

# Heating Plate

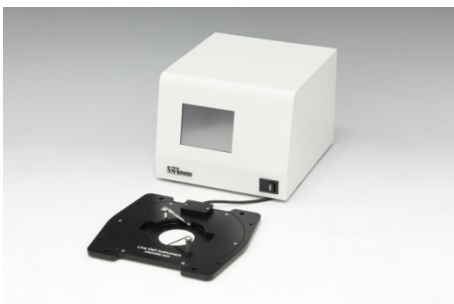
## Heating Plate for Various Types of Chambers



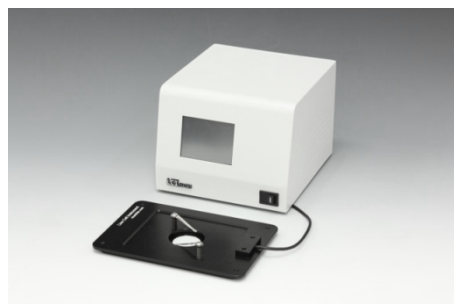
- CU-301 (1 channel temperature controller) with the PID for precise temperature control of the heating plate
- CU-302 (2-channel temperature controller) to control 2 heating plates or an external temperature sensor
- State-of-the-art, ultra-thin thermo-technology (patent pending) to transmit the heat evenly
- Able to regulate the temperature, to program temperature gradients, and to record temperature over time with CCP ver.7 software or MetaMorph software
- Any sizes and/or shapes of the heating plates are customizable upon user's request.

### Specifications

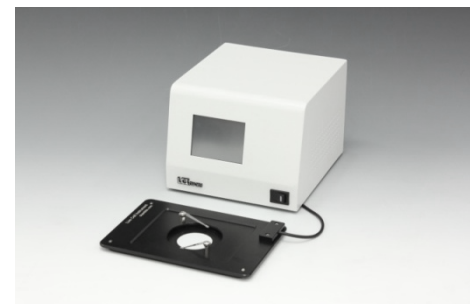
Temperature range	Ambient +3°C ~ +45°C
Temperature control	PID method
Heating method	Thin layer heater
Sensor	PT 100 ohm
Material	Black anodized aluminum alloy



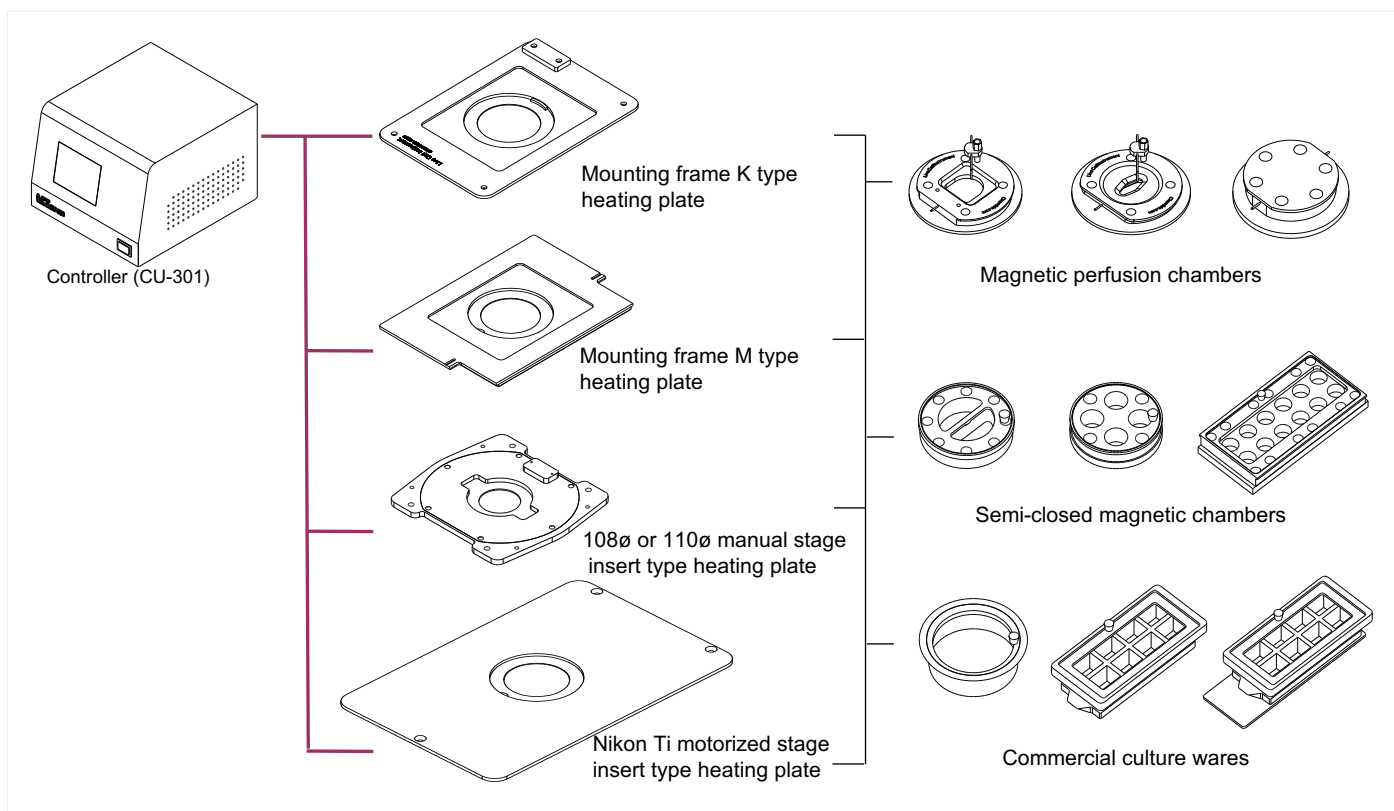
**Heating plate** for 50/60 mm dish type or magnetic chamber for Olympus/Nikon manual stage



