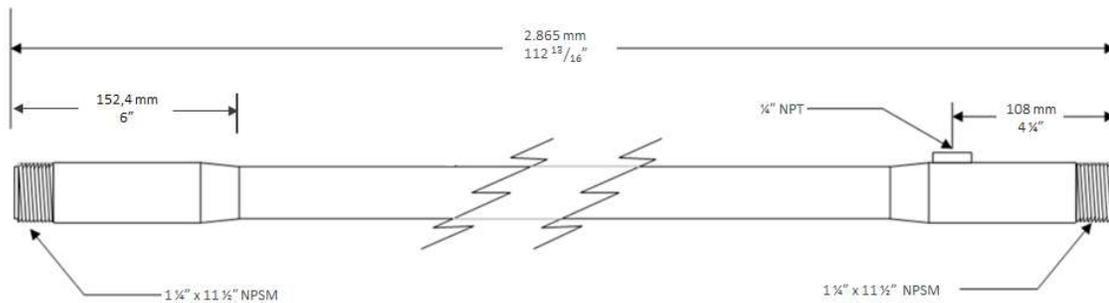


**Product Manual for 1" Tubular Membrane  
Module for Ultrafiltration  
Module Type T-CUT 150-254 IL PVDF 040-2865 CPVC**



**Housing Properties**

Length	[mm]	2.865
Length of Module Head	[mm]	152,4
Type / Size Permeate Port	--	1/4" NPT
Type / Size Concentrate Port	--	1 1/4" x 1 1/2" NPSM
Distance Permeate Port	[mm]	108
Diameter Housing	[mm]	1"
Housing Material	--	CPVC

**Membrane Properties**

Membrane Area	[m <sup>2</sup> ]	0,2
Membrane Material	--	PVDF
Pore Size / Molecular Weight Cut-Off	[kDa]	150
Inner Diameter	[mm]	25,4
Number of Membranes	--	1

**Operating Conditions**

<b>Pressure</b>		
Max. Operating Pressure	[bar]	6,2
Min. Outlet Pressure	[bar]	1,0
Max. Permeate Pressure	[bar]	0,3
Pressure Drop (7,0 m <sup>3</sup> /h; Water)	[bar]	0,3

<b>Temperature</b>		
Operating Temperature	[°C]	5 - 60
Max. Cleaning Temperature (pH 2 or 11)	[°C]	60

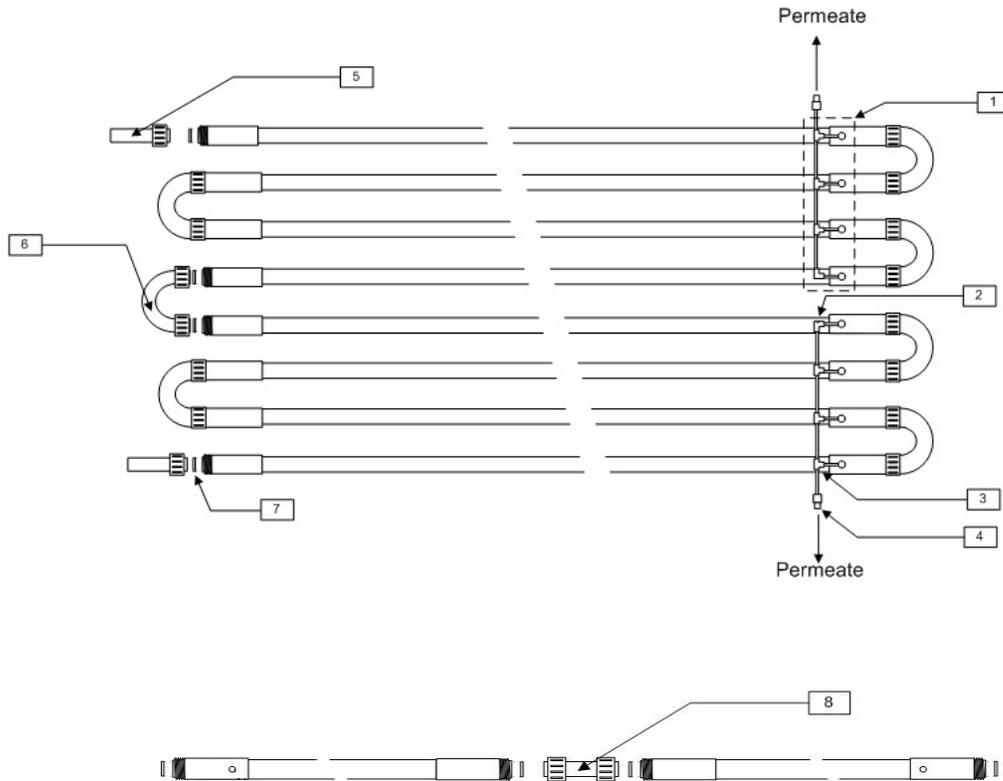
<b>Crossflow</b>		
Crossflow at 1 m/s	[m <sup>3</sup> /h]	1,8
Crossflow at 2 m/s	[m <sup>3</sup> /h]	3,6
Crossflow at 3 m/s	[m <sup>3</sup> /h]	5,5
Crossflow at 4 m/s	[m <sup>3</sup> /h]	7,3
Recommended Crossflow (Water)	[m <sup>3</sup> /h]	7,0

