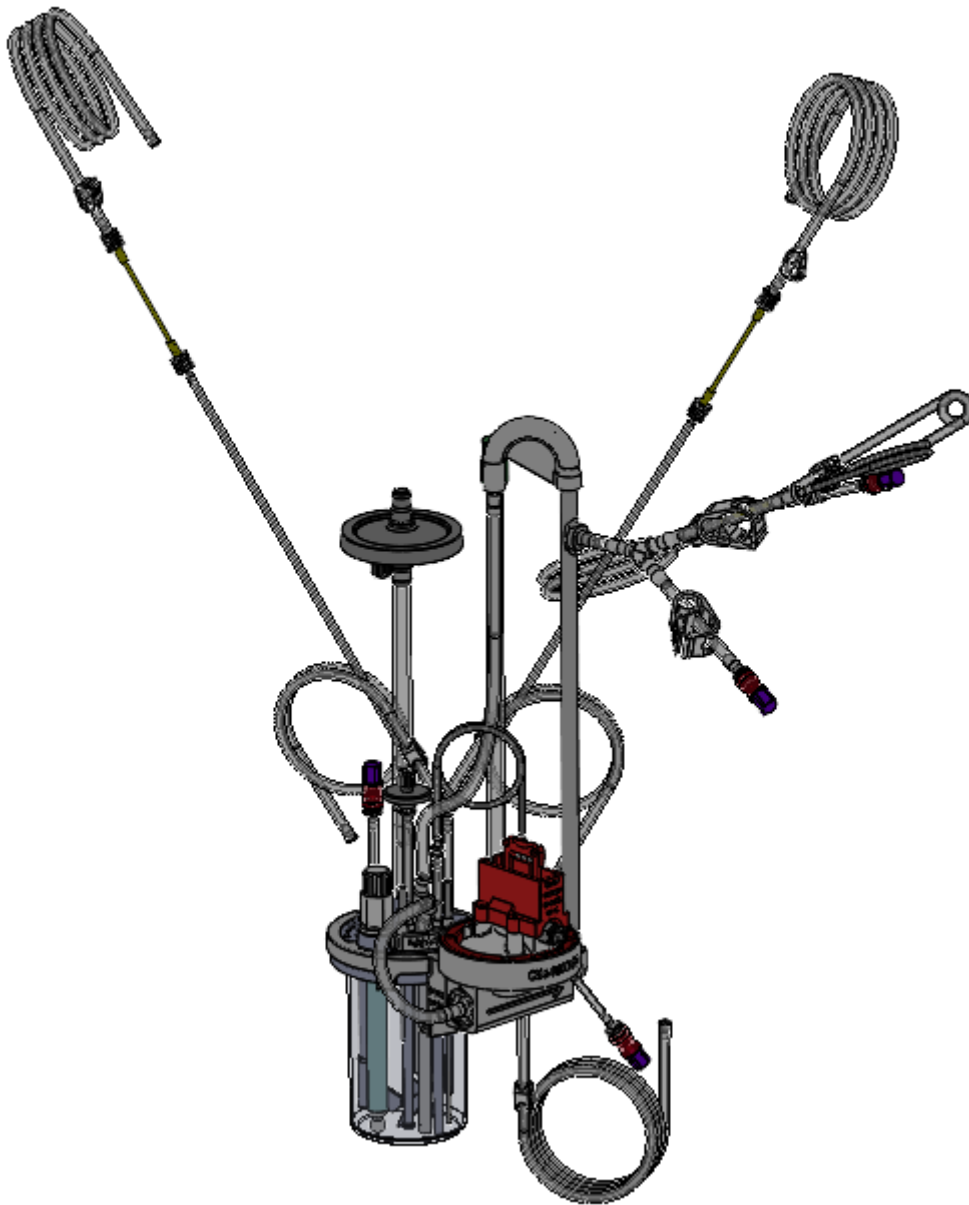


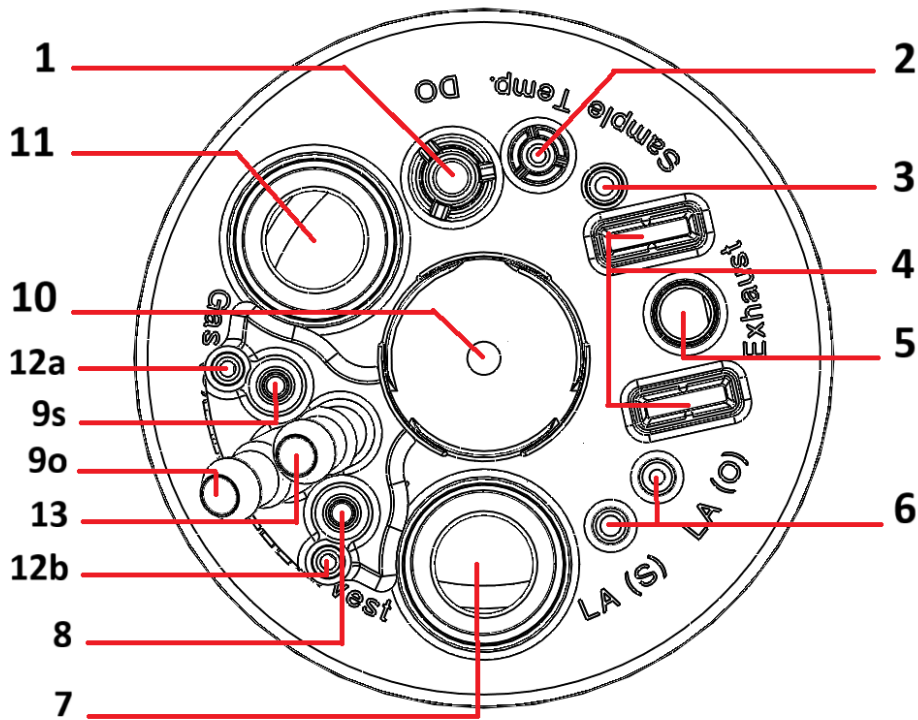
Revision 1.1

Customer name and address	
Date of contact	
Number of SUB's	
Time of delivery, week from order	
Version: 10	
Order number	



Dokumentnummer: K08.2.3.1.7	Emne: Production ordre formular – standard product				
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## Head plate layout:



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## Port description:

Port #	Label	Purpose	Tubing
1	Port for DO sensor	DO.	N/A.
2	Non-invasive well	for Temp sensor.	N/A.
3	ID2,4 Dip-tube, close to bottom. - Sampling port	Sampling port.	Keep original 70 mm silicone hose (OD¼"), with swabable valve.
4	Mount condenser	DasGip hose cooler.	N/A.
5	ID6,4. - Exhaust	Exhaust line.	Keep original silicone hose, straight through connector (6060), ID6.4 (1/4") x OD11.1 (7/16") x 150 mm C-Flex hose, with OD65 (26cm <sup>2</sup> ) sterile filter.
