

Configure a resource-enabling TFF System

with delivery in weeks

KrosFlo® KTF Systems uniquely combine simplicity and configurability. Support for multiple scales, unit operations and applications maximize resource utilization. From design with an on-line configurator to running a concentration and diafiltration unit operation, expert engineering delivers precision performance, a positive user experience and accelerates timelines.

Experience the ease and simplicity of designing on-line

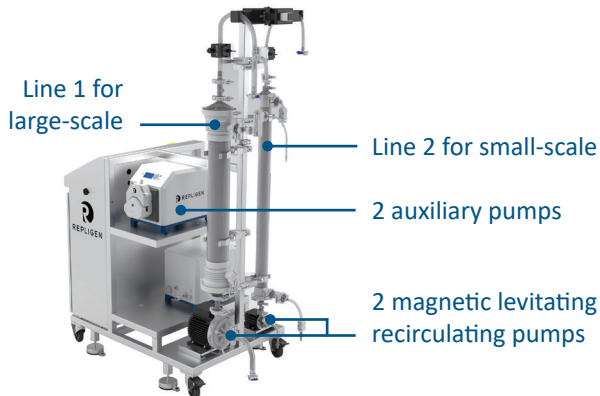
- Input requirements using pull down menus.
- Download on-line engineering drawings within a day.
- Receive as fast as 6 weeks ready-to-use


Revised 04-08-2015


Elevate resource utilization with popular configurations

Design your system for flexibility across multiple parameters, such as volume, application, and filter type. Multiple pumps of different sizes augment volume capability. Multiple pump types at different positions expand application and filter type support.

Volume flexibility



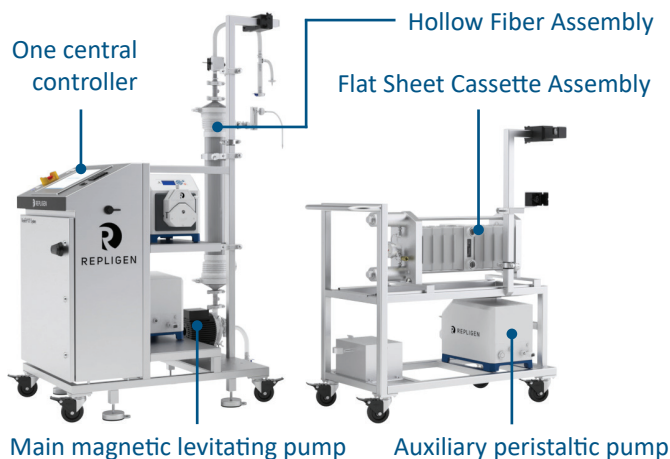
- Configure for a wide range of batch sizes
- Fully compatible with ProConnex® TFF Flow Paths
- Line 1 supports up to 2500 L (KrosFlo® Max X06 Filter)
- Line 2 supports up to 1000 L (KrosFlo® K06 Filters)

Application flexibility



- Configure for multiple applications
- iFIX software programmed for TFDF® applications
- Fully compatible with ProConnex® TFDF® Flow Paths
- Line 1 supports TFDF® clarification (1500 cm²)
- Line 2 supports UF/DF (6000 cm²)

Filter type flexibility



- Configure for different filter formats
- Main magnetic levitating pump: Spectrum® Hollow Fiber Filters
- Main peristaltic pump: process material
- Aux hydraulic pump: TangenX® Flat Sheet Cassettes
- Aux peristaltic pump: permeate line
- Fully compatible with ProConnex® TFF Flow Paths

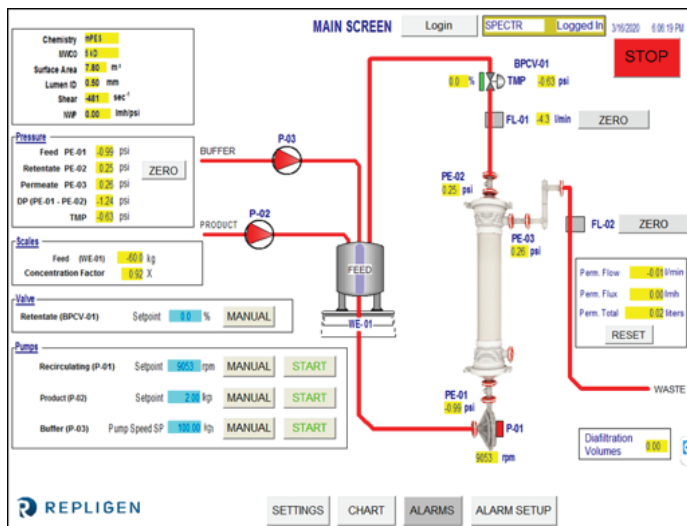
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Software and closed flow path support compliance and quality

Automation and 21CFR pt 11 features support GMP applications

- Configure iFIX 6.0 Software to your process requirements
- Generate batch reports using Dream Report®



Description	
Base Control Platform	iFIX 6.0 Software, 300 tags
Batch Reports	Dream Report®
Security/Trends	Windows® 10 with optional E-signature with iHistorian
PLC	Allen Bradley® PLC Micrologix 1400
Communication	Direct to iFIX: <ul style="list-style-type: none"> • OPC - DA, UA, AE • Ethernet IP - straight to PLC
Interface options	Remote control via Ethernet IP Connecting to other SCADA <ul style="list-style-type: none"> • Delta V™, Emerson, Etc.
Regulatory	21CFR11 Enabled - Compliance and Documentation, including Audit Trail
Process Sequence	Sequence programmed to Process Requirements

