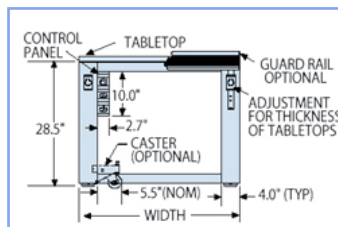
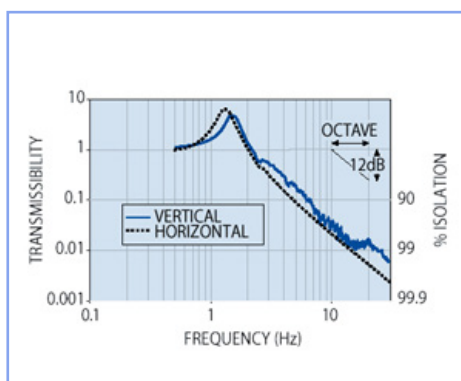
For Load Ranges up to 1300 lbs.

The 9100 Series Vibration Isolation Workstation sets the industry standard for the vast majority of vibration control applications. Designed to isolate sensitive instruments and experiments weighing up to 1300 lbs., the 9100 Series is an efficient, aesthetically and ergonomically styled piece of working furniture. It provides a comfortable work environment that can be customized to its specific use by adding a variety of worksurfaces and accessories.

The 9100 provides both vertical and horizontal isolation. Supported by a VibraDamped steel frame with an Active-Air suspension, the worksurface will maintain a preset zero deflection level regardless of load addition or removal.



Model 9101-02-45
shown with optional
accessories.



PERSONALIZE YOUR WORKSTATION FOR MAXIMUM OF ACCESSORIES

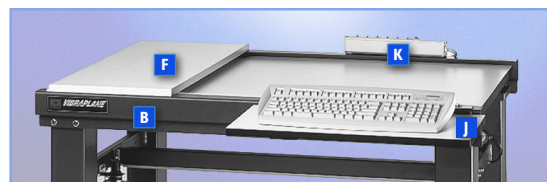
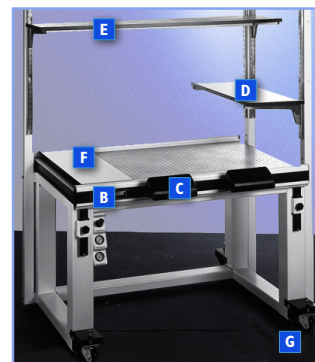
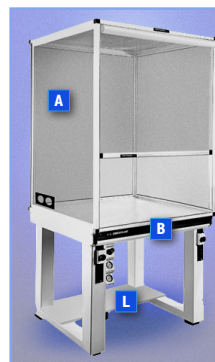
Accessories

Features/Benefits:

- Complete line of accessories designed for each isolation system
- You customize your workstation
- Ergonomically correct comfort
- Optional roll-up door for enhanced laboratory space utilization

Faraday Cages

For electrical and magnetic field shielding, KSI provides high performance Faraday cages for field damping. We offer two specialized designs: The first design (see photo "A" this page) features high density 16 mesh copper wires, with either roll-up or hinged front doors, while the second design (see photo "A1" below) is a Faraday Cage/Darkbox that utilizes an aluminium construction with multiple panel doors for easy access from all sides. Special shelving, access ports and door configurations are available on either configuration.



A : Faraday Cage

D : Overhead Side
Equipment Shelf

F : Sliding Shelf

J : Keyboard Shelf

B : Guard Rail

E : Overhead Rear
Equipment Shelf

G : Casters

K : Electrical Outlet Strip

C : Padded Armrest

H : Monitor Support

L : Fixed Shelf

MULTICLAMP 700B - MICROELECTRODE AMPLIFIER

The MultiClamp 700B is useful for a wide variety of intracellular or extracellular recording, including:

- HIGH-SPEED CURRENT CLAMP
(sharpelectrode or field potentials)
- PATCH CLAMP
(whole-cell, macro-patch or excised patch)
- VOLTAMMETRY / AMPEROMETRY
- ION-SELECTIVE MEASUREMENT
- BILAYER RECORDING



D360 8 - CHANNEL ISOLATED AMPLIFIER & FILTER SYSTEM

The D360 is an 8-channel isolated amplifier specifically designed for human electroencephalography (EEG), electromyography (EMG) or evoked potential (EP) studies.



- Isolated for Patient Safety
- Software Control of Gain & Filter Settings
- Impedance Checking & Deblock Functions
- Suitable for EEG, EMG and EP Amplification

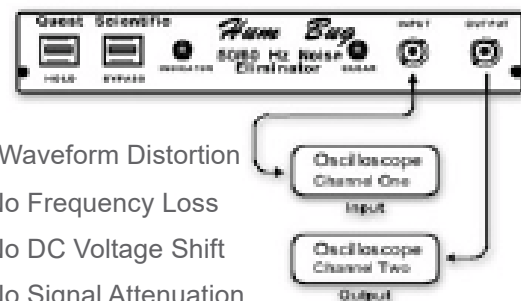
HUM BUG 50/60 Hz NOISE ELIMINATOR

Eliminate 50/60 Hz noise and harmonics without filtering



ELIMINATES ELECTRICAL INTERFERENCE

- Simple 50/60 Hz Sine Waves
- Mixtures of 50/60 Hz Harmonics
- Noise Spikes from Dimmers
- Complex Noise from Fluorescent Lamps



No Waveform Distortion

- No Frequency Loss
- No DC Voltage Shift
- No Signal Attenuation
- No Phase Error

CONSTANT CURRENT HIGH VOLTAGE STIMULATOR, MODEL DS7A

For Percutaneous Stimulation of Nerve and Muscle Tissue



MASTER-8 & MASTER-8 CP

Programmable Stimulator / Pulse Generator



Master-8 is an extremely reliable system as:

Wide time range – interval time between pulses/trains from 60 μ sec. (16,666 PPS) to 3999 sec. (1/3999 PPS).

4 digits resolution – For example: Set the pulse delay to be 10.01 millisecond.

You can modify parameters while stimulating – you don't have to stop the experiment.

For example: while stimulating, switch the stimulation rate from one range to another (e.g. from 98 PPS to 102 PPS).

Simple switch-off the stimulation – important for cases where immediate stimulation cut off is required.

DIGIDATA 1440A

DATA ACQUISITION SYSTEM

A Low-noise Data Acquisition System



Front panel



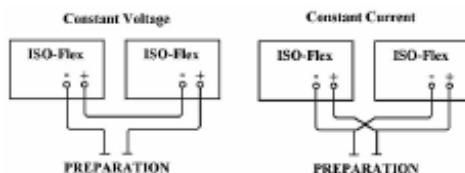
Rear panel

- COMPLETE DATA ACQUISITION SYSTEM
- RACK-MOUNT READY
- USB 2.0 COMMUNICATIONS SUPPORT LAPTOP COMPUTERS
- INCLUDES AXOSCOPE 10 SOFTWARE FOR WINDOWS

ISO - FLEX

The Flexible Stimulus Isolator

You can connect two isolators to get bipolar pulses. The connection is as follows:



Flexibility

ISO-Flex is a flexible stimulus isolator since:

- ISO-Flex is optically-isolated.
- You can switch the unit to constant current or constant voltage using the CURRENT/ VOLTAGE switch.
- You can get bipolar pulses by connecting two isolators.
- Suitable for EEG, EMG and EP Amplification



Specifications

- Input: 5V-10V
- Voltage output: 0-90V
- Current output: 0-10mA
- The output is divided into 3 ranges.

MED64™ SYSTEM

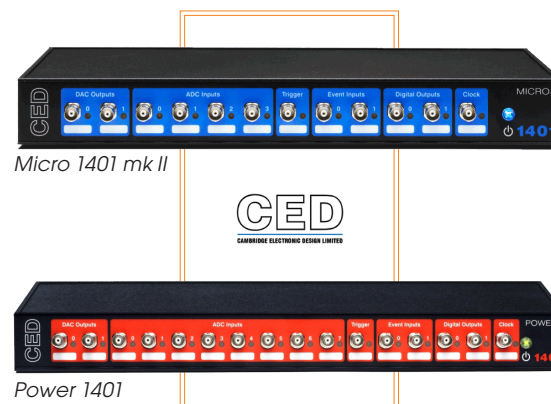
- ➔ A complete, easy-to-use, advanced solution for in vitro multi-site extracellular electrophysiology
- ➔ Get reliable, long-term, continuous recording and two-dimensional, real-time analysis of neuronal/ myocardial activity
- ➔ Stimulate and record responses from different areas within a biological sample over days, weeks and months with simple operation
- SIMULTANEOUS RECORDING ACROSS 64 CHANNELS
- EASY TO USE AND READY TO GO
- LONG-TERM OBSERVATION



IDEAL FOR EXAMINING:

- Pharmacology (Drug Testing)
- Synaptic Plasticity (e.g. - Long-Term Potentiation) and Development
- Spike Detection and Sorting
- Spontaneous rhythmic activity
- Propagation and Pacing in Myocytes
- Pacing and Rhythmic Activity in
- Non-spiking Cells (e.g. Smooth Muscle)

MICRO 1401 mk II AND A POWER 1401



The Power1401 is faster, and has more instrumentation ports than the Micro. The Micro has the facilities and the speed that most users need, most of the time.

The Power can manage 32 spike shape channels, the Micro 16.

SOFTWARE: **Signal** **Spike2**
Version

EAGLE™ ADJUSTABLE PIPETTERS

Lifetime Warranty Comfortable ergonomic design Lasts 20 times Longer

Built with ultra high molecular weight polyethylene (UHMWPE), the piston seal (patent pending) lasts at least 20 times longer than those made with PTFE.

The pipetter delivers with the same accuracy and precision even after more than 51 million non-stop pressrelease strokes.



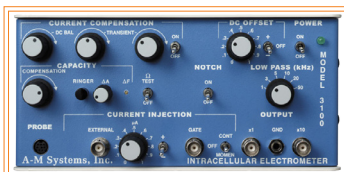
	Model	Volume Range
A	E2	0.2 - 2.0 µL
B	E10	0.5 - 10 µL
C	E20	2 - 20 µL
D	E100	20 - 100 µL
E	E200	50 - 200 µL
F	E1000	100 - 1000 µL
G	E5000	1000 - 5000 µL

DIFFERENTIAL AMPLIFIER MODEL 3000



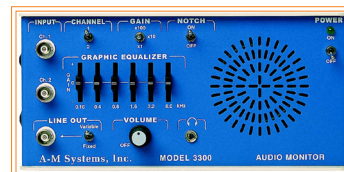
The Model 3000 High-Gain AC/DC Differential Amplifier is designed for low-noise recordings from excitable tissue. Specific applications include EEG, EKG, extracellular recordings, and more.

INTRACELLULAR ELECTROMETER MODEL 3100



The Model 3100 Intracellular Electrometer is a simple to use, low cost intracellular amplifier. It is compatible with Model 3100 Mini Headstage, whose probe measures 1.1 cm in diameter and 5.6 cm in length, and weighs only 10 grams.

AUDIO MONITOR MODEL 3300



The Model 3300 Audio Monitor is a high-quality audio amplifier designed to transform electrophysiological signals into sounds. This amplifier features a built-in 6-band audio equalizer that enables the user to tailor the audio performance to their personal satisfaction.

NEUROPROBE AMPLIFIER MODEL 1600

The Neuroprobe Amplifier Model 1600 is a precision-crafted microelectrode amplifier designed especially for the exacting requirements of intracellular neurological studies. It is a self-contained unit with many built-in features that reduce the need for additional instrumentation and provides the research scientist with versatility, accuracy and ease of operation. The Digital Panel Meter produces a highly accurate display of membrane potential, injected current or electrode resistance.

The internal Dual-Function Transient Control and the DC balance Control assure extremely precise recordings during current injection without requiring an external bridge or a differential input oscilloscope. The ten-turn potentiometers used for the DC Offset, DC balance, Current Injection, and dual Capacitance Compensation Controls allow high resolution.



DIFFERENTIAL AC AMPLIFIER MODEL 1700

The Model 1700 Differential AC Amplifier is intended for research or teaching applications requiring extracellular neurophysiological recording from excitable tissue, such as nerve or muscle, and is capable of making EMG, EEG, EKG and ERG recordings.

The Model 1700 contains 4 independent amplifiers plus a power supply in a single enclosure enabling several channels to be recorded simultaneously. Also, combining four amplifiers in a single instrument reduces the construction cost and these savings are passed on to you.

Each amplifier contains a high-gain, low-noise differential stage followed by low-frequency, high frequency, and notch filters. A connection is also provided for a stimulator input so that recording or stimulating through an electrode is possible.



PATCH CLAMP AMPLIFIER - MODEL 2400

The Model 2400 is a low-noise, full-featured intracellular/extracellular amplifier designed for voltage clamping using patch electrodes on single channels or whole cells. Its unique design allows fast intracellular current clamp measurements with sharp electrodes.

- Full-Function Patch Clamp Amplifier for both whole cells and patches
- True Current Clamp is 100% stable with bandwidth of 200kHz.
- Switchable Dual Resistive Feedback Headstage
- Capacity, series resistance, and whole cell compensation
- 4-pole Low-Pass Bessel Filters
- Internally generated test signals
- Telegraph outputs for all major front panel controls
- Independent hold, offset, and tracking circuitry
- Displays command potentials, cell currents, and voltages



PROGRAMMABLE 8-CHANNEL STIMULATOR MODEL 3800

A-M Systems is proud to introduce our new MultiStim: Programmable 8-Channel Stimulus Generator, the Model 3800.

Based on our experience producing the finest single channel stimulator on the market, the Model 2100 Isolated Pulse Stimulator, we developed the Model 3800. It has 8 completely independent channels, a front panel touch screen, and computer control capabilities.

Each Channel can provide pulse durations as short as 1 microsecond over a 15 minute timing interval, or up to 1ms with a 250 hour timing interval.

Pulse intervals can be as short as 3 microseconds!

