



Pilot Laboratory Equipment for Membrane Filtration

LabUnit M20

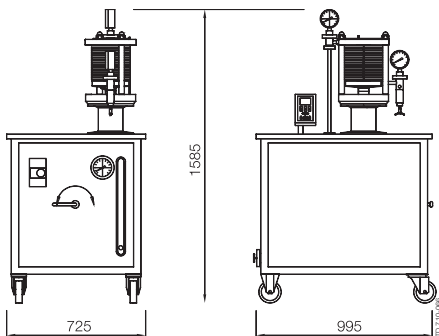
The LabUnit M20 is ideal for research and development, educational work, process development, scale-up, membrane testing, quality assurance and small-scale production. It can be fitted with the whole range of flat sheet membranes for reverse osmosis, nanofiltration, ultrafiltration and microfiltration.

The LabUnit M20 is designed to provide rapid, precise, evaluations in laboratories or other test facilities, while keeping equipment and set-up costs to a minimum.

This wheeled unit comprises a module, high-pressure pump, tank, filter, heat exchanger, valves, gauges, and hydraulic hand pump.

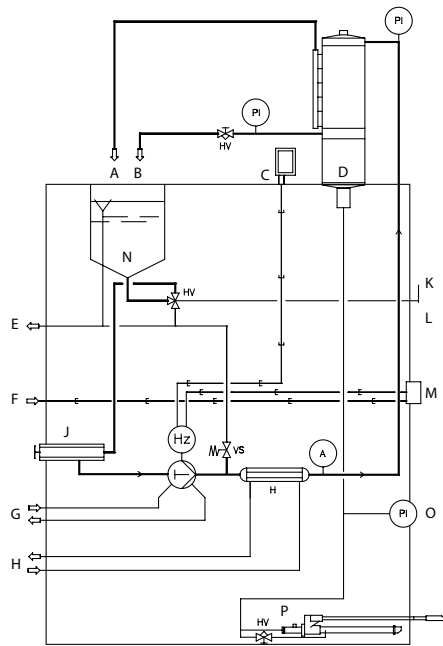
Option

Lab M20-2.5" housing for the testing of 2.5" spiral elements.



Advantages

- Rapid, easy exchange of membranes and spiral elements
- Multiple purposes - possibility of unique combination of plate-and-frame and spiral wound technologies in one unit
- Membrane area from 0.036-0.72 m² (0.4-7.8 ft²) (0.018 m² (0.2 ft²) per membrane)
- Simultaneous test of different membrane types
- Separate permeate outlet from each individual membrane pair
- High operating temperature and pressure (0-60°C (32- 140°F) at 64 bar (928 psi), up to 80°C (176°F) at 5 bar (73 psi))
- Variation of cross-flow from 3.5 to 24 l/min. (0.92 to 6.34 gpm)
- Housing for 2.5" spiral element can be inserted between the module flanges
- All components manufactured in compliance with FDA regulations
- Compact space-saving design
- Two external stay bolts and a low end flange with full stroke permit quick and simple alteration of the module membrane area. Any area between 0.036 and 0.72 m² (0.4 and 7.8 ft²) (divisible by 0.036 (0.4)) can be inserted without use of additional tool.



- A = Permeate
- B = Retentate
- C = Cross-Flow Pump Control
- D = Module
- E = Drain/overflow
- F = Electric Power (5m cable incl.)
- G = Flushing water
- H = Cooling/Heating water
- J = Filter
- K = To pump
- L = To drain
- M = Main switch
- N = Tank 9 L.
- O = Hydraulic oil pressure
- P = Hydraulic oil pump

LabUnit M20 data

Dimensions, L x W x H	995 x 725 x 1585 mm (39 x 29 x 62 inches)
Weight	300 kg (661 lbs)

LabUnit M20 connections

Cooling/heating water in/out	1/2" hose or 1/2" nipple
Drain/overflow	3/4" hose or 3/4" nipple
Flushing water in/out (cross flow pump piston rods)	1/2" hose or 1/2" nipple (for code no. 516856 only)
Retentate outlet	1/2" hose
Permeate outlets	Dia. 1.3/3.5 mm (0.05/0.14 inches) hose
Electric power	3 x 400 V, 50/60 Hz, PE, 5 m (16.4 ft) cable with plug

LabUnit M20 basic components

Module	LabStak® M20
Heat exchanger (H)	Alfa Laval
Filter	Alfa Laval, ø38 mm (1.50 inches), 100 µ
Tank	9 litres (2.4 gallons)
Valves (HV – VS)	Alfa Laval - Klingler
Pressure gauges (PI)	Wika, 2 pieces/0-10 bar (0-145 psi) + 2 pieces/0-100 bar (0-1450 psi)
Pulsation dampener (A)	Alfa Laval, dia. 38 mm (1.50 inches)
Hydraulics	Enerpac

Selection

	Code no.
LabUnit M20 with cross-flow pump, make Wanner, type G10, 5-24 l/min. (1.32-6.34 gpm), 0-60 bar (0-870 psi), 3.0 kW, inclusive of circuit breaker/isolating switch and Hz-inverter (rpm control) with operator panel	516864
LabUnit M20 with cross-flow pump, make Rannie, 3.5-15 l/min. (0.92-3.96 gpm), 0-60 bar (0-870 psi), 3.0 kW, inclusive of circuit breaker/isolating switch and Hz-inverter (rpm control) with operator panel	516856

Options

Housing for 2.5" x 17" spiral element , PN 64