

# KONSOLIDATOR Ultrafiltration Systems

KONSOLIDATOR™ ultrafiltration systems are designed with tubular membrane filtration technology to treat a variety of industrial wastewater. Available in seven different size configurations, the KONSOLIDATOR system can treat feed capacities starting from 200 GPD. The system features KOVALUS SEPARATION SOLUTIONS™ FEG PLUS® in an open-channel configuration with maximum feed TSS concentrations up to 500,000 mg/L. For high-fouling applications utilizing FEG PLUS tubular membranes, spongeballs are used to enhance cleaning by scrubbing solids that have accumulated on the surface of the membranes.

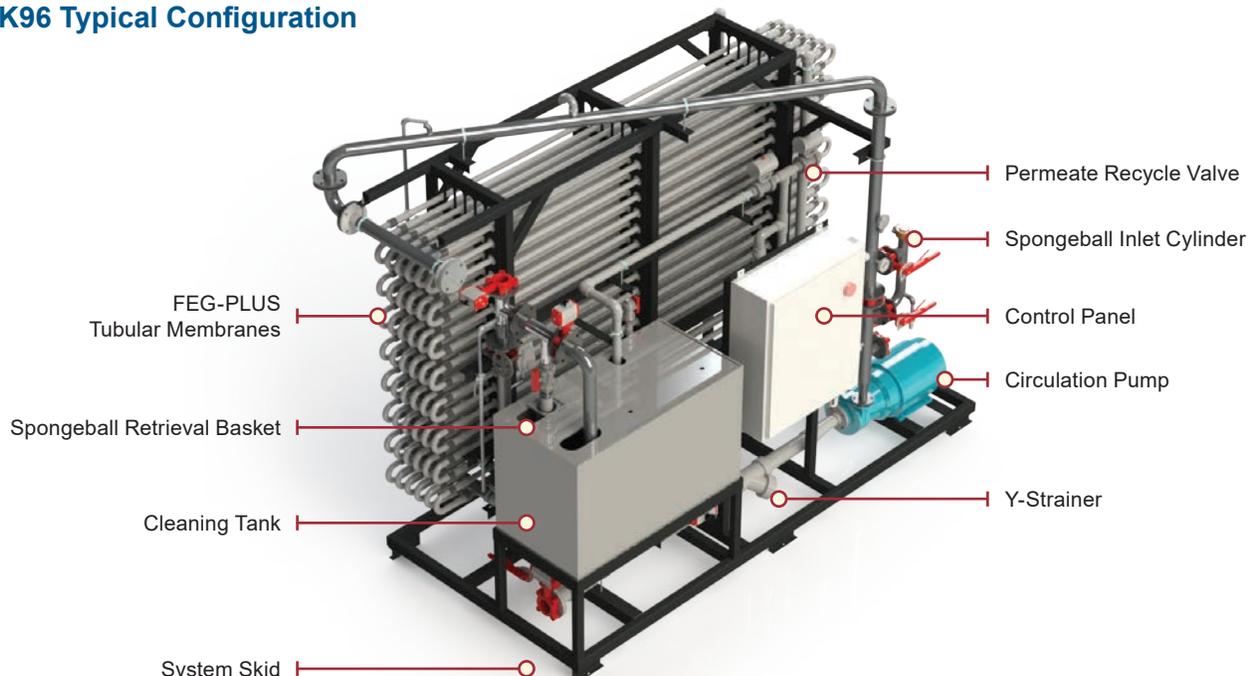
Wastewater contaminated with emulsified oils, grease, heavy metals, and suspended solids from a variety of industries such as food and beverage, metal working, oil and gas, and pulp and paper can all be sufficiently treated for discharge or factory reuse. The KONSOLIDATOR ultrafiltration system offers an efficient, simple, and effective way to reduce economic and environmental impact of difficult industrial wastewater.

The KONSOLIDATOR systems are available as Economy or Plus, depending on the desired level of sophistication of valves and instrumentation.

## BENEFITS

- Clog-resistant
- Reduced hazardous waste hauling cost
- Efficiently cleaned
- Simple operation and maintenance
- Intelligent user interface
- Easily scalable
- Compact footprint
- Fast delivery and installation

