

TOP text **80 - 150 ml ATF Perfusion SUBmerged kit for Modular**
2nd line text ATF-SUBmerged™ 250 "Easy-Connect" kit for Modular SUBs
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Revolutionizing **CellRetention- 250-kit-Modular** SUBmerge SeptraPor® HFF (Hollow-Fibre-Filter) directly into the SUB eliminating dead volume. Inverted innovative **Thalia** diaphragm Single-Use-Pump direct couple to HFF reduce shear stress, eliminate cell accumulation and well known HFF fouling.



CellRetention- 250-kit-Modular unique arrangement integrates 3 components into one for very easy installation. "Easy-Connect" Modular takes care of agitation, aeration, pH, DO and media. Clotho drive unit controls **Thalia** diaphragm pump which takes care of ATF perfusion and protects the HFF.

Clotho Drive Unit integrates pressures, vacuum, volume sensing eliminating the need for external sensors for HFF pressure drop, mass-flow measurements. Clotho process software masters accurately the programmable stroke volume, number of strokes, the allowed pressure drop / **DeltaP / ΔP** along the HFF for fully automatic low alternating broth velocity and fully selectable higher broth velocity for the sequential lumen cleaning eliminating HFF blockage.



Left photo shows the Modular PCS with two **CellRetention- 250-kit-Modular** kits installed. Center photo shows the **CellRetention- 250-kit-Modular** kit (version 3) as delivered ready for installation. Right photo shows the kit vacuum packed ready for E-beam irradiation.

INSIDE the SUB the **CellRetention- 250-kit-Modular** include:

1. The SeptraPor HFF model C012 (manufactured by Meissner Corp)
2. A ID3xOD5 deep-tube silicone hose for sampling, additional liquids, etc
3. A ID3xOD5 hose connects to the 25 µm micro porous sparger body

OUTSIDE the SUB the **CellRetention- 250-kit-Modular** include:

1. **Thalia™** LASER guided Single-Use-Pump controlled by outstanding **Clotho™** drive unit and its software with unlimited opportunities

2. 900 mm weldable OD6.4 x ID3.2 hose connected to SeptraPor permeate barb
3. 900 mm weldable OD6.4 x ID3.2 hose connected to silicone hose deep-tube
4. 900 mm weldable OD6.4 x ID3.2 hose connected to unique 25 µm pore glass frit

The kit (version-3):

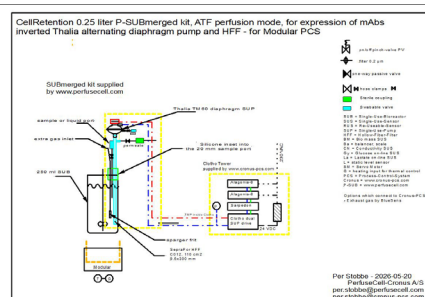
1. The complete and pre-assembled **CellRetention- 250-kit-Modular** kit packed dry in dual film bags and precision irradiated – easy to install the kit under the hood
2. Includes the inverted Thalia TM60 SUP on top of the HFF
3. Includes SeptraPor 110 cm² / 0.2 µm pore / 1 mm lumen for trouble free operation

Benefits:

1. Alternating broth volume, number of strokes and velocity fully programmable, accurately measured and fully repeatable – no process guessing
2. SUBmerged™ and Direct-Fit™ HFF eliminating shear stress caused by conventional Luer-Lok™ fittings

Installation (inside the hood):

1. Very simple - remove the original 20 mm sample port plug
2. Insert the kit with the white nylon plug into the sample port
3. Rotate the nylon plug until the sparger body is positioned appropriate under the impeller not blocking the sensor spot - that's it !!
4. Don't forget to pre-wet HFF as usual by adding 200 ml suitable liquid into the SUB, activate Clotho for 15 strokes and pump entire volume out through the permeate port by external peri pump
5. Find Tips & Tricks here - <https://perfusecell.com/perfusion-support/tips-tricks-in-details/tips-tricks-small-volume>



Notice the hose connected to the glass frit is bended during installation and the frit is resting on the bottom. The built-in one-hole sparger works great for batch processes and reaches in the area of 50 mio/cells/ml. Higher cell density requires optimized gassing now found in the **CellRetention-250-kit-Modular**.

Download documentation