**Heating plate** for 35mm dish type or magnetic chamber for Zeiss/Leica manual stage, most motorized stage, & universal K insert size

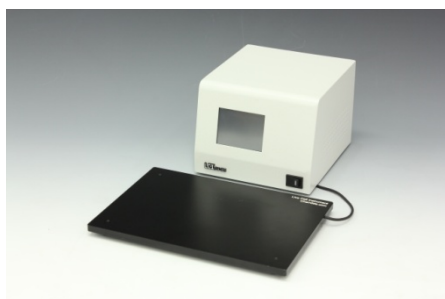


**Heating plate** for 50/60mm dish type or magnetic chamber for Zeiss/Leica manual stage or most motorized stage, & universal K insert size



Model No.	Product
HP-R-10	Olympus manual stage type heating plate
HP-R-20	Nikon manual stage type heating plate
HP-R-30	Leica mounting frame K type heating plate
HP-R-40	Zeiss mounting frame K type heating plate
HP-R-50	Leica mounting frame M type heating plate
HP-R-60	Zeiss mounting frame M type heating plate
HP-R-70	Nikon Ti motorized stage type heating plate
HP-R-80	ASI, LUDL piezo Z-stage type heating plate
HP-R-90	Well plate size heating plate
HP-R-XX	Other type heating plate

## Pre-Heating Plate



- Uniform temperature around the surface of the plate
- PID control system for precise temperature
- Various sizes are available

### Specifications

Pre-heating plate dimension (mm)	210 (W) x 160 (D) x 15 (H) (standard size)
Temperature range	Ambient +3°C ~ 45°C

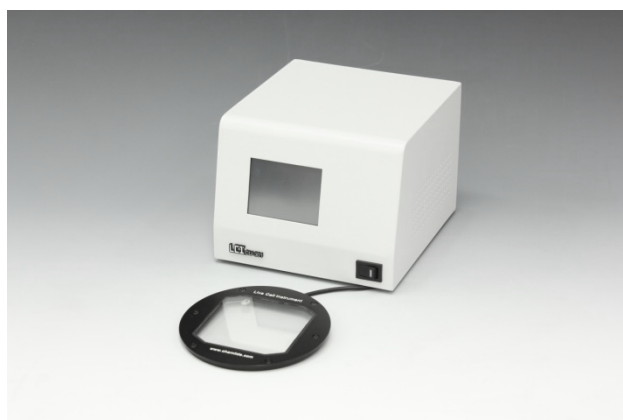
Model No.	Product
PH-S-10	Pre-heating plate

# Heating Glass

## Heating Glass for Various Types of Chambers



universal K type



round type

- CU-301 (1 channel temperature controller) with the PID for precise temperature control of the heating glass.
- CU-302 (2 channel-temperature controller) to control 2 heating plates or an external temperature sensor
- Glass heater is suitable with the upright microscope.
- Able to regulate the temperature, and to program the temperature gradients and to record temperature over time with CCP ver.7 software or MetaMorph software
- Any sizes and/or shapes of the heating glass are customizable upon user's request.

