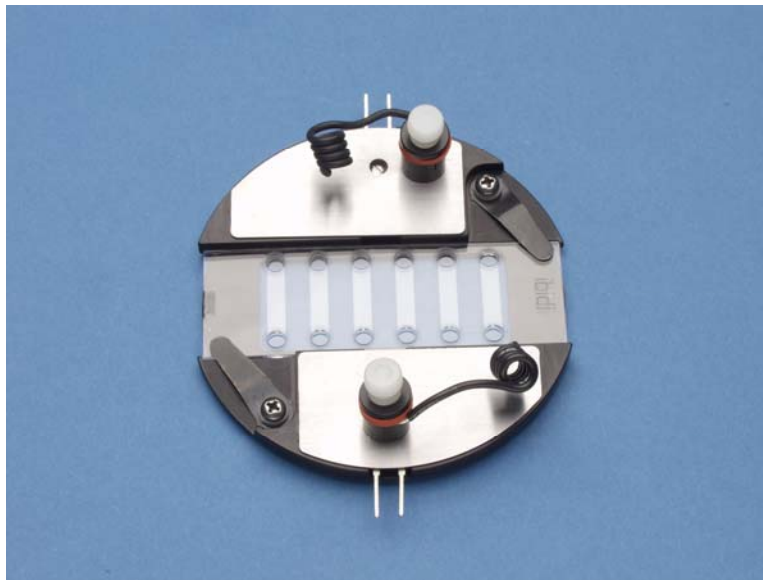


Heated Platform for  
Chambered and 1x3" Slides  
Model CSH-1



**Warner Instruments**  
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## *Table of Contents*

<b>SETUP</b> .....	<b>4</b>
<b>General Comments</b> .....	<b>4</b>
<b>ASSEMBLY</b> .....	<b>4</b>
<b>OPERATION</b> .....	<b>5</b>
<b>APPENDIX</b> .....	<b>6</b>
<b>Cleaning/Maintenance</b> .....	<b>6</b>
<b>Warranty and service</b> .....	<b>6</b>
<i>Service</i> .....	<i>6</i>
<i>Warranty</i> .....	<i>6</i>

The **CSH-1** heated platform from Warner is a versatile base for many popular disposable glass slides and chambered cover glass. The platform is at home on both upright and inverted microscopes and includes resistive heating elements. Magnetic stainless steel along the perimeter of the **CSH-1** permits the positioning of perfusion lines by use of our **MAG-3** magnetic clamps.

Features of the **CSH-1** include:

- ✓ Open design allows easy access
- ✓ Designed for 1 x 3 inch slides
- ✓ Removable perfusion and suction tube holders
- ✓ Magnetic stainless steel plates allow attachment of magnetic holders
- ✓ Stage adapters permit mounting on all major microscopes

**THIS EQUIPMENT IS NOT DESIGNED NOR INTENDED  
FOR USE ON HUMAN SUBJECTS**

## SETUP

### General Comments

The **CSH-1** platform is a versatile base for 1x3" glass slides, as well as many popular disposable chambered cover glass. The platform is at home on both upright and inverted microscopes and includes adjustable perfusion tubes, quick release clamps, and resistive heating elements.

The **CSH-1** base has a 21.5 x 52.3 mm diameter aperture large enough for inverted microscope objectives and magnetic stainless steel plates along the perimeter of the platform permit the use of Warner's **MAG-3** magnetic clamps. An **MC-1** Magnetic Clamp Kit, which includes a variety of holding tools, can also be used with this platform. The platform mounts onto a microscope stage via **Series 30** stage adapters, which are available for all major microscopes.

The included **MAG-3** magnetic clamps provide positioning of removable perfusion and suction tubes for precise solution control. The clamps feature flexible arms which can be oriented in any desired manner.

