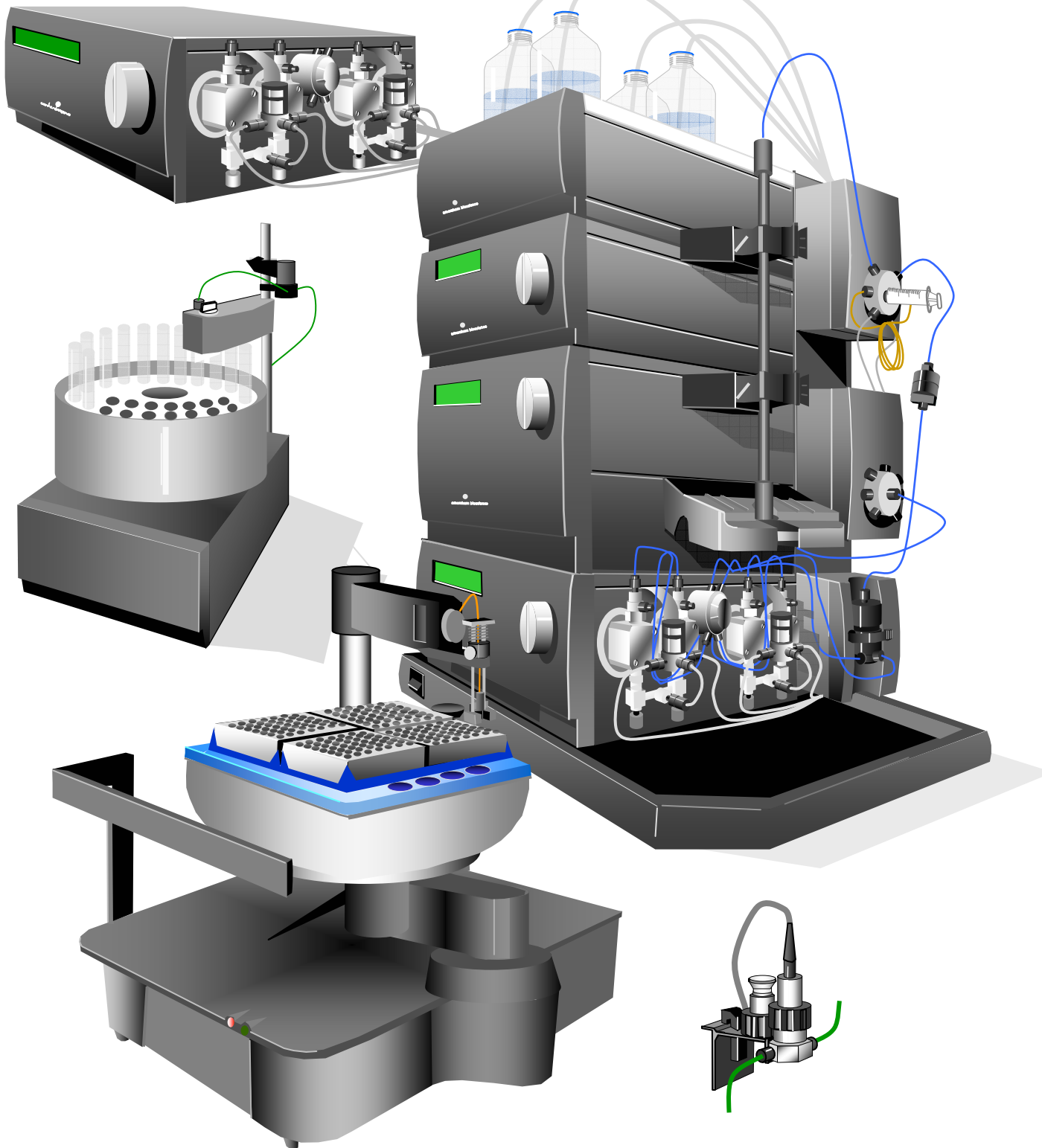
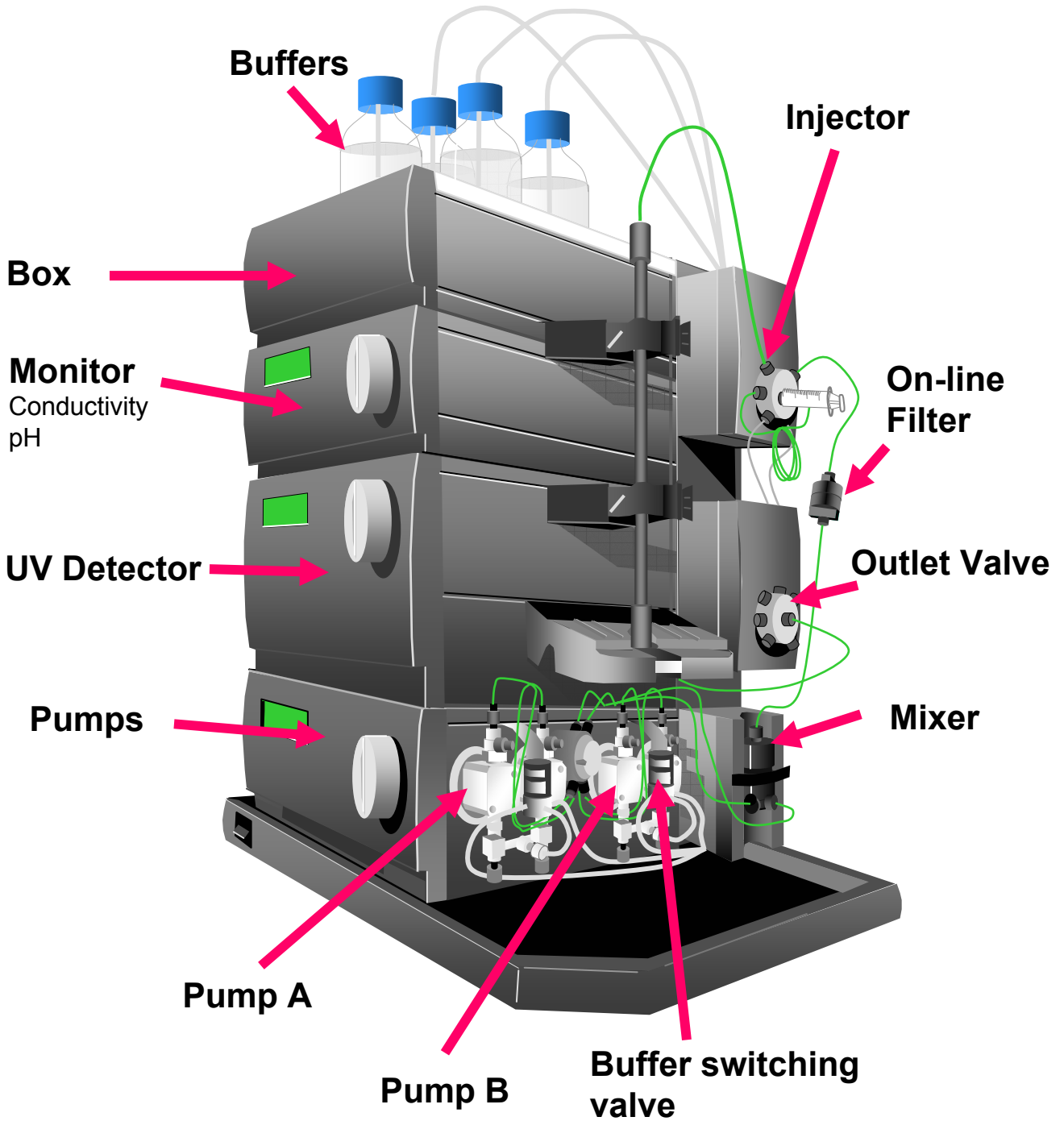


