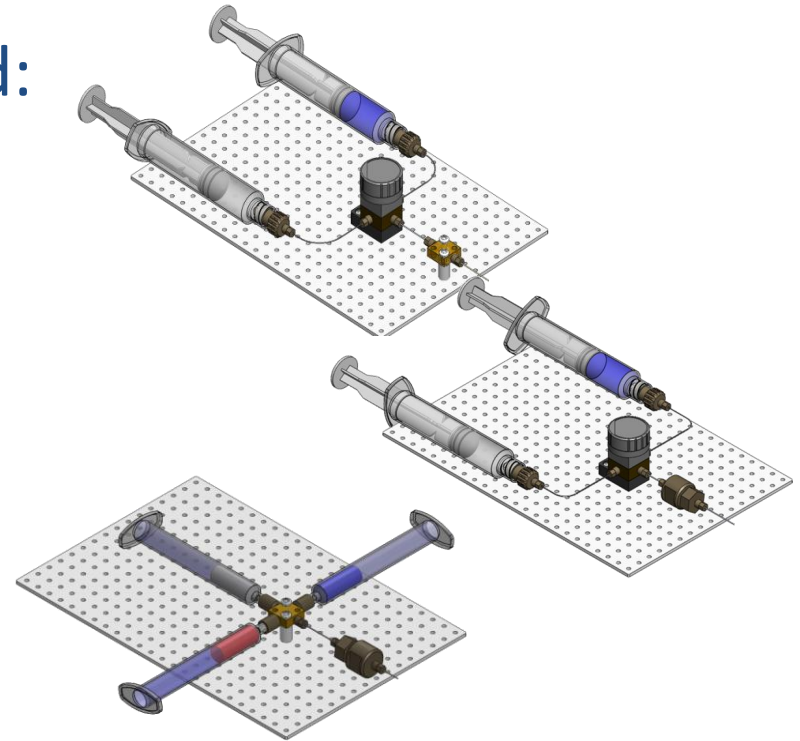


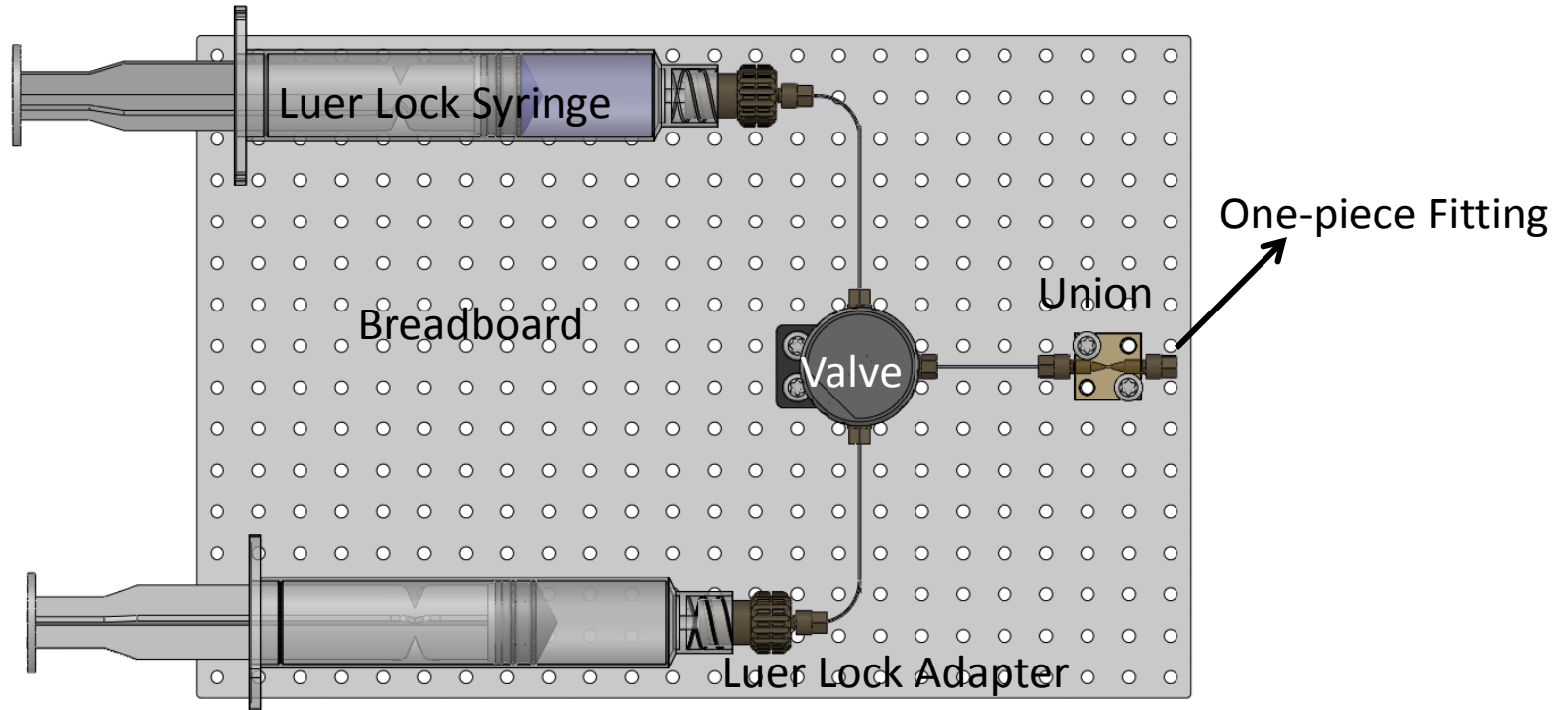
Modular Functional Fluid Circuit Guide

In this guide you will find:

- Injector Example
- Injector Parts List
- Reactor Example
- Reactor Parts List
- Centrifuge Example
- Centrifuge Parts List
- Instructions for Making a CapTite™ Breadboard



