



Product Features:

- Integrated modular design, compact system with small circulation volume and the system can also be designed with single use bags. The TFF system can be delivered as mobile or fixed installation.
- The system is compatible with many types of membranes that are available in the market, such as hollow fiber membranes, cassettes, ceramic membranes, and spiral membranes and supports the use of materials with low shear force/high viscosity.
- Sterilization-in-place (SIP) is available on request
- Drive pump with minimal residual and low shear force
- Software module compliant with section 11 of CFR21
- Compliant with Good Manufacturing Practice (GMP)
- Expandable with dual feeding pump system (optional)
- System supports a variety of control architectures such as Delta, PCS 7, and WINCC
- Linear scale up and seamless integration with the other MOPURITY MUF system

	MOPURITY MUF Lab	MOPURITY MUF Mid	MOPURITY MUF Pro
Equipment size	Bench-scale test to pilot-scale test	pilot-scale test	Production
Batch volume	20-200L	200-2000L	2000-5000L
Flow rate of circulating pump	0.1-18L/min	9-90L/min	20-150L/min
Flow rate of supplementary pump	0-2.5L/min	0-18L/min	0-40L/min
Capacity of circulating tank	5L, 10L, 20L	50L,100L,200L	100L,200L,400L
Minimum circulating volume (pipeline)	0.34L	6.5L	15.3L
Control architecture	WINCC+PLC /PCS7+Batch /Delta V		
Membrane area	0-2.0m ²	2.0-10m ²	5.0-20m ²
Flow meter at reflux end	Electromagnetic flow meter/mass flow meter (optional)		
Flow meter at transmission end	Mass flow meter		
Type of adaptive membrane	Cassette membranes/hollow fiber membranes (compatible with commercially available consumables)/ceramic membranes/spiral membranes (optional upgrade)		
Overall installed dimensions	1.2m*0.65m*1m	1.8m*1m*2.8m	2m*1.3m*2.8m
Installation mode	Benchtop	Mobile	Mobile
Equipment weight	278.6	1100	1371



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MOPURITY™
TANGENTIAL FLOW FILTRATION (TFF) PRODUCTS



TFF Products General Description

– Mopurity SUF

The integrated, fully automated tangential flow filtration system is available for lab-scale, pilot-scale and volume production, ranging from 2L up to 2,000L and all TFF systems are equipped with inline control of pressure, flow, temperature, conductivity and UV. Additional sensors are available and can be supplied on request.

These TFF systems supports the most common pharmaceutical manufacturing applications, such as the production of monoclonal antibodies, vaccines, and recombinant proteins.

TFF Product Features:

- Modular TFF system design that can be flexible adapted to different process scenarios included with a control system that will make it easy to create and edit process recipes.
- Short conversion time, rapid replacement, easy to clean, and no cleaning validation
- The operator interface allows full-automated process control for the entire TFF system and together with the S88 software module, the system also supports a high extent of flexibility for a various process parameters depending on the specific process and recipe functional requirements.
- Drive pump with minimal residual and low shear force
- Software module compliant with section 11 of CFR21
- Compliant with Good Manufacturing Practice (GMP)
- Reserved OPC communication port to support uploading and storage of data
- Expandable with dual feeding pump system (optional)
- Linear scale up and seamless integration with other MOPURITY SUF systems



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	MOPURITY SUF Lab	MOPURITY SUF Mid	MOPURITY SUF Pro
Equipment size	R&D - lab-scale	Lab-scale > pilot-scale	Production scale
Batch volume	2-20L	20-200L	200-2000L
Flow rate of circulating pump	0.1-2.5L/min	20-17L/min	2-75L/min
Flow rate of supplementary pump	0-1.5L/min	0-3L/min	0-18L/min
Capacity of circulating bag	5L, 10L, 20L	10L, 20L, 50L	50L, 100L, 200L
Minimum circulating volume (pipeline)	0.15L	1.5L	3.1L
Control architecture	WINCC+PLC (PCS7+Batch /Delta V Optional)		
Membrane area	0.1-0.4m ² (MP)	0.5-2.0m ² (MP)	3-10m ² (MP)
Flow meter at reflux end	Ultrasonic flow meter		
Flow meter at transmission end	Ultrasonic/mass flow meter (optional)		
Type of adaptive membrane	Cassette/hollow fiber membranes (compatible with commercially available consumables)		
Overall installed dimensions	0.5m*0.5m*1m		0.7m*0.5m*1.4m
Installation mode	Equipment fixed on a benchtop		Mobile modular equipment
Equipment weight	120kg	260kg	410kg

Quality Specifications:

Based on our extensive experience in process system design, we have established stringent specifications for all ingoing components together with our own product manufacturing quality. Our procurement and manufacturing processes are strictly controlled into the smallest detail. As an ASME BPE certified representative in Greater China, we comply strictly with international industry standards for design and manufacturing, including but not limited to:

Hardware System:

