

DOUBLE CHIP INTERFACE H

USER INSTRUCTIONS

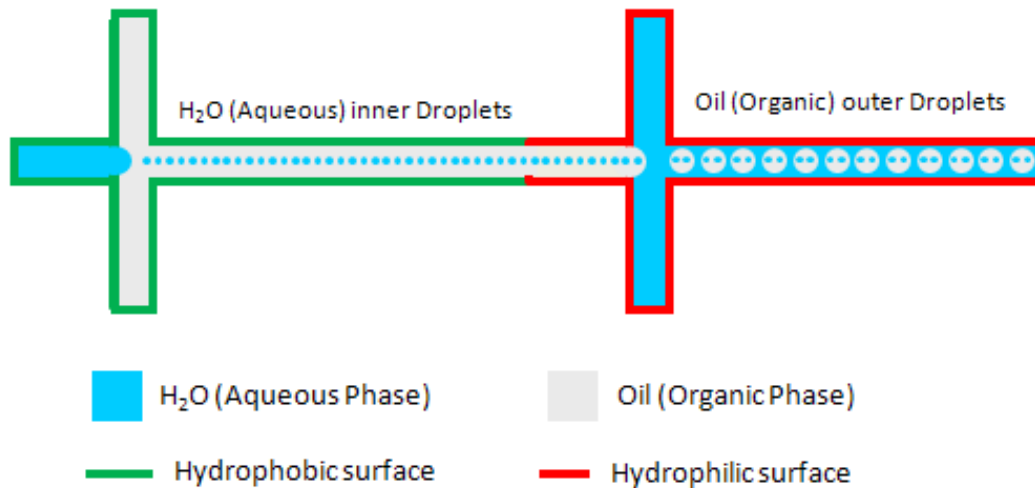


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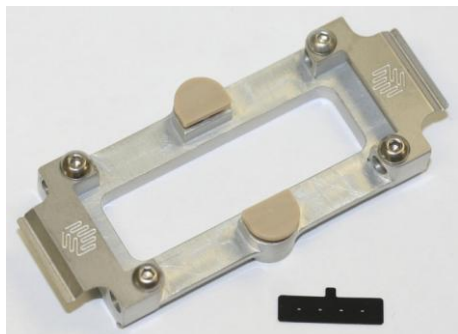
1. Introduction

The Double Chip Interface H (Part No. 3200088) enables 2 chips of dimensions 15 x 22.5 x 4 mm to be interfaced together with a thin perfluoroelastomer gasket in between. The gasket provides 4 fluidic connections from chip to chip. This device can be used with 2 chips of any design, but the primary use is in double emulsion generation. Two Droplet Junction Chips (100µm etch depth) (one hydrophobic and one hydrophilic) are required for double emulsions.



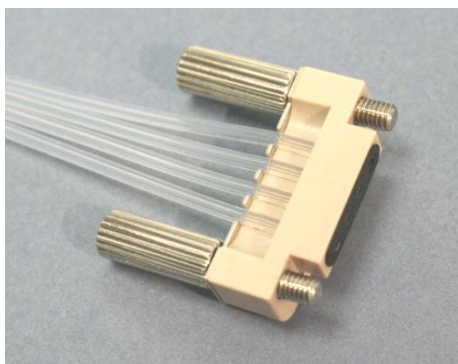
Required surface properties for the generation of water-in-oil-in-water droplets

2. Parts Required



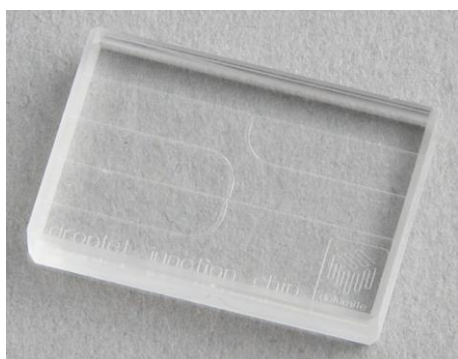
Double Chip Interface H (Part No. 3200088)

- Includes gasket for sealing between 2 chips



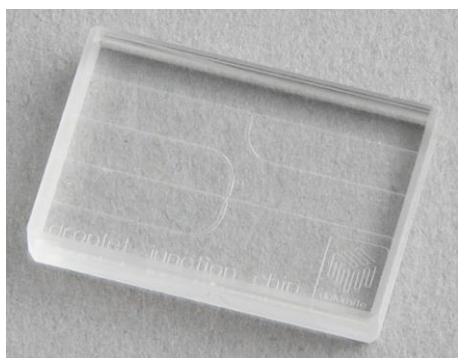
Linear Connector 4-way (Part No. 3000024)