6 O – (LA O)	ID2 Drip-guide. - Antifoam & - Perfusion - Liquid Addition overlay	Antifoam and Perfusion - Liquid Addition Overlay.	Original 70 mm silicone hose (OD¼"), Y-connection (Y230): <ul style="list-style-type: none"> <li>• ID3.2 (1/8") x OD6.4 (1/4") x 500 mm C-flex hose, clamp and closed with plug. (PIP230)</li> <li>• ID1.6 x OD4.8 x 300 mm silicone hose, male luer lock (MTLL220), pump tubing from EP (EP pn: 78510118), male luer lock (MTLL230), ID3.2 (1/8") x OD6.4 (1/4") x 1000 mm C-flex hose, clamp and closed with plug. (PIP230)</li> </ul>
6 S - (LA S)	ID2,7 Dip-tube, close to bottom. - Inoculation addition & - Perfusion - Liquid Addition	Inoculation addition & Perfusion - Liquid Addition.	Original 70 mm silicone hose (OD¼"), Y-connection (Y230): <ul style="list-style-type: none"> <li>• ID3.2 (1/8") x OD6.4 (1/4") x 500 mm C-flex hose, clamp and closed with plug. (PIP230)</li> <li>• ID1.6 x OD4.8 x 300 mm silicone hose, male luer lock (MTLL220), pump tubing from EP (EP pn: 78510118), male luer lock (MTLL230), ID3.2 (1/8") x OD6.4 (1/4") x 1000 mm C-flex hose, clamp and closed with plug. (PIP230)</li> </ul>
7	PG13,5 port	N/A.	Keep original PG13.5 plug and o-ring.