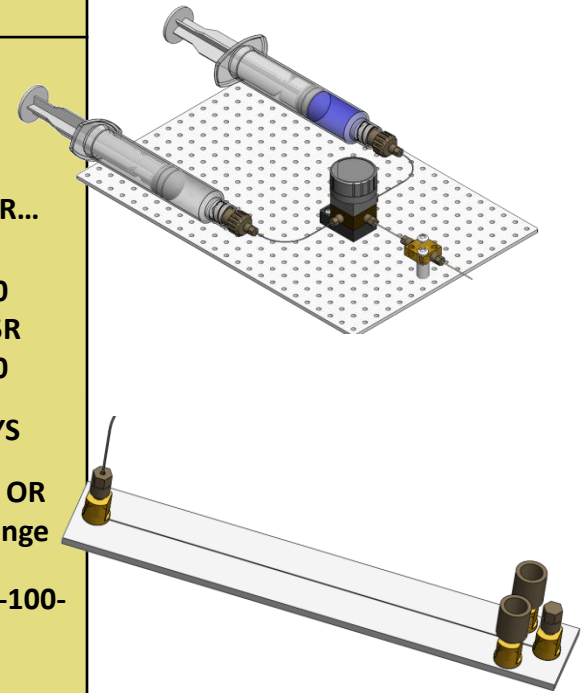
Injector



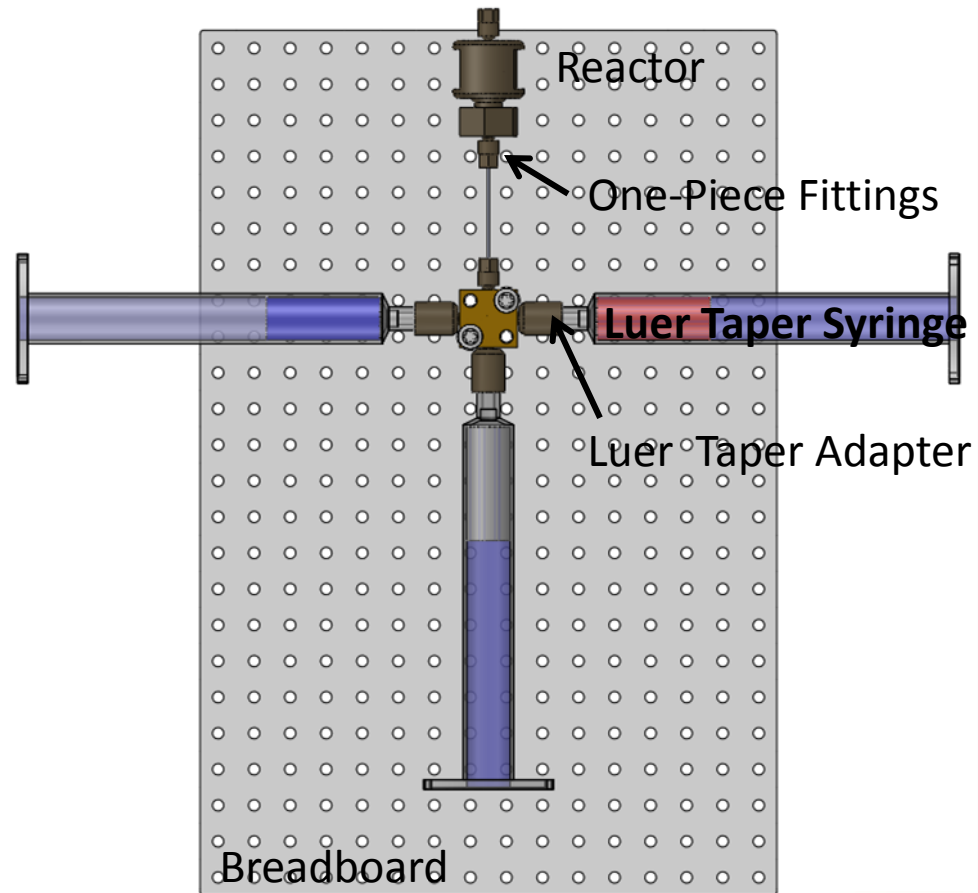
Top Down View of Injector Fluid Circuit

Injector Parts List

REQUIRED COMPONENT	TUBING CIRCUIT	CHIP CIRCUIT
TUBING (PEEK, FUSED SILICA), 360 um O.D.	15 CM	15 CM
Luer Lock Adapters	2 C360-300	2C360-300 OR...
ONE-PIECE FITTINGS ON-CHIP RESERVOIRS BONDED PORT CONNECTORS	6 C360-100	4 C360-100 4 C360-405R 4 C360-400