ÄKTA system Training Guide

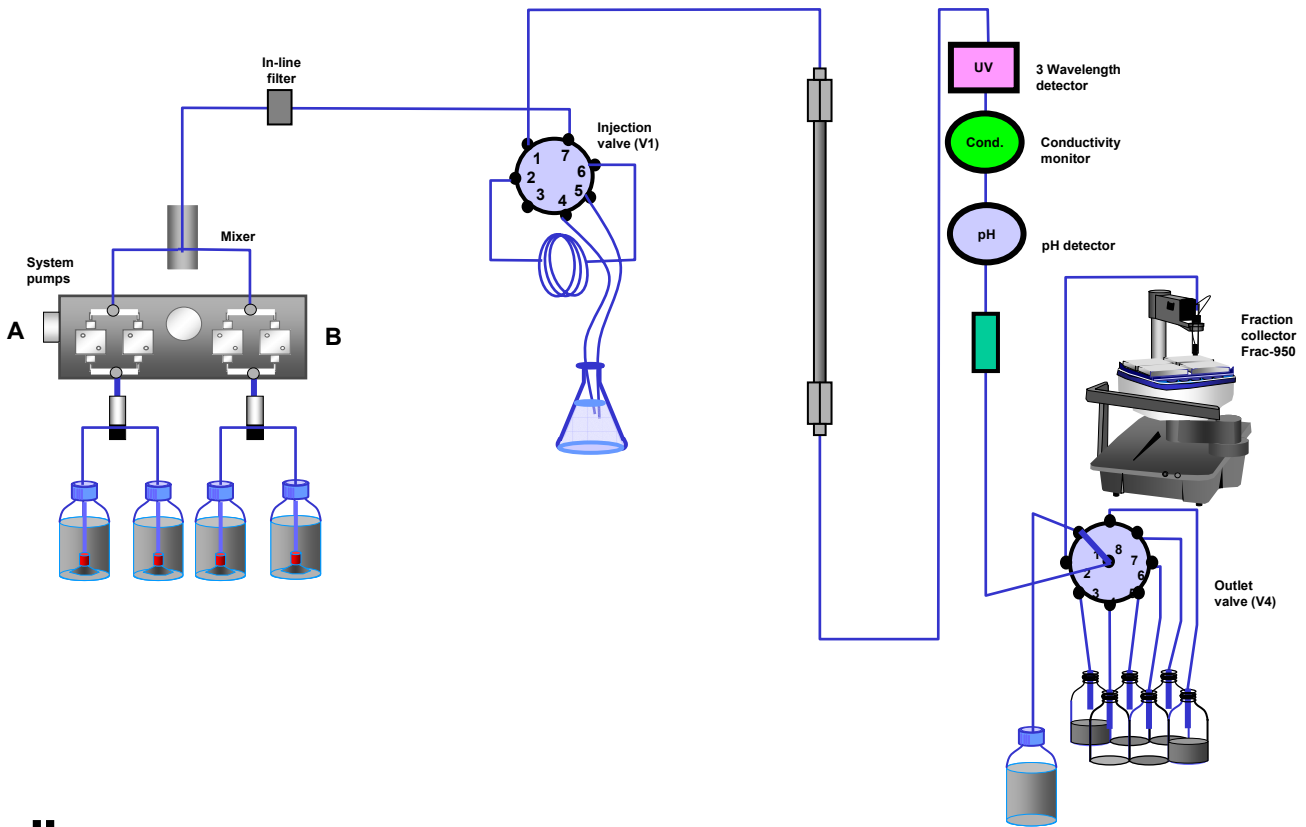
Purifier 100 / 10



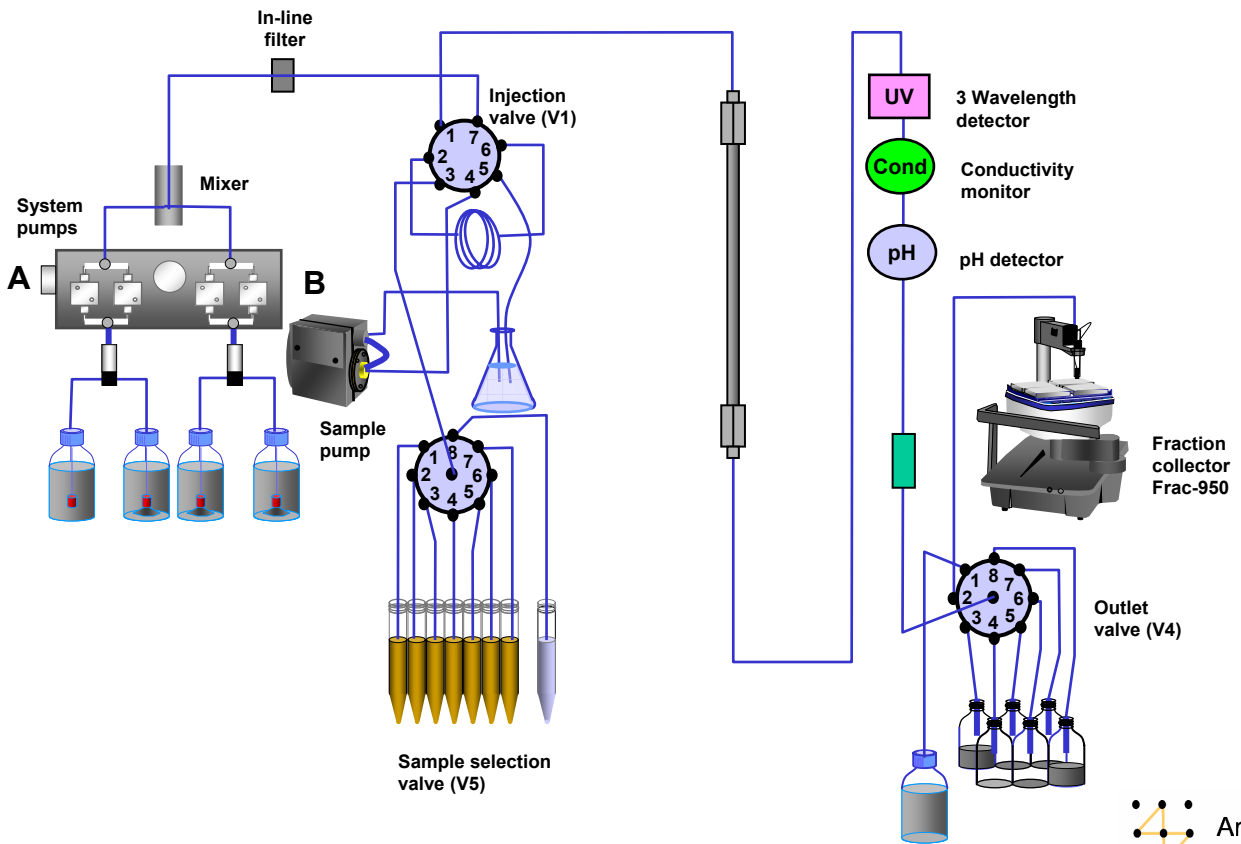
ÄKTA_{purifier}



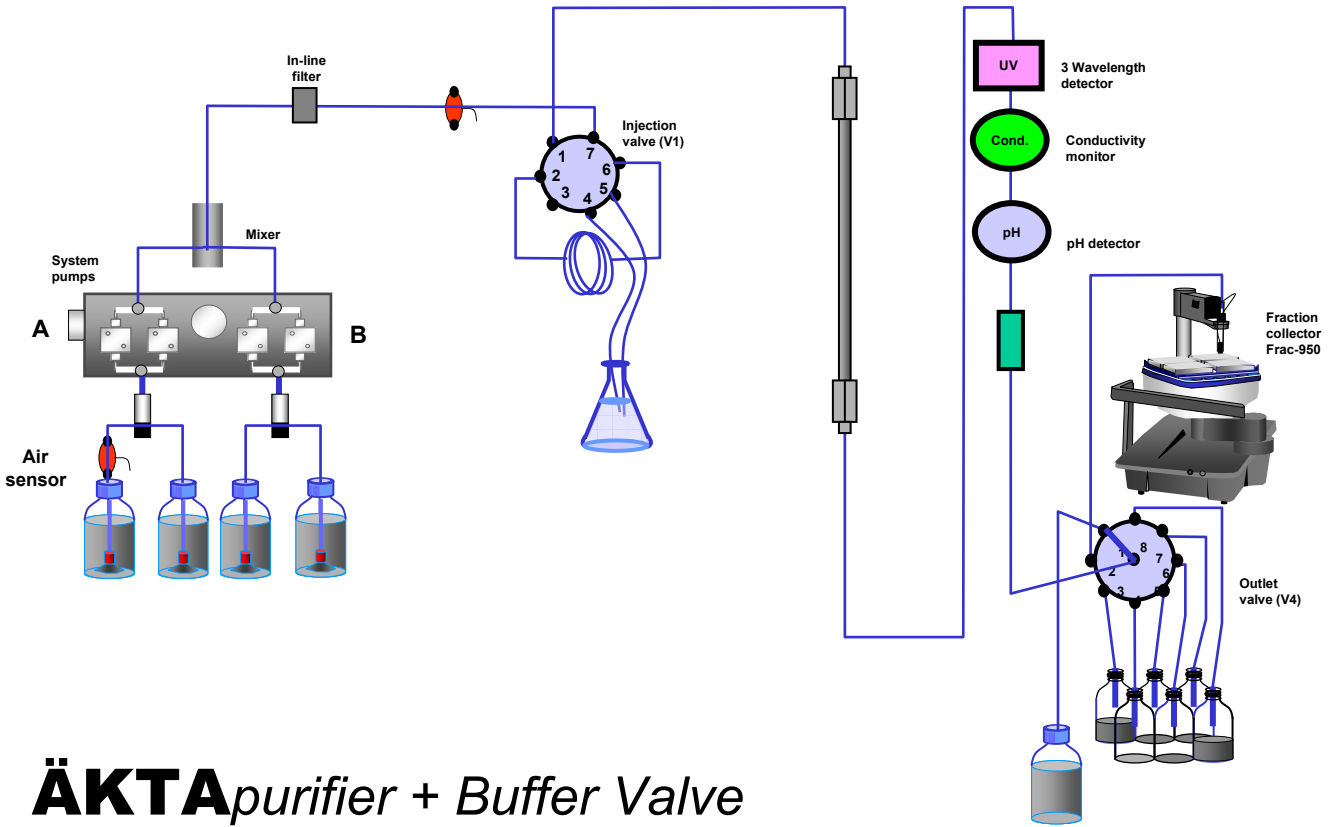
ÄKTApurifier 10 / 100



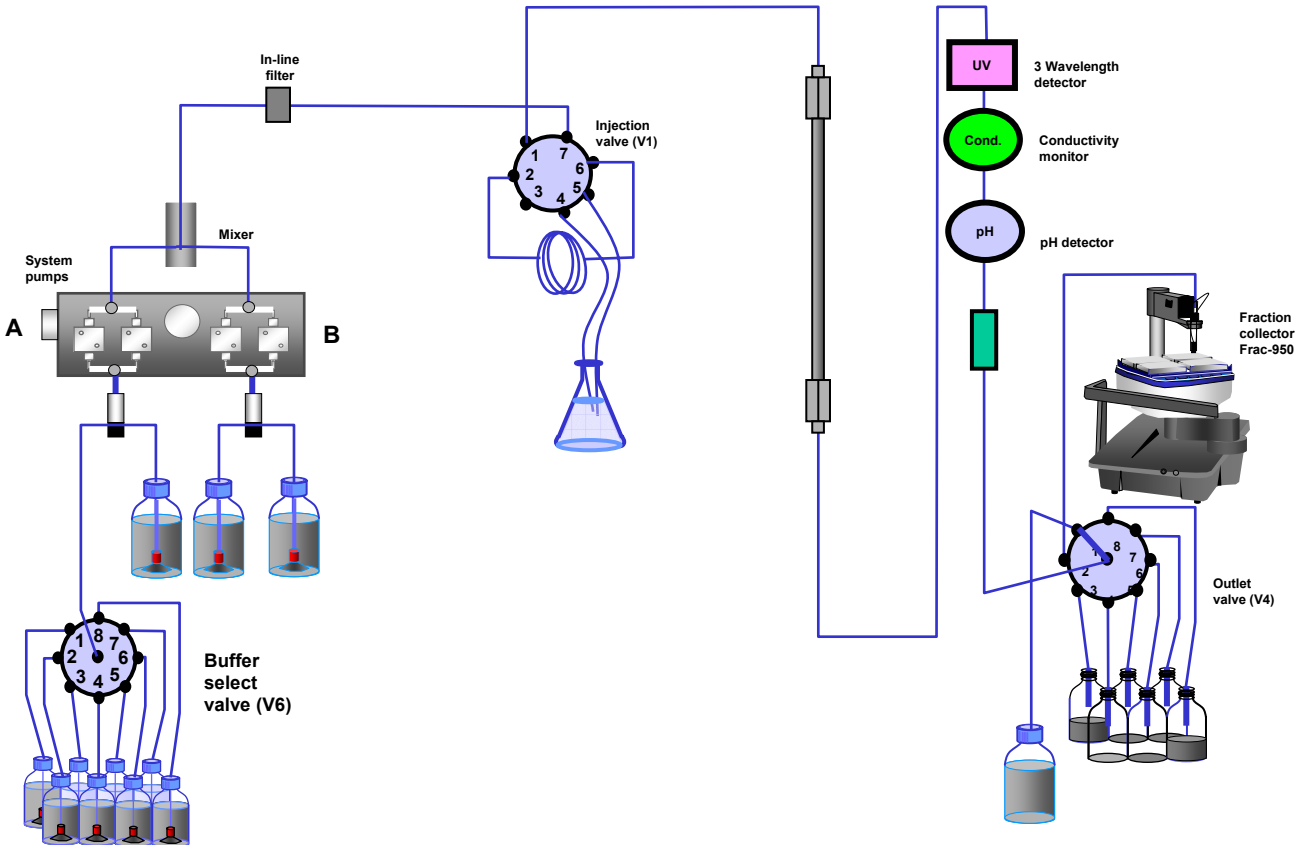
ÄKTApurifier + Sample Pump + Sample Valve