## K96 Typical Configuration

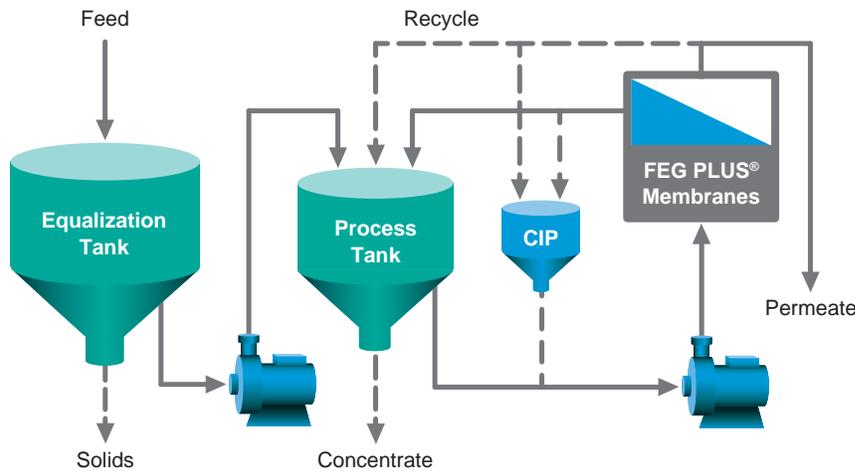


Special Features

	KONSOLIDATOR Economy	KONSOLIDATOR Plus
Valves	Manual	Auto
Instruments	Basic, rotameter	Indicating transmitter
Permeate Recycle	No	Yes
Autopurge	No	Yes
Control	Manual	Semi-auto
Feed/CIP and/or Pump	Yes	Yes
Enclosure NEMA	12	12
Panel	Pushbutton	HMI
Option	Only double mechanical seal	See list*

\*Double mechanical seal; heater CIP (clean in place) tank; CSA stamp; pH control dose package with pH transmitter; free oil skimmer; totalizing flow transmitter; turbidimeter; tanks; turnkey; ancillary equipment as needed; remote status/control; enclosure upgrade to NEMA 4, etc.; HMI size; extra cards; upgraded PLC; other. All systems can be partially tubed for future expansion.

KONSOLIDATOR™ Systems Typical Process



System Models

Model	Wastewater		Membrane Area	
	1000 GPD	m <sup>3</sup> /d	ft <sup>2</sup>	m <sup>2</sup>
16	0.2 - 3	0.75 - 11	4.4 - 35.2	0.4 - 3.3
48	3 - 9	11 - 34	105.6	9.8
96	6 - 18	23 - 68	211.2	19.6
160	10 - 30	38 - 114	352.0	32.7
336	20 - 70	76 - 265	739.2	68.7
544	30 - 100	120 - 400	1,196.8	111.2
736	40 - 140	150 - 530	1,619.2	150.4

Note: Capacities vary depending on application.

Installation

Model	Footprint (L x W x H)	Shipping Weight	Operating Weight	Total Connected HP (460V)	CIP Skid (optional)		
					Footprint (L x W x H)	Shipping Weight	Operating Weight
16	10' x 4' x 6.6' / 3.1m x 1.2m x 2m	1,160 lb / 526 kg	1,680 lb / 762 kg	7.5 HP / 5.6 kW	N/A	N/A	N/A
48	11' x 5' x 8' / 3.4m x 1.5m x 2.4m	1,800 lb / 820 kg	3,600 lb / 1,600 kg	10 HP / 7.5 kW	N/A	N/A	N/A
96	11' x 6.25' x 9' / 3.4m x 1.9m x 2.7m	2,200 lb / 1,000 kg	4,000 lb / 1,820 kg	20 HP / 14.9 kW	N/A	N/A	N/A
160	10.8' x 7.1' x 9.3' / 3.3m x 2.2m x 2.8m	2,100 lb / 950 kg	4,980 lb / 2,260 kg	25 HP / 18.6 kW	N/A	N/A	N/A
336	11' x 10' x 9' / 3.4m x 3.0m x 2.7m	4,300 lb / 1,950 kg	5,900 lb / 2,680 kg	57.5 HP / 42.9 kW	4' x 4' x 6' / 1.2m x 1.2m x 1.8m	200 lb / 91 kg	2,200 lb / 1,000 kg
544	22' x 10' x 9' / 6.7m x 3.7m x 2m	6,677 lb / 4,000 kg	10,350 lb / 4,700 kg	85 HP / 59.7 kW	9' x 9' x 6' / 2.7m x 2.7m x 1.8m	1,650 lb / 750 kg	6,700 lb / 3,040 kg
736	22' x 11' x 11' / 6.7m x 3.4m x 3.4m	13,700 lb / 6,250 kg	19,000 lb / 8,620 kg	115 HP / 89.5 kW	9' x 9' x 8' / 2.7m x 2.7m x 2.4m	1,900 lb / 862 kg	8,200 lb / 3,720 kg

OPEX

Model	Feed Basis (1000 GPD)	Energy Cost (\$ / day)	Chemical Usage (\$ / day)	Total Daily Operating Cost (\$)
16	1.4	2	1	20
48	4	6	5	48
96	9	12	8	65
160	15	21	11	86
336	30	44	14	140
544	50	71	16	204
736	68	96	18	261

Note: Feed basis values are nominal. Total daily operating costs are calculated to include cost of membrane replacement and labor. Actual operating costs are application-dependent and may vary.



Separation Technologies for a Better Future™