Designed to deliver trains of monophasic or biphasic pulses, the Model 3800 can also deliver traditional protocols such as Paired Pulses and Stepped Pulses. Each channel also has a SUM output, whereby the signals of other channels can be summed together for complicated waveform protocols



- Wide timing range: 1 μ s to 250 hours
- Minimum pulse duration: 1 μ s
- Minimum pulse interval: 3 μ s
- Excellent timing accuracy: better than 0.02%,
- Mono- or bi-phasic pulse outputs
- Paired Pulse or Stepped Pulse protocols
- Combo outputs sum individual channel outputs for waveform flexibility.
- Control via front panel touch screen Windows software program
- Calibrated voltage output: ± 10 V with 1 mV resolution (single channel output)
- On-board memory to store stimulation programs
- Sync outputs for both individual pulses and the entire burst train
- Optional SIU available
- MATLAB® and LabVIEW SDK and drivers available
- Includes:
 - Rack Mount Hardware
 - Windows Control Program
 - Instruction & Maintenance Manual
 - USB Cable

MICROELECTRODE AC AMPLIFIER MODEL 1800

Microelectrode AC Amplifier is a two-channel, differential amplifier equipped with Head Stage probes and is intended for extracellular recording and/or stimulating with high impedance metal microelectrodes in research and teaching applications. Extracellular neurophysiological recordings with high impedance microelectrodes can easily be done from excitable tissues such as nerve and muscle. The instrument is not intended for clinical measurements in human subjects.



ISOLATED PULSE STIMULATOR MODEL 2100

The Model 2100 Isolated Pulse Stimulator has been designed for a wide variety of physiological stimulation requirements. A flexible, accurate system, it can be operated free-running, manually triggered, or externally triggered. A TRIG indicator lights when an acceptable trigger is received. An EVENT indicator lights whenever a pulse is delivered.



- Timing range from 1 μ s to over 15 minutes.
- Highly accurate! Better than 0.02%
- Optically Isolated Output Built-In!
- Mono or Biphasic Output Capability
- Status Indicators
- Triggering Capabilities

The operator describes the desired pulse train by setting four times: The delay time (time between trigger and the first pulse); train burst width time; individual pulse duration; and interpulse period (the duration of a single pulse on/off cycle). If the period is set to be shorter than the pulse duration, a timing overlap error LED indicator warns the user of this condition.

ANALOG STIMULUS ISOLATOR MODEL 2200

The Model 2200 Analog Stimulus Isolator is designed for a wide variety of applications. It provides opto-electrical isolation for stimuli generated by a wide range of signal sources. The signal is DC-coupled, and can take on any waveshape within its wide bandwidth.



- Constant Current or Constant Voltage
- Mono- or Bi-phasic Capable
- Low Noise
- Optically Isolated Output
- Built-in Battery Recharger

MULTIRECORD 32-CHANNEL EXTRACELLULAR AMPLIFIER MODEL 4000

Our new Model 4000 Amplifier is designed to mate seamlessly with the TBSI 31-channel multiplexed headstage system and the Datawave Sciworks Data Acquisition and Analysis Package.

The Model 4000 has 32* independent gain and filtering stages that are controlled in realtime by the Datawave software package during data acquisition. Full access to the Datawave A/D card is available on the front panel.

* There are 32 channels in the amplifier, but only 31 are utilized with the TBSI M-Series multiplexed headstage system. The amplifier can be easily paired with other 32 channel headstages, such as TBSI's tethered or wireless systems.



16-CHANNEL AC AMPLIFIER MODEL 3500

A-M Systems is proud to introduce our new Model 3500 16-Channel Extracellular Differential AC Amplifier.

In response to many inquiries for a larger version of our popular Model 1700 4-Channel Differential AC Amplifier, we have developed this unit. The Model 3500 has 16 independent channels, a front panel touch screen, computer control capabilities and a built-in calibrator. In addition, users can quickly monitor on an external oscilloscope the activity on any two channels.

Multiple instruments will be controllable by a single computer program, enabling the setting of critical parameters on as many channels as you need.



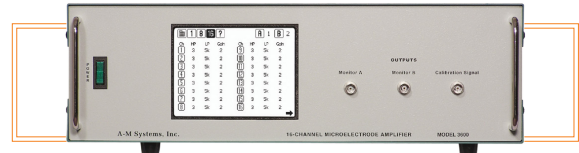
- More gain settings and increased gain range
- More high pass filter settings and increased high pass range
- More low pass filter settings and increased low pass range
- TTL Control of instrument mode
- Twin stimulation busses to pass current
- Channel Monitors
- Built-In Calibration signal
- Common Reference Bus
- Blanking
- PC control capability
- MATLAB® and LabVIEW SDK and drivers available
- Less rack space utilized for 16 channels

16-CHANNEL EXTRACELLULAR AMPLIFIER - MODEL 3600

A-M Systems is proud to introduce our new Model 3600 16-Channel Extracellular AC Amplifier with Headstage.

In response to many inquiries for a larger version of our popular Model 1800 2-Channel Microelectrode AC Amplifier, we have developed this unit. The Model 3600 has 16 independent channels, a front panel touch screen, computer control capabilities and a built-in calibrator. In addition, users can quickly monitor on an external oscilloscope the activity on any two channels.

Multiple instruments will be controllable by a single computer program, enabling the setting of critical parameters on as many channels as you need.

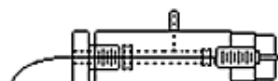


- More gain settings and increased gain range
- More high pass filter settings and increased high pass range
- More low pass filter settings and increased low pass range
- TTL Control of instrument mode
- Channel Monitors
- Built-In Calibration signal
- Common Reference Bus
- Blanking
- PC control capability
- MATLAB® and LabVIEW SDK and drivers available
- Less rack space utilized for 16 channels

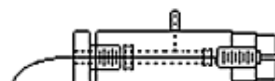
PATCH CLAMP HOLDERS (WITH SUCTION PORT)

Patch clamp microelectrode holders are available in a variety of connector styles, including models compatible with Axon legacy instruments (Axopatch and Axoclamp style connectors), Axon models with the threaded collar connector system, BNC models, and 2 mm male and female connectors. These holders are made out of a 3/8 in. (0.375 in.) diameter polycarbonate, and feature a small suction port to enable patch clamp recording. Standard configurations include straight, 30 degree, 45 degree, and 90 degree models, with and without perfusion ports.

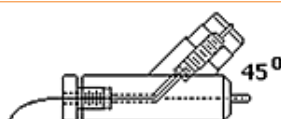
BNC HOLDER WITH SUCTION PORT AND WIRE



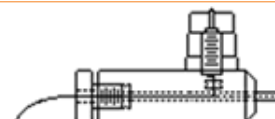
BNC HOLDER WITH SUCTION PORT AND WIRE, FLUOROPOLYMER-BASED PLASTIC



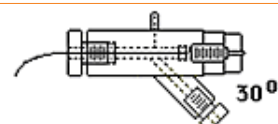
BNC HOLDER, 45 DEG., WITH SUCTION PORT AND WIRE



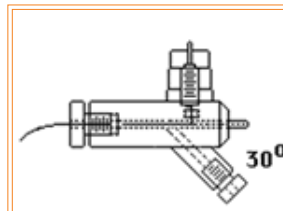
BNC HOLDER, 90 DEG., WITH SUCTION PORT AND WIRE



BNC HOLDER WITH SUCTION AND PERFUSION PORTS AND WIRE



BNC HOLDER, 90 DEG., WITH SUCTION AND PERFUSION PORTS AND WIRE



EPOXY-INSULATED MICROELECTRODES



Epoxy-Insulated Microelectrodes are consistently high-quality electrodes available in either Stainless Steel or Tungsten. We know that electrodes are difficult to manufacture, therefore we take extra care to monitor each step of microelectrode fabrication. Microscopic inspections are performed and microelectrode resistance and capacitance are checked to ensure insulation integrity and proper electrode impedance.

Metal electrode impedance is measured with a 2 nAp-p current at 1 kHz. The tolerance range for 5M epoxy-insulated microelectrodes is 3M to 8M, and the tolerance range for 12 M epoxy-insulated microelectrodes is 10M to 18M. We skew the values a little high because it is possible to lower the impedance at a later stage by passing current through the electrode.

Metal electrodes do not behave as resistors due to polarization. They have low series resistances for high frequency signals and high series resistance for low frequency signals. For example, for DC inputs a typical tungsten microelectrode will have a series resistance of about 200Mohms. However, for a 1kHz sine input, the same electrode will have an impedance of 1Mohm. Its impedance will further drop to only 100kohm for a 100µs pulse.



MCLWAIN TISSUE CHOPPER

MCLWAIN TISSUE CHOPPER MODEL



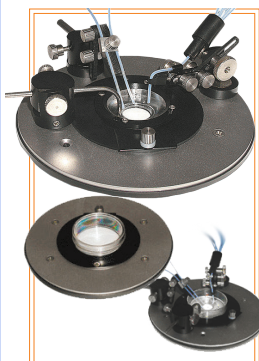
The Mclwain Tissue Chopper was designed to prepare samples of tissue for metabolic experiments and is particularly suitable for small and irregular samples for biopsy or from small organs.

MCLWAIN TISSUE CHOPPER WITH PETRI DISH MODIFICATION MODEL



Modification allows usage of a standard 60 mm petri dish instead of the chopping disc.

MICROSCOPE ADAPTERS, STAINLESS STEEL, MA-xxx



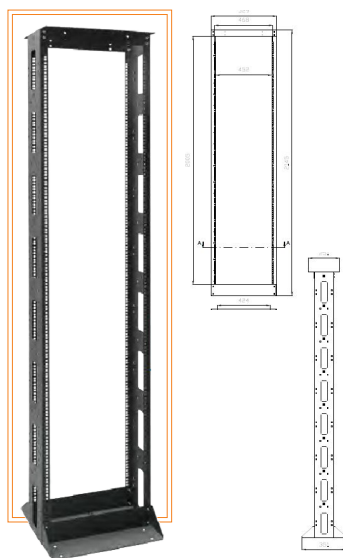
A microscope stage adapter to provide flexible working area for positioning accessories required for high resolution live sample imaging: from media exchange and test solution delivery tubing, to sensors and electrodes. Specially treated stainless magnetic surface of the adapter provides ideal means to mount miniature adjustable magnetic holders. Adapters for all brands of microscopes, including motorized stages, are available. Incorporates adjustable clamp to fix all brands of 35mm petri dishes and chambers, glass bottom dishes (both 35 and 50mm), and heating stages.

Specification

Inside opening	50mm
Reducing ring and clamp	to fit all brands of 35mm dishes, and CSC chambers
Use with	35mm dishes (including glass bottom dishes), CSC chambers, 50mm glass bottom dishes, and heating elements

RACK

A standard system of physical installation of hardware components Modular Structure OPEN RACK 19"



PRECISION TEMPERATURE CONTROLLER TC-1-100-I

Easy to use and flexible controls for stable operation. Independent second channel for the incubator lid.



- Plastic-encapsulated external probes (optional): no metal ions leakage into solutions
- Stability 0.01°C
- Built-in overheating protection
- Analog and RS232 Inputs for programmed temperature changes
- Analog Outputs to monitor temperature
- No vibrations during imaging and recording

Designed to operate miniature incubators by utilizing channel I to independently heat the lid, and channel II the base of the incubator. Includes connecting cables. An external temperature probe might be needed, to monitor bath temperature.



PC-10 PULLER

Vertical pull type with automated double mode for improved versatility

The method used by this puller is to pull the glass capillary vertically using the gravitational force of its own weight. For more versatility, two modes are provided: a single pull, which pulls at one stretch, and a double pull in which the setting is change in mid-process.



PN-21 PULLER

Producing multibarreled electrodes, thick glass tubes and other special microneedles

From capillaries O.D.2 to O.D.4mm thick, the PE-21 can produce the long, comparatively firm electrodes used for nerve center experiments, or multibarreled electrodes combining three, four and seven O.D.1mm glass capillaries.



PN-30 PULLER

Puller for producing long, thin, sharp microneedles

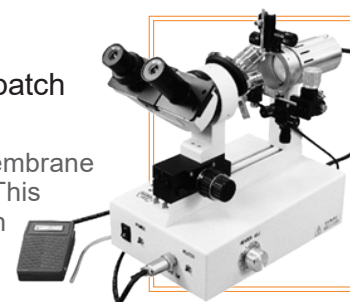
This puller uses a pulling method by which a glass capillary is fine-drawn using electromagnetic force. The long draw-out volume and employment of a strong electromagnetic solenoid enable the production of long, sharp microneedles.



MF-830 MICROFORGE

Powerful microscope mounted to produce microelectrodes for patch clamping

In patch clamping, contact is made between the electrode and the cell membrane to measure cell potential, without damaging the cell membrane. This microforge assists the process by using fire-polishing technology to polish the microelectrode tips. A powerful microscope (525x total magnification) is included for making electrodes with tips less than 2μm.



Specification

Accessories included Foot Switch, Spare Heater, Spare Lamp, Power supply Cable, Allen Wrench

MF-900 MICROFORGE

Multiple functions for making different kinds of microtools

The MF-900 microforge offers a wide range of functions such as cutting, bending, fire-polishing, and forming a spike for making many different kinds of microtools by processing pipette tips. An easy-to-use manipulator is provided for operating the heater and pipette, and the microscope is operated three-dimensionally with control close to the operator's hand.

Specification

Accessories included MF-900F Foot Switch, Power Supply Cable, Allen Wrench, Spare Heater, Spare Lamp, Silicone Rubber Gasket

Movement range Heater manipulator: X14mm, Y14mm, Z14mm
Pipette manipulator: X12mm, Z28mm
Microscope: X approx. 7mm, Y30mm, Z approx. 8mm

Magnifications 50x/100x (Eyepiece: 10x, Objective lenses: 5x and 10x)

Glass capillary O.D.1mm



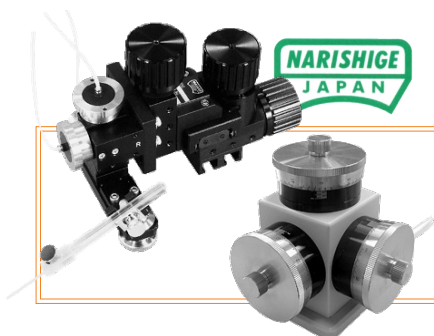
MHW-3 - THREE-AXIS WATER HYDRAULIC MICROMANIPULATOR

Acclaimed water hydraulic manipulator for patch clamping

This was Narishige's first water hydraulic micromanipulator specially designed for patch clamping. Its water hydraulic system has a lower coefficient of expansion than an oil hydraulic system, and allows precise movement. A 1:5 cartridge is incorporated to minimize drifting.