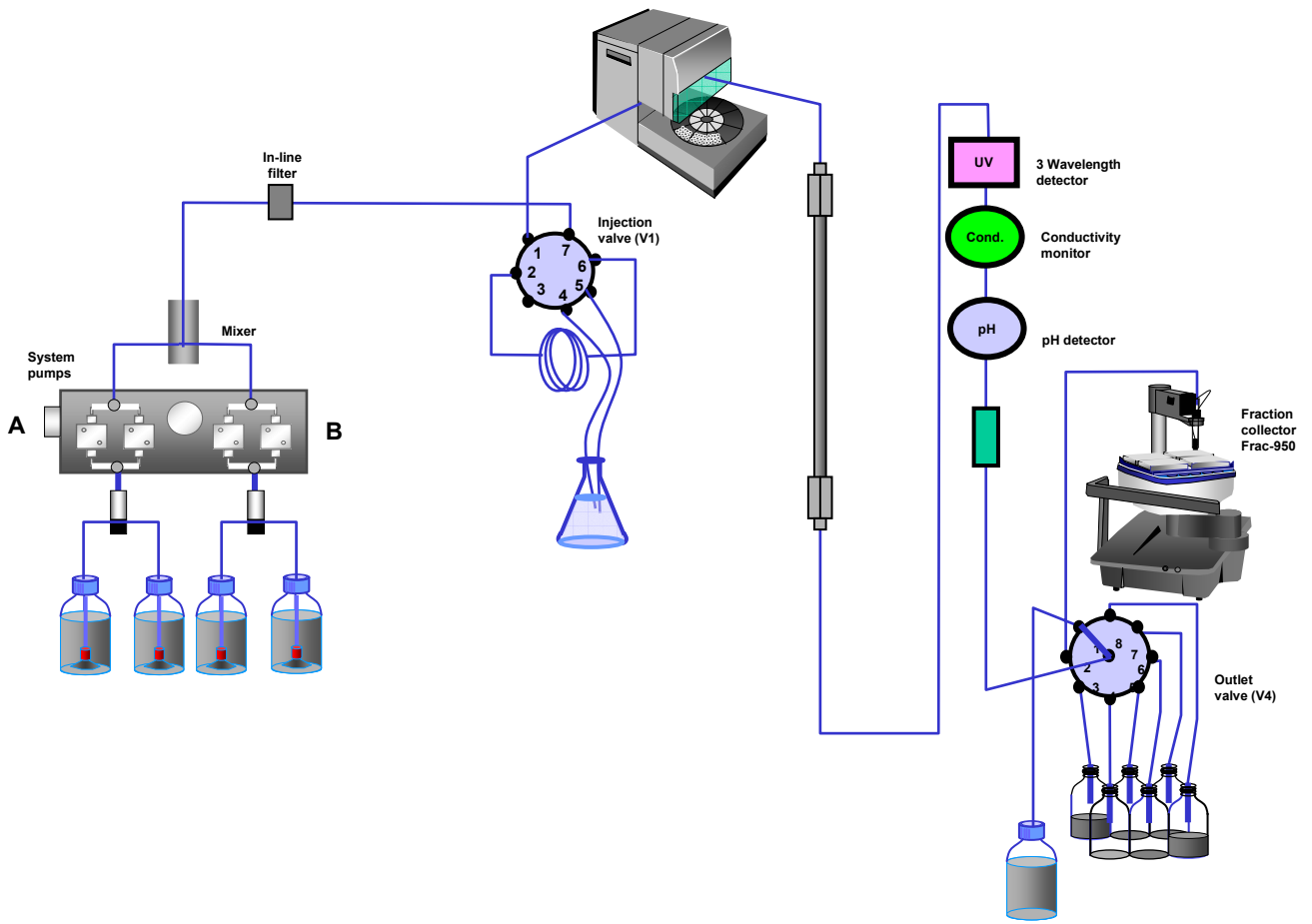
ÄKTApurifier 100 Air



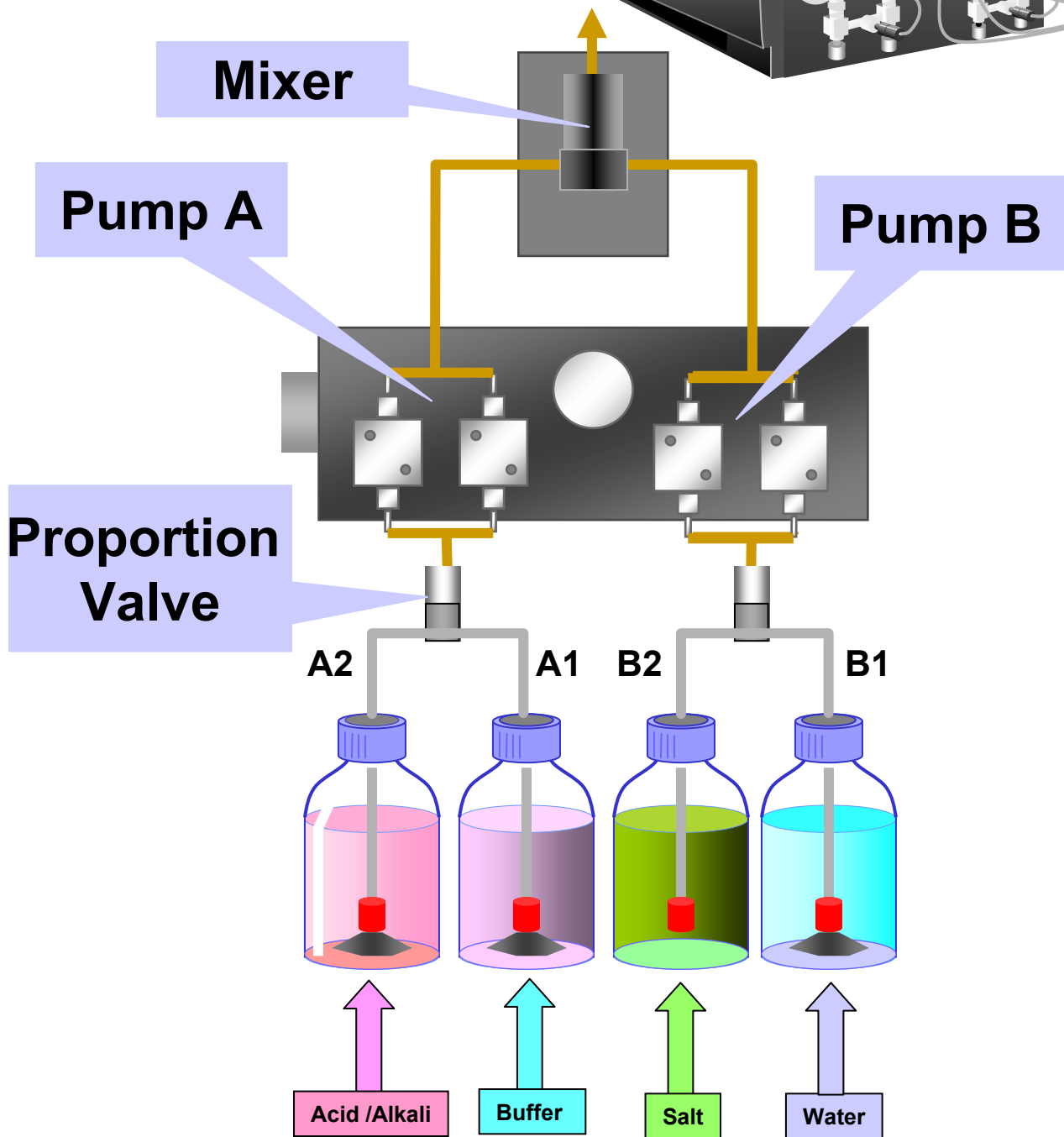
ÄKTApurifier + Buffer Valve



ÄKTApurifier 10 XT

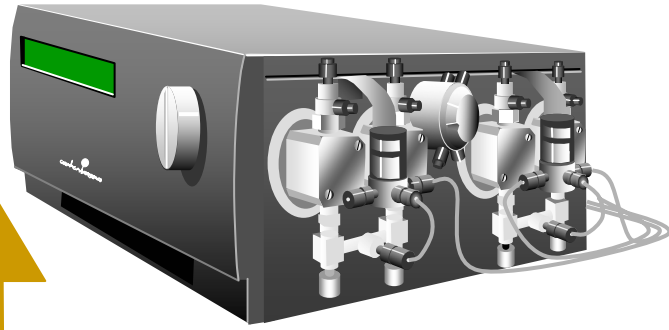


PUMP P-900

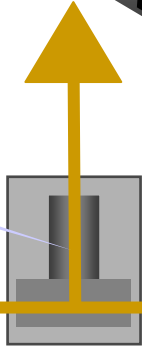


	GRADIENT	MIXER
ÄKTA 10 mls/min	<6 mls/min 6 -14 mls/min	0.6 ml mixer 2 ml mixer
ÄKTA 100 mls/min	<30 mls/min 30 - 50 mls/min 50 - 100 mls/min	2 mls mixer 5 mls mixer 12 mls mixer

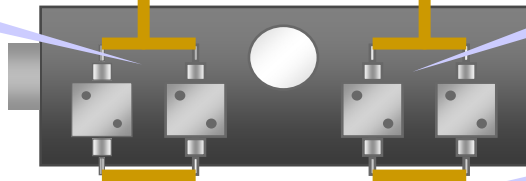
PUMP P-900 Inlets



Mixer



Pump A



Pump B

Switching Valves

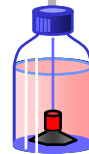
Buffer Select Valve IV-908

A2

A1

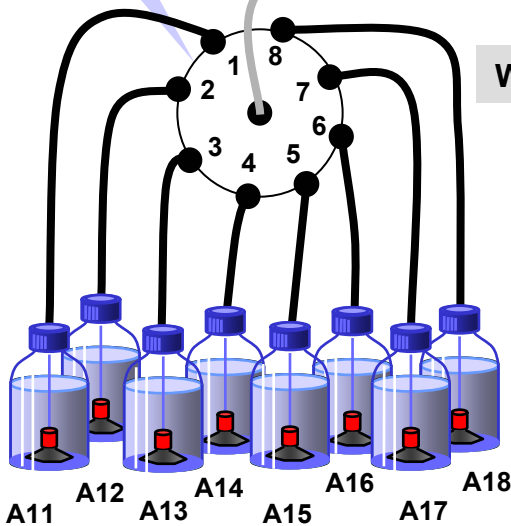
B1

B2



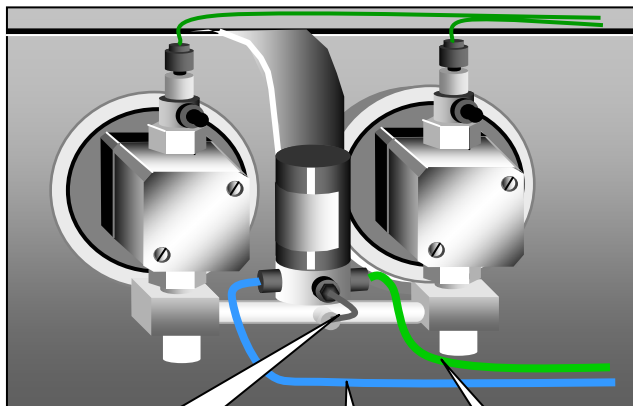
Water

Salt



PUMP P-900 Manually Priming Buffer Inlet Lines

Pump A

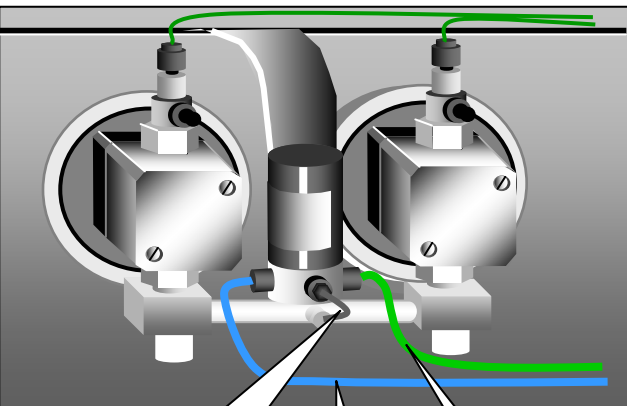


Common inlet

A2

A1

Pump B



Common inlet

B2

B1

Manual → Flowpath

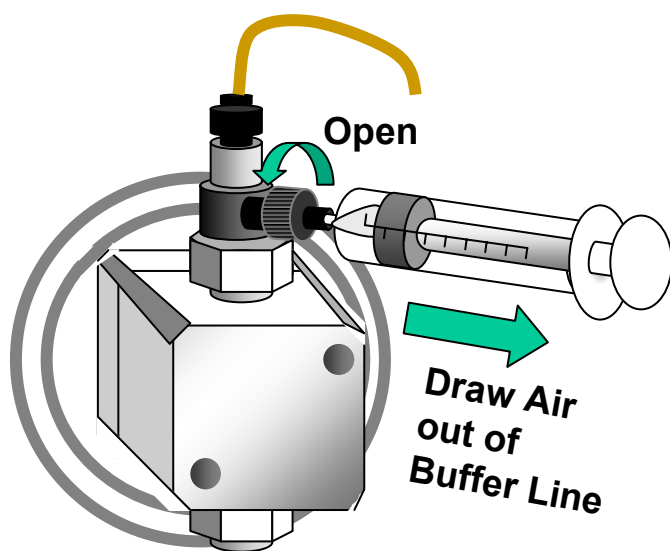
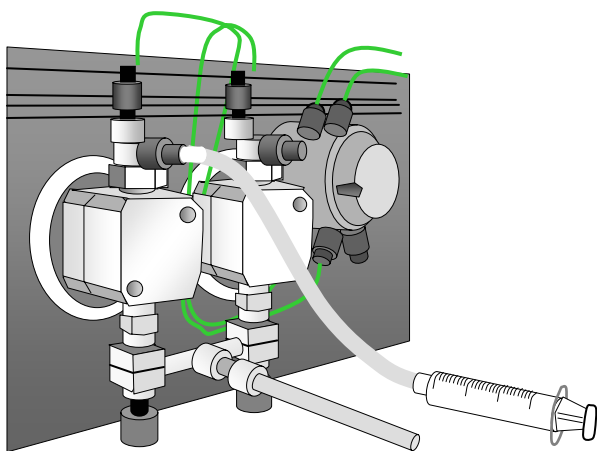


