

# DROPLET COLLECTION MODULE

## USER INSTRUCTIONS



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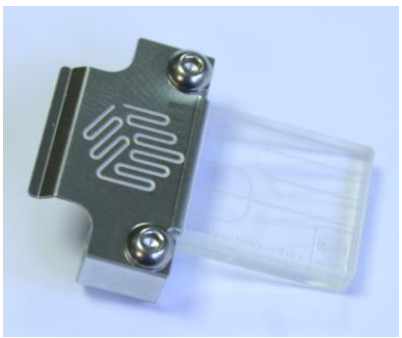
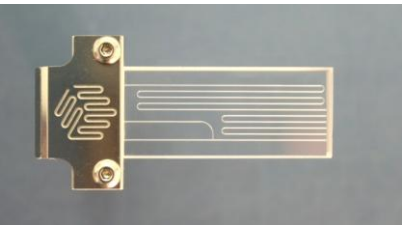
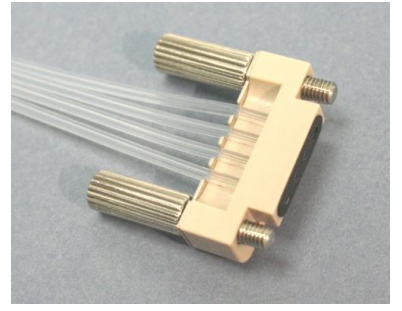
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## 1. Introduction

The Droplet Collection Module (Part No. 3200112) provides a method of taking droplets off-chip without the flow disruption seen at the chip-tube interface. Droplets can be ejected into bulk liquid either vertically upwards or vertically downwards depending on the relative densities of the droplet liquid and carrier liquid. The collection reservoir is a 15ml flat sided quartz vessel to enable optical analysis or UV curing of the emulsion produced.

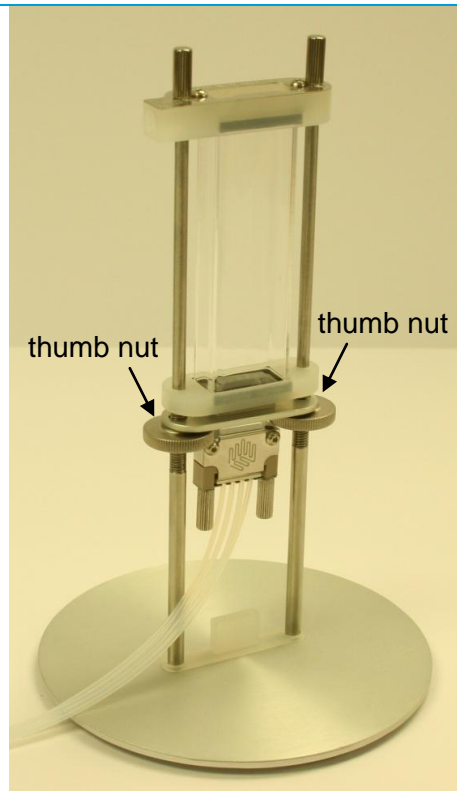
## 2. Compatible Chips

To use the Droplet Collection Module, a compatible chip from the list below is required. Dolomite also offers custom chips with alternative channel geometries on request.

	<ul style="list-style-type: none"> <li>• Droplet Junction Chip with header (100µm etch depth), (Part No. 3200089)</li> <li>• Droplet Junction Chip with header (100µm etch depth) hydrophobic (Part No. 3200090)</li> <li>• Droplet Junction Chip with header (190µm etch depth) (Part No. 3200091)</li> <li>• Droplet Junction Chip with header (190µm etch depth) hydrophobic (Part No. 3200092)</li> </ul>
	<ul style="list-style-type: none"> <li>• T-junction Chip with diced end (Part No. 3200014)</li> <li>• T-junction Chip with Diced end, hydrophobic (Part No. 3200114)</li> </ul>
	<p>Also, required for use with the above chips is the Linear Connector 4-way (Part No. 3000024)</p>

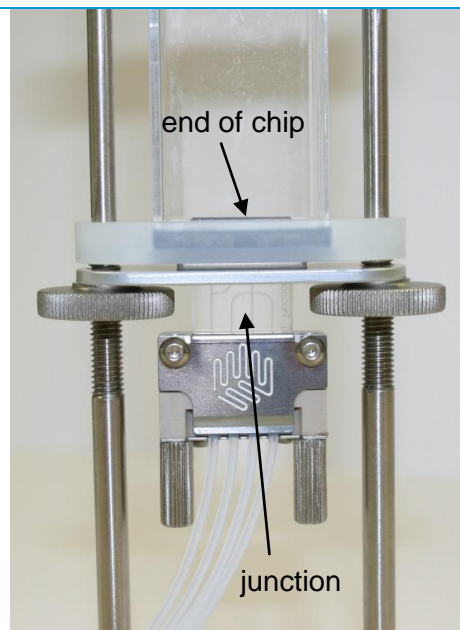
### 3. Floating Droplets Configuration

When the droplet liquid is less dense than the carrier liquid (e.g. mineral oil in water), the floating droplets configuration should be chosen. This ensures that the droplets will pass straight out of the chip without touching the end face and avoiding coalescence.