Specification

Accessories included	B-9 Ball Joint, H-11 Electrode Holder, Allen Wrench	
Movement range	Coarse	X30mm, Y30mm, Z30mm Full rotation of knob: approx. 4mm
	Fine	X2mm, Y2mm, Z2mm Full rotation of knob: 50µm Minimum graduation: 0.2µm
Dimensions / Weight	Control unit	W115 x D115 x H132mm, 1.6kg
	Drive unit	W155 x D155 x H100mm, 900g



MMN-1 - COARSE MANIPULATOR

For installation of a hydraulic micromanipulator; MHW-103



The MMN-1 manual coarse manipulator is designed for use in combination with the MHW-103 for patch clamping. In addition to responsive manual operation, different combinations of components enable a variety of installations.

Specification

Accessories included	Screw; Hex Wrench	
Movement range	Coarse	X30mm, Y30mm, Z30mm
Dimensions /Weight	W130 × D130 × H118mm, 530g	

WR-6 - THREE-AXIS WATER HYDRAULIC MICROMANIPULATOR

Highly recommended for patch clamping from the microscope stage side.

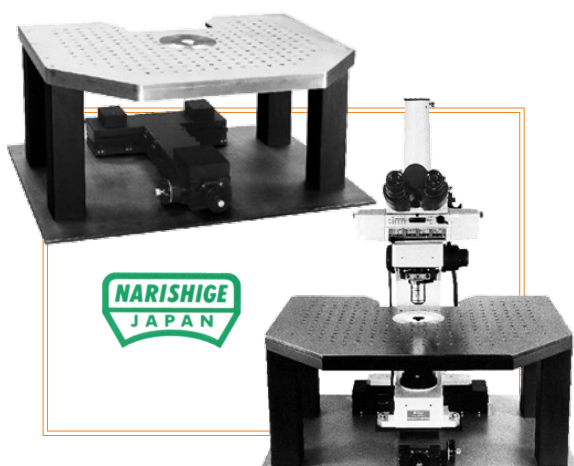


Employing the water hydraulic system, which has a lower coefficient of expansion due to temperature changes, this model offers precise movement while minimizing drift by incorporating a 5:1 cartridge. In addition, it integrates both coarse and fine manipulation capabilities by featuring a manual coarse manipulator for each axis. The drum type control unit has a large handle for precise operation and high linear repeatability. Overall, design considerations are focused on precision movement and stability over long periods of time. The WR-6 is outstandingly versatile: when setting up, it is attached using the bar, but independent setup using a magnetic stand is also possible, as is attachment to the side of the microscope stage with an adaptor.

Specification

Accessories included	B-9 Ball Joint, H-11 Electrode Holder, Allen Wrench	
Movement range	Coarse	X30mm, Y30mm, Z30mm; Full rotation of knob: approx. 4mm
	Fine	X2mm, Y2mm, Z2mm; Full rotation of knob: 50µm; Minimum graduation: 0.2µm
Dimensions /Weight	Control unit	W115 x D115 x H132mm, 1.6kg
	Drive unit	W155 x D155 x H100mm, 900g
Hydraulic tube length	0.9 m	

ITS-N/O/O2/Z/Z2/L ISOLATION SYSTEM



Specification

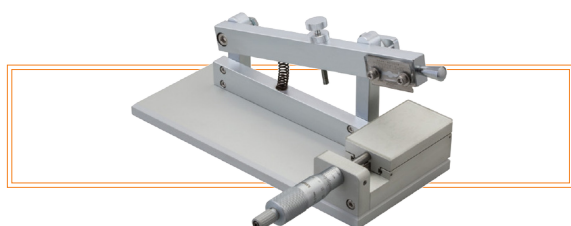
Compatible microscopes	ITS-N	Nikon Upright Microscope for Patch Clamping/Physio Station E600FN
	ITS-O	Olympus fixed stage upright microscope / BX50WI
	ITS-O2	Olympus fixed stage upright microscope / BX51WI
	ITS-Z	Carl Zeiss fixed stage upright microscope / Axioskop FS
	ITS-Z2	Carl Zeiss fixed stage upright microscope / Axioskop 2FS
	ITS-L	Leica fixed stage upright microscope / DMLFS
Movement range	FINE	X22mm, Y22mm, Full rotation of knob: 500um Minimum graduation: 2um
Dimensions/Weight		W650 X D460 X H290mm, 41.7kg
Accessories		ALLEN WRENCH

ST - 10 SLICER

This simple, affordable and durable slicer was developed to slice cerebral tissue.

Specification

Accessories included	Spare Blade Hex Wrench
Dimensions/Weight	W180 × D220 × H110mm, 1.4kg



IM-300 - MICROINJECTOR (PROGRAMMABLE)

Multi-functional, motor-driven injector for precise control of small volumes.

Setting the time and pressure in advance makes it possible to inject very small volumes of liquid with great precision. This model's numerous capabilities, including injection, filling up and holding, and varied functions such as foot switching, programming and air distribution, make it suitable for a wide variety of applications. Moreover, external control with the same action as the foot switch is possible via the input of TTL signals (negative logic).

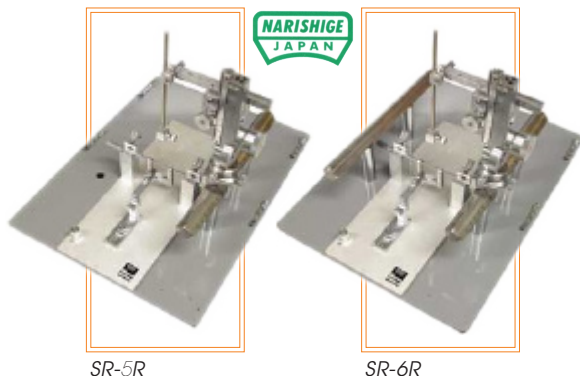


Specification

Accessories included	Output Tube (with a tube connector, Injection Holder (HI-9)) × 2
	Input Hose (with a hose connector)
	Power Cord
	Foot Switch
	Silicone Rubber Gasket (HI01PK01)
	Cleaning Rod
Output tube length	1m
Input pressure	Approx. 400 ~ 700kPa (= approx. 0.4 ~ 0.7MPa, = approx. 60 ~ 100psi)
Injection pressure	Approx. 0.7 ~ 400kP (=approx.0.0007~0.4MPa,=approx.0.1~60psi)
Balance pressure	Approx. 0 ~ 70kPa (= approx. 0 ~ 0.07MPa, = approx. 0 ~ 10psi)
Time settings	10ms ~ 327.66s
Count settings	1 ~ 255
Working voltage	AC100V ~ AC120V, 50/60Hz AC220V ~ AC240V, 50/60Hz
Power consumption	Approx. 25W
Dimensions/Weight	W425 × D205 × H90mm, 3.7kg

SR-5R/6R STEREOTAXIC INSTRUMENT (FOR RATS)

Stereotaxic Instruments for Rats



SR-5R

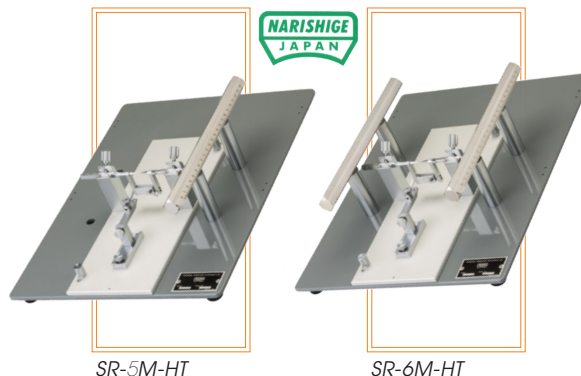
SR-6R

These stereotaxic instruments are designed specifically for rats. The mouthpiece, nosepiece, and auxiliary ear bar are all well thought out for improved ease-of-use.

The mouthpiece and nosepiece are made slimmer and smaller to fit with the tiny mouth of a rat.

SR-5M/6M STEREOTAXIC INSTRUMENT (FOR MICE)

Stereotaxic Instruments for Mice



SR-5M-HT

SR-6M-HT

Based on our long-established SR series, this stereotaxic instrument is designed specifically for mice and is equipped with various functions to fix the head more firmly. The auxiliary ear bar allows clamping actions to be smoothly manipulated with just one hand, letting the operator fix the external auditory canal and check the fixation firmness with the fingertips.

GM-3

Anesthetic Mask for Rats

This extremely compact anesthesia mask hold the nose in place when attached to the holding adapter's nose holder. The lab animal can be held firmly at 3 points (ear/mouth/nose).

The GM-3 for rats is used with the: SR-5R-HT/SR-6R-HT or RA-6N while the GM-4 for mice is used with the SR-5M-HT/SR-6M-HT or MA-6N.



Specification

Dimensions/Weight	W22 × D35 × H19mm, 18g
Inlet/outlet connecting port for anesthesia	Outer diameter ø4mm

GM-4

Anesthetic Mask for Mice

This extremely compact anesthesia mask hold the nose in place when attached to the holding adapter's nose holder. The lab animal can be held firmly at 3 points (ear/mouth/nose).

The GM-3 for rats is used with the SR-5R-HT/SR-6R-HT or RA-6N while the GM-4 for mice is used with the SR-5M-HT/SR-6M-HT or MA-6N.



Specification

Dimensions/Weight	W20 × D28 × H14mm, 10g
Inlet/outlet connecting port for anesthesia	Outer diameter ø4mm

MO-82 - ONE-AXIS OIL HYDRAULIC MICROMANIPULATOR (WITH STEPPING MOTOR)

The combined use of a stepping motor and an oil hydraulic drive for accurate positioning of a microelectrode



Used in combination with Digital Manipulation System, the MO-8, or MO-10 Pencil-type Micromanipulator which is easily mountable onto a mechanical manipulator or stereotaxic instrument, ensures even more accurate drive control.

The Motor Drive incorporates a 5-phase stepping motor that enables higher precision of fine movement operation. With the working distance of 10mm, the insertion of a microelectrode can be achieved without unwanted vibration.

Specification

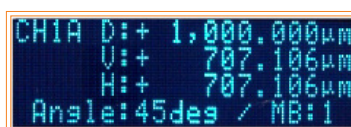
Accessories included	Keypad Cable (3m) Display Cable (1.5m) Extension Cable for Display (1.5m) Power Cord	Rack Mount Brackets Bracket Mounting Screws Rubber Foot Dedicated Electrode Holder
Movement range	10mm (Coarse/Fine/Superfine, drive mode/drive speed changeable)	
Hydraulic tube length	1.5 m	
Drive source	5-phase Stepping Motor	

THE ADOPTION OF MULTI-SLOT CARDBUS READER ALLOWS ADDITIONAL DRIVE UNITS

Based on the DM System, control boards are expandable thus up to three Drive Units can be controlled by one Control Box and one Keypad Controller.



COORDINATE CALCULATION

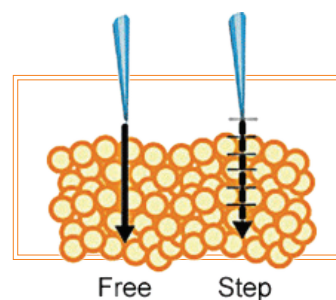


This function enables the user to set an arbitrary position as a reference point and the display is capable of showing the distance traveled from the set reference point.

Position measurement system saves you the inconvenience of calculating the distance traveled, during and after each experiment.

EQUIPPED WITH DIVERSE FUNCTIONS TO SUPPORT VARIOUS EXPERIMENTS

Three driving modes: Free Drive/Set Drive/Step Drive are user-selectable and the respective minimum movement units are user-definable.



KEYPAD CONTROLLER

Easy-to-operate sheet keys are used for the Keypad Controller.



USB COMMUNICATIONS INTERFACE



USB communications interface enables remote-control operation, permitting automatic drive to a specified position as well as interfacing to external hosts such as PCs through application programs.

TSG-2 DOUBLE MAGNETIC STAND

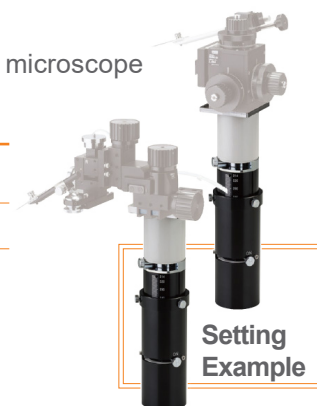


The TSG-2 Double Magnetic Stand is provided with a calibrated vertical adjustment mechanism for easy setup. The powerful magnetic stand enables a large-sized micromanipulator, such as MP-1, to be directly installed.

An appropriately-sized stand for an upright or simple inverted microscope

Specification

Dimensions	ø55 × H214-260mm
Weight	2kg
Magnetic force	80kgf



Setting
Example



TSG-2H SPACER (H50mm)



TSG-2R SPACER (H100mm)



Spacer

	TSG-2H	TSG-2R
Dimensions	ø55 × H50mm	ø55 × H100mm
Weight	260g	520g

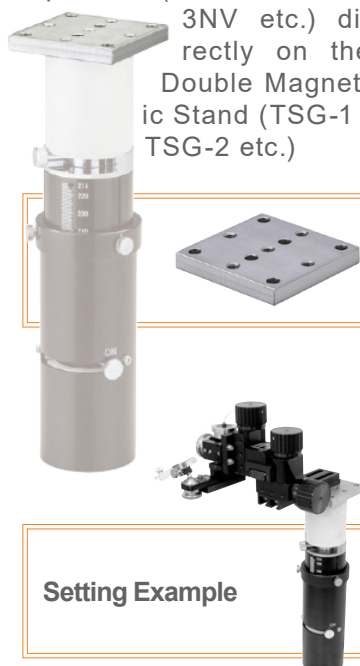
TSG-3 DOUBLE MAGNETIC STAND

The TSG-3 Double Magnetic Stand is provided with a calibrated vertical adjustment mechanism for easy setup. The magnetic stand enables a manipulator to be directly installed. An appropriately-sized stand for a combination of X-Y Base and stereo microscope



TSP-6 MOUNTING PLATE

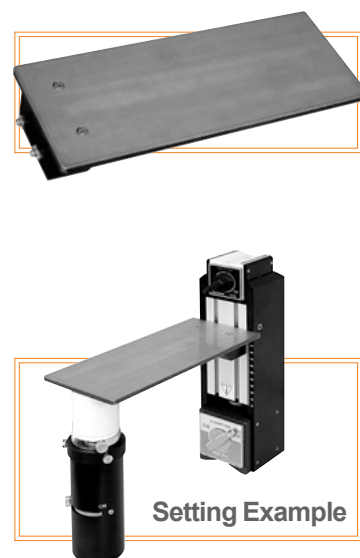
The TSP-6 Mounting Plate is used to mount micromanipulators (MHW-3 / EMM-3NV etc.) directly on the Double Magnetic Stand (TSG-1 / TSG-2 etc.)