A1 or A2 ← BufferValveA

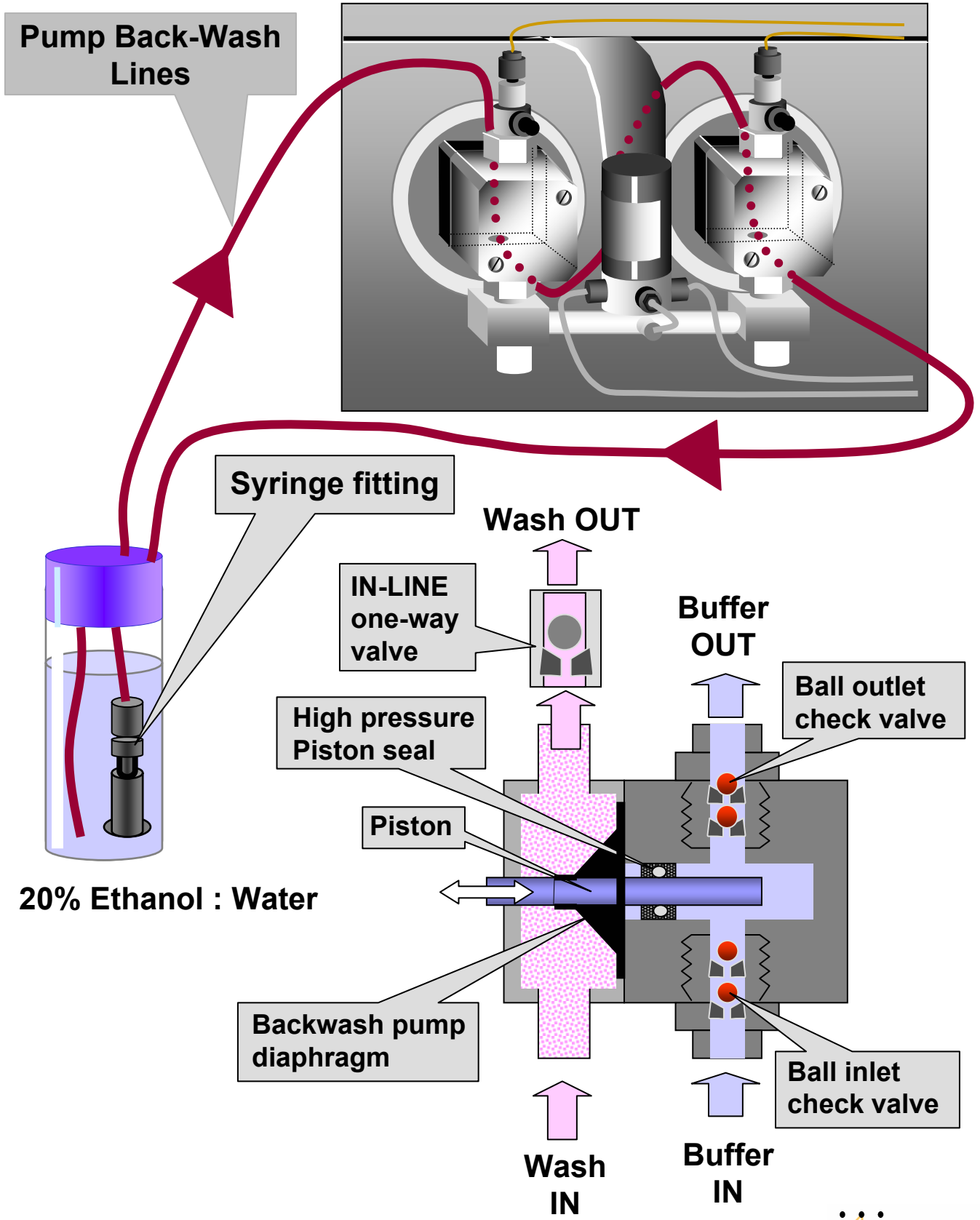
Manual → Flowpath



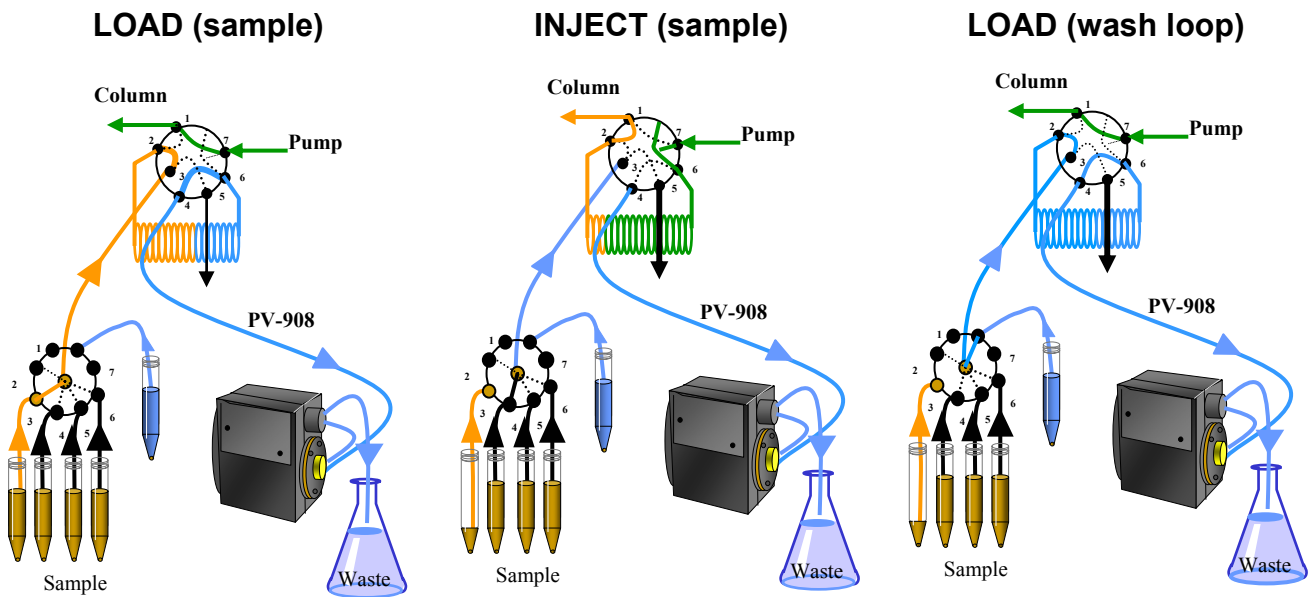
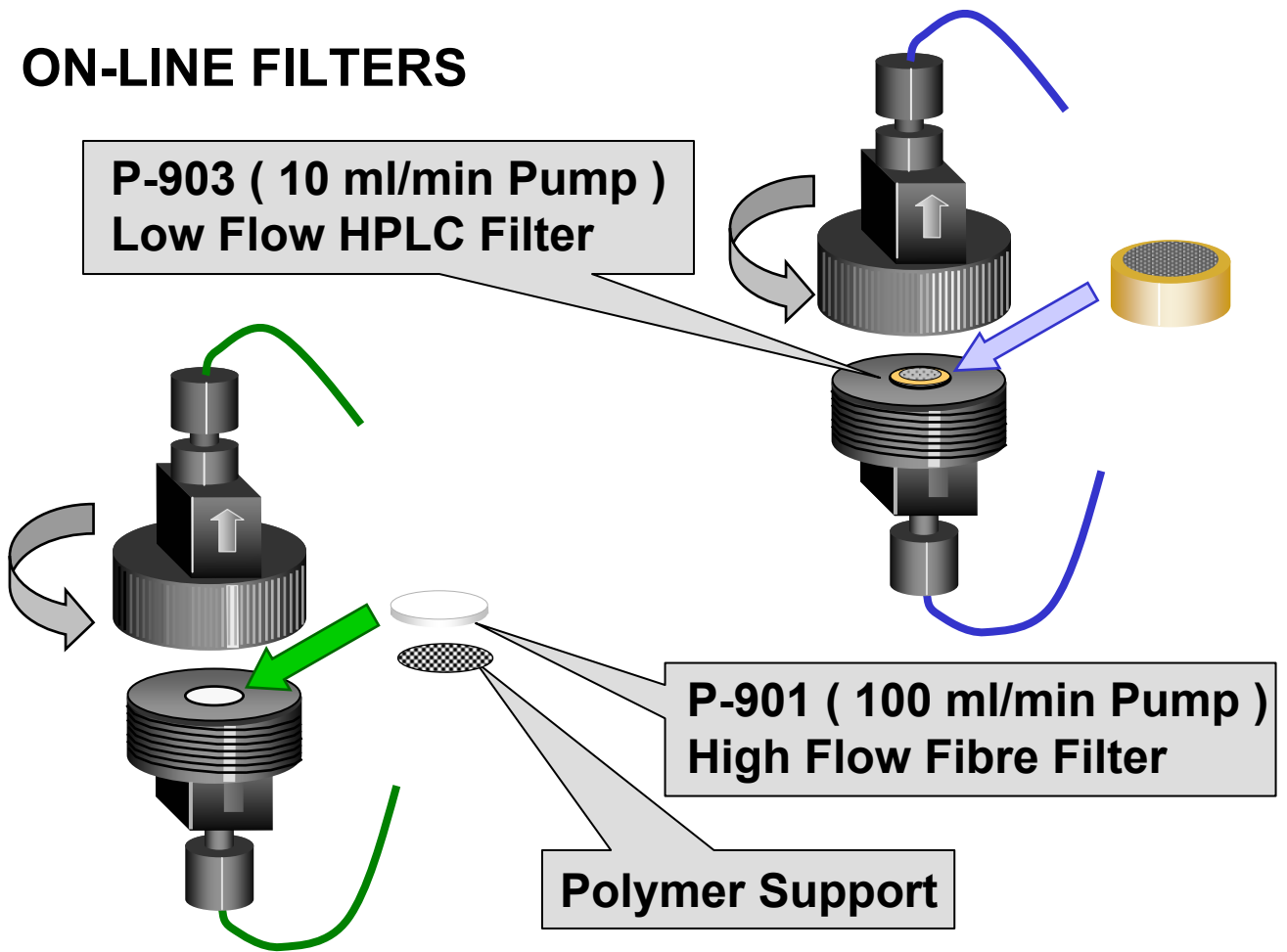
B1 or B2 ← BufferValveB



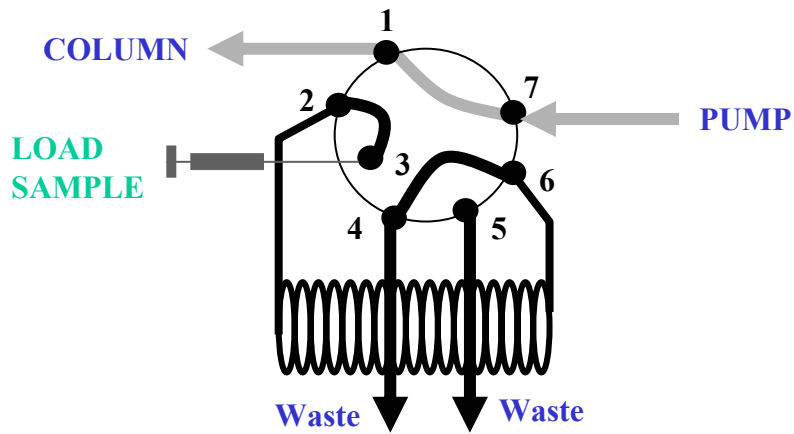
PUMP P-900 Back - Wash Lines



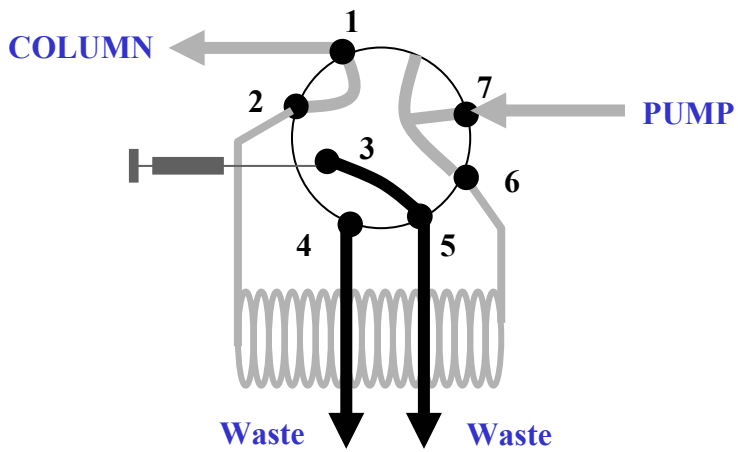
ON-LINE FILTERS



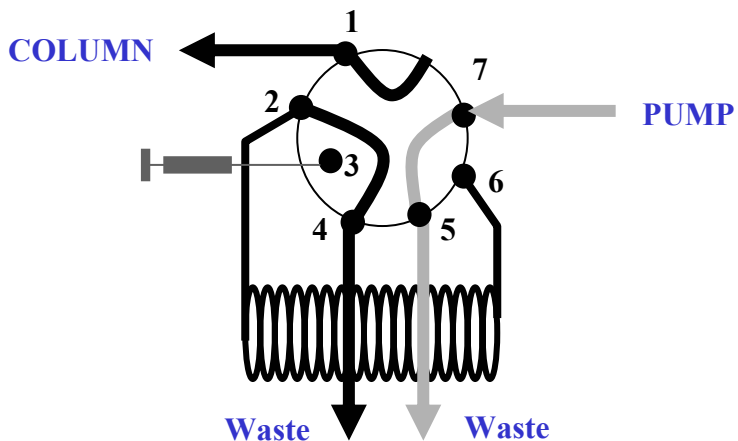
INJECTION VALVE INV- 907



LOAD

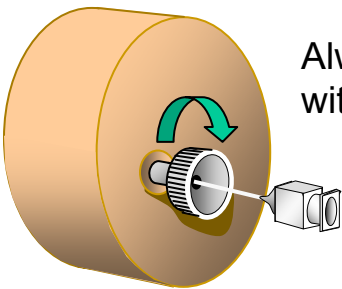
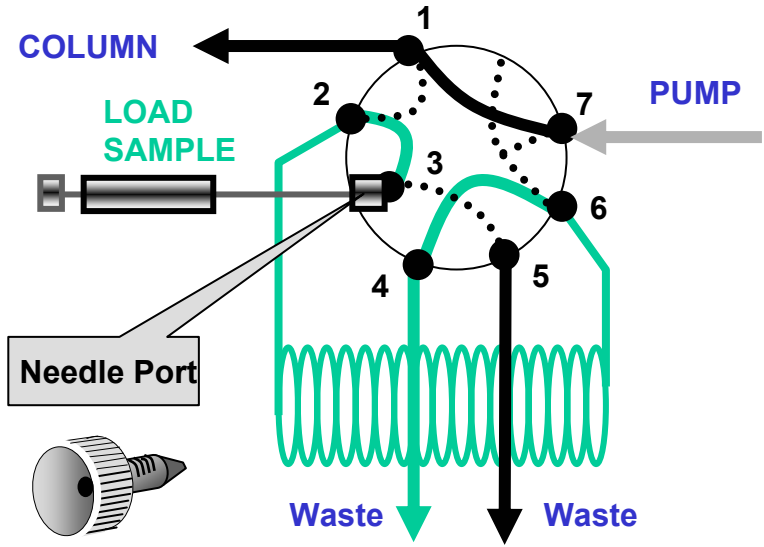


INJECT



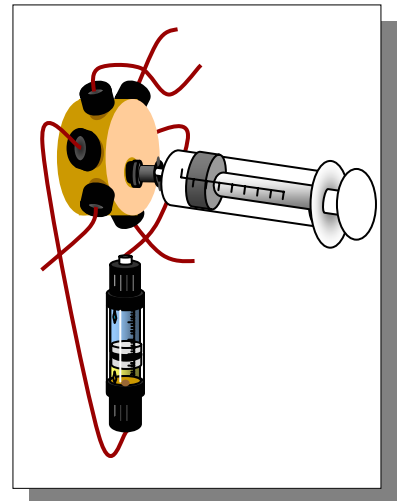
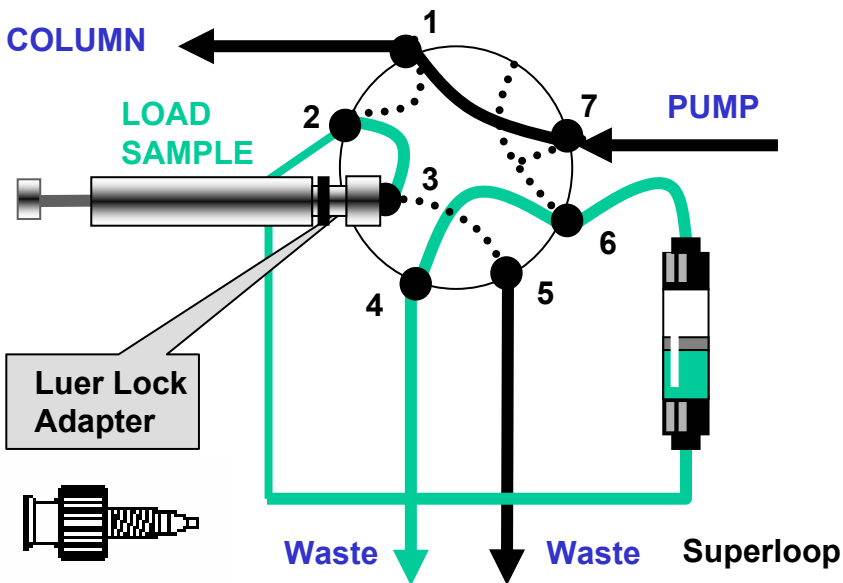
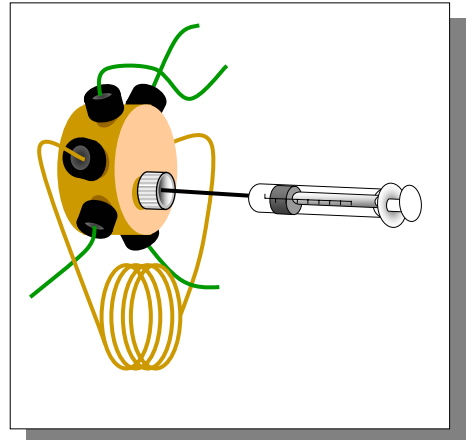
WASTE

