

ChannelMAX 100A

Automated patch clamp and two-electrode voltage clamp system



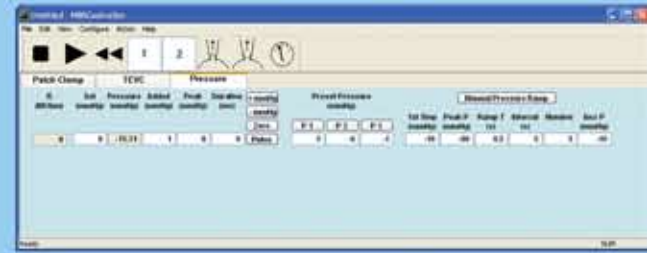
The ChannelMAX 100A Twin system comprises of four automated manipulators, two perfusion chambers, one data acquisition control system, and software. You may use the system for two two-electrode voltage clamp experiments, or up to four patch clamp experiments. This system provides the best value for high throughput experiments.

Advantages

- Run up to four patch clamp experiments or two two-electrode voltage clamp experiments simultaneously - With this new design, the system increases efficiency, decrease equipment cost and save space. The experiment becomes less labor intensive.
- High quality data recording - The system possesses the same high quality, low noise, and low drift data acquisition as the PatchMAX 100A system.
- Best value - This system is more cost effective compared to the traditional electrophysiology setup or the ChannelMAX 100A Mini system.
- Publish papers sooner! - With increased efficiency, you will be able to publish papers sooner than anyone else.

New! NBSController 4.1

Software for controlling ez-gSEAL, ezPATCH PatchMAX and ChannelMAX



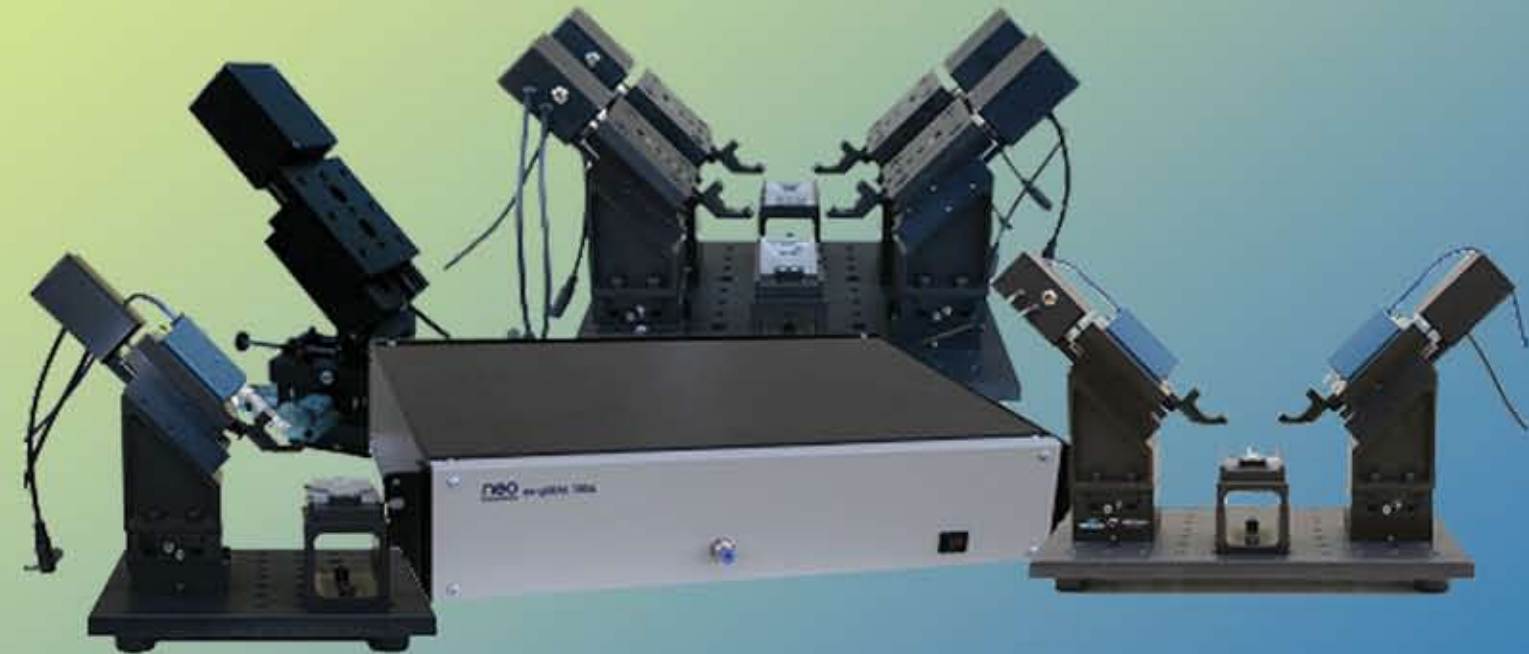
Perfusion Chamber

for
Tissue Culture Cells and
Oocyte Excised Patches



Computer controlled stepper motors bring electrodes close to perfusion pipettes mounted in the chamber for fast and reliable solution change