Setting Example

SP-65 MOUNTING RACK

Used in combination with double magnetic stand TSG-1 and TSG-2 / TSG-3, it serves as a rack to mount manipulators on it.



Setting Example

AURORA SCIENTIFIC INC.

Specialises in the design and manufacture of research instruments. Our main product line is designed for muscle physiology research but we also offer products for microseismic measurements in mines and products for gas dispersion studies. The muscle physiology products include: force transducers, lever systems, stimulators, control software and test apparatus. These products are designed for testing force-length-velocity relations in a wide variety of natural and artificial fibres. All these instruments offer superior performance, high quality and excellent flexibility. Instruments are sold individually or in complete systems.



1200A INTACT MUSCLE TEST SYSTEM - 1N FORCE - 1205A INTACT MUSCLE TEST SYSTEM - 10N FORCE

Complete test system for evaluating the mechanical characteristics of intact muscle with peak forces of up to 1N or 10N. The muscle preparation is held vertically in a water-jacketed bath. Both force and length are controlled and measured with this system. Length-tension, force-velocity, force stimulation frequency, stiffness and work loop protocols can all be measured with this system.

1400A PERMEABILIZED FIBER TEST SYSTEM - 100mN FORCE

Complete test system for evaluating the mechanical characteristics of permeabilized fibers with peak forces of up to 100mN. The test apparatus fits on an inverted microscope which allows for observation and fluorescence measurement. The bath plate contains 6 wells for different calcium concentrations. The motorized translation system moves the bath plate relative to the fiber. Both force and length are controlled and measured with this system. kTR, pCa-force, length-tension, force-velocity, and stiffness can all be measured with this system.

802B PERMEABILIZED FIBER TEST APPARATUS

For testing permeabilized fibers with the ASI model 312C or 322C high-speed length controller and a 400A series force transducer.

SCAVENGING CUBE FOR ANESTHETIC GAS

Proper scavenging of waste anesthetic gas can be challenging. Too much vacuum sucks the gas past the patient; not enough causes you to be exposed. The VetEquip Scavenging Cube addresses these problems like never before.

The Scavenging cube creates low-pressure/high-flow exhaust for chambers such as the VetEquip Vented Chamber, and low-flow/high-pressure vacuum for circuits like the CX-series nosecones or similar. Vent to a VaporGuard filter or in-house evacuation for easy removal of all waste gas.

THE SCAVENGING CUBE ALLOWS USE OF A CIRCUIT AND CHAMBER WITH ANY TYPE OF EVACUATION.



SMALL ANIMAL HANDLING



New superior cut resistant gloves for animal handling.

Gloves are suitable for the safe handling of small laboratory animals including rodents.

T/FLEX® PLUS gloves are a 13 gauge seamless knit shell; material is Dyneema® engineered fibers plated with Lycra® – Spandex®, Thermax® and the antimicrobial treatment Alphasan® combine to provide a comfortable glove featuring the highest cut resistance. Gloves conform to international safety standards for cut resistance.

Available in five sizes: X-Small through X-Large

Cat #	Description
HG 013G6	T/FLEX® PLUS handling gloves, X-small
HG 013G7	T/FLEX® PLUS handling gloves, Small
HG 013G8	T/FLEX® PLUS handling gloves, Medium
HG 013G9	T/FLEX® PLUS handling gloves, Large
HG 013G10	T/FLEX® PLUS handling gloves, X-Large

EXTRACT - ALL SYSTEMS VET EQUIP

EXTRACT-ALL BENCH MOUNT EVACUATION UNIT WITH PRIMARY FILTER

Every effort must be taken to reduce personnel exposure to waste anesthetic gases. These self-contained recirculating air-cleaning systems capture air contaminants directly at the source, safely remove them, and then release clean air back into the room.

- Standard two-stage filtration system
 - * High efficiency cartridge filter - * Activated carbon
- Two self-supported, articulating extractor arms, which can be flared at one end to make a "hood" up to 4.5" in diameter or decreased to make a nozzle as small as 2.0" in diameter. Each arm's reach is expandable up to 48" in length.
- 3800 FPM duct velocity (one arm) - 2250 FPM duct velocity (two-arms) - (A cap included to close off the unused inlet if only one arm is desired)
- Low noise level - 100,000-hour motor life (typical) - Heavy-duty 14-gauge construction.
- Baked-on polyurethane powder-coat finish

EXTRACT - ALL BENCH ITEM NUMBER: 933101

Comes with two sets of mounting brackets to attach easily to table or bench top, with primary stage filter extending above or below.



EXTRACT - ALL CABINET ITEM NUMBER: 933105

The portability of this system makes it ideal to use in hard to reach places and for moving between locations.

The primary stage filter is located inside the cabinet. This model also accepts an optional 3rd stage activated carbon, refillable adsorption module.



3RD STAGE MODULE

High-capacity adsorption filter. Refillable with activated carbon.

For use with 933105.



MICROVENT 1 - DUAL MODE VETERINARY VENTILATOR IPPV/HFOV

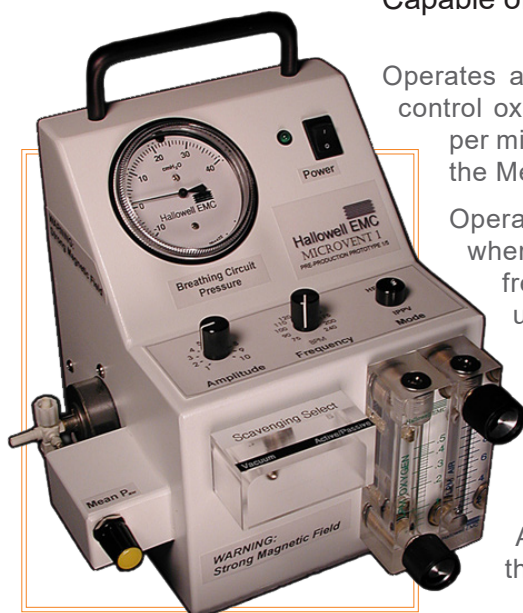
Capable of supporting the smallest animal you can intubate

Operates as a standard IPPV ventilator allowing the investigator to control oxygen flow (50ml to 100ml per minute), number of breaths per minute (75 to 2400, the volume of each breath (0 to 10ml) and the Mean Airway Pressure.

Operates as a high frequency oscillatory ventilation system wherein the lungs are expanded and held inflated as the high frequency vibrations (750 to 2400 vibration cycles per minute) cause the osmotic exchange of O₂ and CO₂ without lung expansion and contraction. The primary result is less movement for the microsurgeon to contend with a secondary result of far less barotrauma for the patient.

Addition of a standard vaporizer allows use as an anesthesia machine, with or without any ventilation.

An internal interface feature allows direct connection to either a passive or active waste gas disposal system.



MONITORING BADGE

ITEM NUMBER: 931443

Badges are worn by personnel in the anesthesia procedure area. The badge adsorbs halogenated hydrocarbons (including isoflurane and halothane). After being worn for 8 hours, they are repackaged in foil containers and sent to a chemical laboratory for analysis. The lab determines the exposure levels and reports the results.



RODENT WORKSTAND

ITEM NUMBER: 984102

The HEMC Rodent WorkStand was developed in collaboration with George A. Vogler, D.V.M., DACLAM of Saint Louis University Medical School Comparative Medicine Department to facilitate endotracheal intubation and intratracheal dose instillation and other similar procedures. The WorkStand will support rats, mice and similar small rodents in a stable and comfortable position.



MOUSE INTUBATION PACK

ITEM NUMBER: 984104

Used with the Rodent WorkStand, each pack is designed to neatly hold all the tools and supplies needed to perform quick, efficient and minimally traumatic orotracheal intubation of small rodents. Each compartment is labeled for contents, reordering information and component instructions.

Pack includes; a specially designed and molded autoclavable intubation speculum, a lidocaine applicator, and endotracheal tube guide wire, an incisor loop and a brief tutorial video. The Mouse Pack includes HEMC™'s NEW mouse endotracheal tubes in two sizes.



Does not include an Otoscope.

Oscopes in 3 quality ranges are available by special order:

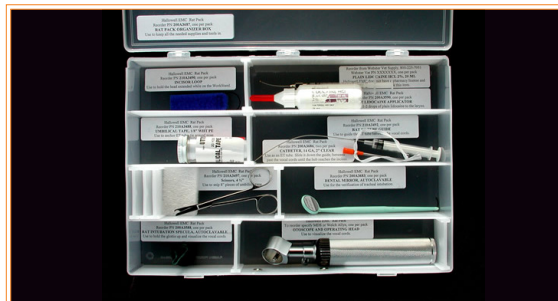
- MDS, non-rechargeable NICAD batteries.
- Welch Allyn, rechargeable NICAD batteries.
- Light and easy to handle Welch Allyn, rechargeable LI Ion batteries.

RAT INTUBATION PACK

ITEM NUMBER: 984106

Used with the Rodent WorkStand, each pack is designed to neatly hold all the tools and supplies needed to perform quick, efficient and minimally traumatic orotracheal intubation of small rodents. Each compartment is labeled for contents, reordering information and component instructions.

Packs include; a specially designed and molded autoclavable intubation speculum, a lidocaine applicator, and endotracheal tube guide wire, an incisor loop and a brief tutorial video. In addition, the Rat Pack contains scissors, umbilical tape, and a mirror for the verification of tracheal intubation.

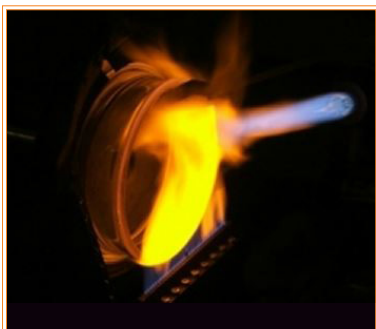


Does not include an Otoscope.

Oscopes in 3 quality ranges are available by special order:

- MDS, non-rechargeable NICAD batteries.
- Welch Allyn, rechargeable NICAD batteries.
- Light and easy to handle Welch Allyn, rechargeable LI Ion batteries.

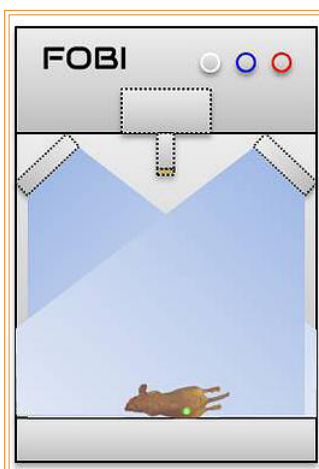
GLASS LABORATORY EQUIPMENT



- Glass electrochemical cells.
- Glass equipment for waste water disposal.
- Quartz cells with optical windows.
- Quartz furnace tubes and distillation apparatus.
- Standard glassware.
- Glass reactors.
- Custom-made equipment for the chemical industry and research laboratories

FOBI

FLUORESCENCE-LABELED ORGANISM BIOIMAGING INSTRUMENT



FOBI is a bioimaging instrument which images and analyzes fluorescence signal from fluorescence labeled organism.

FOBI uses light source and filter that are optimized for Green fluorescence and NIR to distinguish background and signal without preprocessing. Diffused LED light makes the results more reliable as it reduces variations in position.

Not only highly sensitive images but also movies can be acquired by FOBI. Its simple design and program allows ease of use and quick acquisition of data.

- Compact size (260x260x400mm), Just connect USB cable to PC.
- Easy to use-Use it easier than digital camera. every process will be done with just one click.
- Fast- Fluorescence signal detect, Take real time imaging.
- Powerful- Perfect background signal remove, Fluorescence intensity quantitative analysis.
- Economical - Better performance than price

TUMOR

It is possible to take an image of tumorization animal using stable expressed GFP tumor cell line. FOBI can check the antitumor activity without sacrificing the animals by intensity measuring. FOBI can determine the location and extent of the cancer metastasis by tracking the fluorescence signal.

CELL TRACKING

FOBI can confirm survival and location of target cell that made by variety purposes. There are several problems with introduction of the fluorescence gene using a viral, stem cells and immune cells can check In Vivo after staining the cells using a fluorescent dye.

Ex Vivo

The results of In vivo imaging data can confirm once again by Ex vivo imaging. Fluorescence signal can expressed continuously after animal was sacrificed. It is possible to quantify the fluorescence image again thru obtain the separation. Ex vivo data that obtained as above can be good evidence and increase the reliability of the test.

PLANT

FOBI can take imaging and quantitative analysis in plant leaves. It's very hard thing because Chlorophyll's auto fluorescence. FOBI's color camera can taking not only GFP's green fluorescence but also red fluorescence. So you can also check the plants' health condition. You can check both of GFP analysis and health condition at one leaf. FOBI can take imaging at seed and callus. You can check the function thru whole period of growth and regeneration.

Analysis - Fluorescence imaging analysis can exactly quantitative analysis by remove background.

INCUDRIVE 90

Roller bottle incubator for rolling up to 90 bottles

- selfcontained incubator/roller for 90 bottles
- energy savings
- mobile, built on castors
- limits cross-contamination
- warm-up period max. 2 hours
- CO₂-version (optional)

Roller bottle incubator for 90 bottles for the production of e.g. vaccines using adherent cell cultures.

Consisting of an incubator and a drive mechanism for rolling up to 90 cell culture bottles with a diameter of between 100 and 120 mm and 270 mm length, on 9 levels, of 5 bottles side by side in two rows.

The rotational speed of a bottle with diameter 120 mm is continuously adjustable from 0.1 to 2 rpm.



Heating of only the exactly needed space for the cultivation of the seed cultures and the production cultures results in considerable energy savings compared to large warm rooms. Temperature range is +5°C above room temperature to +50°C, continuously adjustable. With protection against over-heating.

DS3 ISOLATED CONSTANT CURRENT STIMULATOR



The DS3 provides a precise Constant Current stimulus (up to 32mA) controllable in Pulse Duration

and Amplitude and as with the DS2A this output comes from self-contained batteries. The DS3 also features a "clamp" or discharge circuit which discharges the output between stimuli, preventing a charge build up on the preparation. In other constant current devices this charge build up can lead to a loss of stimulus. The DS3 can be triggered by an external device such as our new DG2A Train/Delay Generator. This stimulator is NOT approved for use on human subjects.

