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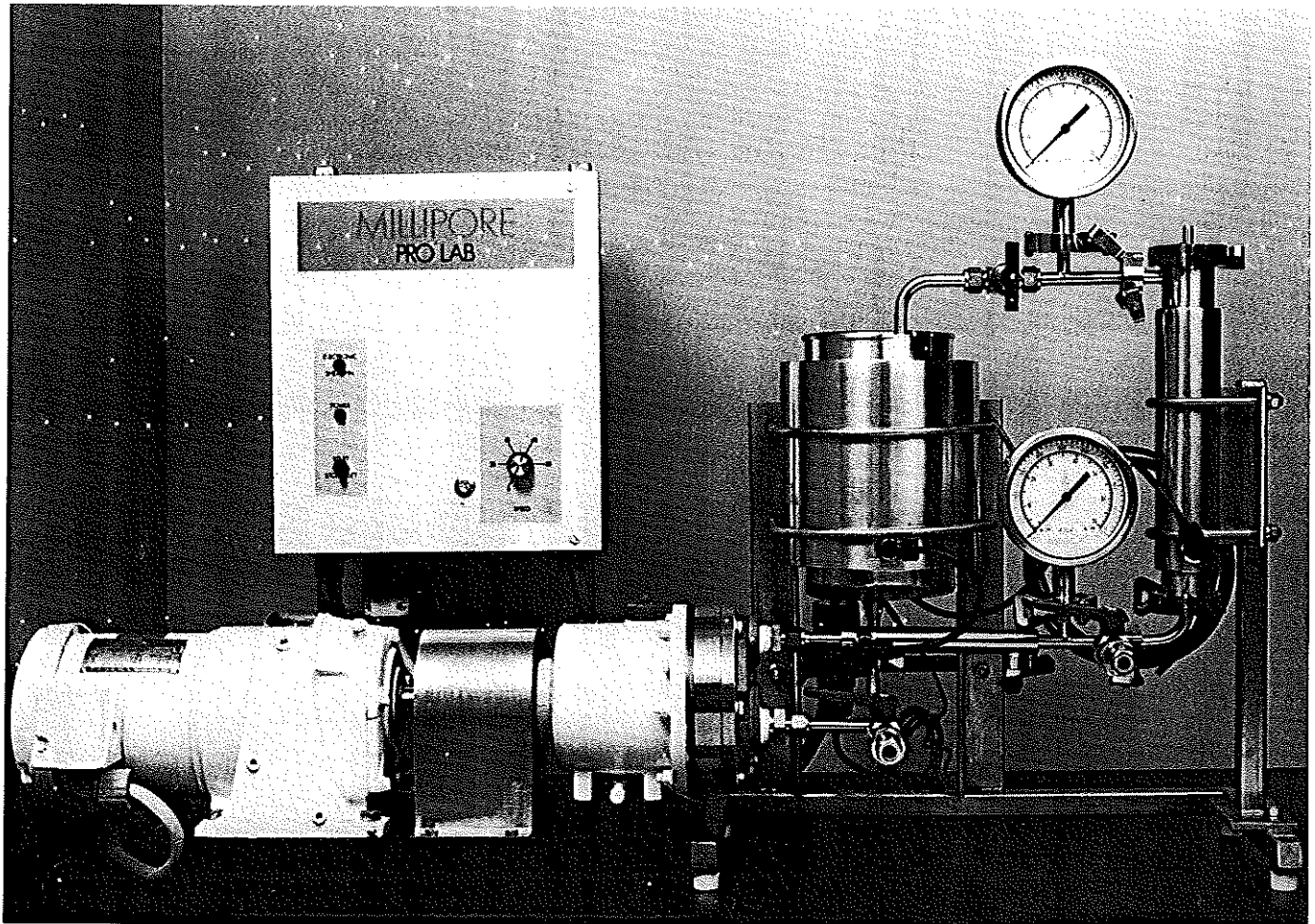
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Pro-Lab Bench Top Development System



Simplify scale-up of reverse osmosis processes.

