Scientific Systems Design Inc.

Product Catalogue

January 2025

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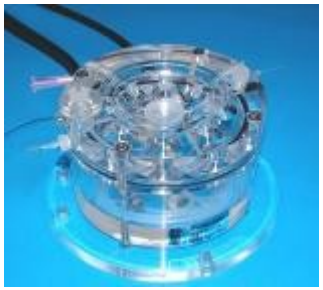
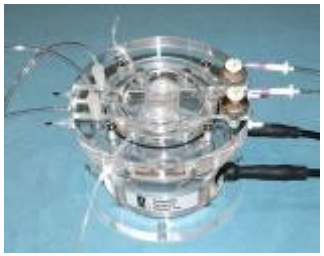
BRAIN SLICE CHAMBER SYSTEMS

Versatile, precision engineered tools for long service



BSC1

* **Interface and submerged preparations**
* **Removable net type insert**
* **Low noise temperature control**



BSC1-2

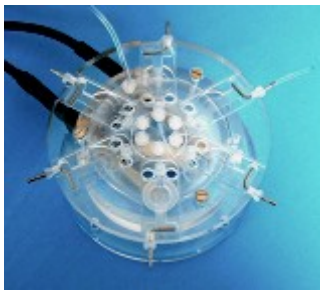
* **Dual version of BSC1**
* **Two independent channels sharing same oxygenation and temperature control**
* **Interface and submerged preparations**
* **Removable net type inserts**
* **Low noise temperature control**

BSC2

* **Interface preparations**
* **Templates with diamond profile**
* **Minimal fluid dead space**
* **Stable recordings for many hours**

BSC2-2

* **Dual version of BSC2**
* **Interface preparations**
* **Minimal fluid dead space**
* **One well can be used for storage of slices in interface mode**



BSC3

* **Two, three, four or six well chamber with independent lines**
* **Interface or submerged preparations**
* **Fluid level adjustable in each well**
* **Removable nylon net and insert**
* **Suitable for pharmacology high throughput studies**

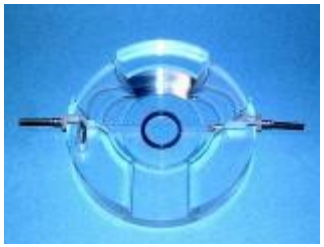
Brain Slice Chamber Selector

There are a number of different brain slice chambers with specific applications used with stereo microscopes on lab bench table. The following selector help you to chose the right chamber for your project.

Microscope Type	Stereo Microscope				
Chamber Version	Submerged or Interface			Submerged	
Channel Number	1	2	2, 3, 4 or 6	1	2
Chamber Model	BSC1	BSC1-2	BSC3	BSC2	BSC2-2

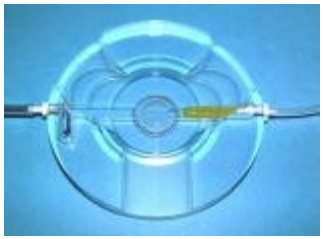
MICROSCOPE STAGE CHAMBERS

Unique design for high quality imaging and easy electrode approach at shallow angles



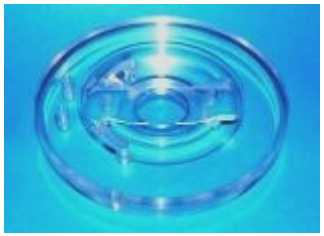
MS1

* **1 ml capacity flow-through upright stage chamber**
* **Unique profiled contour for rotary and swing type turrets for par-focal viewing**
* **Glass coverslip base**
* **Easy removal for cleaning**



MS2

* **1.5 ml capacity flow-through upright stage chamber**
* **Unique profiled contour for rotary and swing type turrets for par-focal viewing**
* **Glass coverslip base**
* **Slice exposed to aCSF from both sides**
* **In-Line temperature control unit MH02 available**



MS3

* **Interface slice preparation under compound microscope stages**
* **Glass coverslip base**
* **Templates for single or dual wells**
* **Small dead space**

MS4

* **1ml capacity submerged preparations**
* **Glass coverslip base**
* **Temperature control unit available**

MS5

* **Unique design for holding coverslips from incubated preparations, for easy placing and removal**
* **Glass coverslip base**
* **Approx 2ml capacity**

MC

* **Membrane chamber with enhanced, dual surface slice perfusion**
* **Increased viability +16Hrs**
* **High mechanical stability for patch Clamp experiments**
* **Inverted or upright microscope compatibility**

Microscope Stage Chamber Selector

The following selector helps to chose the right chamber for your project.
Note: All Microscope Stage Chambers can be used with our In-Line MH02 heating system