STEREO DISCOVERY.V8

Entry into the Class of Sophisticated Stereomicroscopes

Compared with conventional entry level models the high-performance optics impresses with:

- enhanced resolution
- increased contrast
- a perceptibly improved stereoscopic impression.

As a result, it offers an image brilliance that is without equal in this class of instrument. Benefit from a visible increase in information in all bio-medical and industrial applications and experience a new view.

BALL LENS - UNCOATED

Ball lenses are highly polished spheres made of optically transparent homogeneous materials. Carefully controlled manufacturing process produces spheres with precise diameters and unsurpassed surface quality.



PROGRAMMABLE LED DRIVER

The programmable LED drivers provide a tunable DC current to multiple individual LEDs or clusters of two, three or four diodes combined into a single output fiber.

1000mA current limit is standard, other values on request.



CLINICUT 60 CRYOSTAT



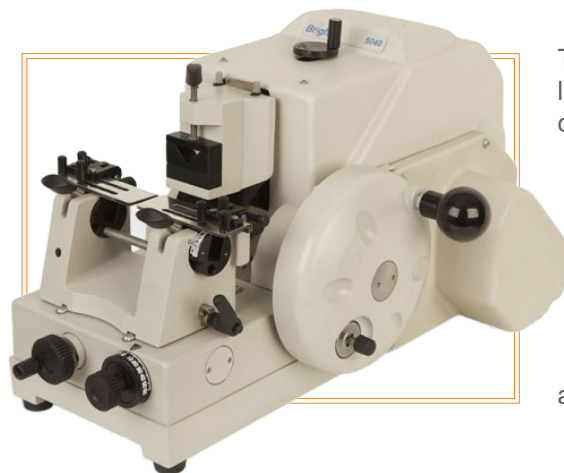
More than just a cryostat, the Clinicut 60 offers a systematic approach to the preparation, cutting and storage of fresh tissue specimens. Its unique specimen quick freezer is not simply a 'cold-spot' inside the chamber, but an insulated work station for tissue preparation and also enables specimens to be prepared in various shaped moulds.

With the addition of the compact, durable and reliable 3020 microtome, this cryostat's thoughtful design has also made the onerous task of regular cleaning so much easier.

Available as a manual or as a motorised rewind version, rapid frozen sections really are made easy with the Clinicut 60.

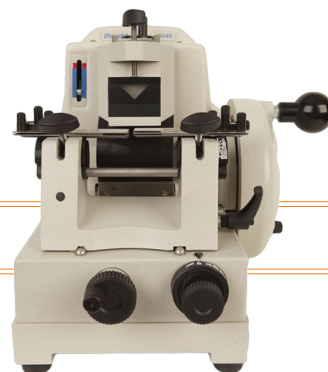
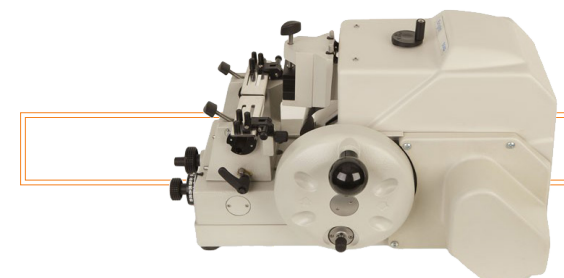
- Small 'footprint' - takes up less space in the laboratory
- Thermostatically controlled chamber temperature to -35°C with fully programmable automatic defrost and digital display
- Excellent, rapid specimen quick freezer to -45°C with specimen moulds and heat dissipater
- Simple to set up - easy to use
- Accepts a wide range of knives and disposable blades
- Cuts excellent sections and incorporates the Easi-Set anti-roll plate

5040 MICROTOME



The popular 5040 microtome is of rotary retracting, self-lubricating design and has a heavy cast alloy base and cutting arm. Its robust construction makes it accurate and incredibly reliable.

The use of fixed beryllium hinges means that all lateral motion is controlled and allows no slop or play that can be experienced in other, lesser designs which can result in 'chatter' and 'thick and thinning'. Its pawl and ratchet wheel and head-advance design ensures absolute calibration for section thickness accuracy and repeatability.



- Easy to use rotary retracting microtome with wide range of optional features
- Choice of advance/rewind handle positions
- Motor drive with zone control is available
- Of hard wearing construction and maintenance free
- Standard knife holder accepts most conventional knives
- Quick release feather blade holder can be fitted
- Specimen feed indicator
- Safety features include fitted knife guards and locking handwheel

STARLET



Not since cryostats were invented has there been such a small, portable yet convenient instrument.

Featuring many design concepts developed from our continuous research programme, the Starlet cryostat is available in a choice of either handwheel

or lever operation. In addition to standard voltages, the Starlet is available as a battery operated 12V DC version ensuring that this cryostat really is one of the most versatile possible.

The size of the Starlet makes it ideal as a back-up instrument or for use in laboratories where space is at a premium. Fully portable, it can be transported with ease from laboratory to laboratory and is a must for use in the 'field' - the possibilities are endless. If frozen sectioning is infrequent and a full-sized, full-priced cryostat cannot be justified, the Starlet does the job and fits any budget.

Inexpensive and reliable the Starlet - ideal where space and funds are limited - really is unique amongst cryostats.

- Small, inexpensive and portable - a battery version is available for use 'in the field'
- Thermostatically controlled temperature in the range ambient to -30°C with digital display
- Choice of handwheel or lever operated microtome
- Uses disposable blades and incorporates the Easi-Set anti-roll plate
- Cuts excellent sections just like a full sized cryostat

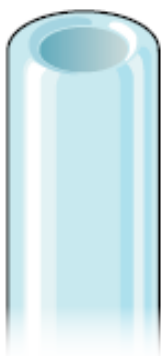
OTF5000

Based on the long-established and reliable OTF/AS cryostat, the new OTF5000 brings the extensive range of Bright cryostats completely up to date. New styling coupled with improved user ergonomics, the latest blade systems in the ever-reliable and powerful 5040 microtome, a huge choice of options plus money-saving package deals make these cryostats absolutely unique.

They are suitable for an endless range of applications and, in the correct configuration, are capable of cutting a wide diversity of specimens from undecalcified bone to brain, resins, plastics and plant tissue, as well as more usual soft tissue. Allowing full anti-roll plate adjustment for perfect results coupled with long lasting temperature stability, the OTF5000 can truly be described as complete.



- New contoured top for added operator comfort and usability
- Suitable for research and clinical operation
- 2 money-saving special packages available
- Uses solid knives or disposable blades including new lever release Feather blade holder
- Available in 2 different working heights
- Automatic evaporator defrost supplied as standard
- Non-urgent functions on side panel
- Long list of options and accessories
- Contains tried and tested 5040 rotary microtome



SINGLE-BARREL GLASS CAPILLARIES

Clean, high quality glass for making micropipette electrodes and other research implements Standard, no Filament

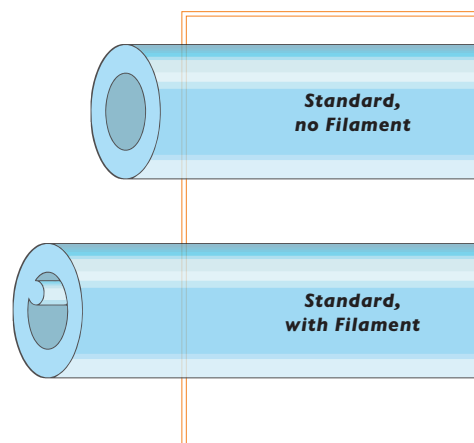
Fire-Polished glass capillaries are easier to insert into microelectrode holders without damaging the gasket.

Borosilicate glass capillaries: Close dimensional tolerances assure microelectrode uniformity and reproducibility. Available in one-, two-, three-, five- and seven-barrel configurations.

Single-Barrel Standard Borosilicate Glass Tubing

OD (mm)	ID (mm)	FIL	Fire-Polished	Length	Quantity	Item
1.0	0.58	✓		3 in. (76mm)	500	1B100F-3
1.0	0.58			3 in. (76mm)	500	1B100-3
1.2	0.68	✓		3 in. (76mm)	350	1B120F-3
1.2	0.68			3 in. (76mm)	350	1B120-3
1.5	0.84	✓		3 in. (76mm)	225	1B150F-3
1.5	0.84		✓	3 in. (76mm)	300	1B150-3
1.0	0.58	✓	✓	4 in. (100mm)	500	1B100F-4
1.0	0.58		✓	4 in. (100mm)	500	1B100-4
1.2	0.68	✓	✓	4 in. (100mm)	400	1B120F-4
1.2	0.68			4 in. (100mm)	350	1B120-4
1.5	0.84	✓	✓	4 in. (100mm)	300	1B150F-4
1.5	0.84		✓	4 in. (100mm)	300	1B150-4
2.0	1.12	✓		4 in. (100mm)	125	1B200F-4
2.0	1.12		✓	4 in. (100mm)	200	1B200-4
1.0	0.58	✓		6 in. (152mm)	500	1B100F-6
1.0	0.58			6 in. (152mm)	500	1B100-6
1.2	0.68	✓		6 in. (152mm)	350	1B120F-6
1.2	0.68			6 in. (152mm)	350	1B120-6
1.5	0.84	✓		6 in. (152mm)	225	1B150F-6
1.5	0.84			6 in. (152mm)	225	1B150-6
2.0	1.12	✓		6 in. (152mm)	125	1B200F-6
2.0	1.12			6 in. (152mm)	125	1B200-6

Single Barrel standard wall thickness capillaries are offered either with or without inner filaments for quick filling in a variety of lengths and diameters. Two usable electrodes can be made from one 6-inch length.



PATCH CLAMP CAPILLARY

To select the best patch clamp glass for your experiments, we have evaluated available glass types in terms of the four properties most crucial to successful patch clamp studies.

PG52151-4, PG52152-4 and PG52165-4 are prepared from Schott #8250 glass (equivalent to Corning #7052), one of the most widely used patch clamping glasses. This is a specially formulated borosilicate glass with a softening temperature that is 110°C lower than regular borosilicate glass (Corning 7740, or Pyrex). It has excellent sealing properties for most cells. Electrical properties are also very good.

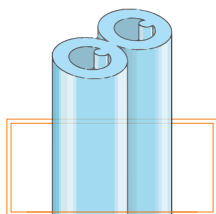
PG10150-4 and PG10165-4 are composed of Corning #0010 glass, a high lead content (22% PbO) glass. Its thermal and electrical performance is between the Schott #8250 and Corning #8161 glasses described above. It is much more economical than Corning #8161 glass. It has been found that this glass causes much less alteration in channel behaviour than Corning #8161 and Schott #8250 glass (Furman and Tanaka, Biophys. J. 53, p287, 1988).

Patch clamp capillaries do not have microfilaments.

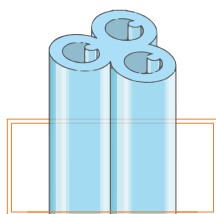
PATCH CLAMP CAPILLARY GLASS

Catalog #	Glass Type	OD/ID (mm)	Dielectric Constant	Softening Point °C	Quantity
PG52151-4	+8250	1.5/1.0	4.9	720°	100
PG52152-4	+8250	1.5/0.9	4.9	720°	100
PG52165-4	+8250	1.65/1.1	4.9	720°	100
PG10150-4	+0010	1.5/0.75	6.7	625°	100
PG10165-4	+0010	1.65/1.1	6.7	720°	100

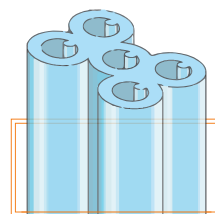
MULTI-BARREL GLASS CAPILLARIES



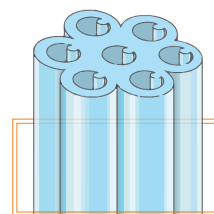
TWO.BARREL



THREE.BARREL



FIVE.BARREL



SEVEN.BARREL

Multi-barrel

configurations are designed especially for microiontophoresis.

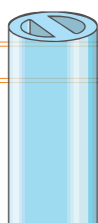
Because the capillaries are fused together during manufacture, you will not need to twist them while pulling to seal the tips together.

An inner filament in each barrel makes filling easy and fast.

Multi-Barrel Borosilicate Glass Tubing with Filaments

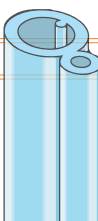
Description	OD/ID(mm)	FIL	Length	Quantity	Item
Two-Barrel	1.5/0.84	✓	4 in. (102mm)	100	2B150F-4
Three-Barrel	1.2/0.68	✓	4 in. (102mm)	100	3B120F-4
Five-Barrel	1.2/0.68	✓	4 in. (102mm)	65	5B120F-4
Seven-Barrel	1.2/0.58	✓	4 in. (102mm)	60	7B100F-4
Seven-Barrel	1.2/0.68	✓	4 in. (102mm)	75	7B120F-4
Two-Barrel	1.5/0.84	✓	6 in. (152mm)	100	2B150F-6
Three-Barrel	1.2/0.68	✓	6 in. (152mm)	100	3B120F-6
Five-Barrel	1.2/0.68	✓	6 in. (152mm)	65	5B120F-6
Seven-Barrel	1.0/0.58	✓	6 in. (152mm)	60	7B100F-6

SPECIAL CONFIGURATION BOROSILICATE CAPILLARIES



Septum Theta

offers superior cell impalement. The natural bevel resulting from the prominent spear-like projection of the septum gives microelectrodes a sharp, spear-point tip.



Piggyback

glass consists of a pair of borosilicate capillaries fused together during manufacture. One barrel is larger than the other, and both have inner filaments for quick filling.

Special Configuration Borosilicate Glass Tubing

Description	OD/ID(mm)	Length	Quantity	Item
Septum Theta	1.5/1.02	6 in. (152mm)	100	TST150-6
Piggyback	1.51/0.84 0.75/0.35	4 in. (102mm)	50	PB150F-4
Piggyback	1.51/0.84 0.75/0.35	6 in. (152mm)	50	PB150F-6

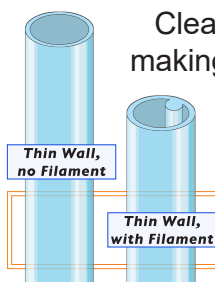
BOROSILICATE GLASS ROD

1.0 mm diameter
for making tools, probes, tips

Borosilicate Glass Rod

Description	OD/ID(mm)	Length	Quantity	Item
Glass Rod	1.0	4 in. (102mm)	500	GR100-4
Glass Rod	1.0	6 in. (152mm)	500	GR100-6

THIN-WALL GLASS CAPILLARIES



Clean, high quality glass for making micropipette electrodes and other research implements.