SAMPLE LOADING METHOD

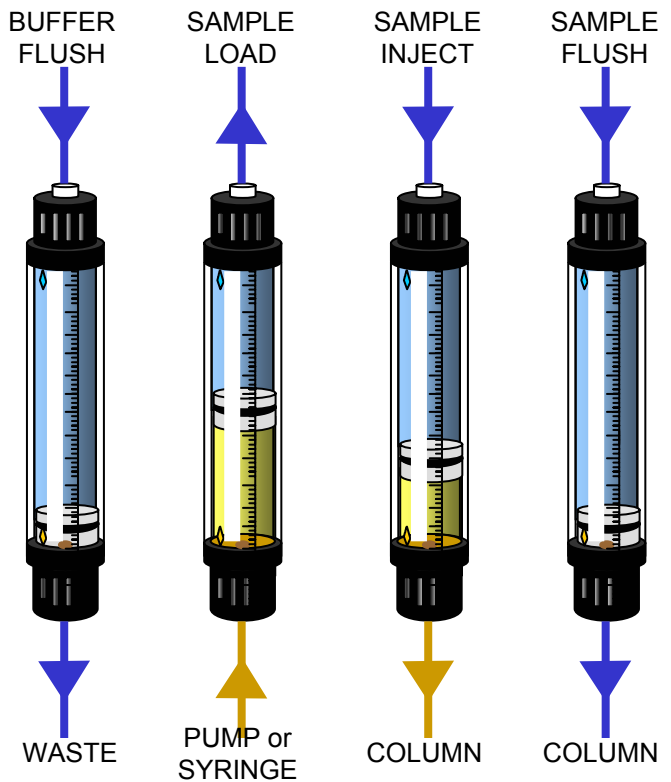
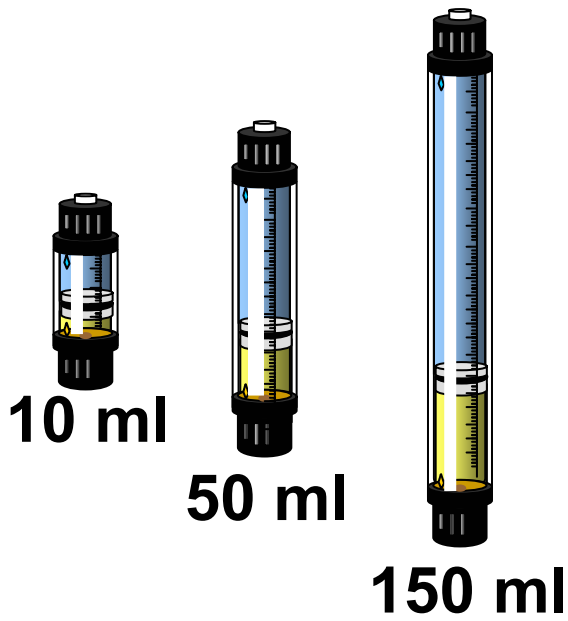
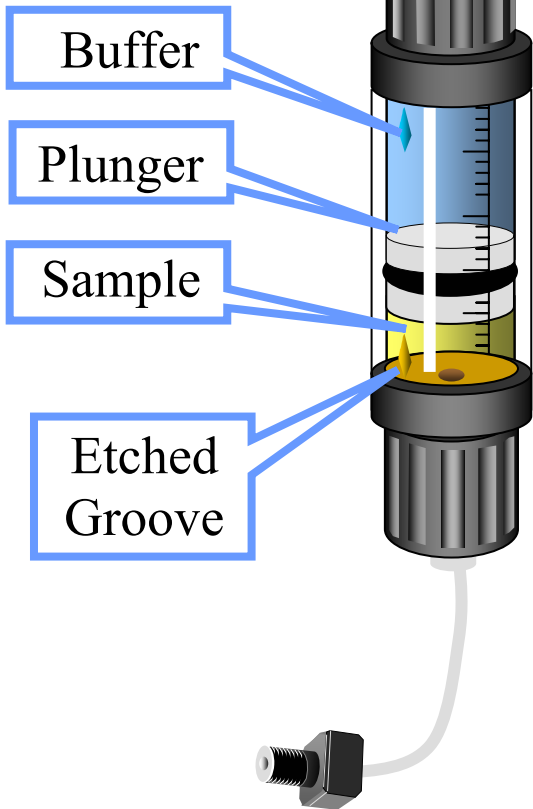


Always tighten by hand
with needle inserted

Do Not Overtighten



SUPERLOOPS



Volume

10 ml
50 ml
150 ml

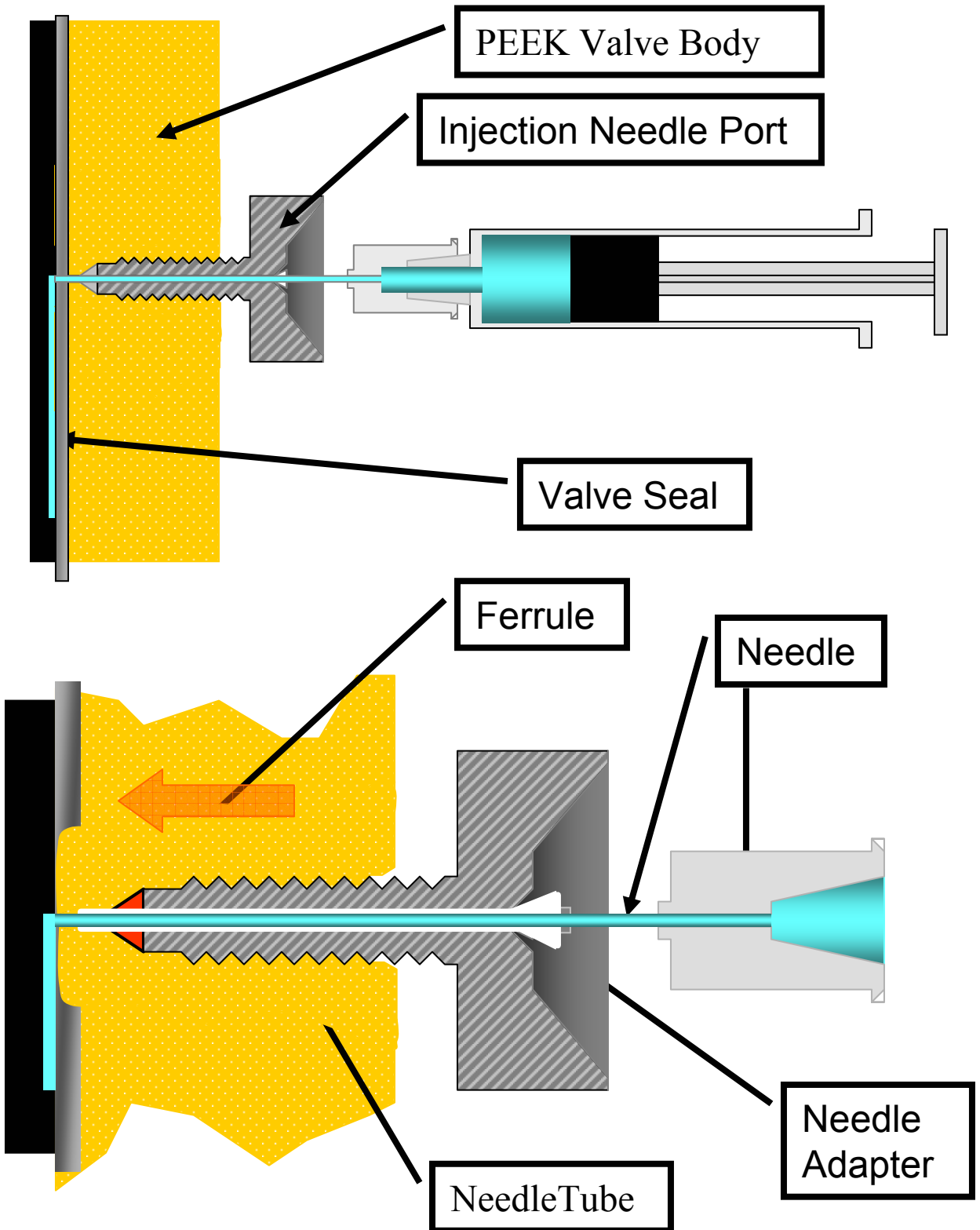
Max. allowed column pressure

4 Mpa
4 Mpa
2 Mpa

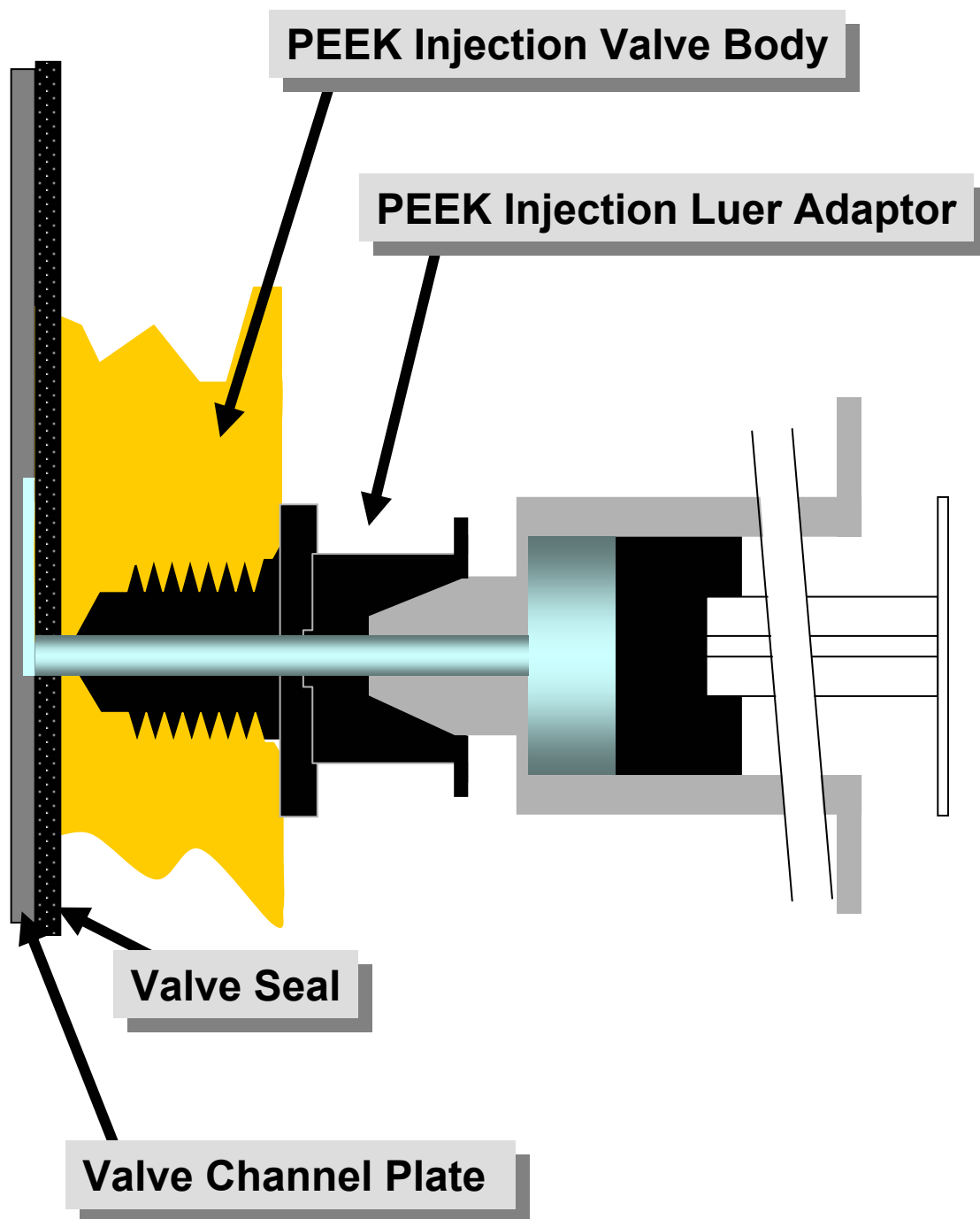
Code No.