Microscope Type	Upright				Inverted		
Chamber Version	Submerged			Interface	Submerged		
Dual Surface Perfusion	No	Yes	Enhanced	No	No	No	Enhanced
Culture Preparation	No	No	No	No	No	Yes	No
Chamber Model	MS1	MS2	MC	MS3	MS4	MS5	*MC

*** MC used on inverted microscopes requires long working distance objective**

BRAIN SLICE KEEPERS

Maintenance of healthy slices in stable condition for many hours

BSK1

* **Hooks into purpose designed vessel (BSKV) fitted with gas inlet and ceramic air stone for bubbling oxygen /carbon dioxide mixture into ASCF and needle valve gas flow regulator**
* **Hemispherical deflector under net directs bubble flow above slices ensuring circulation downwards onto slices**
* **Modular design allows for easy cleaning and net replacement**

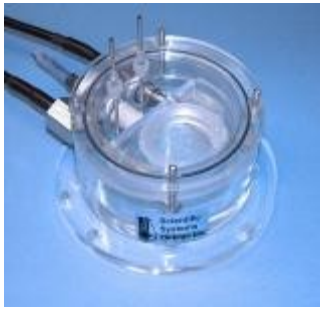
Please visit www.scisys.info/bsk1 for complete configuration

BSK2

* **Minimum 5ml total incubating media volume for loading slices with expensive test solutions**
* **Slices supported on a quick change nylon net**
* **12.4mm diameter ring**
* **Modular design allows efficient cleaning between experiments**
* **Simple to set up and maintain**

BSK4

* **Slices maintained for many hours in incubating media**
* **Four separate rings allow separation of different types of preparations**
* **Each ring is 33mm in diameter**
* **Slices supported on a quick change nylon net**
* **Modular design simple to set up and maintain**



BSK AM

* **Pre-incubate slices at controlled temperatures prior to transfer to recording chamber**
* **Inlet and outlet ports used to supply ACSF to Alpha MED Sciences multi-electrode array probes**
* **Simple to set up and maintain, modular design allows quick cleaning and assembly**
* **Modular design simple to set up and maintain**

BSK6-6

* **Two, three, four or six separate channel versions available**
* **Each ring has a 12.4mm net diameter**
* **Minimum 2ml (BSK6-6-2) or 4ml (BSK6-6- 4) per incubating well for expensive test solutions**
* **Modular design allows efficient cleaning and net replacement**
* **Each channel has individual needle valve gas flow regulators**

12.4mm diameter ring

BSK12

* **Slices maintained for many hours in incubating media**
* **Twelve separate rings allow separation of different types of preparations**
* **Slices supported on a quick change nylon net**
* **Modular design simple to set up and maintain**

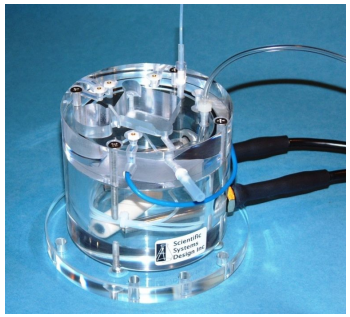
33mm diameter rings

BSK5-2

* **Slices maintained for many hours at an interface with incubating media**
* **Two or four separate ring versions allow separation of different types of preparations**
* **Slices supported on a quick change nylon net**
* **Supplied with conical lid to direct condensation drops to the sides**

ORGAN AND TISSUE CHAMBERS

For Never/skin/muscle grease-gap and other isolated preparations



TC KG

* **Isolated organ, skin, nerve and muscle reparations**
* **Preparations maintained for many hours in flowing incubating media**
* **Large diamond-shaped flow cell for maintaining preparation on a custom substrate**
* **Grease-gap across a removable acrylic partion**
* **Temperature controlled base heats incoming media flowing across preparation**
* **Humidity and gas environment can be controlled within diamond-shaped flow cell**

Brain Slice Keepers Selector

There are a number of different brain slice keepers with specific applications, different volume of maintenance media, ring diameter, ring number etc. The following selector helps to chose the right keeper for your project.

Keeper Version	Submerged							Interface
Ring Diameter	33mm			12.5mm				33mm
Ring Number	1	1	4	1	*6		12	2
Shared aCSF	Yes	Yes	Yes	Yes	No		Yes	Yes
Fluid Capacity	200ml	150ml	500ml	5ml	4ml	2ml	500ml	250ml
Keeper Model	BSK1	**BSK AM	BSK4	BSK2	BSK6-6-4	BSK6-6-2	BSK12	BSK5-2

*** BSK6 is available in 2, 3, 4 and 6 rings and capacity 2ml or 4ml.**

**** BSK AM is heated and designed for multi-electrode array users.**

TEMPERATURE CONTROL SYSTEMS

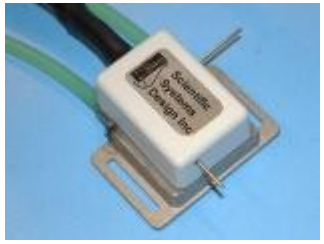
Low noise and efficient, make the preparation and recording stable and durable

