Kvick lab packet holder

User Manual

In the package

Part	Qty.	Material of construction
Front plate	1	316L stainless steel
Front plate threaded posts	4	410 stainless steel
Back plate	1	316L stainless steel
Wrench	1	Chromed steel
Nuts (1/4-20)	4	Brass
Spacers	4	316L stainless steel
Washers	4	316L stainless steel
Kvick™ UNF accessory kit		
(code number 11000671)		
(catalog number KSP001AKT)	1	
Short adapters		
(UNF[5/16-24]-to-female Luer-Lok™)	4	Polypropylene
Long adapters		
(UNF[5/16-24]-to-female Luer-Lok)	4	Polypropylene
Gaskets	8	EPDM (ethylene propylene diene monomer)
UNF block	1	PEEK (polyetherether ketone)
Luer-Lok block	4	Polypropylene
Stand	1	Urethane
User manual	1	
Certificate of compliance	1	

Optional part (not included):

Torque wrench (code number 56411284, catalog number KLTW001)

Fig 1. Kvick lab packet holder (11000670, KLPH001SS)

Holding capacity

The Kvick lab packet holder is designed for optimal use with one to three Kvick lab packets (100 cm^2 each). The physical capacity of the holder is five Kvick lab packets or one Kvick lab cassette (0.11 m^2).

Filter installation

CAUTION
The holder weighs 2.3 kg (5.2 pounds). To prevent injury, be sure to handle the holder with a secure grip.

Step	Action
1	Place the holder on the bench. Remove back plate.

Step	Action
2	Insert a clean gasket onto the front plate. Alignment notches on the gasket will aid in positioning the gasket. Notches on the end of the gasket align with the short posts on either end of the holder. Notches on one long side of the gasket align with threaded posts. Notches on the other long side are not relevant to the installation.
3	Place the packet or cassette onto the gasket, in the same orientation. If additional packets are used, stack them on top of the first one. Additional gaskets are not required.
4	Place the back plate on top of the last packet.
5	Place the spacers onto the bolts. If more than two Kvick lab packets or a Kvick lab cassette are installed, do not use the spacers.
6	Add the washers and tighten the nuts by hand. Then, tighten each nut 1/4 of a turn, using an alternating pattern. Continue tightening 1/4 of a turn until the nuts are tight. As a coarse check on tightness, one may check that cross flow with water is approximately 100 to 150 ml/min at ΔP (Feed pressure-Retentate pressure) 2 bard (30 psid), and that the holder is leakfree. For more precise control of the assembly, use a torque wrench to apply 40 in-lb of torque to each nut. Use of a torque wrench is highly recommended for studies involving scale-up or scale-down of the filtration process.

Fig 2. Kvick lab packet and Kvick lab cassette (underneath)

Use of the holder stand

- The stand is designed to receive the front plate.
- The holder must house at least one packet: an empty, tightened holder will not fit into the stand.
- For most effective use, the holder ports should face the user and the stand should be oriented with the logo facing forward.
- The stand is not required when the holder is used with the ÄKTAcrossflow™ system.

Holder connections and operation

- No adapters are required when the holder is used with the ÄKTAcrossflow system.
- To connect the holder to systems that require Luer-Lok connections, two different lengths of UNF-to-Luer-Lok adapters are supplied as part of the accessory kit. At the user's discretion, either adapter may be used. To prevent leakage, insert one gasket into each port before installing the adapter. Install the adapter carefully to prevent cross threading.
- For optimum performance, the holder should be oriented in the upright position by using the filter clamp on the ÄKTAcrossflow or by using the stand. The front plate of the holder is marked with an "up" arrow.
- In order to control the filtration process, the system should be equipped with a valve at the retentate port to adjust transmembrane pressure (TMP).

  TMP = (Feed P + Retentate P)/2 - Permeate pressure

  Additional valves at feed and permeate ports may also be installed. Pressure gauges at the feed and retentate ports are required. A pressure gauge at the permeate port is optional. A general diagram of a cross flow filtration system is shown in the figure below.

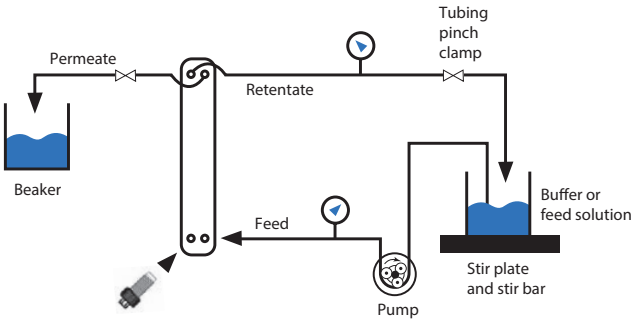

Fig 3. Typical cross flow filtration setup

Operating parameters	
Max feed pressure	4 barg (60 psig)
Max temperature	50°C (122°F)
Max pH range	1 to 14
Holding capacity	5 Kvick lab packets
	1 Kvick lab cassette
Holder holdup volume	< 0.1 ml feed side
(Nominal)	< 0.1 ml permeate side
Cassette holdup volume	1 ml feed side per Kvick lab packet
(Nominal)	

Typical operating conditions	
Cross flow	60 to 80 ml/min per Kvick lab packet
	725 to 975 ml/min per Kvick lab cassette
TMP	1.7 to 2.5 barg (25 to 35 psig)

Cleaning cassettes in the holder

The holder is resistant to all chemical cleaning solutions typically used for cleaning Kvick lab packets and cassettes. Two common cleaning regimens are:

1. 0.1-0.5 N NaOH

Contact time = 60 minutes

Temperature = 40°C (113°F)

2. 0.5 N NaOH with 300 ppm NaOCl

Contact time = 60 minutes

Temperature = 20°C (68°F)

Cleaning the holder

When cleaning the holder without packets or cassettes installed, use standard laboratory detergent and rinse thoroughly with clean water. Do not use chemicals or conditions that are incompatible with stainless steel, such as high concentrations of NaOCl or NaCl.

Packets and cassettes that may be used with this holder

Code number	Catalog number	Membrane NMWC[1]
Kvick lab packets		
56411202	UFELA0005001ST	5 kD
56411206	UFELA0010001SE	10 kD Select
56411204	UFELA0010001ST	10 kD
56411208	UFELA0030001ST	30 kD
56411210	UFELA0050001ST	50 kD
56411214	UFELA0100001ST	100 kD
Kvick lab cassettes		
56411331	UFELA0005010ST	5 kD
56411326	UFELA0010010SE	10 kD Select
56411325	UFELA0010010ST	10 kD
56411327	UFELA0030010ST	30 kD
56411328	UFELA0050010ST	50 kD
56411329	UFELA0100010ST	100 kD

[1] nominal molecular weight cutoff

Systems that may be used with this holder

The holder fittings allow direct connection to the ÄKTAcrossflow automated cross flow filtration system. With the Kvick UNF accessory kit adapters, the holder may be used with cross flow filtration systems that accept a femaleLuer-Lok fitting and allow pressure regulation not to exceed 4 barg (60 psig) of inlet pressure.

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