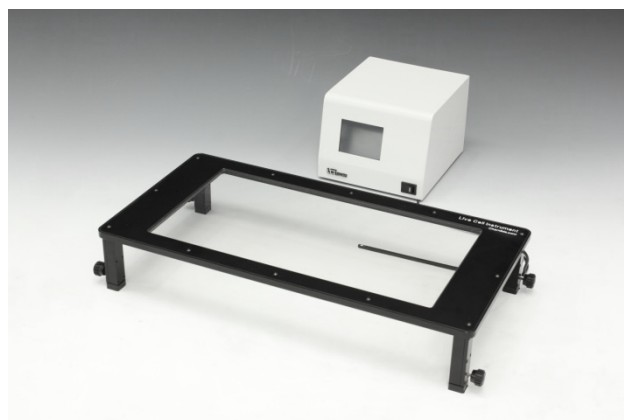


table type for the stereo microscope with height adjustable legs

### Specifications

Temperature range	Ambient +3°C ~ +45°C
Temperature control	PID method
Heating method	Glass heater
Sensor	PT 100 ohm
Material	Black anodized aluminum alloy

Model No.	Product
HG-S-10	Olympus manual stage type heating glass
HG-S-20	Nikon manual stage type heating glass
HG-S-30	Leica mounting frame K type heating glass
HG-S-40	Zeiss mounting frame K type heating glass
HG-S-50	Leica mounting frame M type heating glass
HG-S-60	Zeiss mounting frame M type heating glass
HG-S-70	Nikon Ti motorized stage type heating glass
HG-S-80	ASI, LUDL piezo Z-stage type heating glass
HG-S-90	Well plate size heating glass
HG-C-XX	Heating glass cover
HG-T-XX	Table type heating glass
HG-S-XX	Other type heating glass