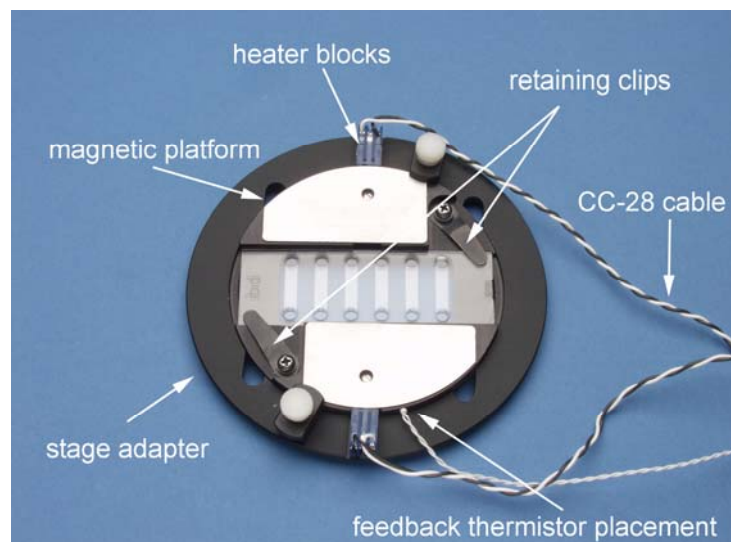
Resistive heating of the **CSH-1** platform base is provided by Warner's **TC-324B** or **TC-344B** temperature controller and a **CC-28** cable. In-line heating of perfusate can be directly achieved using our **SH-27B** or **SF-28** in-line solution heaters.

### ASSEMBLY

**Chambered cover slides** are ideal inserts for use with the **CSH-1** and the platform has been optimized for this application (a representative sampling is shown to the right).



1. Begin by removing any installed cover slides from the **CSH-1** platform by rotating the two retaining clips out of the way.
2. Place a blank cover slide into the base and secure the into place using the retaining clips
3. Attach the **CC-28** cable assembly to the **CSH-1**. The blue connectors in the **CC-28** attach to the heater blocks on the **CSH-1**. The white thermistor in the **CC-28** goes into the large hole in the side of the **CSH-1** (see photo to the right).
4. Place the **CSH-1** into an appropriate stage adapter and place the **CSH-1**



onto your microscope stage

5. Using the magnetic holders, mount the perfusion tubes onto the magnetic platforms and make adjustments for positioning and solution height.
6. The completed assembly is ready for use.

## **OPERATION**

The open format design of the **CSH-1** enables easy access for microelectrodes, pipets and perfusion lines. 1x3" cover glasses and chamber slides can be quickly and easily exchanged without affecting the adjustments of the flow lines.

The open design of the **CSH-1** also permits imaging using either upright or inverted microscopes. **Series 30** stage adapters are used to mount the **CSH-1** onto most commonly used microscope stages. Contact our Tech Support Department for custom stage adapters.

Resistive heating of the **CSH-1** is achieved using a **TC-324B** or **TC-344B** temperature controller and a **CC-28** cable. The blue **CC-28** connectors attach directly to each resistive heating element. Feedback control for temperature regulation is provided via the white thermistor (T1) which is inserted into the large hole in the platform base (look under the edge of the stainless steel brackets). We recommend using a drop of mineral oil to insure good thermal contact between the white T1 thermistor and the platform chassis.

The **CC-28** bath thermistor (i.e. T2) can be placed directly into the bath to determine the solution temperature in any region of interest. Heating of perfusate can be achieved using a **SH-27B** or **SF-28** in-line solution heater which are also controlled via our temperature controllers.

## **APPENDIX**

### ***Cleaning/Maintenance***

The **CSH-1** is constructed of anodized aluminum and stainless steel. It can be easily cleaned with common laboratory detergents. We do not recommend the use of solvents such as ethyl alcohol (EtOH) as this will likely dissolve the glue holding the stainless steel plates onto the base. For similar reasons, do not autoclave.

### ***Warranty and service***

#### ***Service***

We recommend that all questions regarding service be referred to our Technical Support Department. Normal business hours are 8:30 AM to 5:00 PM (EST), Monday through Friday.

We can be reached by any of the following means:

Phone: (800) 599-4203 or (203) 776-0664

Fax: (203) 776-1278

email: [support@warneronline.com](mailto:support@warneronline.com)

Snail mail: 1125 Dixwell Avenue, Hamden, CT 06514

web: <http://www.warneronline.com/contact.html>

#### ***Warranty***

The **CSH-1** is covered by our Warranty to be free from defects in materials and workmanship for a period of one year from the date of shipment. If a failure occurs within this period, we will either repair or replace the faulty component(s). This warranty does not cover failure or damage caused by physical abuse.

In the event that repairs are necessary, contact Warner Instruments for an RMA authorization prior to shipping. Shipping charges to the factory are the customer's responsibility, return charges will be paid by Warner Instruments.