# Fluigent Droplet Starter Pack※

# Quick Start Guide

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- 3 **EZ Drop** chip
- 1/32" tubing
- 2 Adaptor sleeve

2 Flow EZ™

1 Flow EZ™ supply kit

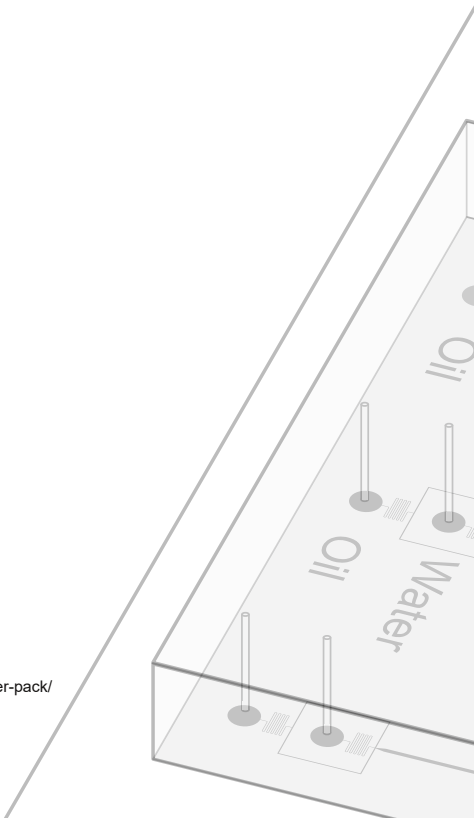
2 Flow Unit

2 Low flow rate kit

2 P-Cap

2 P-Cap kit

1 Tube cutter

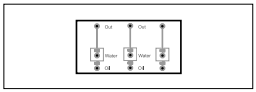



※ This guide may also be used by Drolet Kit user for information purpose.
Datasheet is available at https://www.fluigent.com/product/droplet-starter-pack/

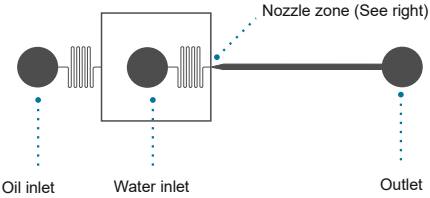
For any question: contact@fluigent.com / www.fluigent.com

# Chip overview

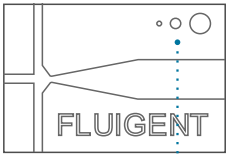
The **EZ Drop** is a microfluidic chip to generate water in oil droplets (using flow focusing). Each chip contains 3 identical devices and each one can be used independently.



Channel overview of a single device




Nozzle zone

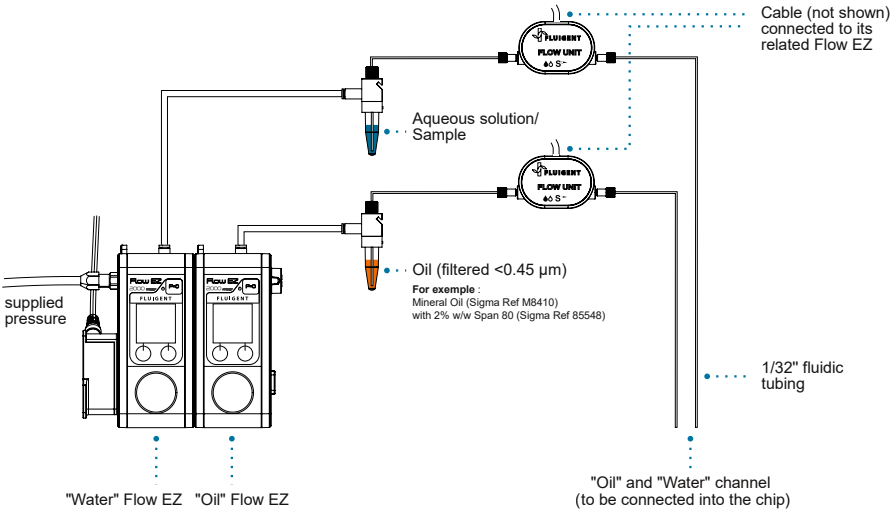



Scale of 20µm, 50µm and 100µm
(for a quick droplets' size identification under microscope)

# Setup installation

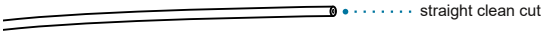
## Preparation

1. Install the whole setup as shown below (Use of filtered solutions will enhance chip life).
2. Power on your Flow EZs and follow the first-time use procedure (See Flow EZ's quick start guide).

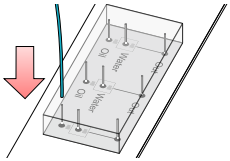


## Chip connection tips

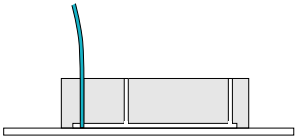
1. Make sure the 1/32" tubing you are about to insert has a **straight clean cut** at its end. If not so, use a tube cutter to make a straight clean cut.




2. Insert the tubing gently until it touches the **bottom**.

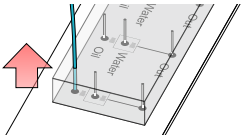


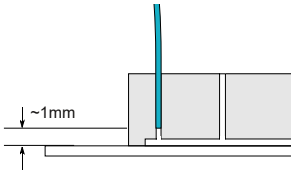

example of the "Oil" channel tubing inserted into the "Oil" connection hole



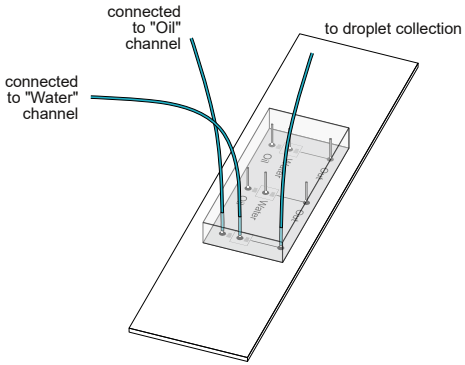
(lateral view, channel size not in scale)

3. Pull the tubing up gently for about **1mm** (to leave space for the flow).



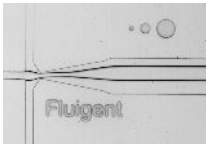

4. Repeat previous steps for the two other connection holes on the same device.



4 If you need to achieve a specific size and rate of droplets, adjust the pressures to reac
certain Oil/Water flow rate combination (flow rate is shown as $Q_{meas}$ on your Flow EZ's
You can use the diagram below to quickly identify the Oil/Water flow rate combination
desired diameter and generating rate.

## Droplets' rate/size diagram (part)

Only the part under 1.0 µL/min is presented here




Orange: Oil flow rate
Green: Water flow rate
unit : µL/min

**Example of use**: *For a combination of 1.0 µL/min of oil and 1.0 µL/min of water, you may achieve a droplet diameter of 55 µm at a rate of 190 Hz (11400 droplets per minute).*

※ This diagram shows only the part of low flow rate. The EZ Drop chip itself can achieve up to 4000 Hz under certain circumstances (See the datasheet for more details).

※ Results may be different from data on this diagram, depending on experimental environment.