**Step 1:**

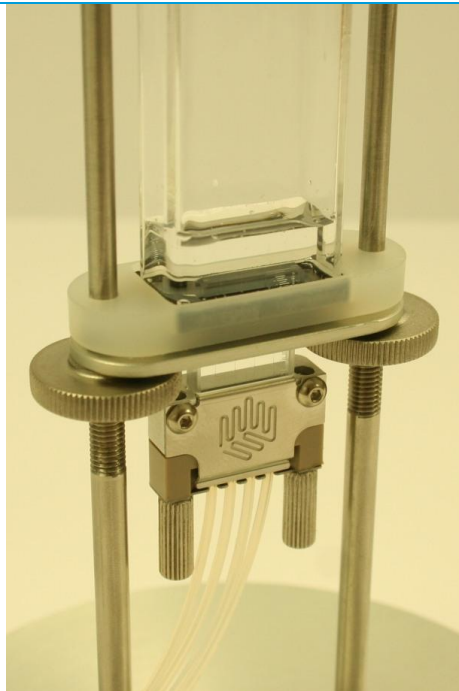
Check that the thumb nuts are unscrewed slightly to allow chip to be inserted.

Locate chip in the recess underneath the reservoir and push through the seal.

**Step 2:**

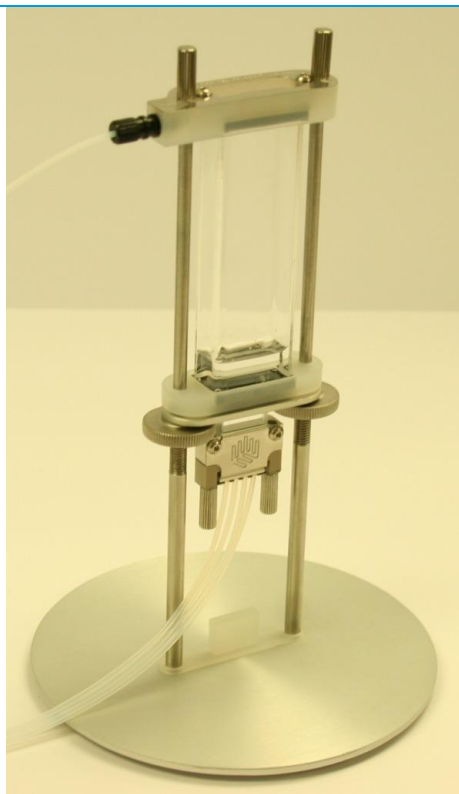
Ensure end of chip is protruding into reservoir and junction is visible.

Tighten thumb nuts until chip cannot be easily moved. This creates a seal around the chip.



**Step 3:**

Fill reservoir with a small volume of carrier liquid to cover the end of the chip.



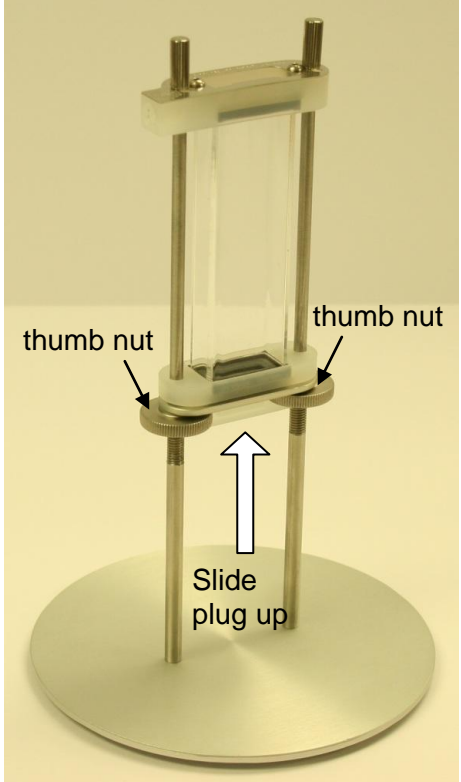
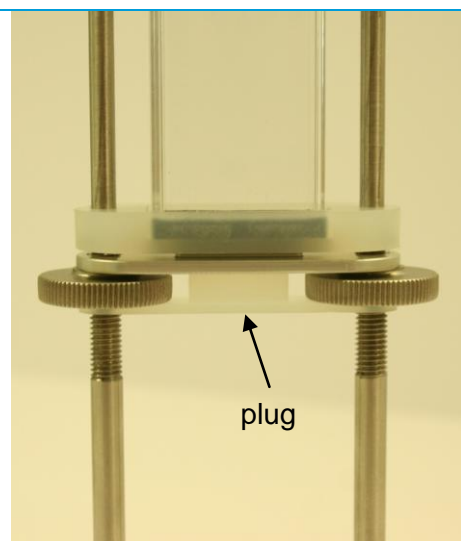
**Step 4:**