BREADBOARD	1 LS-600	NOT ALWAYS
SYRINGE PUMPS OR FLUID SOURCES	2 Luer Lock Syringes	2 LS-SYRINGE OR Luer Lock Syringe
VALVE,3-PORT, 2-POSITION	1 MV201-C360	CROSS-PMMA-100- T
SCREWS/STANDOFFS	(2) ¼" TORX (2) ½" TORX	CHIP HOLDER (2) ¼" TORX
TOOLS	T7 TORX WRENCH HEX WRENCH	LS-EPOXY

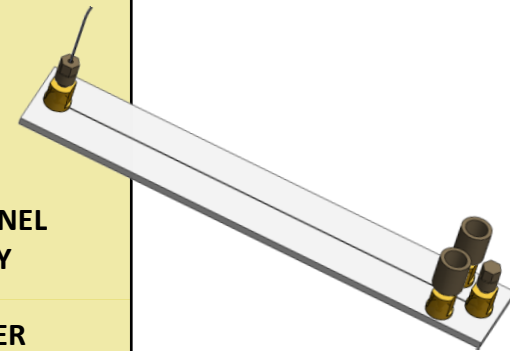
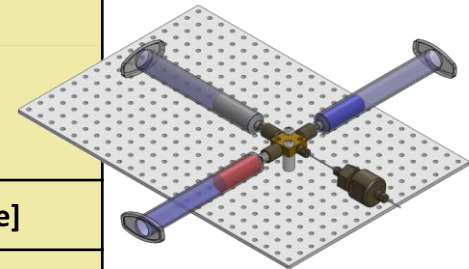