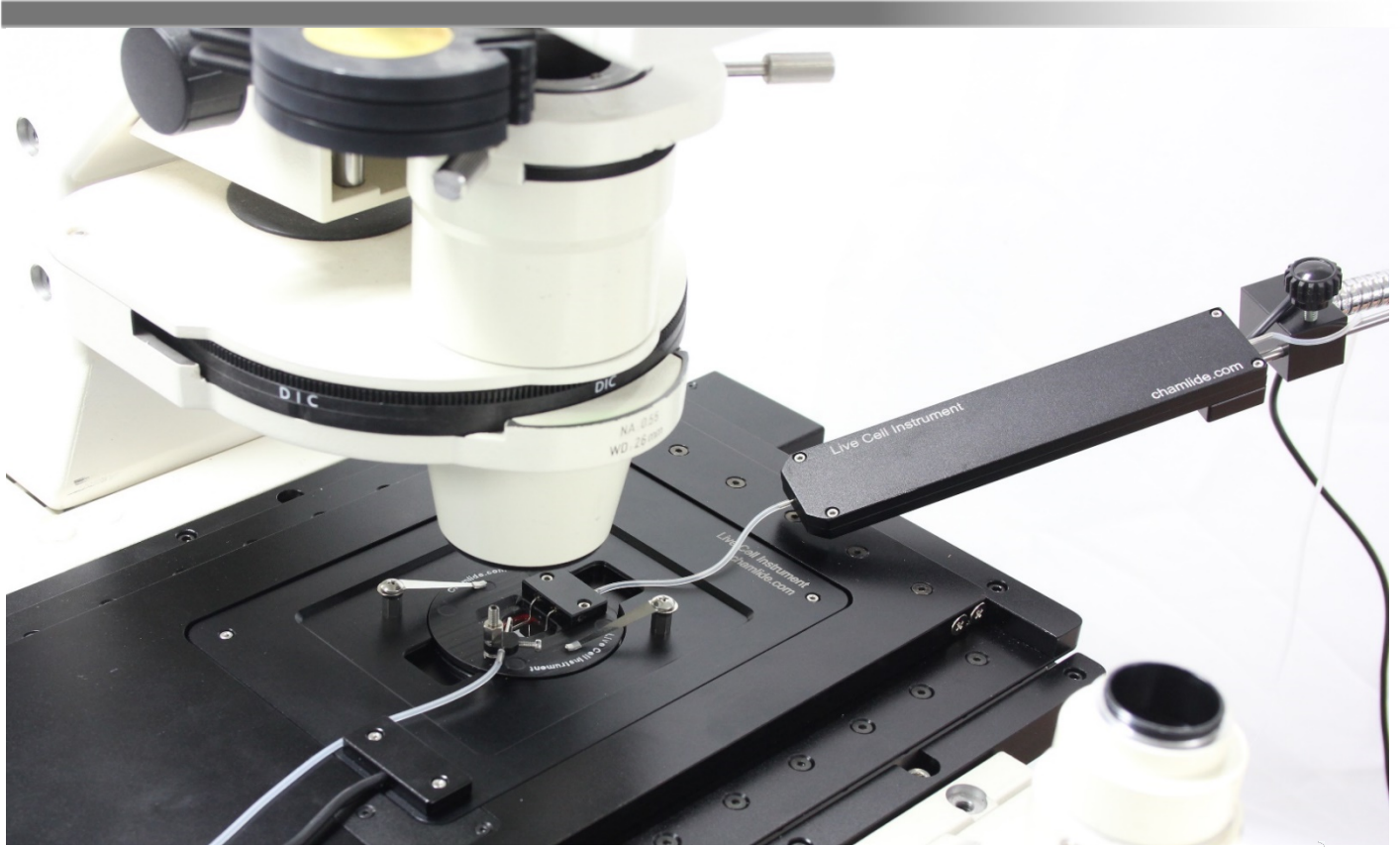


### customized heating glass cover and base

- cover to control temperature precisely and keep CO<sub>2</sub> gas composition inside
- controlled by CU-302( 2 channel-controller).