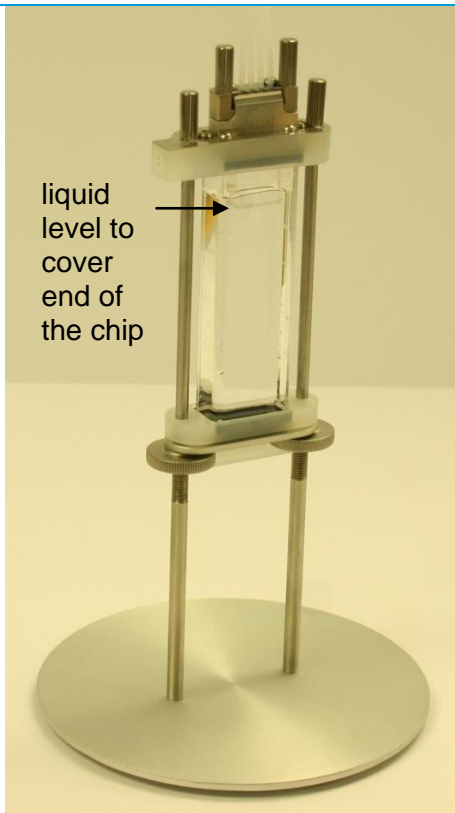
If required, insert overflow pipe provided into 1/4-28" overflow port.

The set-up is now ready for droplet formation.

## 4. Sinking Droplets Configuration

When the droplet liquid is more dense than the carrier liquid (e.g. water in mineral oil), the sinking droplets configuration should be chosen. This ensures that the droplets will pass straight out of the chip without touching the end face and avoiding coalescence.

 <p>A photograph of a laboratory apparatus. It consists of a clear cylindrical reservoir mounted on a metal base. Two vertical metal rods pass through the top and bottom of the reservoir. At the bottom of the reservoir, there is a white plug. Two thumb nuts are attached to the rods, one on each side, to adjust the height of the plug. An upward-pointing arrow is labeled "Slide plug up". Labels "thumb nut" with arrows point to the two thumb nuts.</p>	<p><b>Step 1:</b></p> <p>With the thumb nuts unscrewed slightly, slide the plug up to block the hole in the underside of the reservoir.</p>
 <p>A close-up photograph of the bottom of the apparatus. The white plug is visible, held in place by the two thumb nuts. An arrow points to the plug with the label "plug".</p>	<p><b>Step 2:</b></p> <p>Ensure plug is positioned as high up as possible.</p> <p>Tighten thumb nuts until plug cannot be easily moved. This creates a seal around the plug.</p>



**Step 3:**

Fill reservoir with carrier liquid and insert the chip into the recess provided in the top of the reservoir.

Check that the liquid level is just high enough to cover the end of the chip.



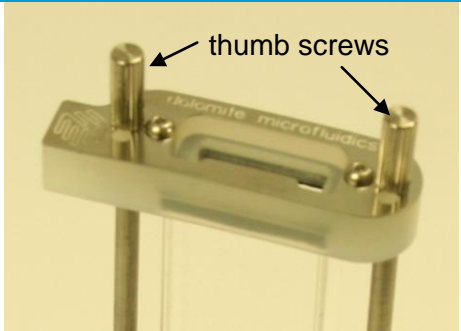
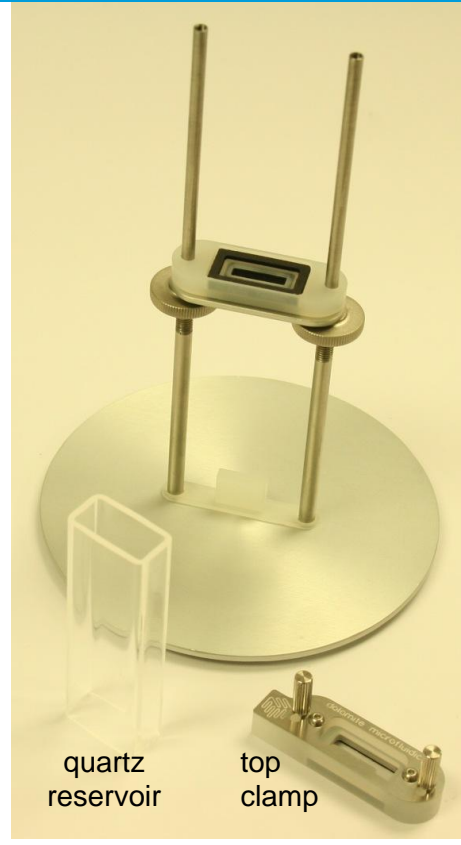
**Step 4:**

