



# Laboratory Equipment for Membrane Filtration

## LabStak® M20 and TestUnit M20

The Alfa Laval TestUnit M20 is ideal for research and development, educational work, process development, scale-up, membrane testing, quality assurance and small-scale production. It is designed to provide rapid and 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, heat exchanger, valves, gauges, and hydraulic hand pump. It can be fitted with the whole range of flat sheet membranes for reverse osmosis, nanofiltration, ultrafiltration and microfiltration. As an option, it can be fitted with a 2.5" housing which makes it a perfect tool for initial spiral element testing in continuation of preceding flat sheet membrane screening.

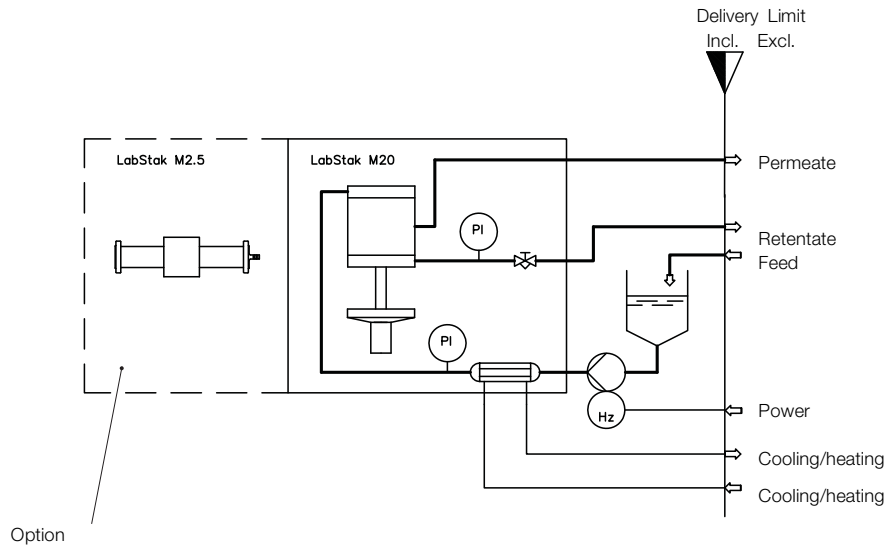
- Easy and quick exchange of membranes and spiral element
- Unique combination of plate-and-frame and spiral wound technologies in one unit
- Membrane area from 0.036-0.72 m<sup>2</sup>
- Simultaneous test of different membrane types
- Separate permeate outlet from each individual membrane tested
- Testing volume of 5-50 litres
- All components manufactured in compliance with FDA and EEC regulations



### Technical data

		LabStak® M20	M20 2.5" housing	TestUnit M20
Membrane area	m <sup>2</sup>	0.036-0.72	0.5-1	0.036-0.72
Max. inlet pressure *	bar	60	64	60
Max operating temperature *	°C	90	90	80
Operating pH range *		1-13	1-13	1-13
Cross-flow range	l/min.	5-10	15-24	5-24
Hold-up volume	l	0.27 + 2.14 l/m <sup>2</sup> membrane area		3 + 2.14 l/m <sup>2</sup> membrane area
Number of support plates		1-20	-	1-20
Number of spacer plates		2-21	-	2-21
Number of flat sheet membranes		2-40	-	2-40
Number of permeate outlets		1-20	1	1-20
Tank size	l	-	-	7.5

\*Please consult specifications for the applied membrane type for more detailed information on operation conditions



Components	LabStak® M20	M20 2.5" housing	TestUnit M20
All external steel parts	AISI 304	AISI 316L	AISI 304
Internal, product wetted steel	AISI 316L	AISI 316L	AISI 316L
Support and spacers plate	Polysulphone (PSO)	-	Polysulphone (PSO)
Permeate outlet hose	Silicone rubber	-	Silicone rubber
O-ring set	Nitrile	Nitrile	Nitrile
Module	-	2517	LabStak® M20 Optional M20 2.5" housing
1 cross-flow pump	-	-	Wanner
1 heat/cooler exchanger	-	-	Alfa Laval
1 valve	-	-	Alfa Laval
2 pressure gauges	-	-	Baumer

Connections	LabStak® M20	M20 2.5" housing	TestUnit M20
Feed inlet	3/8" female	Tank, 1" hose connection	Tank, 1" hose connection
Retentate outlet	1/2" hose connection	1/2" hose connection	1/2" hose connection
Permeate outlet, hose	ID 1.3, OD 3.5 mm	1/2" hose connection	ID 1.3, OD 3.5 mm
Cooling/heating water in/out	1/4" female	-	1/4" female
Electrical power	-	-	320-550 V + PE, 45-65 Hz

Dimensions	LabStak® M20	M20 2.5" housing	TestUnit M20
L x W x H	200 x 190 x 130 mm	500 x 380 x 435 mm	1090 x 590 x 1480 mm
Weight	90 kg	12 kg	205 kg

Order number	LabStak® M20	M20 2.5" housing	TestUnit M20
	517100	517051	531010

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ESE02463EN 1304

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