- 2 required
- For connection of 1/16" OD tubing to chips



Droplet Junction Chip (Part No. 3000158) *or custom chip of dimensions 15 x 22.5 x 4 mm*

- For generation of droplets of oil-in-water
- For larger droplets, a version of this chip with larger channel size is available (Part No. 3000436)



Droplet Junction Chip (100µm etch depth), hydrophobic (Part No. 3000301) *or custom chip of dimensions 15 x 22.5 x 4 mm*

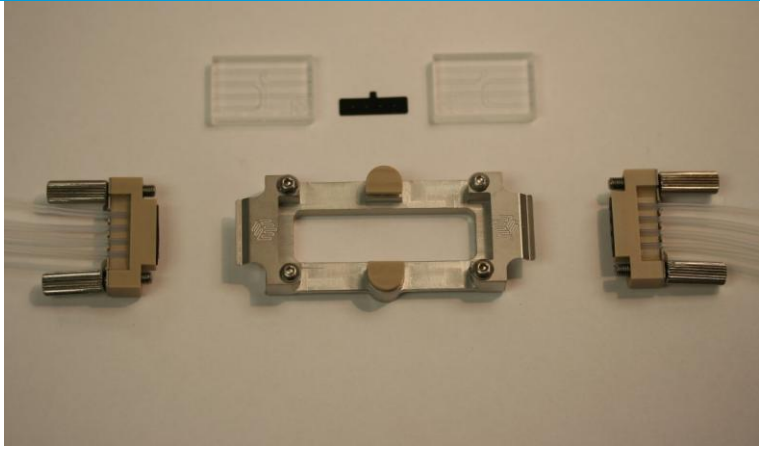
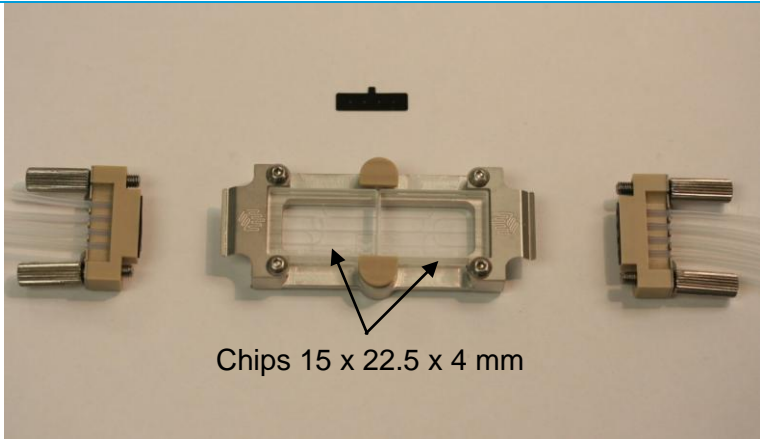
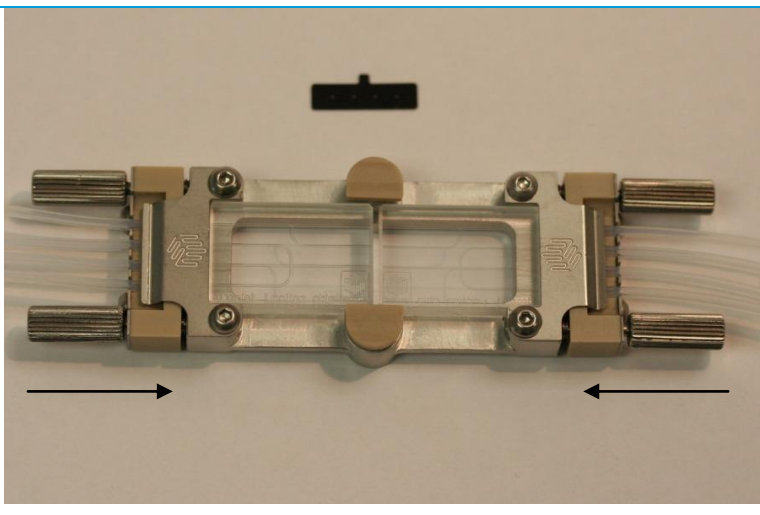
- For generation of droplets of water-in-oil
- For larger droplets, a version of this chip with larger channel size is available (Part No. 3000437)