# IHS-101

## Fluidic Inline Heater

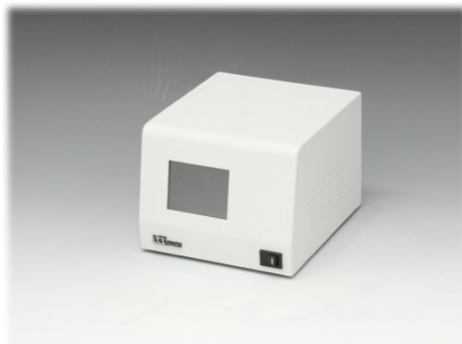


Magnetic base

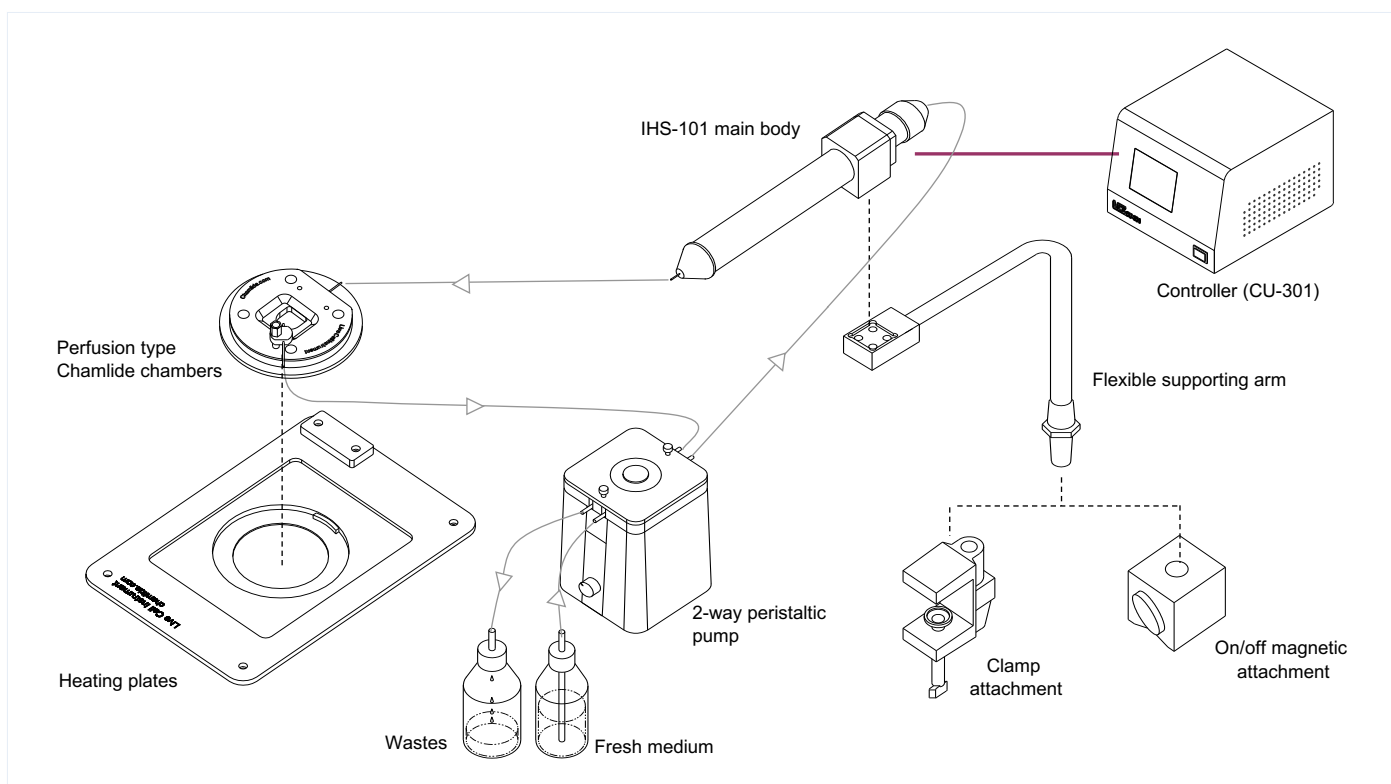
- Made of aluminum
- Great thermal conduction
- Great durability
- Magnetic base



Clamp



- Very simple and effective in-line solution heating to warm perfusion solutions
- Minimal dead volume of 150  $\mu\text{l}$ .
- Magnetic system connects the body of HIS-101 to the supporting arm which is flexible for easy installation on the microscope.
- Attachable supporting arm either directly to the microscope or to elsewhere with a clamp or an on/off magnetic attachment
- CU-301 with the PID system for the precise temperature control of the medium to flow directly into the chamber
- Able to regulate the temperature, and to program the temperature gradients and to record the temperature over time with CCP ver.7 software or MetaMorph software



**Perfusion Experiment**

## Specifications

Internal dead volume	150 $\mu\text{l}$
Inlet/outlet tubing size	O.D 1.1mm, ID 0.7mm
Heating method	Cartridge heater
Temperature range	Ambient +3°C ~ +45°C
Inline heater dimension	20 mm $\varnothing$ x 139 mm
Supporting arm length	500 mm
Inline heater main body material	Main body      acetal component and aluminum alloy Supporting arm    steel stainless, plastic or on/off magnet

### Model No.

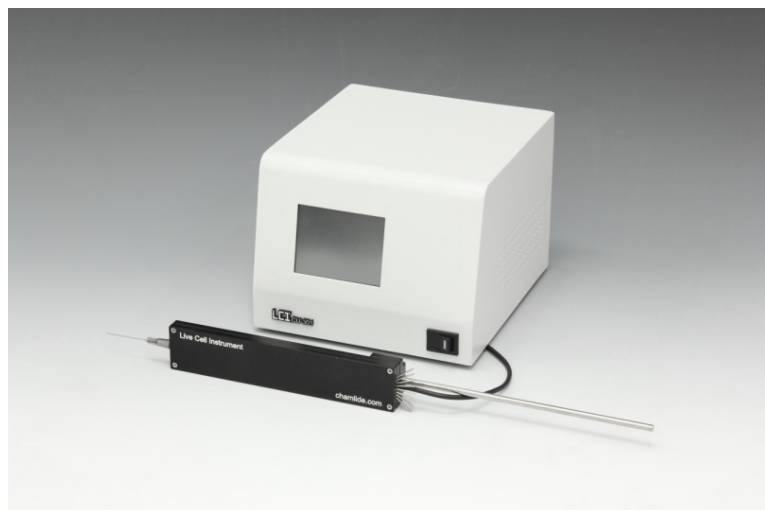
IL-H-10

### Product

IHS-101 (Fluidic in-line heater)