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Port #	Label	Purpose	Tubing
8	ID2,7 Dip-tube, set at bottom. - Harvest bottom	Bleed removal.	ID3 x OD6 x 40 mm silicone hose, straight through connector (N013-007), ID1.6 x OD4.8 x 550 silicone hose, male luer lock (MTLL220), pump tubing from EP (EP pn: 78510118), male luer lock (MTLL230), ID3.2 (1/8") x OD6.4 (1/4") x 1000 mm C-flex hose, clamp and closed with plug. (PIP230)
9 O	ID5 Dip-tube, close to bottom. - TFF Suction	TFF Suction.	ID5 x OD8 x 160 mm silicone hose to pump inlet.
9 S	Gassing bottom	Sparger.	ID3 x OD6 x 70 mm silicone hose, female luer lock (FTLL230), OD25 sterile filter and male luer lock plug. (MTTLP)
10	Magnetic coupling	Servo motor.	N/A.
11	PG13,5 port	Selectable sensor, pH, K8.	Hamilton K8 sensor, 120 mm long.
12 A	SS lvl-sensor	Liquid monitoring (Estimated 65 mm from bottom, at 200ml mark)	For banana plug.
12 B	SS lvl-sensor	Liquid monitoring (Estimated 9 mm from bottom)	For banana plug.
13	ID5 Dip-tube, 40 mm from bottom. - TFF Return	TFF Return.	ID5 x OD8 x 280 mm silicone hose to filter barb.

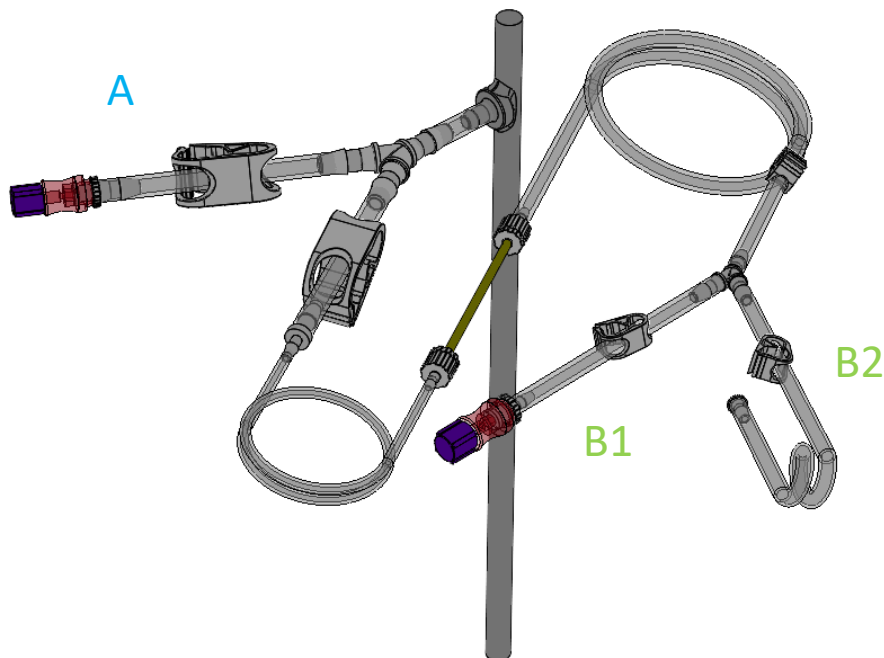
Dokumentnummer:	Emne:				
K08.2.3.1.7	Production ordre formular – standard product				
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## TFF assembly:

TFF: Custom Meissner SeptraPor®: “XFCM20C012-XX1X” - 0.2µm pore size with ID1.0 mm fibers (# lumen/fibers = 13), Length (L) = 300mm, with a surface area of 110 cm<sup>2</sup>. 1x Permeate port.