NANOFIL NanoFil Syringe, 10 microfilter

NanoFil syringe does not contain any injection tips, those must be purchased separately.

It does include a 26 gauge beveled needle for backfilling.

Recommended Accessories

RPE-KIT	Retinal Pigment Epithelium (RPE) injection kit (SilFlex tubing, gasket, holder and blunt tipmix)
IO-KIT	Intraocular (IO) injection kit (SilFlex tubing, holder, gasket and beveled tipmix)
NF33BL-2	33 G blunt NanoFil needle (pkg of 2)
NF34BL-2	34 G blunt NanoFil needle (pkg of 2)
NF35BL-2	35 G blunt NanoFil needle (pkg of 2)
NF36BL-2	36 G blunt NanoFil needle (pkg of 2)
NF33BV-2	33 G beveled NanoFil needle (pkg of 2)
NF34BV-2	34 G beveled NanoFil needle (pkg of 2)
NF35BV-2	35 G beveled NanoFil needle (pkg of 2)
NF36BV-2	36 G beveled NanoFil needle (pkg of 2)
NF33FBL-2	33 G Flexifil blunt NanoFil needle (pkg of 2)
NF33FBV-2	33 G Flexifil beveled NanoFil needle (pkg of 2)
NF33-36BL	Assortment of 4 blunt NanoFil needles
NF33-36BV	Assortment of 4 beveled NanoFil needles
NFQ34-5	34 Gauge Flexible Quartz Tubing for filling (pkg5)

Replacement Parts

NFINHLD	NanoFil Injection Holder
SILFLEX-2	SilFlex tubing (pkg of 2)
NFGSK-5	Spare Gasket for NanoFil & Holder (pkg of 5)

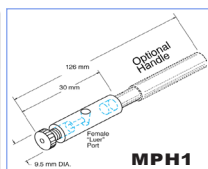
MICROELECTRODE HOLDERS

MPH1	33 G blunt NanoFil needle (pkg of 2)
MPH3	34 G blunt NanoFil needle (pkg of 2)
MPH4	35 G blunt NanoFil needle (pkg of 2)
MPH6S	36 G blunt NanoFil needle (pkg of 2)

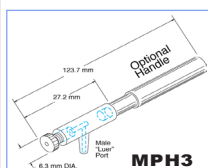
**SPECIFY O.D. OF GLASS
(1.0, 1.2, 1.5 OR 2.0 mm)
WHEN ORDERING.**

Handles and Accessories (not included)
Handle #2505 is for use with WPI manipulators. The smaller diameter handle #5444 is required for use with Narishige and Zeiss manipulators.

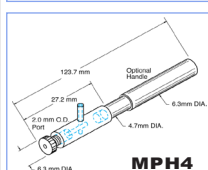
2505	1/4 - in. (6.3 mm) diameter handle
5444	3/16 - in. (4.8 mm) diameter handle
GO1-100	Replacement gasket 1.0 mm, Package of 100
GO2-100	Replacement gasket 1.2 mm, Package of 100
GO3-100	Replacement gasket 1.5 mm, Package of 100
GO4-100	Replacement gasket 2.0 mm, Package of 100
1571	Clear Silicone Rubber Sealant (4.7 oz)



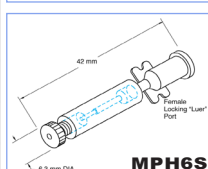
MPH1



MPH3



MPH4



MPH6S

AG/AGCL HALF-CELLS

New, improved sintered pellets with lower resistance and high strength. Stable and well balanced in the presence of current, these small and inexpensive half-cells are easy to work with as bath electrodes.

EP05 Ag/AgCl Electrode
0.5 mm diam x 8 mm

EP08 Ag/AgCl Electrode
0.8 mm diam x 8 mm

EP1 Ag/AgCl Electrode
1.0 mm diam x 2.5 mm

EP2 Ag/AgCl Electrode
2.0 mm diam x 4 mm

EP4 Ag/AgCl Electrode
4.0 mm diam x 1 mm

EP8 Ag/AgCl Electrode
8.0 mm diam x 1 mm

EP12 Ag/AgCl Electrode
12.0 mm diam x 1 mm

RC1 Reference Cell
with 1.5 m lead

RC1-T Reference Cell,
1.5 m lead, 2mm pin

RC2 Reference Cell
with 2.0 mm pin

RC2-F Reference Cell
with female connector

RC3 Reference Cell
with epoxy body,
4.5 mm diam x 50 mm

RC4 Reference Cell
with glass body,
4.0 mm diam x 75 mm

RC5 Reference Cell
with glass body,
4.0 mm diam x 50 mm

RC6 Reference Cell
with glass body,
1.5 mm diam x 50 mm

3578 Adapter Cable
for Ag/AgCl Pellets

EP05
0.5 mm dia.
2 cm long

Ag Wire 60 mm long

EP08
0.8 mm dia.
2 cm long

Ag Wire 60 mm long

EP1
1 mm dia.
3 mm long

Ag Wire 70 mm long

EP2
2 mm dia.
4 mm long

Ag Wire 5 cm long

EP4
4 mm dia.
1 mm thick

Ag Wire 12 mm long

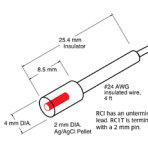
EP8
8 mm dia.
1 mm thick

Ag Wire 12 mm long

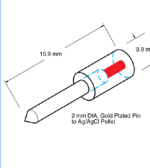
EP12
12 mm dia.
1 mm thick

Ag Wire 12 mm long

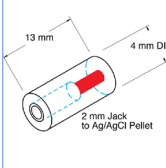
RC1/RC1T



RC2



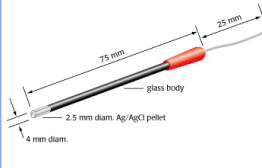
RC2F



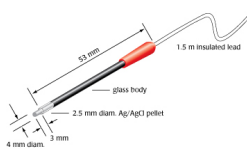
RC3



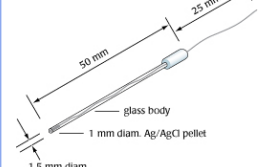
RC4



RC5



RC6



MICROPIPETTE HOLDERS & HALF CELLS

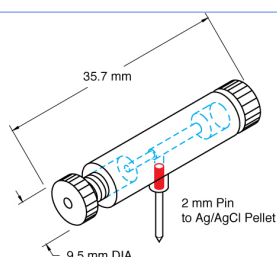
WPI's microelectrode holder-half-cells couple fluid-filled glass micropipettes to high input impedance amplifiers. A Ag/AgCl pellet (or a silver wire) molded into the holder body provides stable potential. Electrical connection is made via male 2 mm pins or female 2 mm sockets.

The pipette may be mounted axially or at right angles to the holder. Pipettes are held with screw-caps or rubber gaskets (without caps). Filling WPI microelectrode holders with electrolytes containing chloride results in stable electrode potential. Suitable electrolytes include KCl, NaCl and CaCl₂.

Holders are supplied for standard WPI single capillary tubing of 1.0, 1.2, 1.5 and 2.0 mm outside diameters. (Call WPI regarding custom designs for other glass diameters.) The holder style you select will depend on your experimental application, space, and instrumentation.

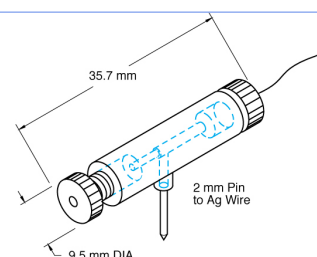
APEH1

- Male Connector
- Pellet Half-Cell
- No Pressure Port
- 2 Screw Caps



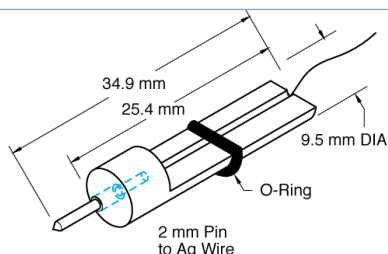
APEH2

- Male Connector
- Wire Half-Cell
- No Pressure Port
- 2 Screw Caps



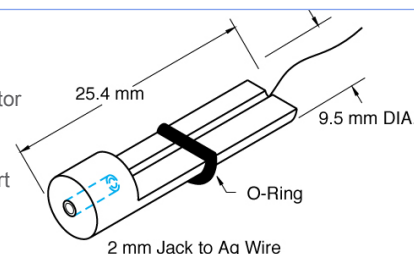
EHB1

- Male Connector
- Wire Half-Cell
- No Pressure Port



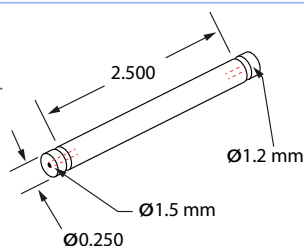
EHBF

- Female Connector
- Wire Half-Cell
- No Pressure Port



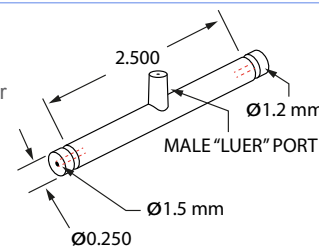
FOIMPH

- Fiber Optic Connector
- No Pressure Port
- Screw Cap



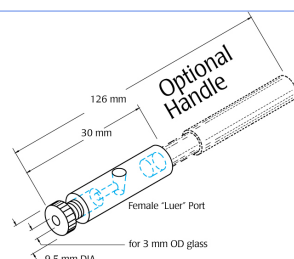
FOIMPH-LF

- Fiber Optic Connector
- Male Luer
- Screw Cap



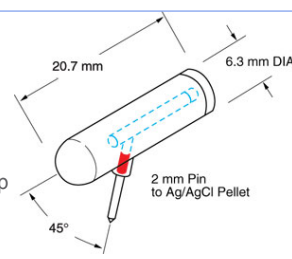
MBMPH5-7

- Female Luer
- Screw cap



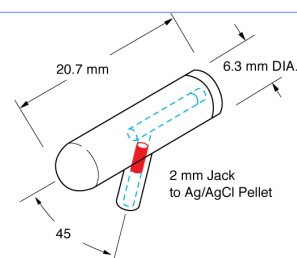
MEH145

- Male Connector
- Pellet Half-Cell
- No Pressure Port, No Cap



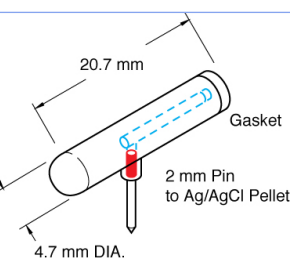
MEH1F45

- Female Connector
- Pellet Half-Cell
- No Pressure Port, No Cap



MEH1R

- Male Connector
- Pellet Half-Cell
- No Pressure Port, No Cap



DUMONT TWEEZERS #5

500085

Material: Dumostar - non-magnetic, non-corrosive
Length: 11cm Tips: 0.025 x 0.015 mm



500233

Material: Dumostar - non-magnetic, non-corrosive
Length: 11 cm Tips: 0.10 x 0.06 mm



14098

Material: Dumoxel - non-magnetic, non-corrosive
Length: 11cm Tips: 0.1 x 0.06 mm



500342

Material: Inox
Length: 11 cm Tips: 0.10x0.06 mm



500341

Material: Inox, Biology
Length: 11 cm Tips: 0.05x0.01 mm



14095

Material: Stainless Steel, Medical Biology tweezers
Length: 11cm Tips: 0.05 x 0.01 mm



501201

Material: Stainless Steel, Medical, 90° bent
Length: 11 cm Tips: 0.05 x 0.01 mm



14101

Material: Stainless Steel, Medical Biology, 45°
Length: 11cm Tips: 0.05 x 0.01 mm



500232

Material: Stainless Steel, Medical Biology
Length: 11 cm Tips: curved, 0.02 x 0.06 mm



14096

Material: Titanium
Length: 11cm Tips: 0.1 x 0.06 mm



14096

Material: Titanium
Length: 11cm Tips: 0.1 x 0.06 mm



DUMONT TWEEZERS #7

14188

Material: Dumoxel - non-magnetic, non-corrosive
Length: 12 cm Tips: 0.17 x 0.1 mm



501302

Material: Stainless Steel
Length: 11cm Tips: 0.17 x 0.10mm serrated jaws



14097

Material: Inox
Length: 12 cm long Tips: 0.17 x 0.1 mm



14187

Material: Titanium - non-magnetic, non-corrosive
Length: 12 cm Tips: 0.17 x 0.1 mm



FORCEPS

500092

Adson Forceps
Length: 12 cm, 1x2 teeth



14226

Adson Forceps
Length: 12 cm, serrated tips



14142

Graefe Forceps
Length: 7 cm, serrated straight 0.7 mm tips



14140

Graefe Forceps
Length: 7 cm, 1x2 teeth, straight 0.7 mm tips



500363

Dressing Forceps
Length: 15.5 cm, serrated (pictured)



500364

Dressing Forceps
Length: 25.5 cm, serrated



FORCEPS

500365

Dressing Forceps
Length: 30.5 cm, serrated



501217

Dressing Forceps
Length: 12.5 cm, serrated



15914

Iris Forceps
Length: 10 cm, serrated straight 0.8 mm tips



15916

Iris Forceps
Length: 10 cm, 1x2 teeth, straight 0.8 mm tips



15917

Iris Forceps
Length: 10 cm, 1x2 teeth, curved 0.8 mm tips



500455

Filter Forceps (great for gel handling)
Polypropylene finger grip, length: 11 cm, straight flat jaw



FORCEPS

500451

Micro Hemostatic Forceps
Length: 12.5 cm cm long, serrated, 0.4 x 0.8 mm tips



500452

Micro Hemostatic Forceps
Length: 12 cm cm long, serrated, 0.4 x 0.8 mm tips



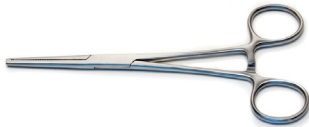
501240

Mixer Hemostatic Forceps "Baby", right angle
Length: 14 cm

FORCEPS

ROCHESTER-OSCHNER HEMOSTATIC FORCEPS

501326 -- Straight, lenght 16 cm



501710 -- Curved, lenght 14 cm



501709 -- Straight, lenght 14 cm



SCISSORS

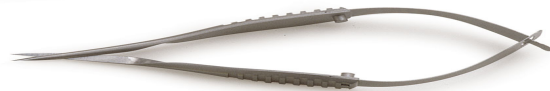
14177

McPherson-Vannas Scissors
Length: 7 cm, straight 3 mm blades, 0.1 mm tips



501778

Vannas Scissors, Super Fine
Length: 8 cm, straight 3 mm blades, 0.015 X 0.015 mm



14003

Vannas Scissors
Length: 8 cm, straight 5 mm blades, 0.1 mm tips



500260

Vannas Scissors
Length: 8 cm, 45° angled to side, straight 5 mm blades, 0.1 mm tips



SCISSORS (TITANIUM)

555640S

Vannas Scissors, Titanium
Length: 8 cm, straight 7.5 mm blades



555641S

Vannas Scissors, Titanium
Length: 8 cm, angled 7.5 mm blades



14364

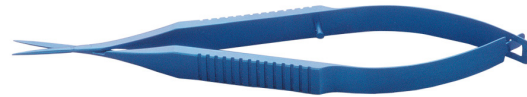
Vannas Scissors, Titanium
Length: 8 cm, straight 3 mm blades



SCISSORS (TITANIUM)

555580S

Vannas Scissors, Titanium
Length: 10.5 cm, curved, sharp tips, 10.5 mm blades.