Reactor

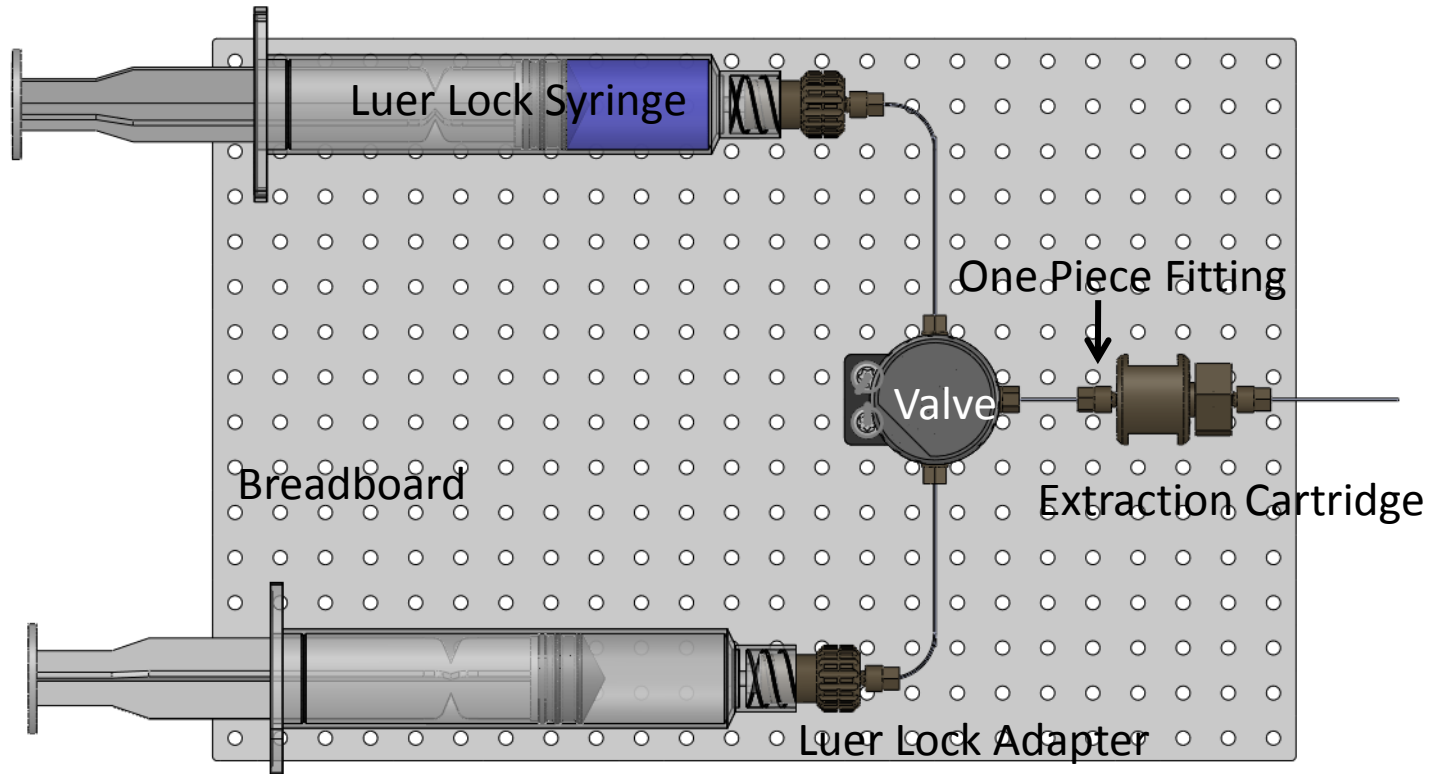


Reactor

COMPONENT TYPE	TUBING CIRCUIT	CHIP CIRCUIT
TUBING (PEEK, FUSED SILICA)	15 CM	15 CM
FITTINGS	3 C360-100 3 C360-405R	4 C360-400 3C360-405R 3 C360-100
CARTRIDGE	1 uFilter-C360 OR uCTG - [vol] - [tubing size]	
BREADBOARD	1	NOT ALWAYS
SYRINGE PUMPS OR FLUID SOURCES	3 LS-SYRINGE	3
CROSS	1 C360-204	CROSS CHANNEL GEOMETRY
SCREWS/STANDOFFS	(2) ¼" TORX (2) ½" TORX	CHIP HOLDER (2) ¼" TORX
TOOLS	T7 TORX WRENCH HEX WRENCH	LS-EPOXY

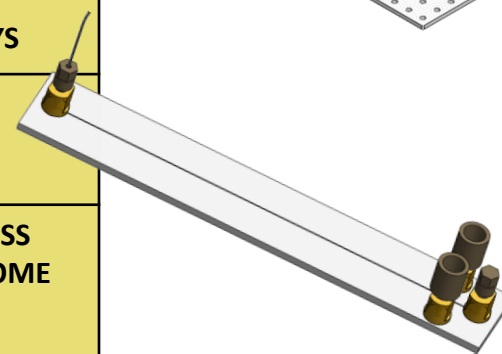
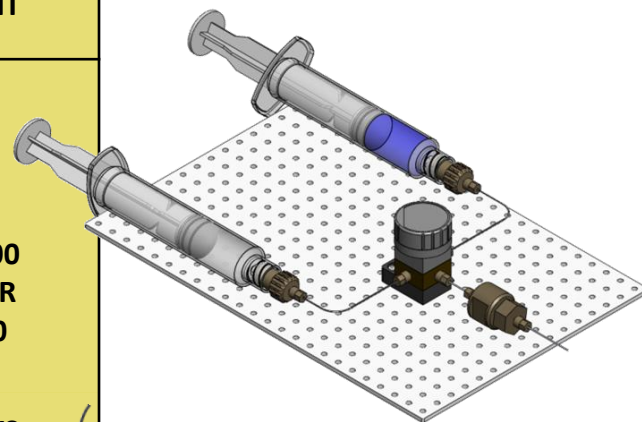


Centrifuge



Centrifuge

REQUIRED COMPONENT	TUBING CIRCUIT	CHIP CIRCUIT
TUBING (PEEK, FUSED SILICA)	15 CM	15 CM