**Permeate;** OD8 x ID5 x 40 mm silicone hose, Y-connection (260-6005):

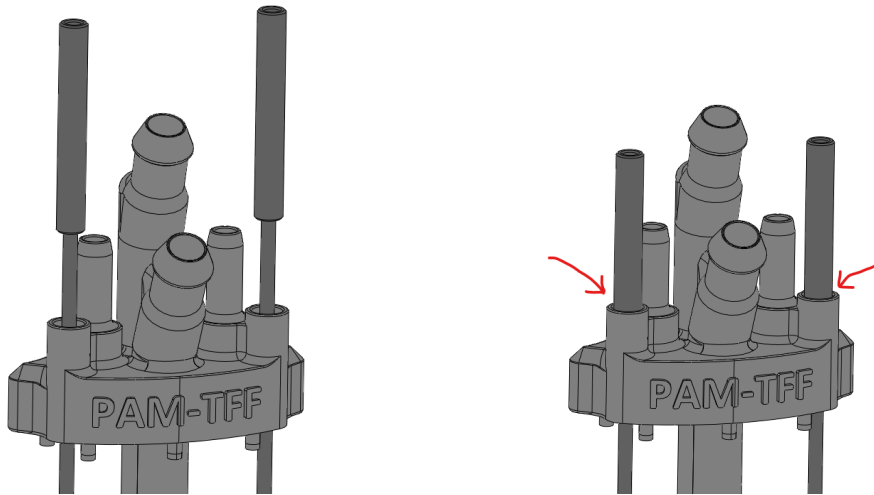
- A. **Wash-Line:** OD8 x ID5 x 100 mm silicone hose, clamp, female Luer-Lock (FTLL360) and swabable valve.
- B. **Harvest-Line:** OD8 x ID5 x 100 mm silicone hose, clamp, straight through reducer (3050), ID1.6 x OD4.8 x 450 mm silicone hose, male Luer-Lock (MTLL220), Bioprene pump-head tubing (ID1.0 mm x OD3.1 mm), male Luer-Lock (MTLL230), ID3.2 (1/8”) x OD6.4 (1/4”) x 600 mm C-flex hose, clamp, Y-connection (240-6005):
  1. ID3.2 (1/8”) x OD6.4 (1/4”) x 100 mm C-flex hose, clamp, female Luer-Lock (FTLL230), and swabable valve.
  2. ID3.2 (1/8”) x OD6.4 (1/4”) x 400 mm C-flex hose, clamp and plug. (PIP230)