- Current version of Good Manufacturing Practice (cGMP)
- Title 21 of Code of Federal Regulations (CFR21) - Good Manufacturing Practice (GMP) for Finished Drugs
- Quality management system is compliant with ISO 9001
- 2004/108/EC - Software compliant with section 11 of CFR21 on electronic records, signatures and audit trails

Single-use Components:

- Compatibility test and analysis certifications conducted as per USP <88>
- Each batch of materials is double checked before delivery
- Only NON animal derived component (ADCF) materials are used
- Quality management system is compliant with ISO 9001
- Manufacturing conducted in a controlled environment (C+A) (in accordance with ISO 14644)

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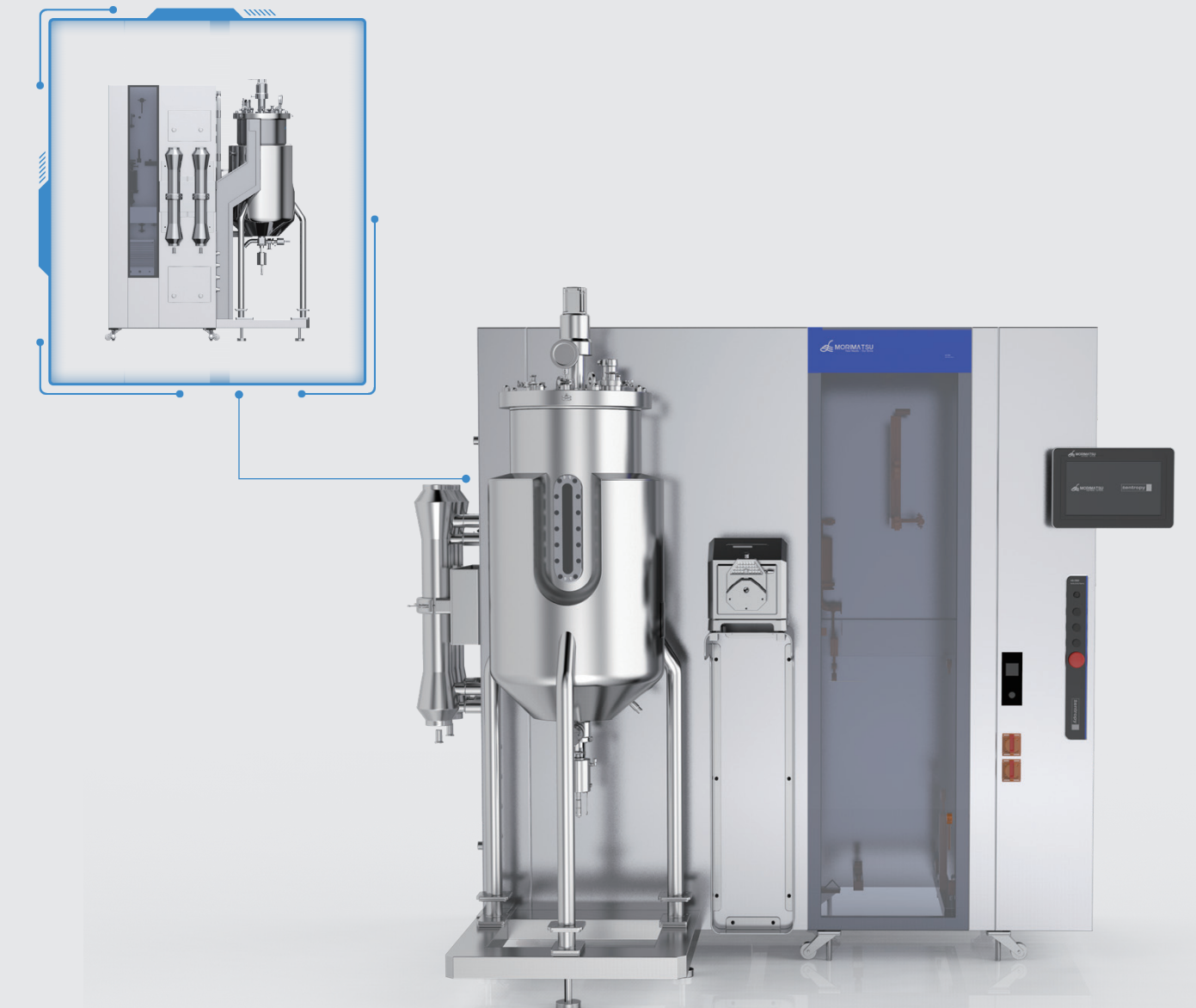
TFF Products General Description

– Mopurity MUF

An integrated, fully automated filtration system with several product series to cater to different process scales ranging from 20 to 5,000L, covering lab-scale, pilot-scale to production scale. We also provide customized filtration systems 20 to over 5,000L.

These TFF systems supports the most common pharmaceutical manufacturing applications, such as biopharmaceuticals, chemical drugs, and active pharmaceutical substances.

The system is compatible with many types of membranes that are available in the market, including hollow fiber membranes, cassettes, ceramic membranes (optional), and spiral membranes (optional).



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