



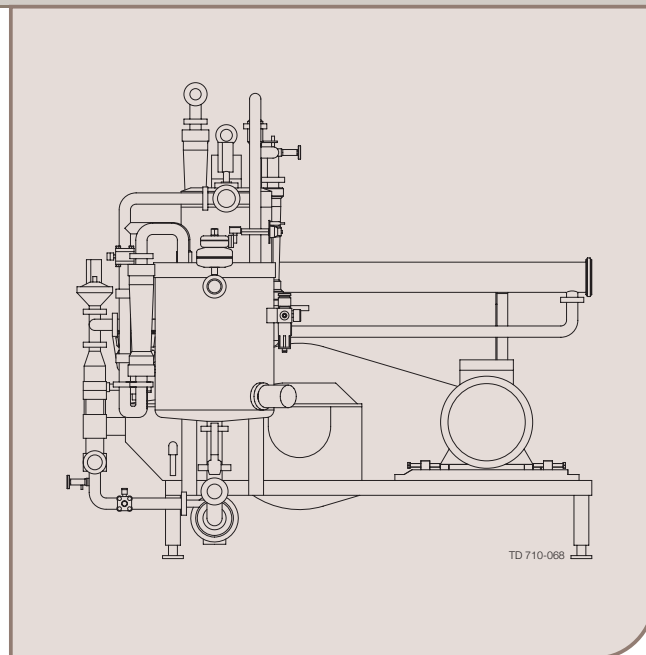
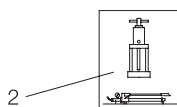
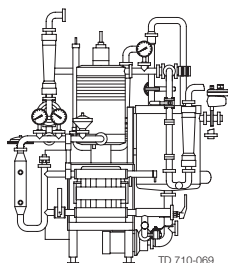
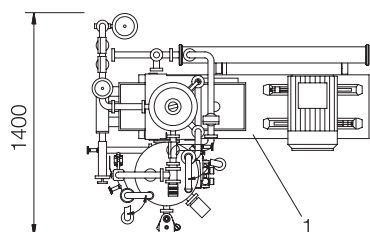
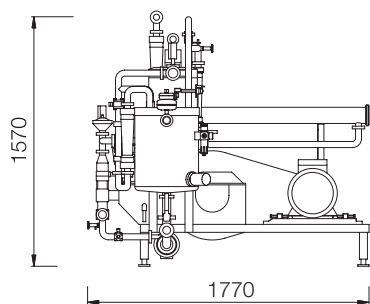
Pilot laboratory equipment for membrane filtration

PilotUnit Combi-50 RO/NF

The PilotUnit Combi-50 RO/NF is a handy, versatile test unit that provides a perfect combination of flat sheet and spiral wound designs. It consists of a module M30 and a 3.8" spiral element.

The PilotUnit Combi-50 RO/NF is the ideal tool for selective flat sheet membrane screenings, pilot scale spiral tests and small-scale production using reverse osmosis and nanofiltration. To meet these demands, the module has a flat sheet membrane area of 4.5 m² and a 3.8" spiral element with a membrane area of up to 7.3 m².

Alfa Laval also provides tailor-made system solutions for individual requirements.

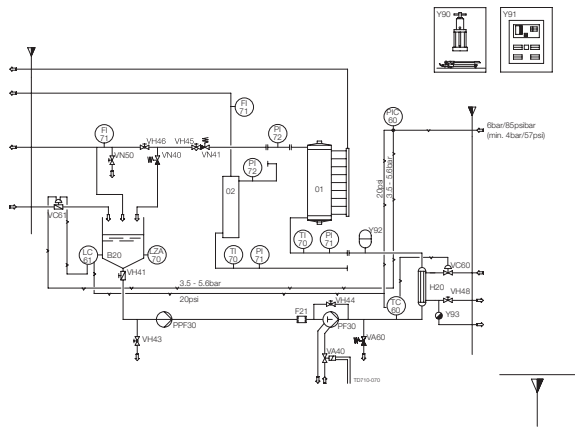


Advantages

- Versatile filtration properties
 - membrane area ranging from 4.5 to 6.7 m²
 - simultaneous test of different membrane types
 - system configuration tests and comparison tests
 - product volumes ranging from 50 to 1,000 litres
- Sanitary design with all materials in compliance with FDA regulationse
- Rapid, easy exchange of membranes and spiral element
- Operation at pH 1-13, and pressures of up to 50 bar
- Complete unit with pump, valves, tank, etc. Needs only a power supply, compressed air, water, and feed product to operate

All dimensions are in mm
 Pos. Descriptions of parts included
 1 = Unit
 2 = Hydraulic hand pump

Flow diagram of PilotUnit Combi-50 RO/NF



- A = Permeate
- B = Permeate
- C = Concentrate
- D = Product CIP-water
- E = Sealing water 1.5 lpm
- F = To main switch
- G = Air (oil free)
- H = Steam, cooling water
- J = Cooling water
- K = Condensate
- L = Alfa Laval Nakskov A/S, delivery limit
- M = Excl.
- N = Incl.
- O = Sewer
- S = Sampling

Flat sheet membrane options

- CA995PE
- RO98PP
- NF

Spiral element options

RO XX sizes 3838/XX
NF XX sizes 3838/XX

PilotUnit Combi-50 RO/NF data

Feed/drain	Ø38/34 for welding
Retentate	Ø38/34 for welding
Permeate	Ø38/34 for welding
Cooling/heating water	¼" BSP male
Weight, empty	825 kg
Weight, liquid filled	905 kg (inclusive of 25 litres in tank)

Data	Pre-Feed Pump	Feed Pump
Make	Alfa Laval	Rannie
Type	GM-1 (A)	RO 60-66
Capacity	5 m³/h at 1.2 bar	5 m³/h at 1-50 bar
Product wetted parts	Acid resistant, AISI 316	Acid resistant, AISI 316
Motor size/speed	0.55 kW/2940 rpm	11 kW/1460 rpm

Instrumentation	
Pressure gauge, 0-100 bar	Inlet, module/element
Pressure gauge, 0-100 bar	Retentate outlet, module/element
Temperature gauge, 0-160°C	Retentate inlet, module/element
Flow meter, 400-4000 l/h	Retentate outlet, module/element
Flow meter, 40-400 l/h	Permeate outlet, module/element
Level control, feed tank	Pneumatic level controller + valve with actuator and positioner
Temperature control	Pneumatic thermostat directly governing temperature control valve

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The information contained herein is correct at the time of issue,
but may be subject to change without prior notice.

How to contact Alfa Laval
Contact details for all countries
are continually updated on our website.
Please visit www.alfalaval.com to
access the information direct.