PTC05

* **Very low noise direct current output**
* **High output power for rapid heating**
* **Compatible with our range of heating devices**
* **Temperature control below ambient with optional Peltier Controller**

MH02

* **Compact in-line solution heater**
* **Single channel stainless steel tube for rapid heating**
* **Internal sensor for accurate feedback control**
* **Proportional temperature controller, PTC05, with low noise performance for electrophysiology**



MHC01

* **Compact in-line heating and cooling the perfusion solution**
* **Single channel stainless steel tube for rapid control**
* **Temperature range: 15-55 deg. C**
* **Custom manufactured**

***Contact us** to discuss your requirements*

BRAIN SLICE TRANSPORTER

For the for the stable movement of viable slices between facilities

BST

* **Designed for maintaining isolated, living slices *in vitro***
* **Enables transportation of brain slices from surgical preparation areas to other laboratory locations**
* **Specifically addresses the needs for maintaining viability during transport, even over distances involving walking or vehicular transportation**
* **Allows brain slices to remain in interface mode, minimizing disturbance from external motion.**

UV STERILIZER UNIT

Stop the growth of bacteria in media, keep slices healthy for a longer time

UVS

* **Reduce and hold bacterial loads in fluidic systems**
* **Chemical free sterilization**
* **Compact size approx. 2”x4.5”x4.7”**
* **Allows brain slices to be maintained without the toxic effects of bacterial growths**
* **Maintains circulating systems in sanitized conditions, reduces cleaning episodes required for equipment maintenance**

ACCESSORIES

High quality accessories make excellent performance

SH13, SH18, SH20

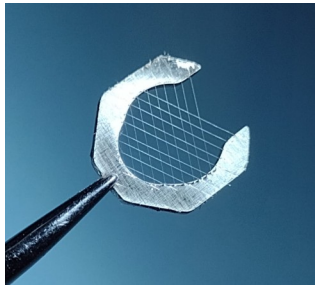
* **Stainless steel type 304 framed fine nylon grids for slice stabilization**
* **Nine or more 20 to 25 um thick nylon threads across frame**
* **Three sizes: 13, 18 and 20mm opening**

Ceramic bubbler

* **Biologically safe**
* **Very strong and long lasting**
* **Microbubbles for efficient and excellent solution aeration**
* **Easy maintenance**

Sintered Ag-AgCl Pellet

* **Fine grain, homogeneous mixture of Ag-AgCl**
* **Sintered to increase electrode contact area**
* **Non-polarizable**
* **Do not require chloridizing**
* **High precision, low noise, low impedance**



SH13X, SH18X, SH20X

* **The fine nylon grids are crossed at 60 degrees to hold down the slice more uniformly on multi-electrode arrays**
* **Three sizes: for 13, 18 and 20mm diameter openings**

Note: We supply spares and other accessories not limited to the list, like Nylon Mesh, Nuts, Connectors, etc. Contact us for any requests.

CUSTOMIZATION

Design, development and manufacture to meet your needs

We have over 30 years of working experience in research labs, and have been supplying to universities, pharmaceutical and biotech industries over 20 years. We understand and know how to collaborate with our customers to provide the most efficient services.

Contact us to discuss the requirements for your special projects

SETTING UP A COMPLETE LAB?

We represent other brands to help our customers set up a complete electrophysiological rig

We represent all the products from our partners, AutoMate Scientific, Digitimer, Novel Optics, Precisionary Instruments, with our customization service, to help our customers set up a complete electrophysiological rig.

Brand name of Amplifiers, Stimulators/Isolators, Noise Eliminators, Micromanipulators, Microelectrode pullers, Antivibration Tables, Faraday Cages, Slice and Tissue Vibratomes, Microscopes and Equipment Racks

ABOUT SCIENTIFIC SYSTEMS DESIGN INC.

Scientific Systems Design Inc. is a Canadian company involved in the design, development and manufacture of scientific research instruments for universities and pharmaceutical sectors all over the world. Our current range of systems have been developed for the neurosciences, with wider applications in related areas such as pharmacology, biochemistry and biophysics.

Read more about us at www.scisys.info

Our Strength

Innovative Design

All our products are designed by scientists within our company having had years of lab experience to make the products fit for your research.

High Quality

Our products are manufactured for durability, proved and referenced by scientists.

Customization

We have designed and developed several products specified by our customers and has led to the introduction of new products.

Our Philosophy

Our core philosophy is to engage with customers as efficiently as possible to serve their needs for both standard items as well as instruments designed and developed for specific projects. We are continuously improving the design and range of our innovative products whilst maintaining the highest quality for demanding applications.

WE SHIP WORLDWIDE

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