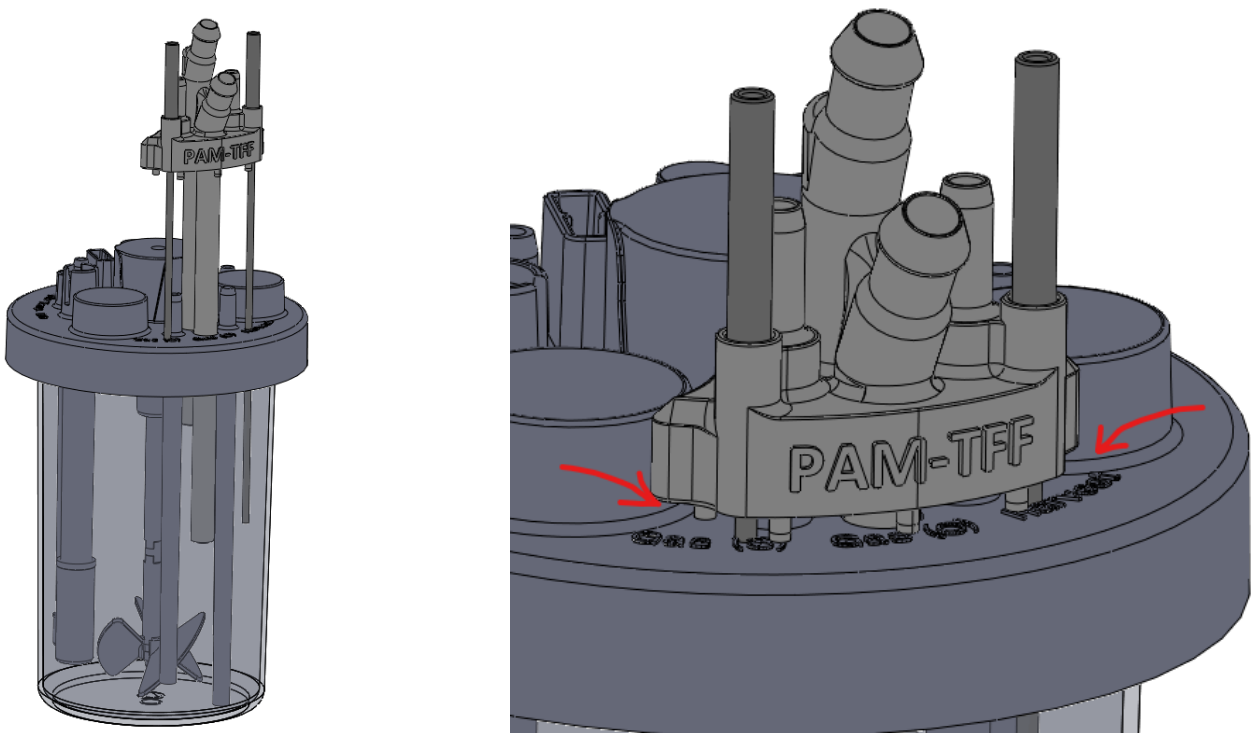
## Mounting Port-Addition-Mount (PAM-TFF)

Insert SS-rods in the PAM-TFF 3D-print and glue in place with a small amount of UV-glue as shown in picture below. (shortest SS-rod in the left side – Port 12A)

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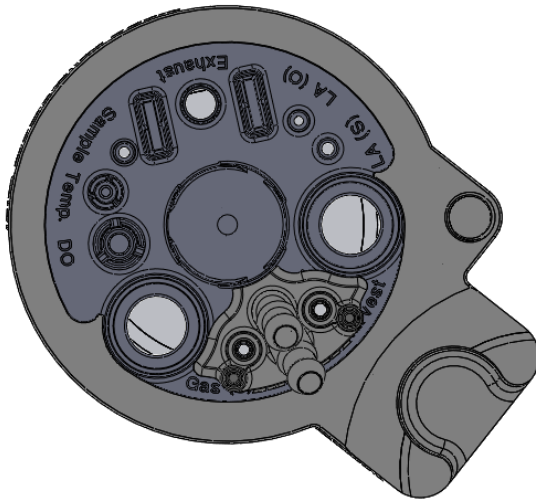


Position the PAM-TFF so that both dip-tubes and SS-rods are inside the vessel. Then dispense a suitable amount of silicone on to the headplate filling up the area of the PAM-TFF. Carefully press down the PAM-TFF until its “legs” touches the vessel sealing it in place.