<b>pH</b>		
Continuous Operation (25°C)	--	2 - 11
Cleaning (60°C)	--	2 - 11

**Additional Information**

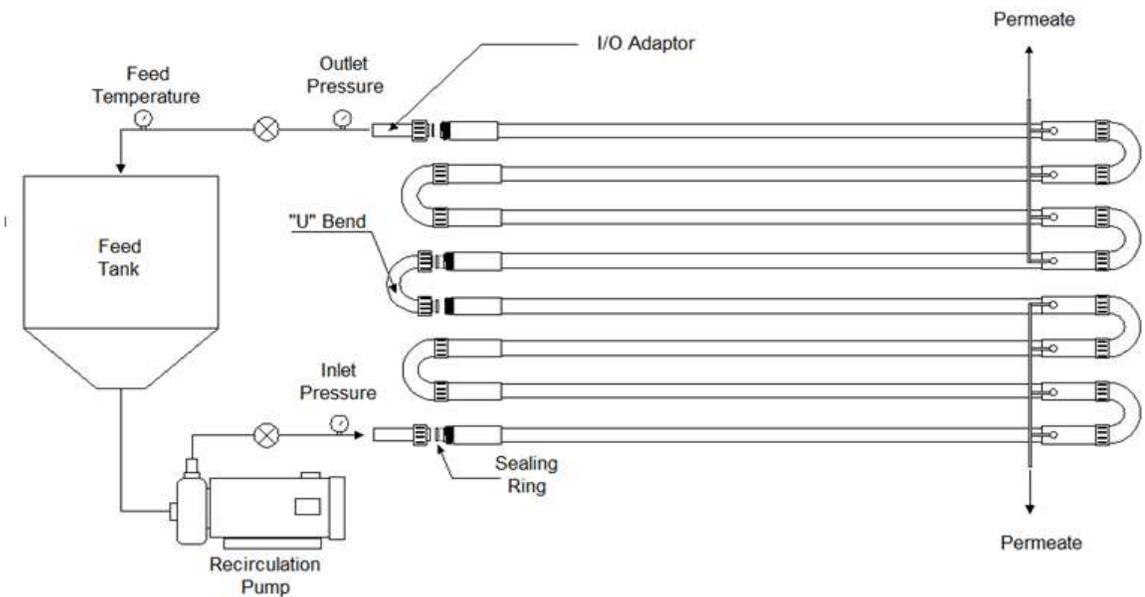
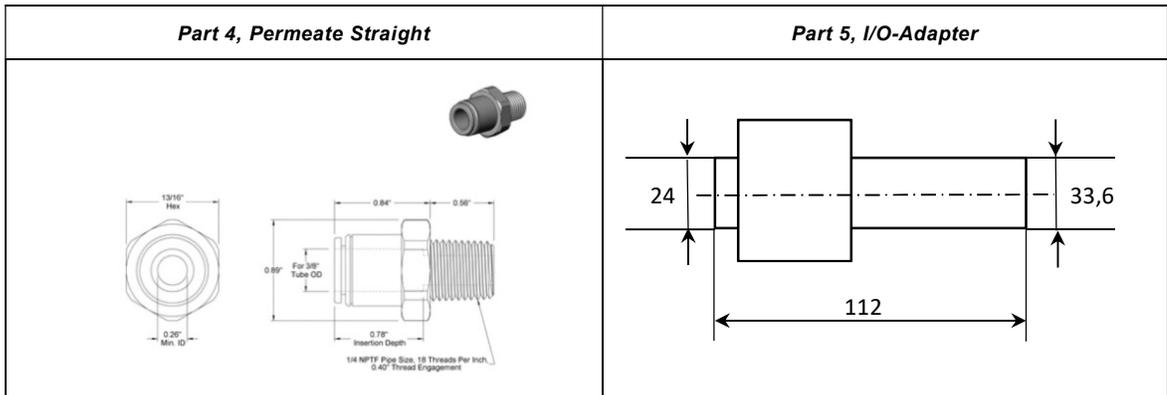
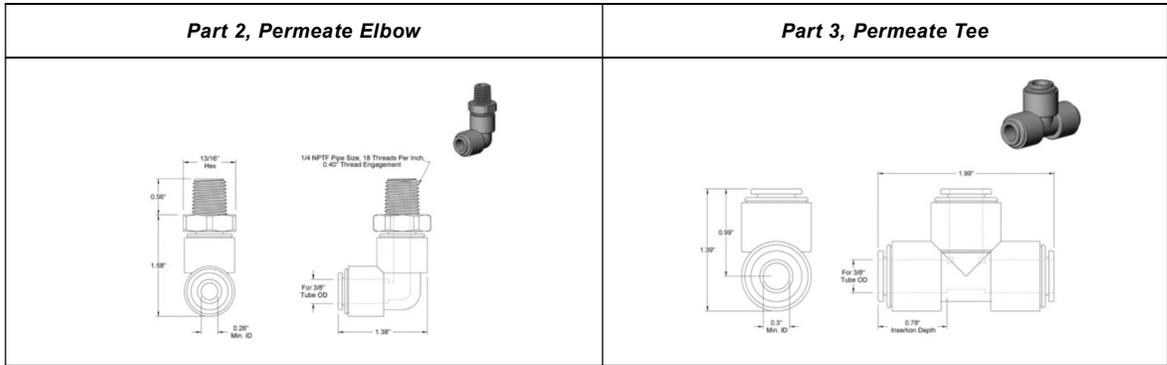
Required Prefiltration	[mm]	3,5
Weight dry / filled with Water	[kg]	2 / 3
Max. Chlorine Tolerance (pH 10,0)	[ppm]	200