ONE-PIECE FITTINGS RESERVOIRS BONDED PORT CONNECTORS	7 C360-100	6-8 C360-100 2 C360-405R 4 C360-400
BREADBOARD	1	NOT ALWAYS
SYRINGES	2 LS-SYRINGE or Luer-Lock Syringe	
VALVE,3-PORT, 2-POSITION	1 MV201-C360	TEE OR CROSS CHANNEL GEOME TRY
SCREWS/STANDOFFS	(2) ¼" TORX (2) ½" TORX	CHIP HOLDER (2) ¼" TORX
TOOLS	T7 TORX WRENCH HEX WRENCH	LS-EPOXY



Mounting Your Fluid Circuit on a Breadboard CapTite™ Components



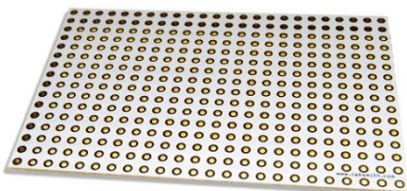
One-piece fitting (C360-100)
One-piece plug (C360-101)



Interconnects:
Tee (C360-203)
Cross (C360-204)
Y (C360-203Y)
Union (C360-202)



Luer-lock adapter
(C360-300)



Manual breadboard
(LS-600)



Filter holder
(uFilter-360)



Breadboard reservoir
(C360-BBRES)






Manual valve
(MV201-360)