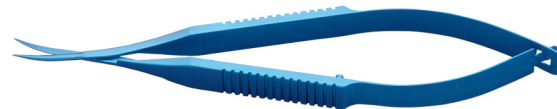
555582S

Vannas Scissors, Titanium
Length: 10.5 cm, straight, sharp tips, 12.5 mm blades.



555583S

Vannas Scissors, Titanium
Length: 10.5 cm, angled, sharp tips, 10.5 mm blades.



DISSECTING & SURGICAL SCISSORS

14393 --Dissecting Scissors, 10 cm long, straight



14394 --Dissecting Scissors, 10 cm long, curved



15922 --Dissecting Scissors, 12,5 cm long, straight



115923--Dissecting Scissors, 12,5 cm long, curved



14192 -- Surgical Scissors, 14 cm long, straight, Sharp/Blunt



501221 -- Surgical Scissors, 14 cm long, curved, Sharp/Blunt



501223 -- Surgical Scissors, 16 cm long, straight, Sharp/Blunt



501226 -- Surgical Scissors, 16 cm long, curved, Sharp/Blunt



501220 -- Surgical Scissors, 14 cm long, curved, Sharp/Sharp



501225 -- Surgical Scissors, 16 cm long, straight, Sharp/Sharp



501228 -- Surgical Scissors, 16 cm long, curved, Sharp/Sharp



501218 -- Surgical Scissors, 14 cm long, straight, Sharp/Sharp



501219 -- Surgical Scissors, 14 cm long, straight, Blunt/Blunt



501222 -- Surgical Scissors, 14 cm long, curved, Blunt/Blunt



501224 -- Surgical Scissors, 16 cm long, straight, Blunt/Blunt



501227 -- Surgical Scissors, 16 cm long, curved, Blunt/Blunt



SCALPELS, KNIVES BLADES AND HANDLES

500236

Scalpel Handle #3, 13 cm long,
stainless steel



500237

Scalpel Handle #4, 14 cm long,
stainless steel



500239 -- Scalpel Blades
#10, stainless steel, sterile
(100 / box)



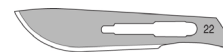
500244 -- Scalpel Blades
#21, stainless steel, sterile
(100 / box)



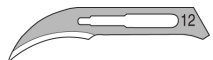
500240 -- Scalpel Blades #11,
stainless steel, sterile
(100 / box)



500245 -- Scalpel Blades
#22, stainless steel, sterile
(100 / box)



500241 -- Scalpel Blades #12,
stainless steel, sterile
(100 / box)



500246 -- Scalpel Blades
#23, stainless steel, sterile
(100 / box)



500242 -- Scalpel Blades
#15, stainless steel, sterile
(100 / box)



500247 -- Scalpel Blades
#24, stainless steel, sterile
(100 / box)



500243 -- Scalpel Blades
#20, stainless steel, sterile
(100 / box)



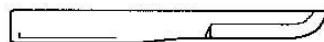
500248 -- Scalpel Blades
#25, stainless steel, sterile
(100 / box)



501249 -- Needle Blades, 6/pk



501250 -- Miniature Edged Blades,
curved tip, 12/pk



501251 -- Miniature Edged Blades,
round tip, 12/pk



501247

Round Knurled Blade Handle, stainless steel
Lenght: 10 cm



501248

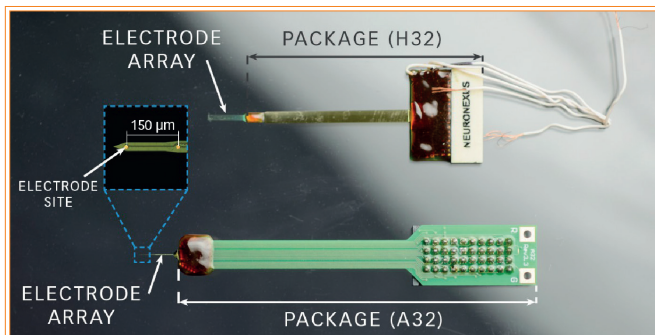
Hex Blade Handle, stainless steel
Lenght: 10



- 500348** -- Disposable Scalpel, No. 10, sterile, (10/box)
- 500349** -- Disposable Scalpel, No. 11, sterile, (10/box)
- 500350** -- Disposable Scalpel, No. 12, sterile, (10/box)
- 500351** -- Disposable Scalpel, No. 15, sterile, (10/box)
- 500352** -- Disposable Scalpel, No. 20, sterile, (10/box)
- 500353** -- Disposable Scalpel, No. 21, sterile, (10/box)
- 500354** -- Disposable Scalpel, No. 22, sterile, (10/box)
- 500355** -- Disposable Scalpel, No. 23, sterile, (10/box)
- 500356** -- Disposable Scalpel, No. 24, sterile, (10/box)



LEADING-EDGE NEURAL PROBES AND SYSTEMS



NeuroNexus offers high-quality, high channel count neural probes for single-unit, multi-unit, and local field potential electrophysiology.

Our state-of-the-art electrodes are designed to minimize tissue damage for superior signal quality. Also, instrumentation and accessories to support electrophysiology experiments, including chronic drives, 3-electrode experiment stands, and a data streaming system.



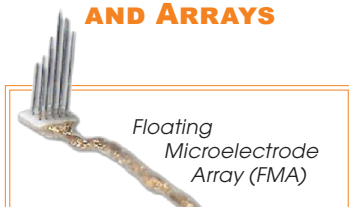
NeuroNexus

PLEXON

SOLUTIONS FOR NEUROSCIENCE RESEARCH

- Advanced In Vivo Neurophysiology Solution
- NEW Behavioral Research Solution
- Behavioral Research Solution for Electrophysiology
- Optogenetic Stimulation Solution

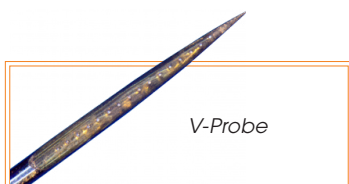
ELECTRODES, PROBES AND ARRAYS



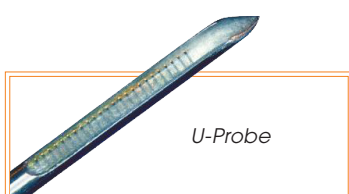
Floating Microelectrode Array (FMA)



Brain Slice Probe



V-Probe



U-Probe

HEKA COMPUTER CONTROLLED AMPLIFIERS

The EPC 10 USB Family - The fully computer controlled Patch Clamp Amplifiers of the EPC 10 USB family are now integrated with the LIH 8+8 A/D D/A data acquisition interface and connected to the computer via a USB 2.0 host interface.



EPC 10 USB

- EPC 10 USB Single
- EPC 10 USB Double /
- Triple / Quadro
- Extended Patch Clamp Amplifier Systems

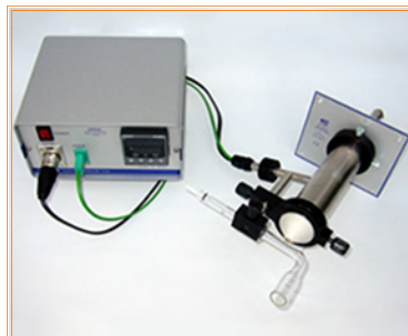
MICRO DRILL "CORDLESS"

Designed for research applications. The drill is constructed of light-weight aluminum alloy for balance and control and is powered by a rechargeable 6-volt nickel cadmium battery.

Under normal operating conditions the unit will function for 8 hours between recharging.



INTERFACE for GAS CHROMATOGRAPH



Application of EAG and SSR signal recording as a detector for active fractions in the effluent of a gas chromatograph (GC) requires a suitable transfer device to apply part of the effluent to the insect preparation without the risk of condensation of compounds.

The devices offered by are consisting of a heated transfer line (max. temp. 3000 C or resp.) supplied with an air mixing tube assembly and digital temperature controller with power supply. For maximum safety the heater is powered by 24V via an isolation transformer. Mounting plates are provided to attach the transfer line to any model of gas chromatograph.

W - SERIES

WIRELESS RECORDING SYSTEMS

With our **W-Series** recording system, you can obtain data from up to 126 neural electrodes without having to sacrifice form or function. Our custom single-ended ASIC amplifier design enables every channel to amply sample low frequency wave forms and spikes alike. Your test subjects will be free to move and behave naturally in the environment of your choosing, while you can rest assured that your data will be of the highest quality.

The complete system is comprised of a wireless headstage transmitter with an integrated rechargeable battery, RF signal receiver/baseband demodulator, power supply, and basic interfacing cables.



M - SERIES

MULTIPLEXED RECORDING SYSTEMS

With the **M-Series** amplifier system, you can record 5, 16 and 32 channels of data using just three wires, with each additional headstage requiring only one extra wire. Many customers take advantage of this system's minimal wiring by implementing a commutator for wire rotation management, thereby preventing the animal from tangling its tether and compromising the experiment. Used with a 9 wire cable and commutator, the multiplexing headstage and receiver can connect to over 200 independent channels of electrode connection.

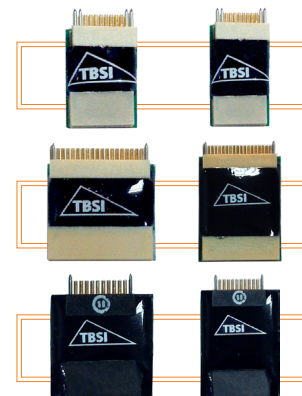


T - SERIES

TETHERED RECORDING SYSTEMS

Our **T-Series** tethered headstage systems are capable of acquiring and filtering up to 32 individual signals, with a 1:1 channel to wire ratio. However, we recommend the M-Series amplifier systems for tethered applications requiring very high channel counts and minimal wiring.

All T-Series recording headstages provide a compact and reliable connection to your electrodes. These headstages interface perfectly with our data acquisition equipment, but they are also adaptable and can output analog data directly to other amplifier systems.



S - SERIES

NEURAL STIMULATOR SYSTEMS

Our dual channel stimulation systems allow researchers to generate and upload two separately customizable waveform patterns to a stimulator headstage, wirelessly. We offer products for both optogenetic and electrical stimulation. TBSI's StimWare and Op-toStimWare applications allows the user direct control over the details of the uploaded stimulation pattern, including three optional tiers of nested patterns.

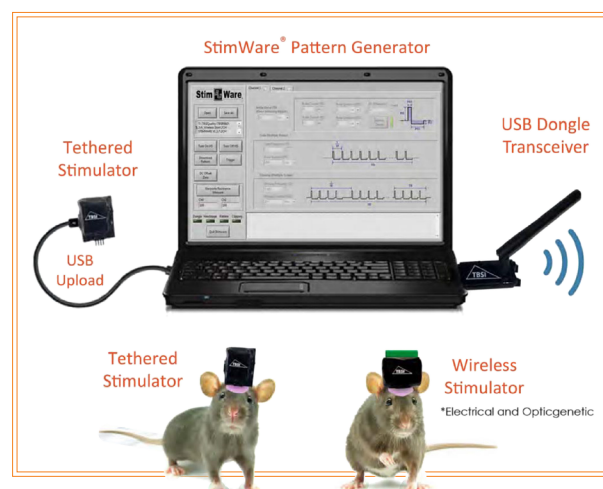
Each complete system is comprised of a stimulator headstage with integrated battery and all necessary accessories, including the StimWare or OpStimWare software package.

Wirelessly Programmable

The wireless two channel stimulator supplies stimulation patterns in real time via wireless communication with a USB dongle transceiver. StimWare enables a range of wireless headstage interaction, including external event and user triggering, and stimulator on/off control

USB Pre-Programmable

This two channel stimulator requires a USB connection to your computer to upload new stim patterns. The headstage retains programs until they are overwritten, and the programs are manually triggerable by the magnetic wand, included with the system. The headstage does not require its tether to execute stored programs.



NEUROWARE

Capable of recording, filtering, and sorting up to 64 channels of data simultaneously, NeuroWare is your solution for real-time waveform viewing and identification. It features comprehensive tools to enhance your recording experience, including digital filtering options and individual channel referencing.

NeuroWare can be used seamlessly with any of our tethered or wireless recording hardware. The program is designed to interface with TBSI's optional data acquisition board, which can be installed inside any of our recording system base stations to enable digital data output. The recording system transmits the digitized data to your computer via a USB cable, simplifying the integration process between hardware and software.



NeuroWare

OPTIMAP

Capable of recording, filtering, and sorting up to 64 channels of data simultaneously, NeuroWare is your solution for real-time waveform viewing and identification. It features comprehensive tools to enhance your recording experience, including digital filtering options and individual channel referencing.

NeuroWare can be used seamlessly with any of our tethered or wireless recording hardware. The program is designed to interface with TBSI's optional data acquisition board, which can be installed inside any of our recording system base stations to enable digital data output. The recording system transmits the digitized data to your computer via a USB cable, simplifying the integration process between hardware and software.