Automated Patch Clamp Products for Academia



New! ez-gSEAL 100A

Computer Controlled Pressure Controller for Patch Clamping



The ez-gSEAL 100A pressure controller is designed mainly for automated patch clamping, but it can also be used for many other applications. With the ez-gSEAL pressure controller, patch clamping becomes as easy as a click of a button. You may use it with our ezPATCH 100A smart manipulator, PatchMAX 100A automated patch clamp system, ChannelMAX 100A Mini automated dual clamp system or ChannelMAX 100A Twin automated quad-clamp system for fully automated patch clamp experiments, or use it as a stand alone product on a traditional rig. You may also use the controller for puffing drugs or studying stretch channels. The software-controlled pressure controller comes with pumps so air tanks are not required.

Advantages

- Set a very small holding pressure during experiments so that the seals last a long time.
- Set pulse amplitude and duration for breaking in so you will not lose a seal from the process.
- Patch clamp experiments become precise and reproducible.
- It's easy and stress free.
- High success rate.
- Training time is shorter.
- Fewer variables in trouble-shooting when having trouble to make seals.
- The skill is good forever.
- The auto-seal algorithm is similar to that used in the PatchXpress® automated patch-clamp system. PatchXpress® users can use it to test their seal parameters under a microscope for easier trouble-shooting and lower cost.

ezPATCH 100A

Smart manipulator



The ezPatch 100A manipulator is a smart manipulator. It has all the functions that a manual manipulator has. In addition, it comes with a computer controlled feedback system so that it can stop immediately after the electrode touches the cell membrane. The system is ideal for patch clamping.

In patch-clamp experiments, all that users need to do is aim the electrode at a selected cell. Click a button and the electrode will stop at the surface of the cell membrane in specified speed and pressure (measured by resistance increase). When used with the ez-gSEAL, patch clamp experiments will be as easy as 'aim and seal'.

Key Features

- Resolution of the computer-controlled manipulator is 50 nm.
- No electrical noise during recording.
- Manipulator movement stops when the patch pipette touches the cell membrane.
- Includes a computer-controlled manipulator, a data acquisition board, a BNC interface box and control software.
- Works with ez-gSEAL 100A pressure controller for 'aim and seal'.

PatchMAX 100A

Patch clamping system



The PatchMAX 100A is an automated patch clamping system. Controlled by a computer, the instrument brings the patch pipettes to touch the surface of the cell membrane without the need of a microscope. When used with the ez-gSEAL, it makes seals automatically. The system can be manually controlled for experiments that need flexibility. It can be upgraded to a ChannelMAX 100A system, which can be used for both patch clamp and two-electrode voltage clamp.

Advantages

- Incredibly small footprint - This 8 inch x 8 inch patent-pending design replaces the microscope and the manipulator in the traditional rig.
- Automatic membrane detection - The movement of the patch pipette can be programmed to stop within 0.1 μm after the tip touches the cell membrane.
- High seal success rate - The computer controlled system reduces human errors so that the success rate of making gigaohm seals improves.
- Excised patch - This is the only automated patch clamp system that offers an excised patch feature.
- Save and reuse sealing parameters and share with people in the lab.
- Low electrical noise - No current going through the motor when it stops for low electrical noise recording.
- Low drift - The motorized stage can hold its micro-step position (50 nm resolution) overnight even without current!
- Fast solution change - Computer controlled stepper motors bring electrodes to perfusion outlets. Solution change is as simple as clicking a button.
- Affordable - low cost compared to other automated patch clamp system or traditional patch clamp systems.

ChannelMAX 100A Mini

Two patch clamp or One two-electrode voltage clamp system



The ChannelMAX 100A Mini system is based on the PatchMAX 100A patch clamp system and is the mini version of the ChannelMAX 100A system. Comprising of two automated manipulators, a data acquisition interface board and software, the system can be used for doing two oocyte or cultured-cell patch clamp experiments, or one two-electrode voltage clamp experiment. The Mini system can be upgraded to the ChannelMAX 100A Twin system.

Advantages

- Economical choice - This system is more cost effective than the traditional electrophysiology setup.
- High quality patch clamp - Enjoying the same high quality patch clamp as the PatchMAX 100A system, ChannelMAX 100A Mini patch clamp system is low drift, vibration free and noise free.
- Automated two-electrode voltage clamp - Computer controls the electrode movement so that they stop after entering an oocyte.
- Switching between patch clamping and two-electrode voltage clamping is easy -The system is designed so that no repositioning is required when switching between patch clamping and two-electrode voltage clamping.
- Save space - As the system can be used for both two-electrode voltage clamp and patch clamp, less lab space is required. You do not need two data acquisition systems.
- Higher efficiency, less labor-intensive.