



# Pilot Laboratory Equipment for Membrane Filtration

## PilotUnit Combi-50 UF/MF

The Alfa Laval PilotUnit Combi-50 UF/MF is a handy, versatile test unit that provides a perfect combination of flat sheet and spiral wound designs. It consists of a module M37/38 and a 3.8" spiral element.

The Alfa Laval PilotUnit Combi-50 UF/MF is the ideal tool for selective flat sheet membrane screenings, pilot scale spiral tests and small-scale production using ultrafiltration and microfiltration. To meet these demands, the module has a flat sheet membrane area of 1.65/2.25 m<sup>2</sup> and a 3.8" spiral element with a membrane area of up to 7 m<sup>2</sup>.

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

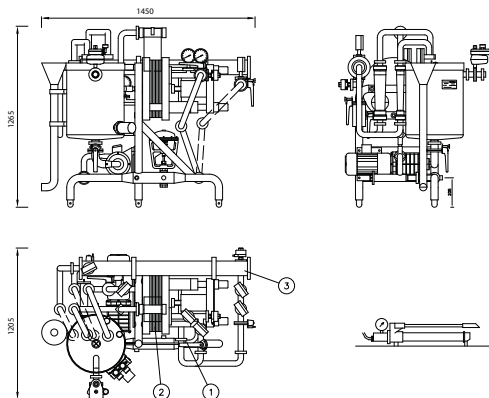
### Spiral element options

The element housing in the Alfa Laval PilotUnit Combi-50 UF/MF is specially designed for Alfa Laval 3.8" UF and MF spiral elements. For further information, please consult the product descriptions for the Alfa Laval sanitary spiral elements.

### Advantages

- Versatile filtration properties
  - membrane area ranging from 0.15 to 7 m<sup>2</sup>
  - 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 components in compliance with FDA regulations
- Rapid, easy exchange of membranes and spiral element
- Operation at pH 1-13, and pressures of up to 10 bar
- Complete unit with pump, valves, tank, etc. Needs only a power supply, compressed air, water, and feed product to operate

### Dimensions (mm)



### Pos. Description of parts included

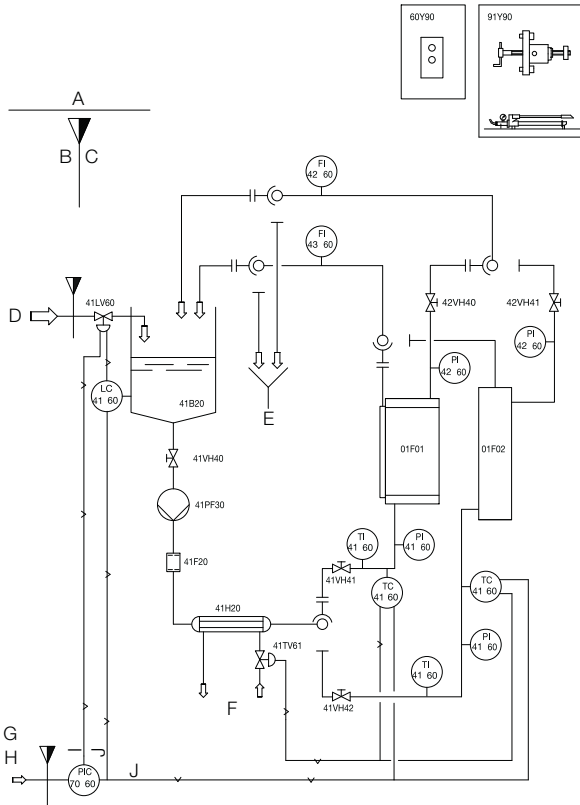
1	Basic Equipment	
2	Plastic set	Code no.
A:	M37	PL451
B:	M38L	PL735
C:	M38H	PL781
3	ATD system	101945, 101946, 102935

### Flat sheet membrane options

Flat sheet UF and MF membrane types:

- CA
- GR
- FS
- RC
- ETNA
- FSM
- MFP

## Flow diagram of Alfa Laval PilotUnit Combi-50 UF/MF



- |                    |                       |
|--------------------|-----------------------|
| A = Delivery Limit | F = Cool/Heat. Medium |
| B = Excl.          | G = Air supply        |
| C = Incl.          | H = 6 bar (85 psi)    |
| D = Feed/water     | I = 5,6 bar           |
| E = Sewer          | J = 1,4 bar           |

Code no.: 522234

Alfa Laval PilotUnit Combi-50 UF/MF data	
Feed	ø38/34 for welding or outer diameter 28 mm for hose connection
Drain	ø51/49
Retentate	ø38/34 for welding or outer diameter 28 mm hose connection
Permeate	ø38/34 for welding or outer diameter 28 mm hose connection
Cooling/heating water in/out	¾" / ½" BSP female or outer diameter 14 mm hose connection
Tank capacity	65 l
Weight, empty	355 kg
Weight, liquid filled	395 kg (inclusive of 25 litres in tank)

Pump Data	
Make	Alfa Laval
Type	LKH 113
Capacity	10 m <sup>3</sup> /h at 8 bar
Product wetted parts	Acid resistant, AISI 316
Motor size/speed	7.5 kW/2800 rpm

Instrumentation	
Pressure gauge, 0-10 bar	Inlet, module/element
Pressure gauge, 0-10 bar	Retentate outlet, module/element
Temperature gauge, 0-100°C	Retentate outlet, module/element
Flow meter, 1,100-13,000 l/h	Retentate outlet, module/element
Flow meter, 40-600 l/h	Permeate outlet, module/element
Level control, feed tank	Pneumatic level controller + valve with actuator and positioner
Temperature controls	Pneumatic thermostat directly governing temperature control valve

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### How to contact Alfa Laval

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