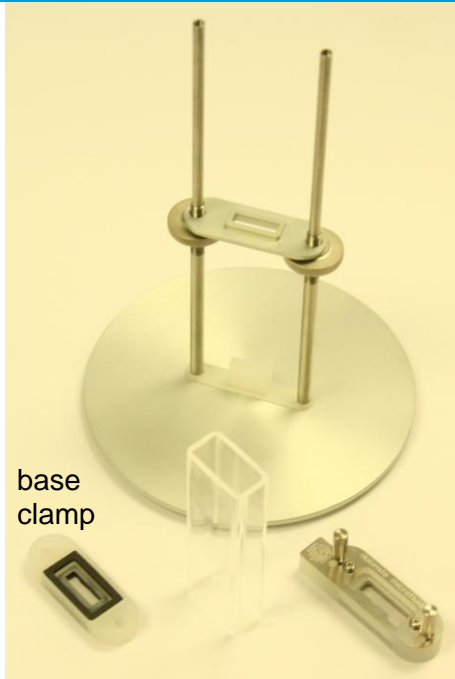
If required, insert overflow pipe provided into 1/4-28" overflow port. Since the droplets collect in the lower part of the reservoir, the overflow port will remove excess carrier liquid.

The set-up is now ready for droplet formation.

## 5. Cleaning and Maintenance

The Droplet Collection Module can be disassembled for easy cleaning of the wetted parts.

	<p><b>Step 1:</b> Undo thumb screws to enable the reservoir to be removed for cleaning.</p>
	<p><b>Step 2:</b> The top clamp and quartz reservoir can now be lifted off.</p>

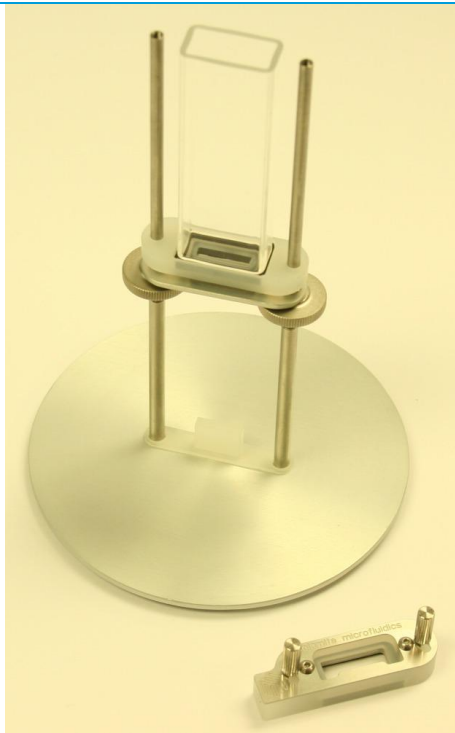


base clamp

**Step 3:**

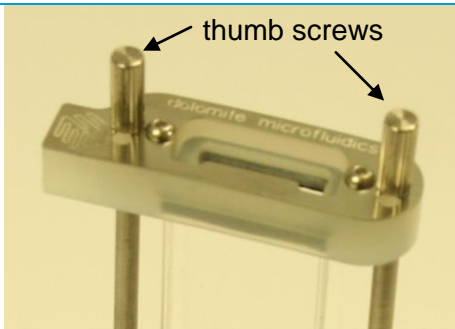
Slide the base clamp up to remove.

Cleaning can now be carried out.



**Step 4:**

To reassemble, slide the base clamp onto the pillars and place the quartz reservoir onto the seal.



thumb screws

**Step 5:**

Place the top clamp onto the quartz reservoir, ensuring that it is aligned.

Tighten the thumb screws evenly to complete assembly.



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