## Assembly Parts



Pos.	Description	Part-Number	Quantity per pass á 8 modules
1	Permeate Pass Kit, PP/PE*	760384	2
2	Permeate Elbow Connector, PE, for flexible hose 3/8" Tube OD x 1/4 NPTF Male Pipe (detailed information see next page)	760505	2
3	Permeate Tee Connector, PE, for flexible hose 3/8" Tube OD x 1/4 NPTF Male Pipe (detailed information see next page)	760506	6
4	Permeate Straight Connector, PE, for flexible hose 3/8" Tube OD x 1/4 NPTF Male Pipe (detailed information see next page)	760507	2
5	Inlet / Outlet – KIT, CPVC	760383	1
6	U-Bend, CPVC, including: --- 2x single female nuts, CPVC	760382 760264	7 (14)
7	Washer, BUNA	---	16
8	Membrane Connector, CPVC	---	---

\* One Permeate Pass Kit consists of 1x Permeate Elbow Connectors, 3x Permeate Tee Connector and flexible hoses OD 3/8", ID 0.275"



### **Installation**

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1. Put eight (8) elements on an appropriate rack.
2. Put the BUNA gaskets / sealing rings (part 7) into the module-end on both sides.
3. Connect them with seven (7) U-Bends (part 6). Connect both ends of the pass with the manifold
4. Connect the permeate outlet of four (4) membrane tubes. Use one (1) elbow adapter (part 2), three (3) T-adapters (part 3) and one (1) straight adapter (part 4) and connect them with a flexible hose.
5. Start the pump (either with a frequency converter or by opening a valve slowly). Recommended flowrate is 8-10 m<sup>3</sup>/h.
6. Run the system under the operating conditions, as described on page 1 (temperature, pressures).
7. We recommend vacuum breakers to prevent collapsing membranes while draining the system.
8. Prevent any pressure on the permeate side.
9. Prevent chemical attack (see page 5).

### **Cleaning Instruction**

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1. Flush the module properly.
2. Add cleaning chemicals and circulate at a temperature of max. 60°C.
3. Cleaning chemicals are: NaOCl with NaOH (pH 10-11) for organic fouling, HNO<sub>3</sub> (pH 2-3) for anorganic fouling
4. Membrane suitable surfactant for greasy / oily fouling
5. Several cleaning steps might be necessary.
6. Flush the system with fresh water after each cleaning step.

### **Long Term Storage Instruction**

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1. Flush and clean the module properly.
2. Fill the clean modules with a suitable preservation solution (i.e. acid solution [H<sub>3</sub>PO<sub>4</sub>], citric acid or similar) at pH approx. 3
3. Alternatively NaHSO<sub>3</sub> (1% solution). Please check system material compatibility.

***The tubular ultrafilter consists of a CPVC housing, Buna gaskets and a PVDF membrane tube. The feed solution must be compatible with all three components of the ultrafilter. Listed below is the chemical compatibility of the membrane tube.***

### **Acceptable Chemical List**

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The following chemicals have no significant impact on membrane properties:

- Aromatic hydrocarbons; Alcohols; Organic Acids; Esthers; Cellosolves; Alkali; Salts; Buffers; NaOCl < 200 ppm; H<sub>2</sub>O<sub>2</sub> < 0.5 %; Phenols; Inorganic Acids; Olive Oil

### **Inacceptable Chemical List**

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The following chemicals will damage or dissolve the membrane:

- Aprotic Solvents; Ketones; Esters; Chlorinated Solvents; Aldehydes; Silicones; Amines

In case of special application conditions, please consult for advice.	Subject to Alterations © CUT Membrane Technology GmbH	<a href="http://www.cut-membrane.com">www.cut-membrane.com</a>	Latest Revision:	05.01.2024
			Page:	4 of 4