



Pilot Laboratory Equipment for Membrane Filtration

LabStak® M39L/H

The LabStak® M39L/H is specially developed for ultrafiltration and microfiltration of highly viscous products and fermentation broths. The module is ideal for a range of uses in industries that include biotechnology, pharmaceuticals, and food and beverages. To meet the demands experienced here, the module is designed for optimized flow dynamics, low energy consumption and pressure operation. The LabStak® M39L/H is ideal for 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 ultrafiltration and microfiltration.

The LabStak® M39L/H is designed to provide rapid, precise process evaluations in laboratories or other test facilities, while keeping equipment and set-up costs to a minimum. The module utilizes the same size support plates and membranes as those found in the full-scale plate-and-frame systems. It consists of an M39 frame and has two alternative plate set options – M39L and M39H – in order of increasing channel height.

Advantages

- Rapid, easy exchange of membranes
- Can be coupled to the by-pass stream of an industrial plant
- Different channel height options to optimize flow and pressure
- Simultaneous test of up to five different membrane types
- Low internal volume
- All components manufactured in compliance with FDA regulations
- Flexible system design
- Flexible membrane area between 0.2 and 1.0 m²
- High operating temperatures (up to 80°C)

Plate set options

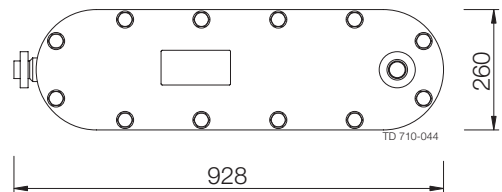
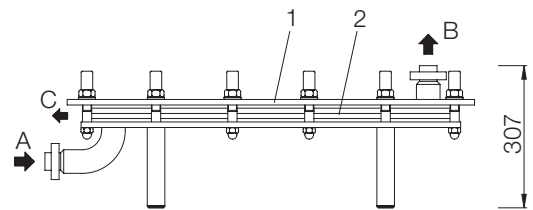
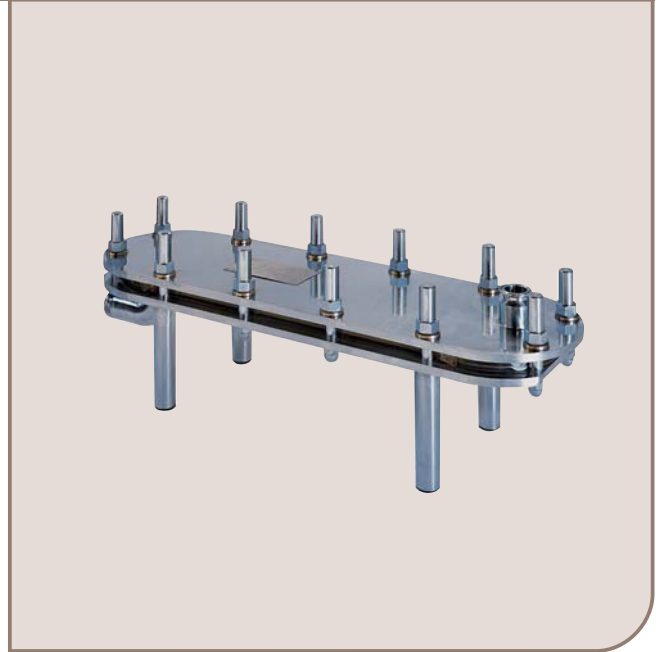
The module consists of a full-size plate-and-frame cross-flow membrane filtration module, type LabStak® M39. The module can be equipped with alternative plate set configurations, according to use.

M39L

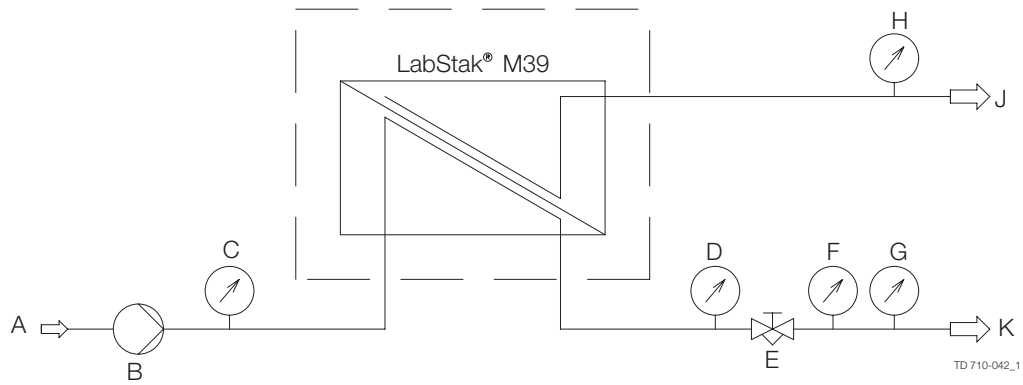
Low channel, for low and medium viscous liquids, code no. PL 835

M39H

High channel, for highly viscous liquids, code no. PL 836



Pos.	Description of parts included
1	Steel frame
2	Support plates and membranes
A	Feed inlet
B	Retentate outlet
C	Permeate outlet



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|-------------------|-----------------|
| A = Feed | F = Temperature |
| B = Pump | G = Flow |
| C = Pressure | H = Flow |
| D = Pressure | J = Permeate |
| E = Control valve | K = Retentate |

Technical data

Number of support plates	5, or 1 per 0.2 m ² of membrane area
Number of end plates	2
Number of flat sheet membranes	2 per support plate
Membrane area M39L/H	0.2-1.0 m ²
Number of sections	1
Basic liquid capacity = A	0.4 litres
Liquid capacity M39L	A + 2.0 litres/m ²
Liquid capacity M39H	A + 2.5 litres/m ²
Liquid flow M39L	5-20 litres/min. per support plate
Liquid flow M39H	20-50 litres/min. per support plate
Max. inlet pressure*	7 bar
Max. operating temperature*	80°C
pH operation range*	1-14
Basic frame weight = B	30 kg
Module weight M39L	B + 3.8 kg/m ²
Module weight M39H	B + 3.5 kg/m ²

* depending on membrane type

Module data

All external steel	Stainless, AISI 304
Internal, product wetted steel	Acid resistant, AISI 316
Support and spacer plates	Polysulphone (PSO)
Permeate outlet hose	Silicone Rubber (Si)
Gasket and o-ring	Nitrile rubber (NBR)

Connections

Cross-flow in-/outlets couplings	DN 38, ISO 2852 clamp
Permeate hose outlets	ø 4/7.4 connection