Millipore PRO systems are tangential flow reverse osmosis systems designed for the rapid concentration of low molecular weight species including antibiotics and peptides. These systems use Millipore spiral wound reverse osmosis cartridges and they include housing, pump, sanitary piping, heat exchanger, pressure instrumentation, tank and frame.

The PRO-Lab 1 bench top development system is designed for basic feasibility studies of membrane types and system operating conditions. It has an exceptionally low hold-up volume — critical for high-value biologicals. And it has a pump capable of generating high pressures so that a wide range of operating characteristics can be tested.

Design Features

- Low hold-up volume
- Quiet operation
- High pressure operation

Applications

- Antibiotic concentration
- Peptide concentration
- Low molecular weight organic concentration
- Desalting

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Specifications

Materials of construction

RO Housing	316L stainless steel, 180 grit ID, satin OD
Piping/fittings	316L stainless steel, 180 grit ID, satin OD
Pump and valves	All wetted parts of 316L stainless steel
Tank	All wetted parts of 316L stainless steel
Elastomers	Viton

Pump and drive

Pump type	Triplex diaphragm
Model	Wanner Engineering D-10 or equal
Flow rate	1.5 gpm (7.5 lpm)
Discharge head	600 psi (40 bar)
Required suction head	Flooded
Pump speed	0-380 rpm
Motor speed	0-380 rpm
Motor enclosure	TEFC
Motor horsepower	1 1/2
Speed control	Parajust A

Instrumentation and controls

Pressure indicators	Anderson gauges: 0-1000 psi
Pressure switch	Anderson
Temperature controller	Sterlco 56-T with bulb and thermowell
High pressure shutdown	675 psig

System requirements

Piping connections	Permeate:	1/4" tube
	Drain:	1/2" tube
	Glycol:	3/8" NPT
		230 VAC, 1Ø, 60 Hz

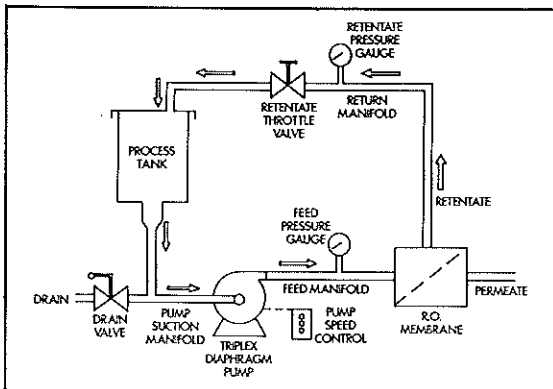
Physical requirements

Length	49"
Width	18"
Height	31"

Estimated shipping weight	175 lbs
Estimated operating weight	125 lbs

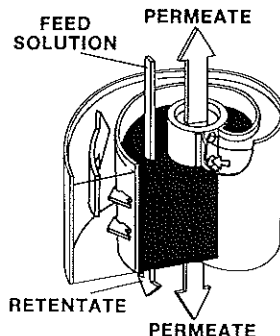
Item	Cat. No.	Description
PRO-LAB	MSD PROLAB	Housing Tank Pump Heat Exch. Temp Control All 316 Stainless

MSD PROLAB 2



Flow Schematic, PRO-Lab 1 System

Flow path through Millipore reverse osmosis cartridge.



Millipore Systems Division

The Millipore Systems Division offers a full line of production, pilot, and bench top development systems using a variety of critical separations technologies. These include reverse osmosis, ultra-filtration, microporous filtration, and high performance liquid chromatography.

For more information

For more information on Kiloprep process chromatography systems, or membrane-based pilot and process systems, contact the Millipore Technical Service Department at 800-225-1380. In Western States 800-632-2708 In Canada 800-268-4881 In Toronto 416-678-2161 In Alaska and Hawaii 415-952-9200 In Massachusetts 617-275-9200 In Puerto Rico 809-747-8444

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