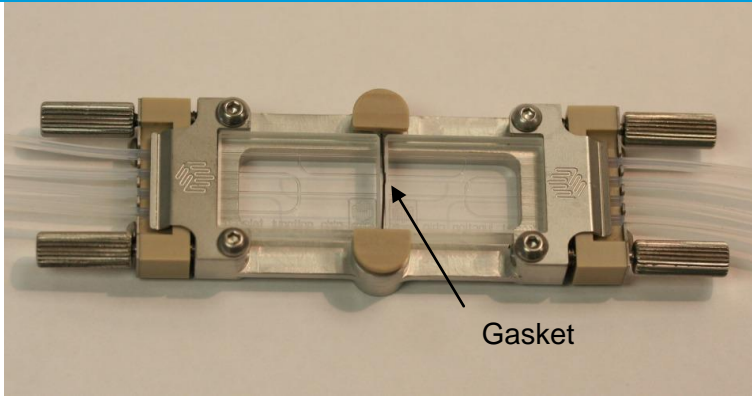


1/16" OD Tubing

- Dolomite offers FEP or PTFE tubing with internal diameters of 0.25, 0.5 & 0.8 mm

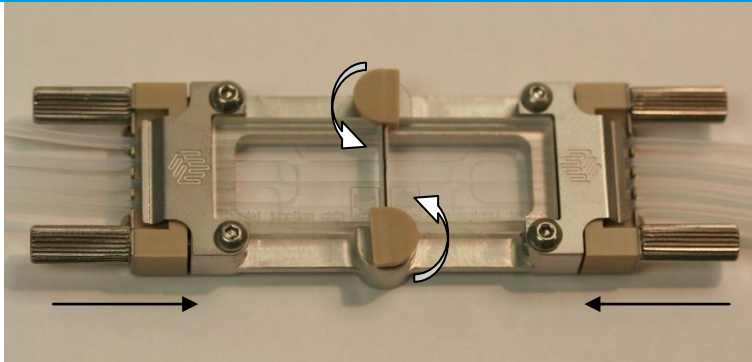
3. Assembly Instructions

	<p>Step 1:</p> <p>Check that you have the parts required.</p>
 <p>Chips 15 x 22.5 x 4 mm</p>	<p>Step 2:</p> <p>Place the chips into the holder ensuring that they are in the correct orientation.</p> <p>For double emulsion generation, details of the chip configuration required are given in section 4.</p>
	<p>Step 3:</p> <p>Screw linear connectors into the holder, but do not tighten at this stage. Ensure that a gap is left for insertion of the gasket.</p>



Step 4:

Insert gasket into the gap between the 2 chips.






Step 5:

Rotate chip retainers to hold chips in place.

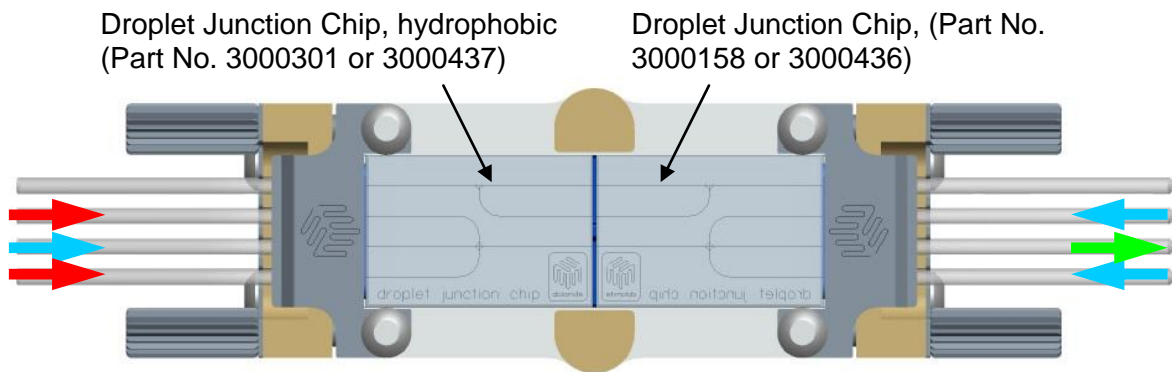
Hand tighten thumb screws (no tools required) to create chip-gasket-chip seal. **Do not over tighten as this will result in chip cracking.**

4. Double Emulsion Chip Configurations

In the following diagrams, the oil and water flows are indicated as follows:

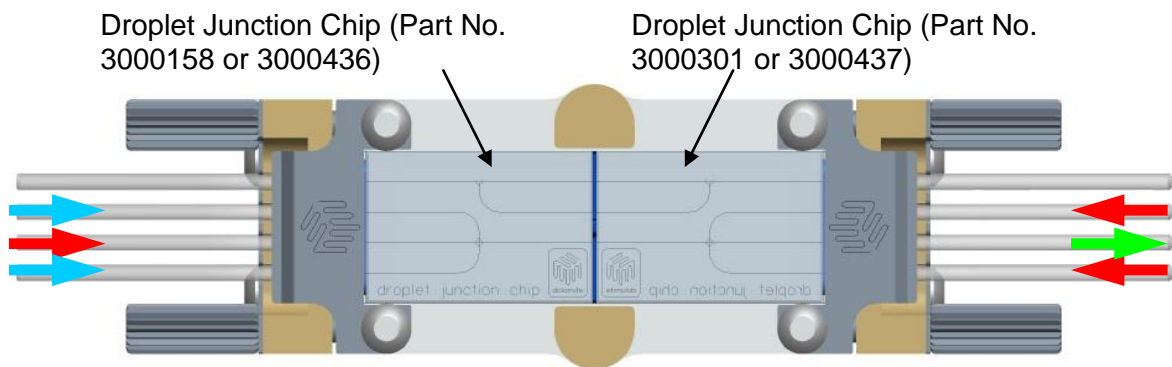
-  Oil in
-  Water in
-  Double droplets out

4.1 Water-in-oil-in-water emulsion on X-junction



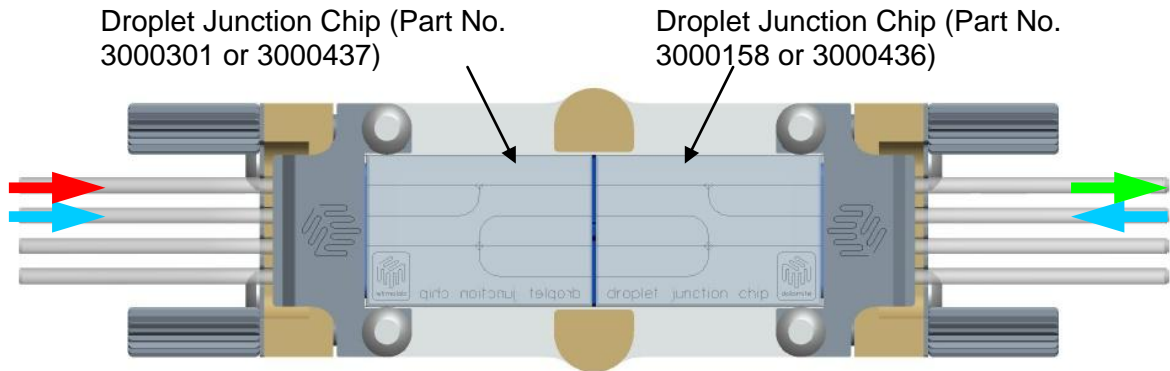
Chip configuration for generation of water-in-oil-in-water emulsion on X-junction

4.2 Oil-in-water-in-oil emulsion on X-junction



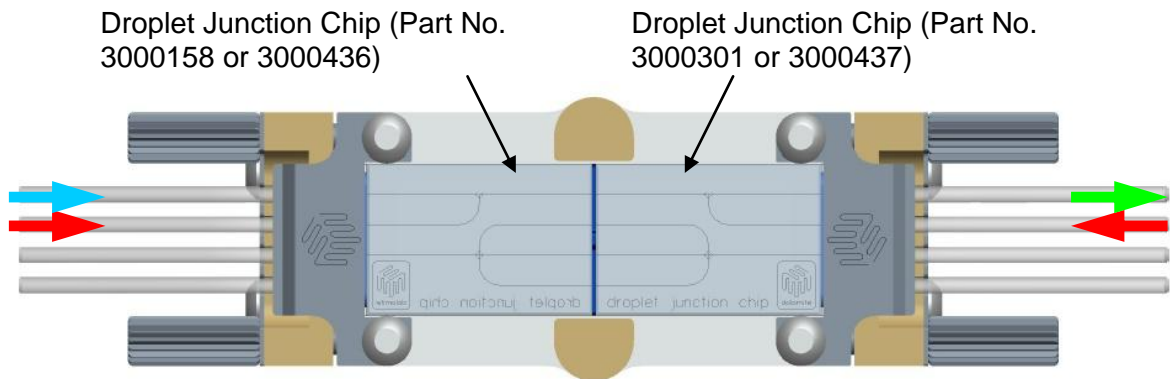
Chip configuration for generation of oil-in-water-in-oil emulsion on X-junction

4.3 Water-in-oil-in-water emulsion on T-junction



Chip configuration for generation of water-in-oil-in-water emulsion on T-junction

4.4 Oil-in-water-in-oil emulsion on T-junction



Chip configuration for generation of oil-in-water-in-oil emulsion on T-junction



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