18-1113-81
18-1113-82
18-1023-85

INV-907 Injection Valve - Injection Port



INV-907 Injection Valve - Luer Adapter



Fluid Dynamics

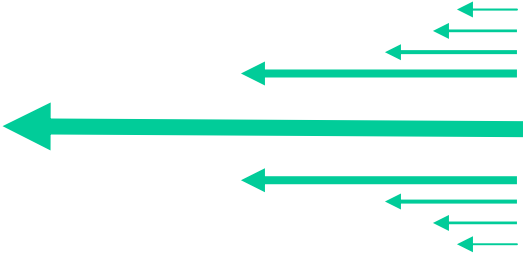
Flow

PEEK Tubing

High Resistance to Flow



Low Resistance to Flow

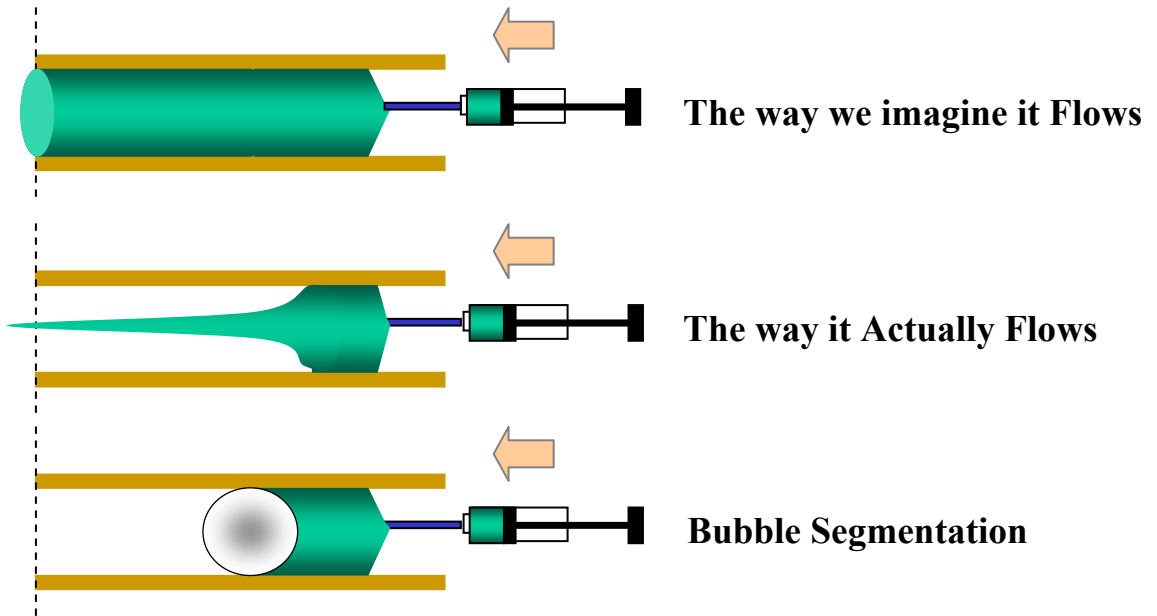


End

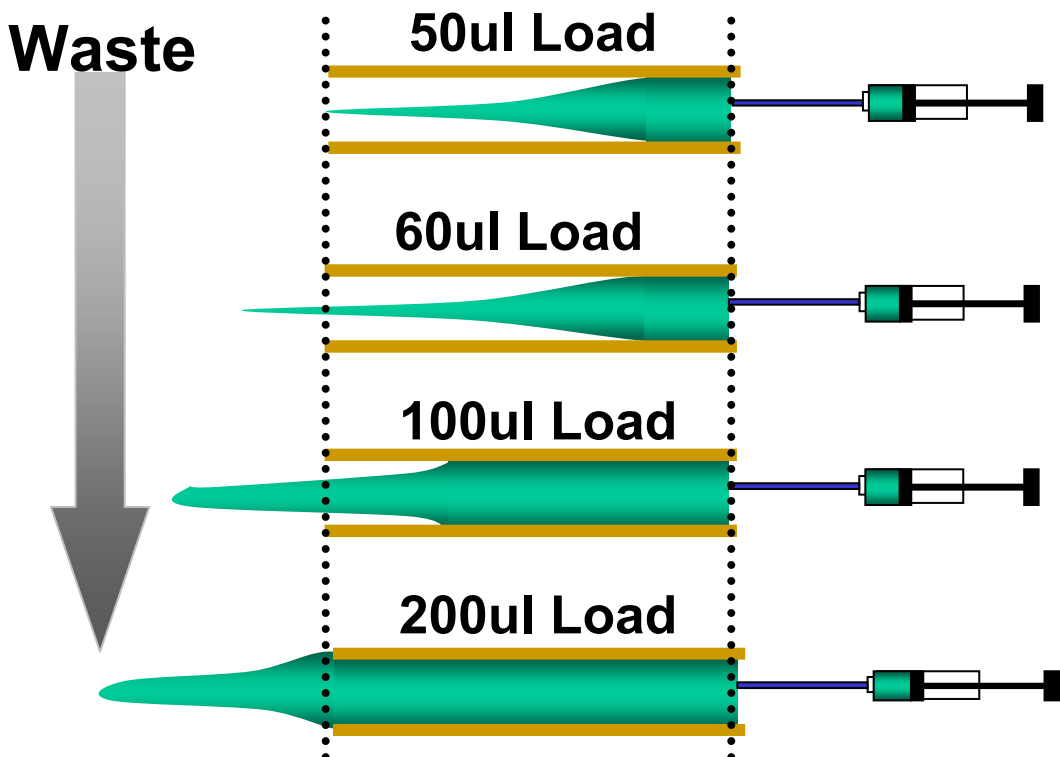
Beginning

Fluid Dynamics

Flow - Injecting a Loop

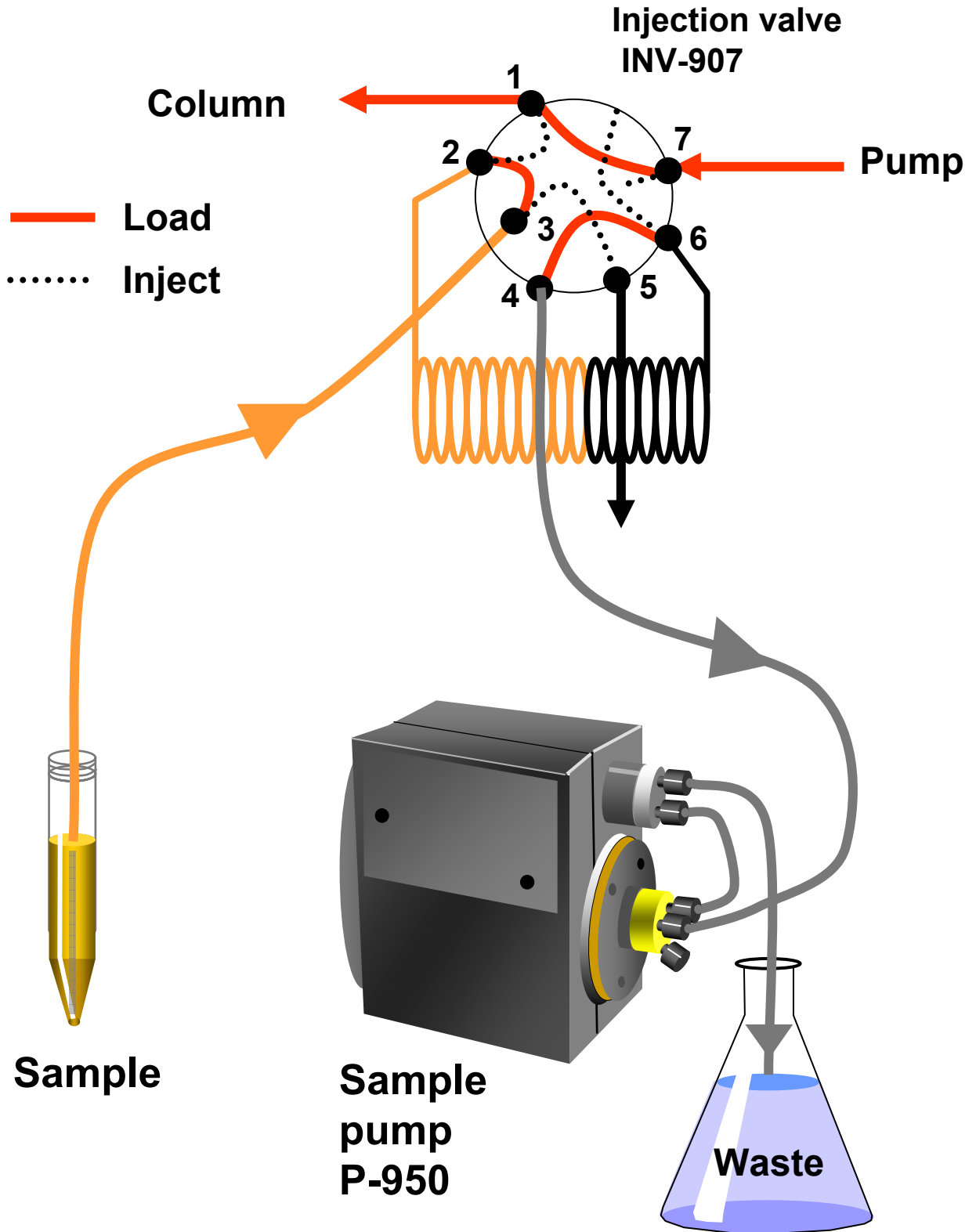


100ul Loop

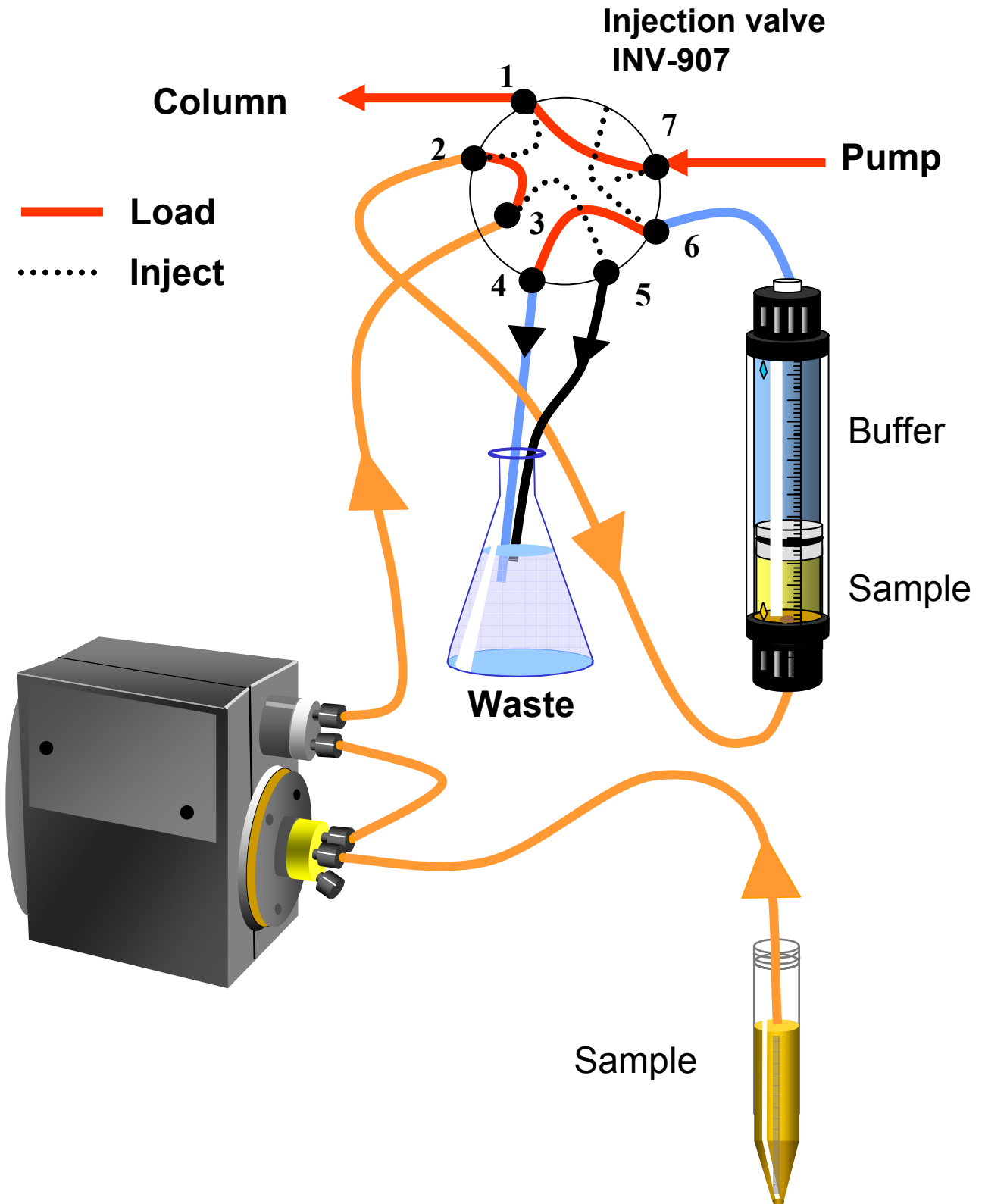


- **Partial Loading Loop = No more than 1/2 Loop Volume**
- **Total Loading Loop = Inject 2X Loop Volume**

