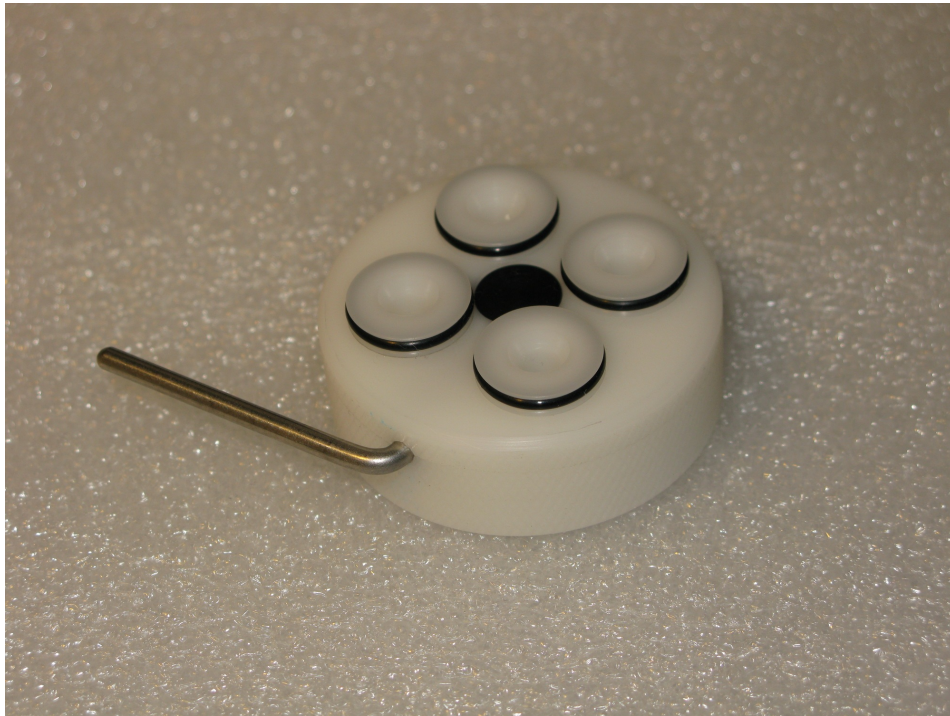




## *Cell Injury Controller II* **HT Adapter**



HT Adapter Manual

# HT Adapter Manual

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# HT Adapter Manual

## Introduction

The HT adapter makes the Cell Injury Controller II compatible with the 24 well, HT BioFlex® Culture Plates. These are the HTP-3001 series of culture plates available from FexCell International Corporation.

The Cell Injury Controller II contains two sets of valves. The Large/Small well selector switch determines which valve set is to be used. There were only two tray types available when the CIC II was created so the Large/Small label made sense at the time but valve choice is actually based on the thickness of the elastic membrane. The Large Well setting is adjusted for trays with a thin elastic membrane having injury pressures typically between 1.8 and 4.0 PSI. The Small Well setting is for trays with a thick membrane with injury pressures typically between 8.6 and 11.8 PSI.

In keeping with the high throughput nature of the HT trays, the HT Adapter injures a group of four wells rather than just a single well. The adapter, therefore, has four O-rings inserted into the tray at once. Removing a well plug having four O-rings, without spilling the tray, can be difficult to do so the adapter includes a lever operated ejection piston to push the adapter out of the tray.

## Operation

The HT BioFlex® Culture Plates (HTP-3001 series) utilize the same elastic membrane as the BioFlex® Culture Plates (BF-3001 series). These are both thin membrane, low pressure trays and therefor use the Large Well setting.

- Apply a thin coat of petroleum jelly to the O-rings before use.
- Place the HT Adapter on the CIC II well plug with the orientation such that the hose and cable will not block the ejection lever.
- Set the well selector switch to Large Well (thin membrane).
- Set the duration. (50 ms is typical)
- Adjust the regulator pressure and trigger the device to ensure the regulator stabilizes at the desired pressure.
- Ensure the ejection piston is retracted.
- Place the subject culture in the clearance spacer and insert the adapter plug.
- Hold the well plug assembly down tight to ensure consistent gas volume.
- Trigger the device and record the peak pressure.
- Rotate the ejection lever to remove the plug from the tray.

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## Settings

You will need to experiment with the pressure settings to determine the pressures that provide the level of trauma desired. Below is a table of regulator settings for the desired stretch percentage which should provide a good starting point. The regulator values given are for the well size selector switch set to the large well (thin membrane) position.

### **BioFlex HT-24 Well Tray Injury Settings (Large Well with 1 ml of fluid media)**

Injury level	Approximate Membrane Stretch	Approximate Regulator Pressure	CIC II - BioFlex equivalent injury peak pressure
Low	120%	6.0 PSI	1.8 PSI
Mild	135%	9.5 PSI	2.7 PSI
Severe	155%	15 PSI	4.0 PSI

## Additional Information

Publications dealing with biaxial strain Cell Injury of brain derived cells in culture can be found at:

**<http://www.people.vcu.edu/~cellis/CICPubs.html>**

BioFlex® Culture Plates are available from FexCell International Corporation online at:

**<http://store.flexcellint.com/consumables.html>**

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