OptiMap™

SYSTEM ACCESSORIES

BIOSENSOR

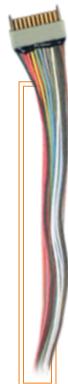
The following accessories will replace channels typically used for neural recording on the headstage. Installation of these features will increase the headstage's length by 0.4 inches, its height by 0.2 inches, and its weight by 0.4 grams.

The biosensor options can be installed in any combination.



CABLES & CONNECTORS

We supply a wide variety of Omnetics brand connectors and cables. Though our headstages typically use Omnetics connectors, they have been tested for compatibility with various other connector brands. Please notify us if you wish to use a connector brand other than the standard and we will try to incorporate it into your headstage.



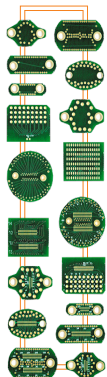
COMMUTATORS

Choose from Plastics1 and Dragonfly Inc. slipring commutators to accommodate between 1 and 18 separate transmission lines.

Commutators available for M-Series and T-Series



EIBs Electrode Interface Boards (EIBs) can be easily incorporated into your animal's implant to provide a sturdy anchor for your headstages and electrodes. We stock a variety of board shapes and sizes ideal for any animal, including mice. We are also capable of designing custom EIB solutions.



EXTERNAL BATTERIES

If you require extra battery life for longer experiments, you have the option to replace the standard internal 4 hour battery with one of our 12 hour or 25 hour external battery options. Using an external battery also helps relieve weight from the animal's head, but it must be stored in a rat jacket or other garment. We also offer wireless power options.



HARNESSES

A harness is recommended for securing external headstage components, such as a battery, onto the back of a rat or mouse.

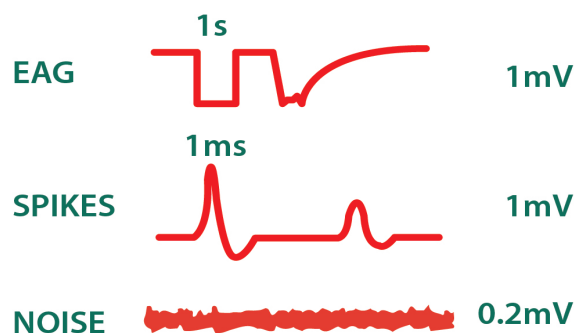
Harnesses available for W-Series and S-Series



>>> EAG <<<

BIOPHYSICAL INSTRUMENTATION FOR THE STUDY OF INSECT CHEMORECEPTION

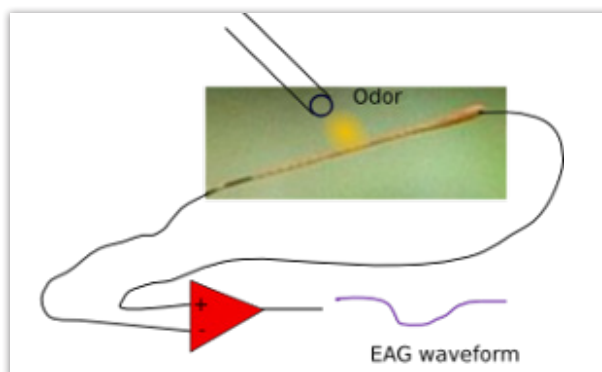
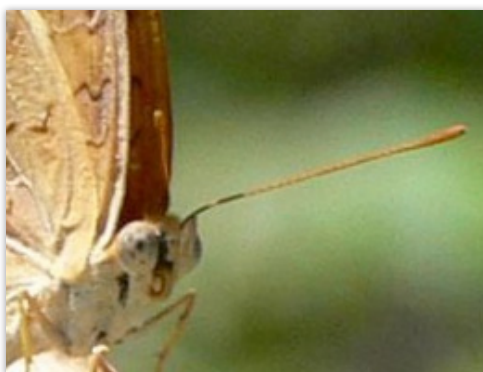
EAG is a Original Equipment Manufacture sintech design and production of instruments for electrophysiological and behavioural research, particularly for the study of insect chemoreception and related fields.



- Signal Acquisition
- Manipulators
- Probes and Holders
- Stimulus Controllers
- Taste Probe
- Electrode Etching
- Micro Beveler
- Signal Simulator
- Locomotion Compensation
- GC-EAD
- Actometers
- Stimulus Delivery
- Olfactometers

The current product range is rather broad and comprises instruments for electrophysiology, data-acquisition, biodetectors for gas chromatography, activity and motion detectors, olfactometers, portable instrumentation for field research, multi-channel and multi-mode detectors, as well as software dedicated to ElectroAntennography (EAG), Single Sensillum Recording (SSR) coupled GC-EAD and GC-SSR, and for multichannel (up to 16) signal recording and analysis.

ELECTROANTENNOGRAPHY



SIGNAL ACQUISITION SYSTEMS

The IDAC (Intelligent Data Acquisition Controller) systems are software controlled signal acquisition systems containing programmable amplifiers and filters, optimised for EAG, SSR, and GC-EAD/SSR recording. They all operate with the EAG, GC-EAD and AutoSpike software on Windows operating systems. The data transmission using the USB port offers high flexibility in the choice of PC or laptop for recording and/or analysis of the signals.

IDAC-2

2-CHANNEL USB ACQUISITION CONTROLLER *(replaces previous IDAC-232 for the serial port)*

2-channel signal recording system optimised for EAG and GC-EAD signals. Connects directly to the USB port of the PC; No external power needed. Auto- and manual offset control and special EAG filter functions available through the software. Compatible with EAG and GC-EAD software for Windows. Suitable for application in the field *(NOT suitable for SSR recording)*



IDAC-4

4-CHANNEL USB ACQUISITION CONTROLLER *with direct control of external solenoids (valves) and actuators*

4-channel amplifier / data-acquisition system for the Universal Serial Bus (USB). For use with any PC (and portables) with USB port. Real-time on screen display of all signals before and during recording. 50/60 Hz filter and zero offset control; special EAG filter. Sampling rate (1/s - 100k/s) adjustable for each channel individually. Powered inputs for active sensors and headstages (Probes). Voice comments can be recorded with data. All inputs and outputs galvanically isolated.



IDAC-16

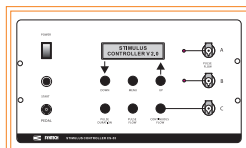
INTELLIGENT DATA ACQUISITION CONTROLLER *with PROGRAMMABLE OUTPUT CONTROL*

Each of the 16 analog input channels is provided with a 6-pin DIN receptacle and a standard BNC input. The DIN connector is suitable for single ended and differential signals and it has pins for + and - 12V to power active input devices, such as high input impedance headstages and signal conditioning transducers. The + signal input is wired in parallel with the central pin of the corresponding BNC input.



STIMULUS CONTROLLER CS 55 *WITH BUILT-IN AIR PUMPS*

- Replaces previous model CS-05 Independent from laboratory air supply Internal vibration compensated air pumps Built-in activated carbon inlet filter.



- Filter can be easily replaced Delivers continuous and pulsed air flow Graphic LCD display
- Flow range 10 - 50 ml/s, non-calibrated
- Pulse duration 0.1 - 60 s in 0.1s increments
- Repeat function: interval range 1- 60 s.
- Signal outputs compatible with recording systems
- Suitable for EAG and GC/EAD and SSR procedure Including foot operated start switch



UNIVERSAL SINGLE ENDED PROBE

- Electrode holders for glass pipette electrodes
- Electrode holders (set of 2) for tungsten wire electrode

EAG PROBE, Type PRG-2 • antenna holder for EAG PROBE

EAG KOMBI-PROBE

PROBES and ELECTRODE HOLDERS

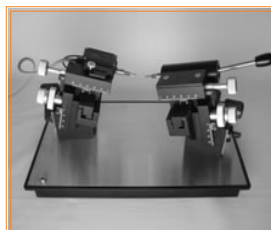
Headstages and probes are the interfaces between the signal source (insect preparation) and the IDAC acquisition system; they pick-up the delicate signals from the preparation and convert the high input resistance to a low resistance and robust output signal suitable for further processing by the IDAC under software control. The probes can be connected directly to the input of an IDAC system without the need for a separate power supply.

MANIPULATORS

Manipulators are necessary for making contact with small and delicate preparations. For relative large antennal preparations the EAG Probe and the use of electrically conductive gel is a good alternative. The model MP-15 is designed for EAG recording; for SSR applications with glass pipettes or tungsten electrodes the INR-5 is the most suitable system. After contact is established with the preparation the whole manipulator unit can be moved towards the odour source or GC transfer outlet.

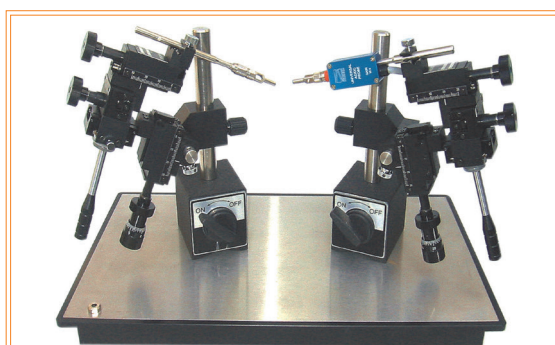
TYPE MP-15

- Complete 'desktop-recording' configuration for EAG and GC/EAD
- Two x-y-z positioners on magnetic bases
- Stainless steel base plate 20 x 30 cm to hold positioners
- Fine joystick control of right-hand positioner
- Adjustable stimulus applicator with stainless steel tube on magnetic base
- High impedance probe and electrode holder on left-hand side
- Connects directly to IDAC computer interface
- No amplifier needed if used in combination with IDAC computer interface
- No Faraday shield required for EAG and GC/EAD recording



TYPE MP-22

- Very compact integral universal recording module
- Dual joystick type x-y-z micromanipulators
- Suitable for glass pipette and tungsten electrode recording
- Including High impedance input probe and different electrode holder
- Indifferent electrode holder
- Connects directly to IDAC computer interface
- No amplifier needed if used in combination with IDAC computer interface
- Adjustable preparation holder air flow tube



TASTE PROBE

PRE-AMPLIFIER FOR RECORDING FROM CONTACT CHEMOSENSILLA

The Tasteprobe, Type DTP-1, is a further development of the prototype of the special amplifier described by Marion-Poll and Van der Pers (1996) that permits reliable DC recordings from insect taste receptors using the Hodgson (1955) technique.

The present model can operate in DC or in AC mode. In DC mode the complete signal, slow (DC) and fast (AC) fluctuations are recorded and amplified. In AC mode the slow (DC) fluctuations are out-filtered and only the fast (AC) components of the signal (like Spikes) are amplified. In both recording modes the DC initial offset at the onset of the recording (before contact is made between the recording electrode and the preparation) is cancelled automatically.

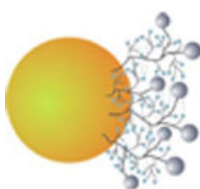


POLYAN

MOLECULAR SURFACE ENGINEERING (MSE)

MICRO & NANOPARTICLES

PolyAn is offering a portfolio of monodisperse PMMA (poly methyl methacrylate) microparticles for multiplex bead assays, calibration of flow cytometers and calibration of fluorescence imaging systems as well as a wide range of other applications in LifeScience research. PolyAn's non-porous microparticles are comprised of a PMMA core with a 3D surface modification:



- PolyAn transparent beads
- Fluorescence encoded beads for multiplex bead assays
- Fluorescence encoded beads for standardisation and calibration
- Calibration slide for fluorescence imaging systems

With PolyAn's production process up to two fluorophores are incorporated into the beads during the polymerisation process. This ensures a much more homogeneous distribution of the dyes within the beads when compared to conventional diffusion controlled dyeing processes. Additionally, the fluorophores are caged within the polymeric PMMA matrix and are less likely to leak-out. The homogenous distribution of fluorophores is illustrated in the adjacent CLSM image.

PolyAn's carboxy-microparticles (COOH) are functionalised using our proprietary Molecular Surface Engineering (MSE) Technology. PolyAn's 3D-Carboxy matrix is suitable as a platform for a wide range of coupling methods. Our microparticles are characterised by low non-specific adsorption and low aggregation behaviour.

FUNCTIONALIZED MICROPLATES & CELL CULTURE CONSUMABLES

Functionalized 96-well plates for covalent immobilization of biomolecules

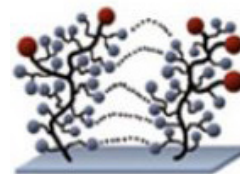
PolyAn has developed 96-well microplates with a three dimensional (3D) Epoxy surface. This surface is the ideal platform for covalent binding of proteins, peptides, DNA and oligonucleotides. The 3D-Epoxy 96-well microplates are used mainly if adsorptive binding of peptides or oligonucleotides, for example, to high/medium binding surfaces is ineffective or the binding strength is not sufficient. Areas of application include detection methods such as ELISA, ELI-Spot, protein and peptide arrays and DNA binding.



MICROARRAY PRODUCTS

Application Overview

- DNA Arrays
- Peptide Arrays
- Protein Arrays



Surfaces for Microarrays

- 3D-Aldehyde Matrix
- 3D-Carboxy Matrix
- 3D-Amino Matrix
- 3D-Epoxy Matrix
- 3D-NHS Matrix
- 3D-Maleimide Matrix
- 3D-PDITC activated Matrix

Functionalized Glass Slides

- 2D-functionalized Glass Slides
- 2D-functionalized Coverslips
- 3D-functionalized Glass Slides
- 3D-Epoxy Glass Slides
- 3D-Aldehyde Glass Slides
- 3D-NHS Glass Slides
- 3D-functionalized Coverslips

Functionalized Polymer Slides

- 3D-reactive Polymer Slides
- 3D-Amino Polymer Slides
- 3D-Epoxy Polymer Slides

Functionalized metals & metaloxides

- Functionalized Sensor Chips for SPR applications

Functionalized multi-well Formats

- Functionalized 96-well plates for microarrays
- 3D-Epoxy surface chemistry
- 3D-NHS surface chemistry
- Customized surfaces

Microarray Reagents

- Microarray Reagents

Nitrocellulose Film Slides

- ONCYTE® AVID
- ONCYTE® NOVA
- ONCYTE® SuperNOVA

ProPlate™ multi-array chambers

- ProPlate™ multi-array chambers
- ProPlate™ Microtiter Plates
- ProPlate Slide Chamber System
- ProPlate Slide Modules
- ProPlate SBS Compliant Tray Sets
- ProPlate Accessories & Replacement Gaskets



GENERAL CATALOGUE *3rd Ver.*

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