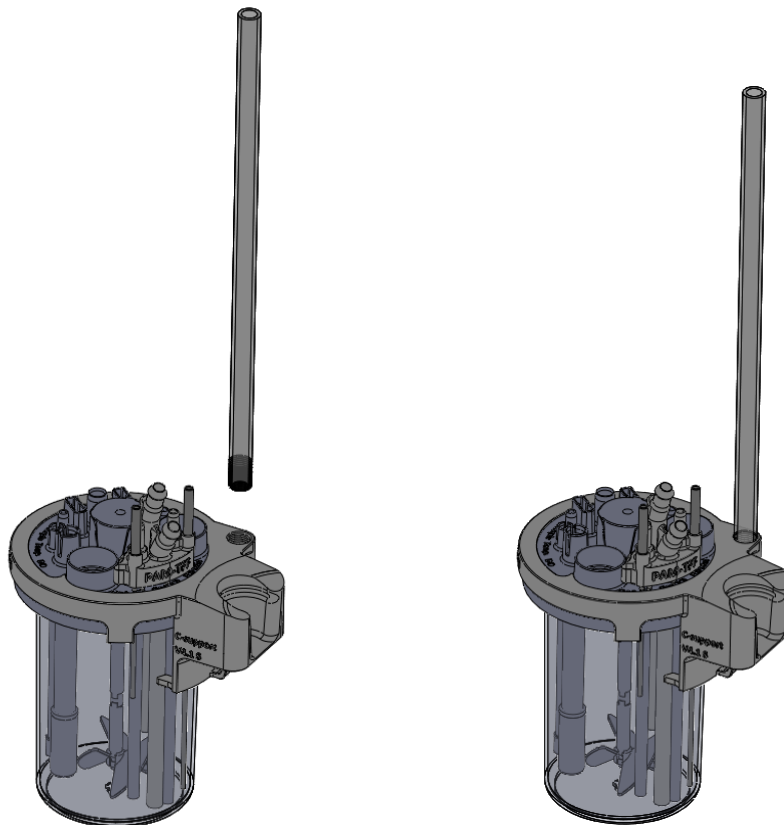


Remove any excess silicone if needed and attach the Clio vessel support. Make sure the snapfits lock in place underneath the vessel lid and let dry for 24 hours.

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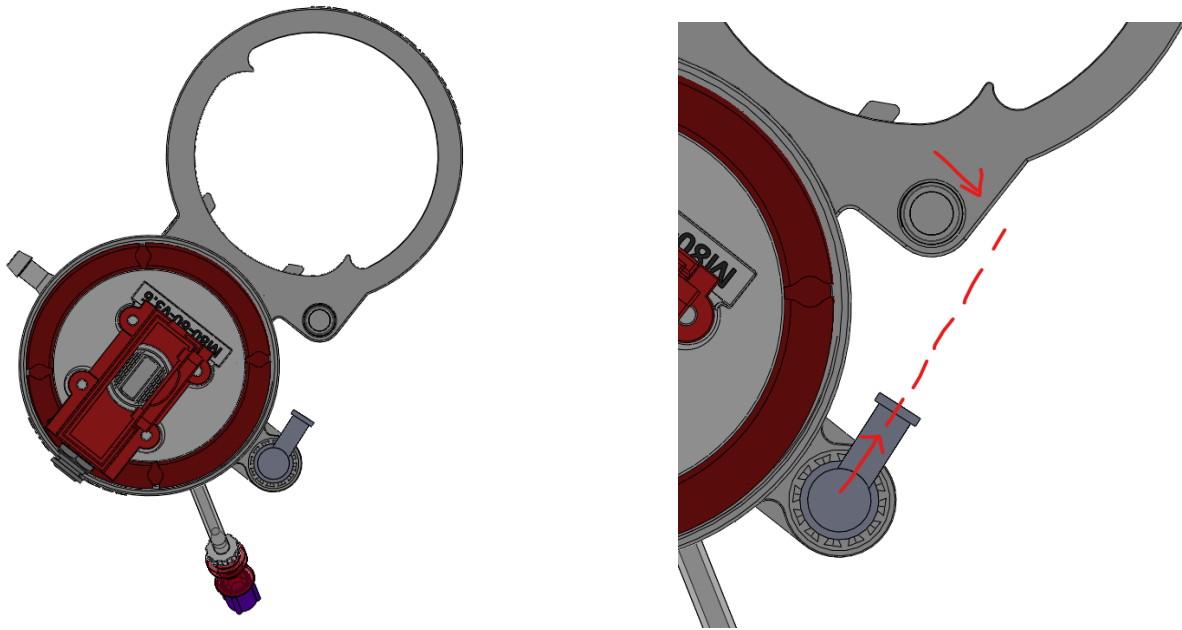
Clio SUP PC tube support:



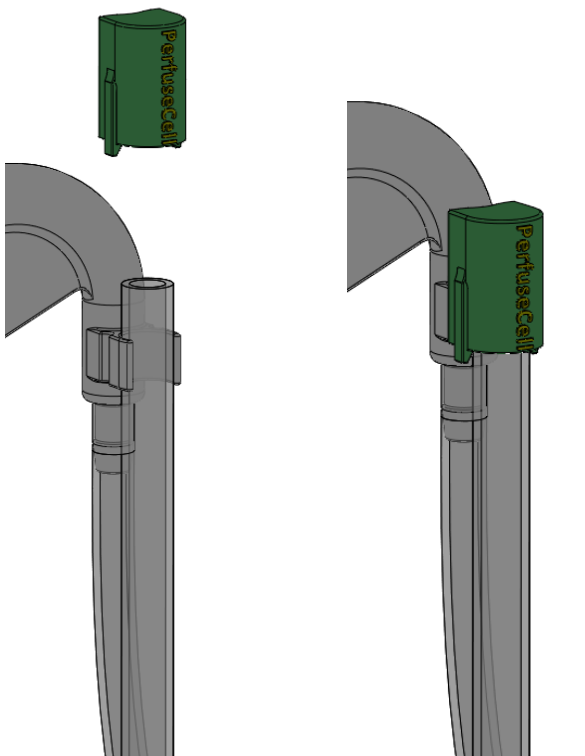
Attached OD10 x 240 mm PC tube for support.

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Hollow-Fiber-Filter orientation and green "PerfuseCell Cap":



The HFF to be mounted with the permeate barb parallel to the assembly pointing slightly to the right of the support PC tube, as shown in the picture above:



When assembly is complete slide on the green "PerfuseCell Cap".

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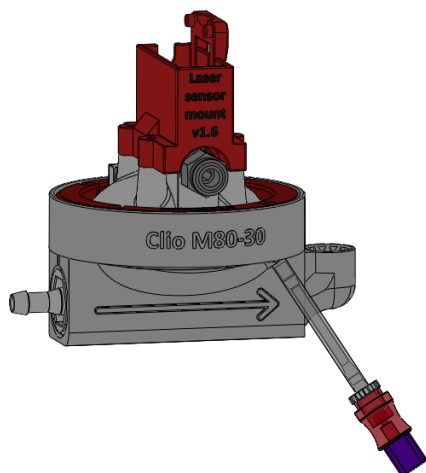
## Single-Use-Pump:

The CM60 SUP used from 2017 up to 2025 was a machined Polycarbonate body with epoxy glued on dome and fluid velocity limited by the Spectrum HFF Luer-Loc connections.

From 2025 (ver 10 onwards) the Nylon medical grade Clio M80-30 SUP integrate the SeptraPor® “XFCM20C012-XX1X” Hollow-Fiber-Filter cartridge directly in the pump body eliminating Luer-Lok for reduced shear stress. Medical grade molded silicone diaphragm.

SeptraPor® HFF spec is: 1 mm lumen, 13 lumen, 0.2 µm / 200 nm pore, 110 cm<sup>2</sup> area.

<https://perfusecell.com/perfusion-bioreactors/cellmembra-tff-integrated-30/cellmembra-300-bioblu>



## Level mark:

Level mark needs to be placed in front of “Exhaust”.

## Strips:

Strips must be applied to all hose barbs.

All strips attached to the headplate to be positioned so that the square lock faces outward, away from the center of the headplate and toward the outer diameter of the vessel.

Designed and manufactured by

PerfuseCell-Cronus-PCS A/S

Noerrelundvej 10

DK-2730 Herlev

Denmark

[www.perfusecell.com](http://www.perfusecell.com)

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