Configure ProConnex® Flow Paths for optimal process yield and safety

- Configure a complete ProConnex® Flow Path from over 250 components: fittings, reservoirs, pressure transducers, aseptic connectors and more
- Gamma-irradiated and packed conveniently in a ready-to-operate format
- Ensure process, scale and application fit through engineering design
- Generate 3D engineering drawings using on-line configurator



Specifications



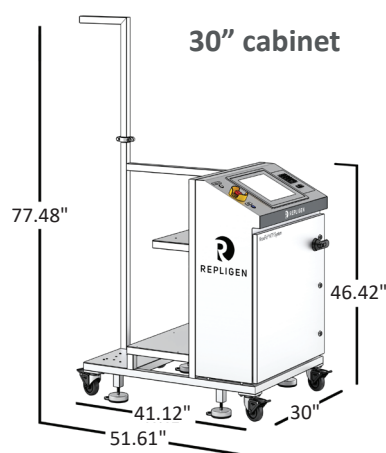
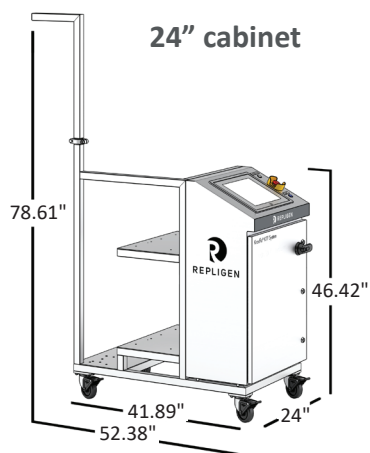
Components

1. Spectrum® Hollow Fiber Filter
2. Automatic back pressure control valve
3. User interface
4. Magnetic levitating pump
5. Retentate flow meter
6. Single-use pressure sensor
7. Auxiliary pumps
8. 304 Stainless steel frame
9. Permeate flow meter
10. Conductivity/UV sensor

Specification	KrosFlo® KTF System
Typical process volumes	200 L - 5000 L
Maximum filter area	2 each up to 17.2 m ² (Hollow fiber) 2 each up to 20 m ² (Cassettes)
Configurable components	
Pumps	Up to 2 MagLev (100 - 2000 series)
Flow rate	Each pump up to 85 LPM
Maximum pressure	Up to 2.5 Bar
Minimum hold up volume	200 mL - 6.0 L
Tubing	3/8 in ID - 1 in ID
Retentate flow meter	Clamp-on flow meter Ultrasonic
Permeate flow meter	Clamp-on or flow through flow meter Ultrasonic
Feed scale or Client signal (4 - 20 mA)	Up to 2000 Kg+
Cabinet width*	24 in or 30 in
TMP control	Non-invasive/No-product contact
Pressure sensor	Sanitary PS 0.5 in, 1.0 in and 1.38 in
Auxiliary pumps	TriLobe SS Peristaltic pump
Software and HMI	
PLC	Allen Bradley
Software	IFix 6.0, iHistorian, Dream Reports, E-signature
DeltaV	Connectivity to DeltaV
GMP	21 CFR Part 11 Enabled

* Specification dependent on your system configuration.

KrosFlo® KTF System dimensions



Run a wide range of filter sizes

Filter type	Application	Volume	Surface area	Series
MiniKros	Pilot-scale TFF	5 - 50 L	0.16 - 0.31 m ² 0.32 - 0.65 m ² 0.51 - 1.0 m ²	N
KrosFlo®	Production-scale TFF	10 - 100 L	0.78 - 1.6 m ² 1.65 - 3.25 m ² 2.55 - 5.10 m ²	K
KrosFlo® Max	Production-scale TFF	100 - 2000 L+	4.30 - 10.40 m ² 7.10 - 17.10 m ² 11.30 - 11.35 m ²	X



Membrane	Lumen	Pore size
mPES	0.5 mm	1 kD, 3 kD, 5 kD, 10 kD, 30 kD, 50 kD, 70 kD, 100 kD, 300 kD, 500 kD, 750 kD
	0.75 mm	0.65 μm
	1 mm	3 kD, 5 kD, 10 kD, 30 kD, 50 kD, 70 kD, 100 kD, 300 kD, 500 kD, 750 kD
ME	0.63 mm	0.1 μm, 0.2 μm
	1 mm	0.2 μm
PS	0.5 mm	10 kD, 50 kD, 500 kD, 0.05 μm
PES	0.5 mm	0.2 μm
	1 mm	0.2 μm

Service and support

Available services include: technical consultation, system installation, training (on-site and virtual), IOQ qualification, preventive maintenance, warranty (Extended Factory) agreements, and service agreements. Support extends to implementation in a regulatory environment including executed Factory Acceptance Testing (FAT) documents and Site Acceptance Testing (SAT) protocols for on-site execution.



Quality assurance through

Manufacturing Centers of Excellence

Manufacturing centers of excellence provide high quality and high-capacity KrosFlo® production facilities. Geographic redundancy, ISO Certification and dedicated Factory Acceptance Testing (FAT) execution zones ensure a compliant documentation system with a robust supply chain. Optional customer participation during FAT provides additional assurance.

- Multiple geographic sites
 - Marlborough (MA), > 63000 ft²
 - Rancho Dominguez (CA), > 56000 ft²
- ISO 9001:2015 certified
- On-site functions include: Document Control, Development, Engineering, Manufacturing, Purchasing, Quality Control and Assurance



Marlborough (MA)



Rancho Dominguez (CA)

- High-capacity manufacturing
- Single-site manufacturing: KrosFlo® TFF System and KrosFlo® TDF® System assembly, membranes, filters and cassettes



- Dedicated FAT execution area with on-site customer participation
- Comprehensive system operator training and certification