# IHS-801

## 8-Channel Fluidic Inline Heater



- Able to apply 8 different solutions to the cells
- Combined with X-Y-Z micromanipulator, movable outlet of IHS-801 close to the cells. (option)
- Other functions are the same as the IHS-101.
- CU-301 controller with the PID system for precise temperature control of the medium to flow directly into the chamber.
- Able to regulate the temperature, and to program the temperature gradients and to record the temperature over time with CCP ver.7 software or MetaMorph software



Outlet needle (different sizes)



8 channels connected to the end of the outlet to minimize the dead volume during solution change

### Specifications

Internal dead volume	35 $\mu$ l /each tubing
Tubing size	OD 1.1mm
Heating method	Cartridge heater
Temperature range	Ambient +3 $^{\circ}$ C ~ +45 $^{\circ}$ C
Inline heater dimension	20mm (W) X 20mm (D) X 100mm (L) without pole
Inline heater material	Acetal component and aluminum alloy

#### Model No.

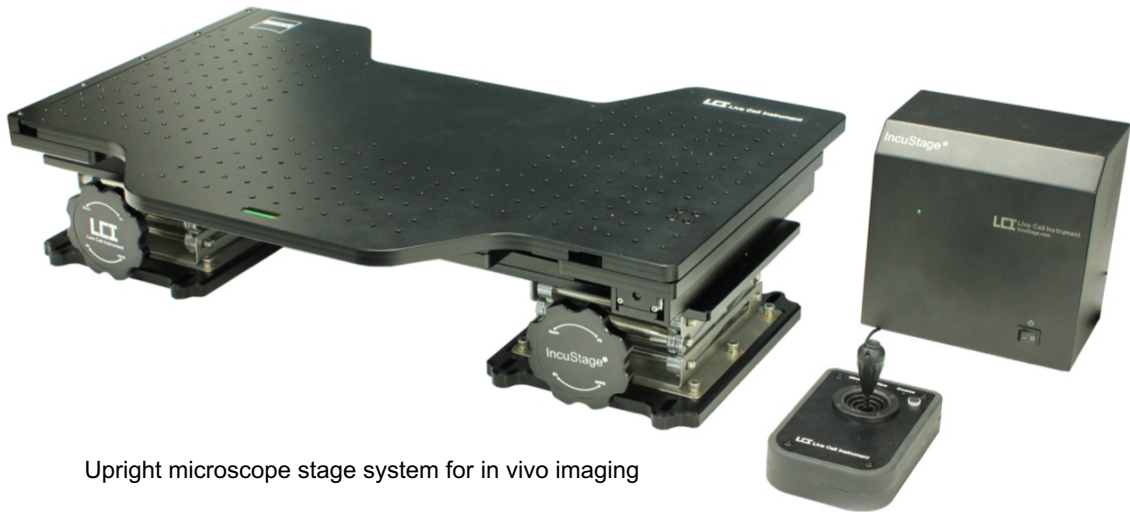
IL-H-80

#### Product

IHS-801 (8 channel-fluidic inline heater)

# In Vivo Imaging Stage System

## Mouse and Rat In Vivo Imaging Stage for Upright Microscope



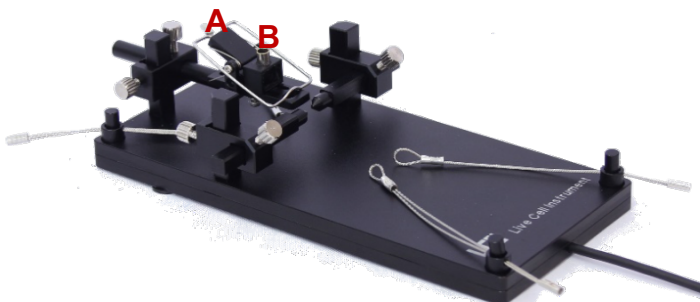
Upright microscope stage system for in vivo imaging

- Microscope plate to stabilize the animal during the experiment
- Our motorized stage fit to all upright microscopes.
- Observation area is movable with a joystick in micro-level.
- Height is adjustable by 2 hand-knobs depending on an animal size.
- Controllable with software to acquire multi-positional image