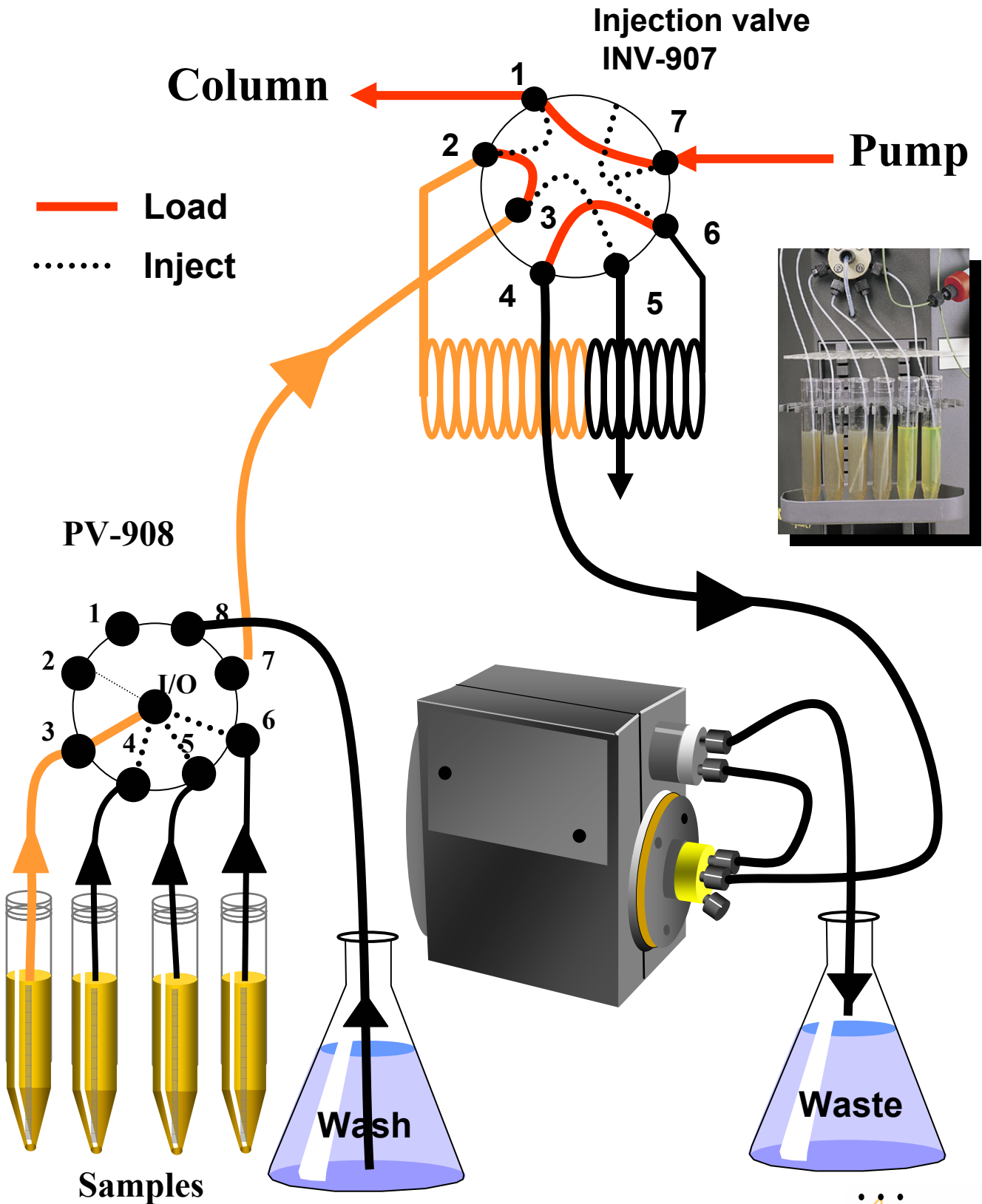
LOADING A SAMPLE LOOP



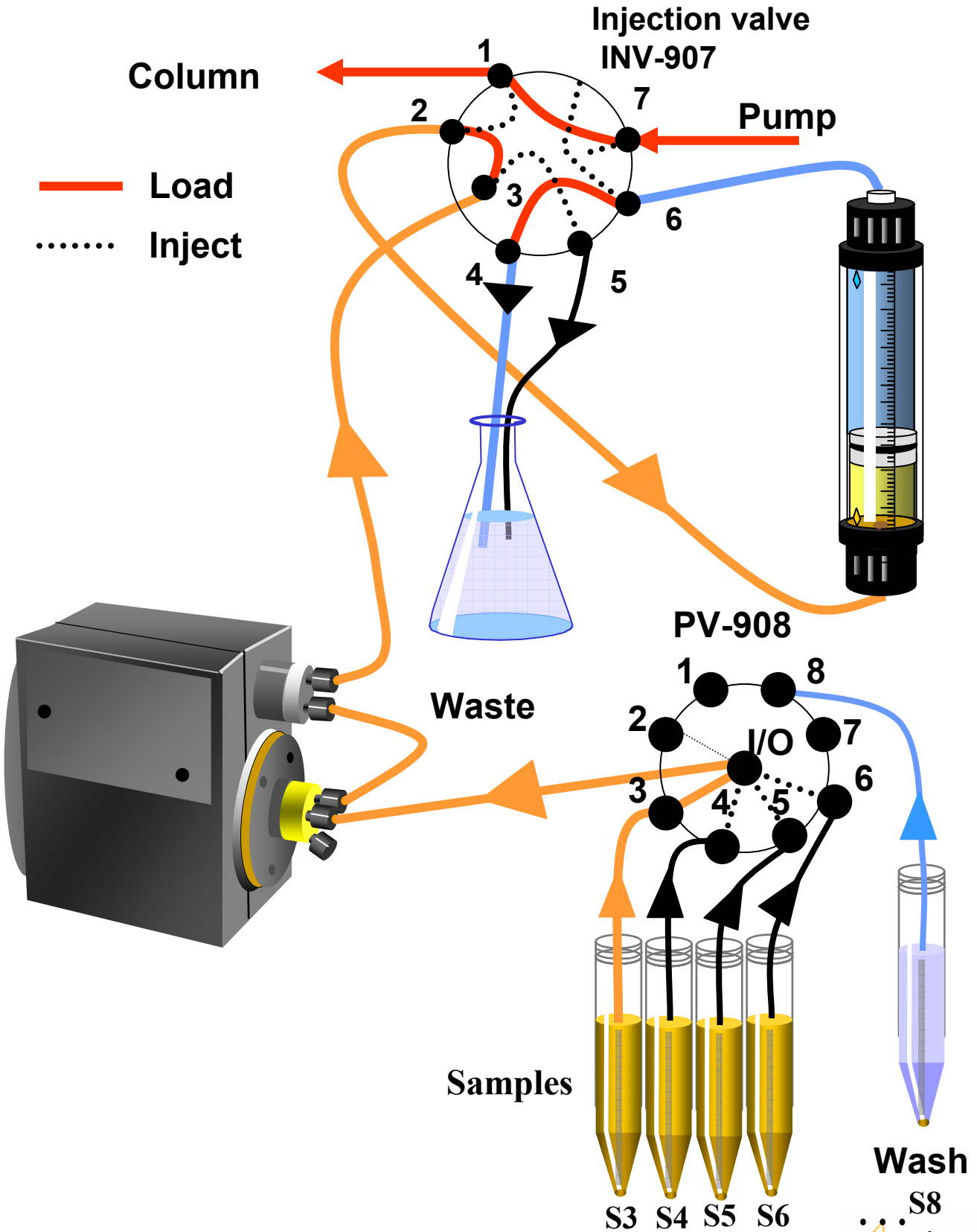
LOADING A SUPER LOOP



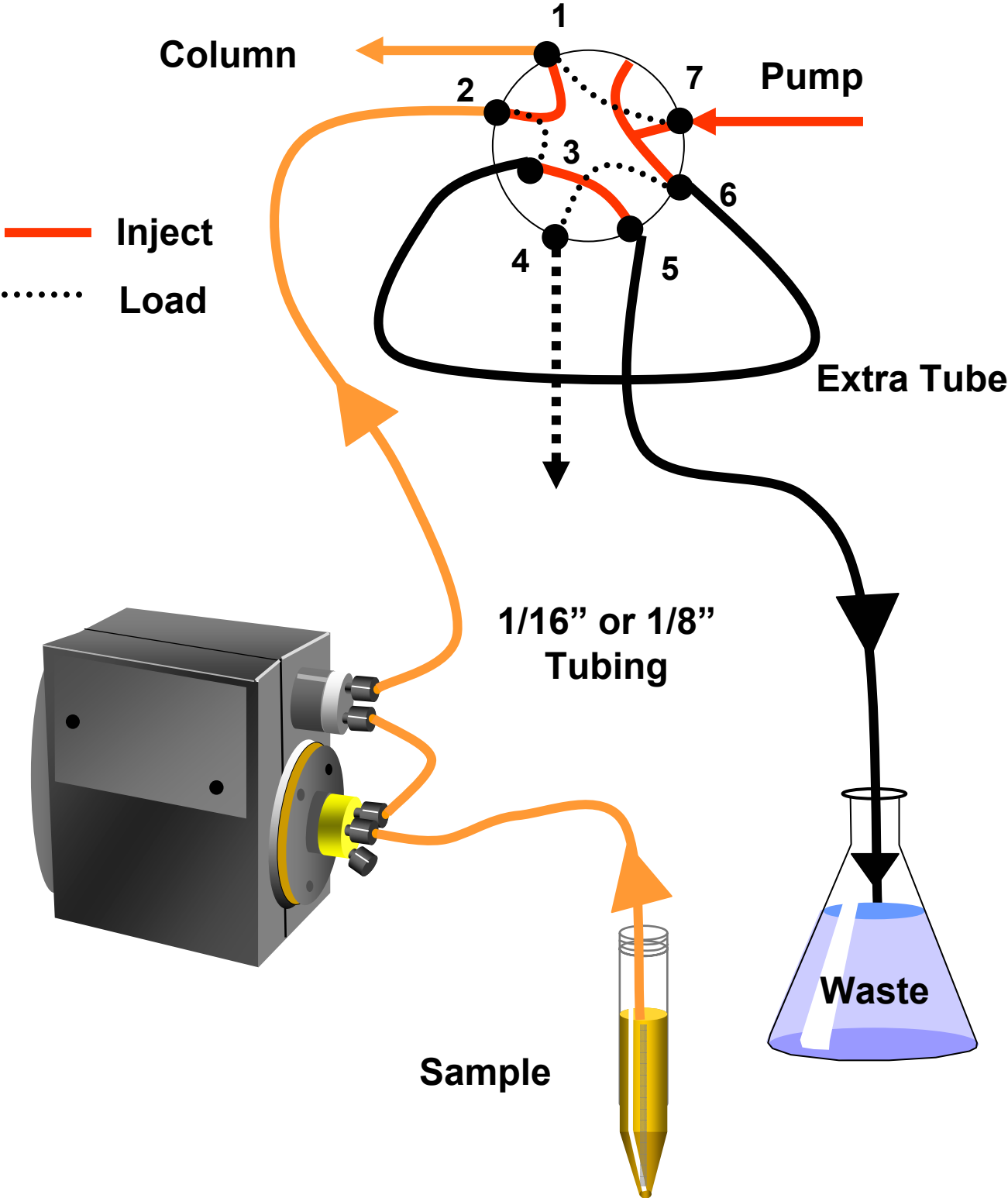
MULTI-LOADING A SAMPLE LOOP



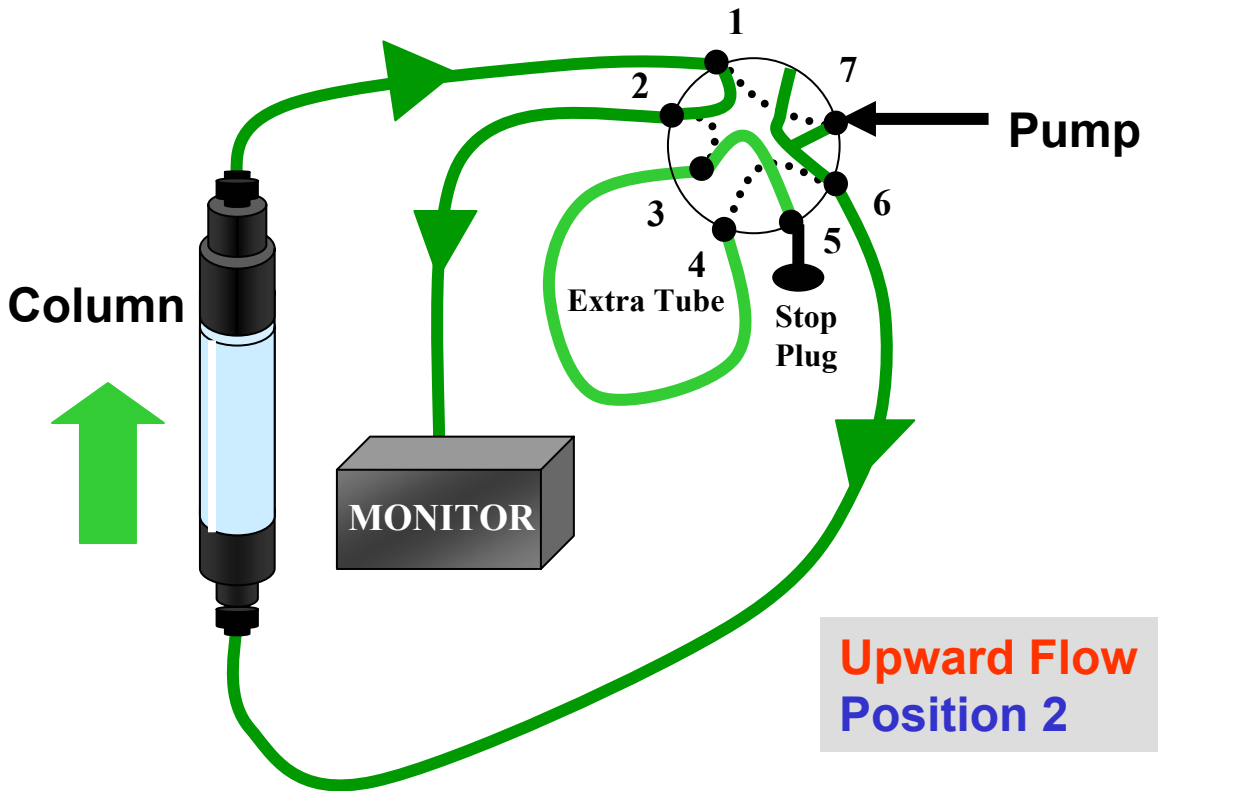
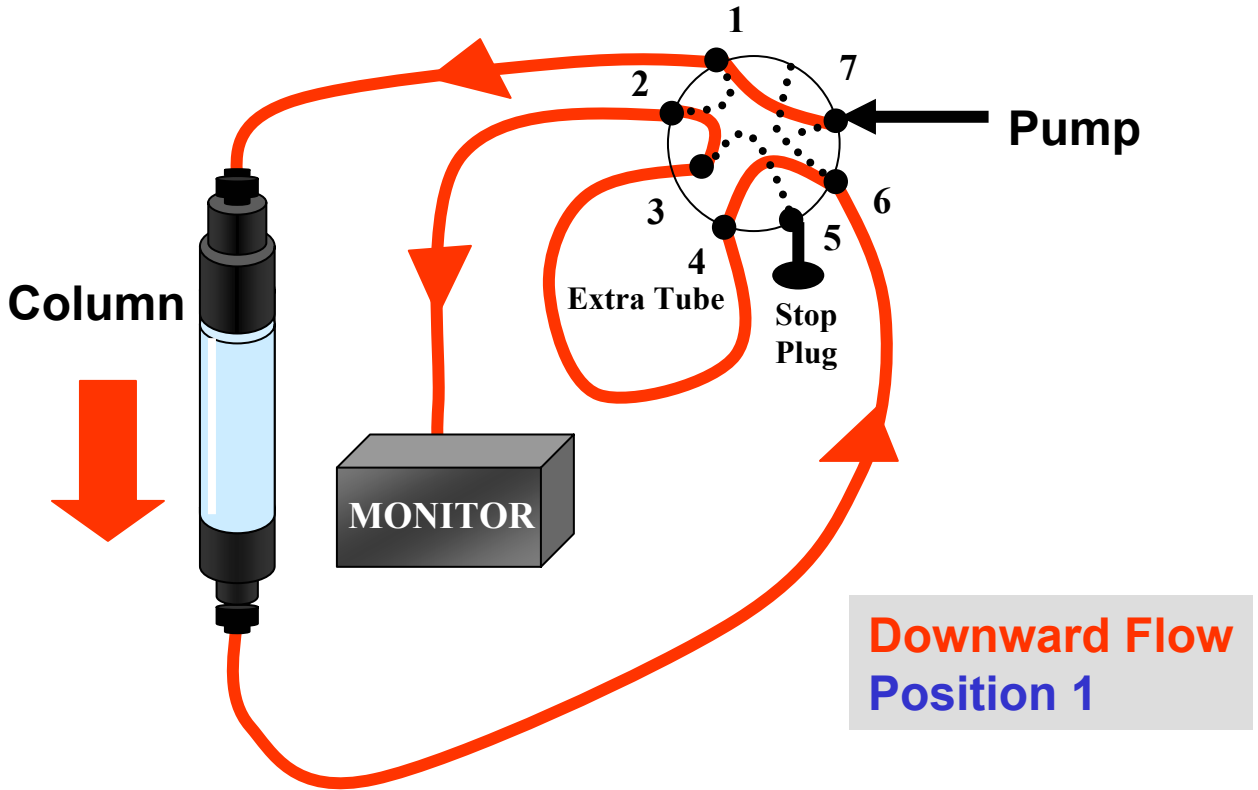
MULTI-LOADING A SUPER LOOP