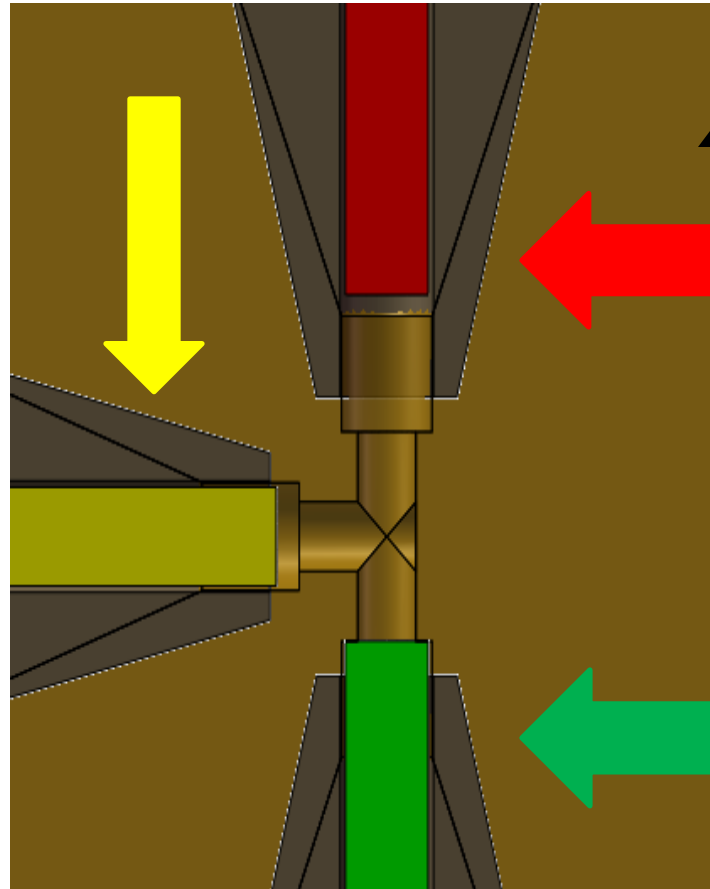
Mounting Your Fluid Circuit on a Breadboard

Installation Tools and Supplies

- Breadboard Mounting
 - T7 TORX driver for installing breadboard screws
 - ¼" screws to attach valve, reservoirs and chip holders to breadboard
 - ½" screws to attach interconnects to breadboard
 - ¼" standoff, spacer for interconnects
- Capillary
 - PEEK® capillary, 360 µm OD, 150 µm ID
 - PEEK capillary cutter
 - Fused-silica capillary, 360 µm OD, 150 µm ID
 - Cutting stone to score fused-silica capillary

Zero-Dead Volume Capillary Installation

<u>Color</u>	<u>Condition</u>
	No Flow
	Dead Volume
	Unobstructed Flow ZDV



Cause

Tubing too far
back and one-
piece fitting will
crush tubing

Tubing is not
flush
in seat, gap= dead
volume

Tubing is flush
in seat, no gaps &
no obstructions

CapTite™ Installation Instructions

- Lay out components on breadboard without fastening anything
 - Where possible, plan to use jogs or bends in the tubing between breadboard mounted components to make tubing length requirement less precise.
- Cut tubing to desired length
 - PEEK tubing use blade or knife to cut
 - Fused-silica tubing use cutting stone to score then break
- Working one leg of your fluid circuit at a time:
 - Connect tubing to fluid circuit leg and finger-tighten.
 - Ensure tubing is seated flush in the component before tightening.
 - Use hex wrench to tighten one-piece fittings ONLY if access finger-tightening is not possible because access is blocked. Use caution not to over-tighten.
 - Gently pull on tubing to ensure it is secure.
 - Use T7 Torx driver to fasten screws to fix component to the breadboard.
 - Use spacers with the interconnects to help level tubing throughout circuit.
- Test for leaks by placing plug in system outlet and pressurizing with manual syringe
- Move on to next component after verifying component is secured and leak free.