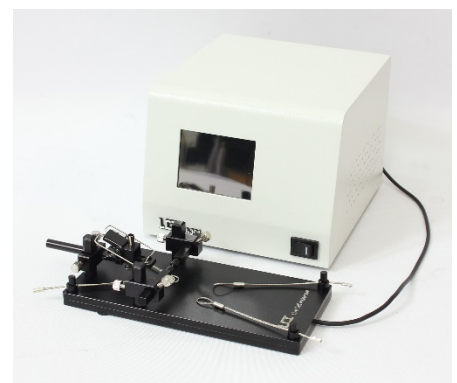
Model No.	Product
US-M-10	Motorized stage for animal-experimental upright microscope

### Heating Plate with Traditional Stereotaxic Fixation

- A heating plate to maintain the body temperature of the animal.
- Traditional stereotaxic device with ear bars and a tooth holder
- Tooth holder parts of the heating plate contains an anesthesia mask adaptor that connects to anesthesia tubing.

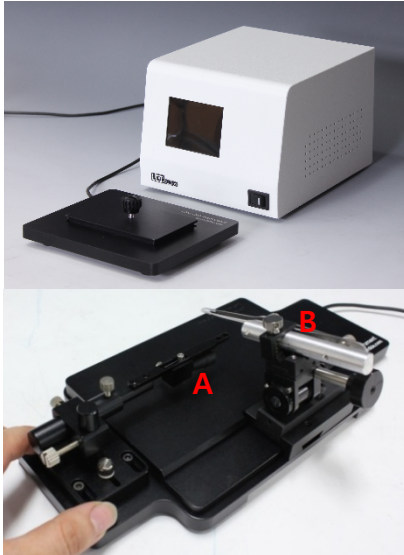


a heating plate with a stereotaxic device for a mouse



- A. Tooth holder with one-touch button
- B. Anesthesia tubing connected to directly mask adaptor in the tooth holder to maintain anesthesia during microscopy

## Heating Plate with Block Type Fixation



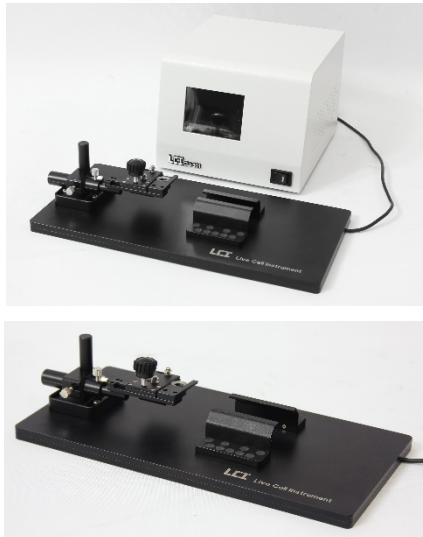
- A heating plate with a block type fixation can be used on bones (e.g. skull) with dental cement or adhesive.
- Shapes and sizes are customizable according to experimental purposes.
- Forceps pusher to experiment specific areas for imaging
- Heating plate to maintain an animal's body temperature
- Fixed part is assembled to a heating plate with screws.
- Anesthesia mask adaptor to connect anesthesia tubing

- A. inhalation anesthesia funnel  
B. forceps pusher for specific area



A block type fixation part to attach bones (e.g. skull)

## Heating Plate with Ring Type Fixation



- Designed to image the skull of small animals through a ring hole fixed on the skull
- Usable coverslip on the hole (standard OD12mm)
- Able to allow coverslips to get a good imaging without dried tissues and diffused media reflection.
- Ring is made of titanium to increase strength and to reduce weight.
- Fixed ring type should be used after fixing bones with adhesive or dental cement.
- Without anesthesia, the device can be easily dis/assembled by the magnetic force.
- Useable with a heating plate to maintain the body temperature of the animal
- Equipped with an application of gas anesthesia
- Anesthesia mask adaptor to connect anesthesia tubing



Slit to fix ring on the mouse skull



Magnetic holder to fix mouse body



Fixed ring type to attach bones

### Model No.

US-R-10  
US-R-10R  
US-R-20  
US-R-30

### Product

Heating plate with traditional stereotaxic type fixation device for mouse  
Heating plate with traditional stereotaxic type fixation device for rat  
Heating plate with block type fixation device for mouse  
Heating plate with ring type fixation device for mouse