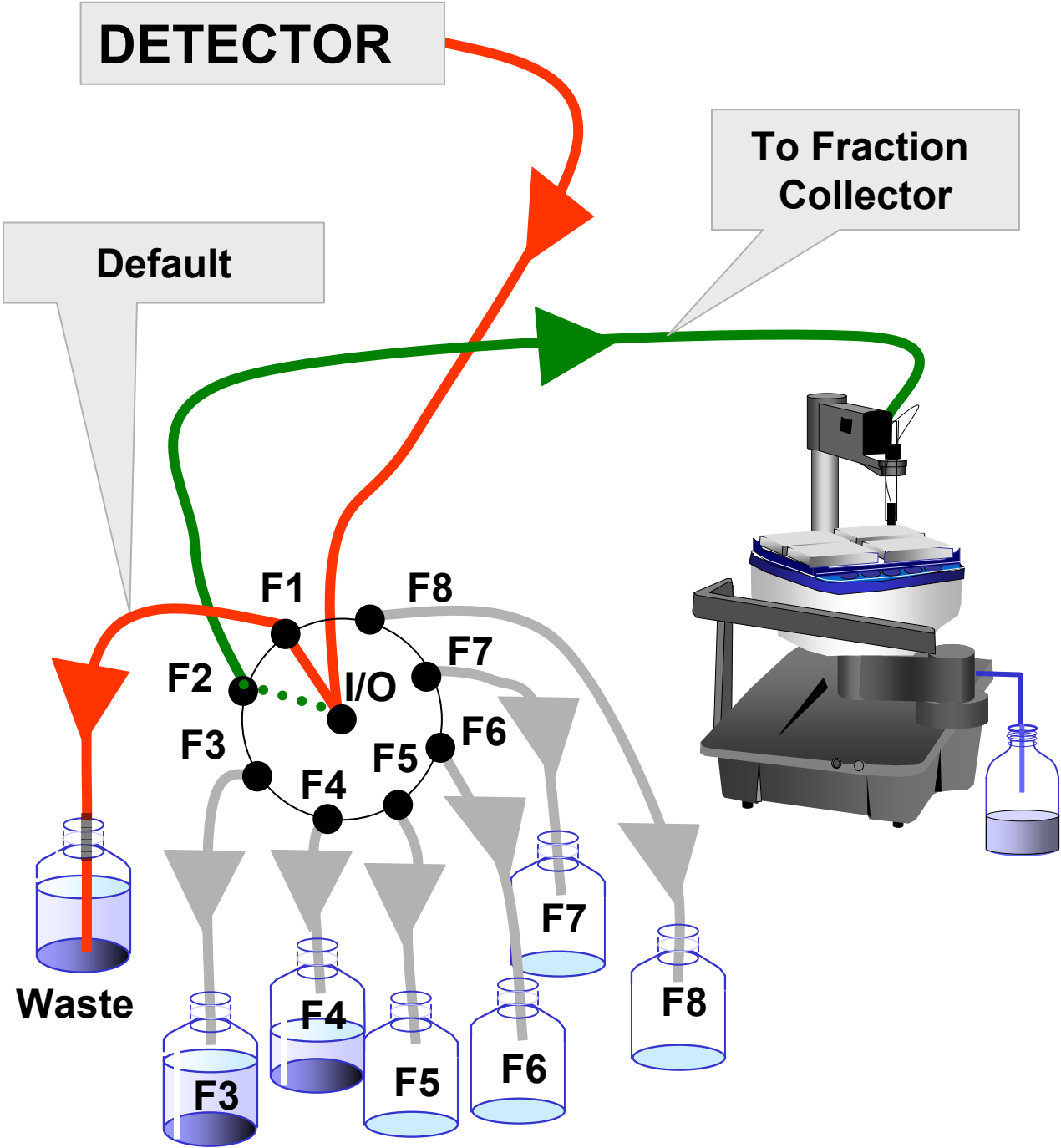
DIRECT LOADING ON TO COLUMN



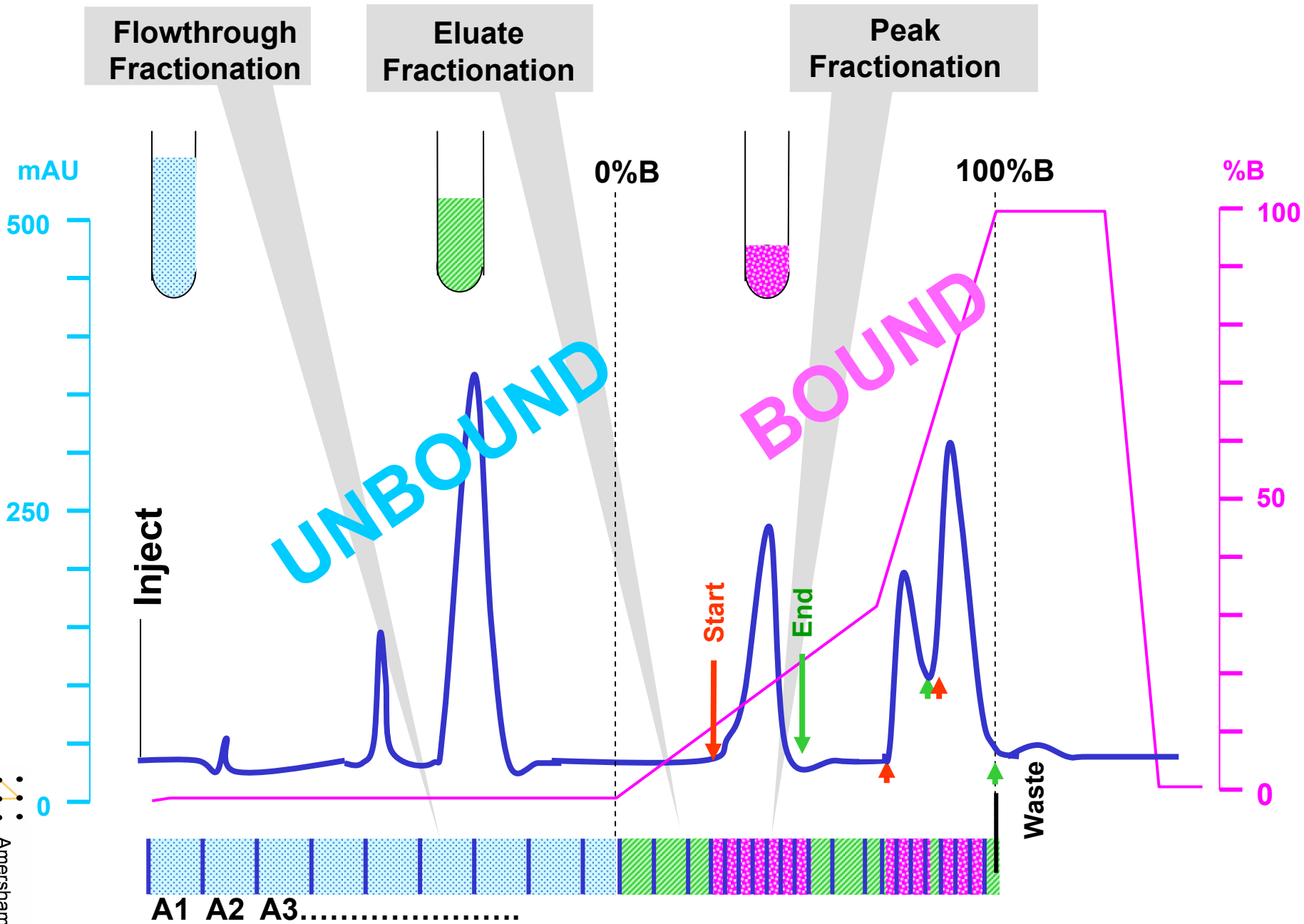
REVERSE FLOW VALVE (INV-907)



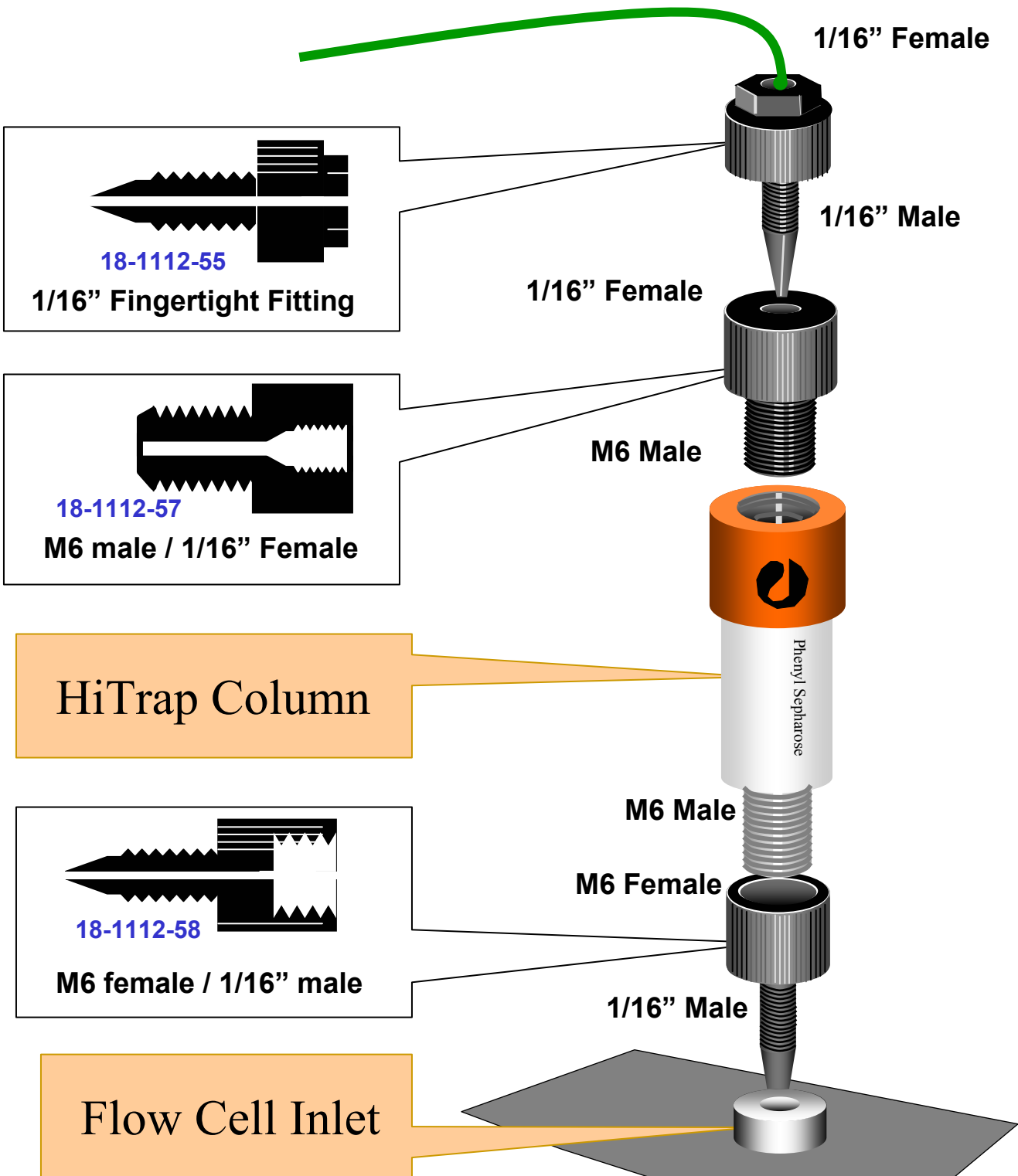
OUTLET VALVE PV-908



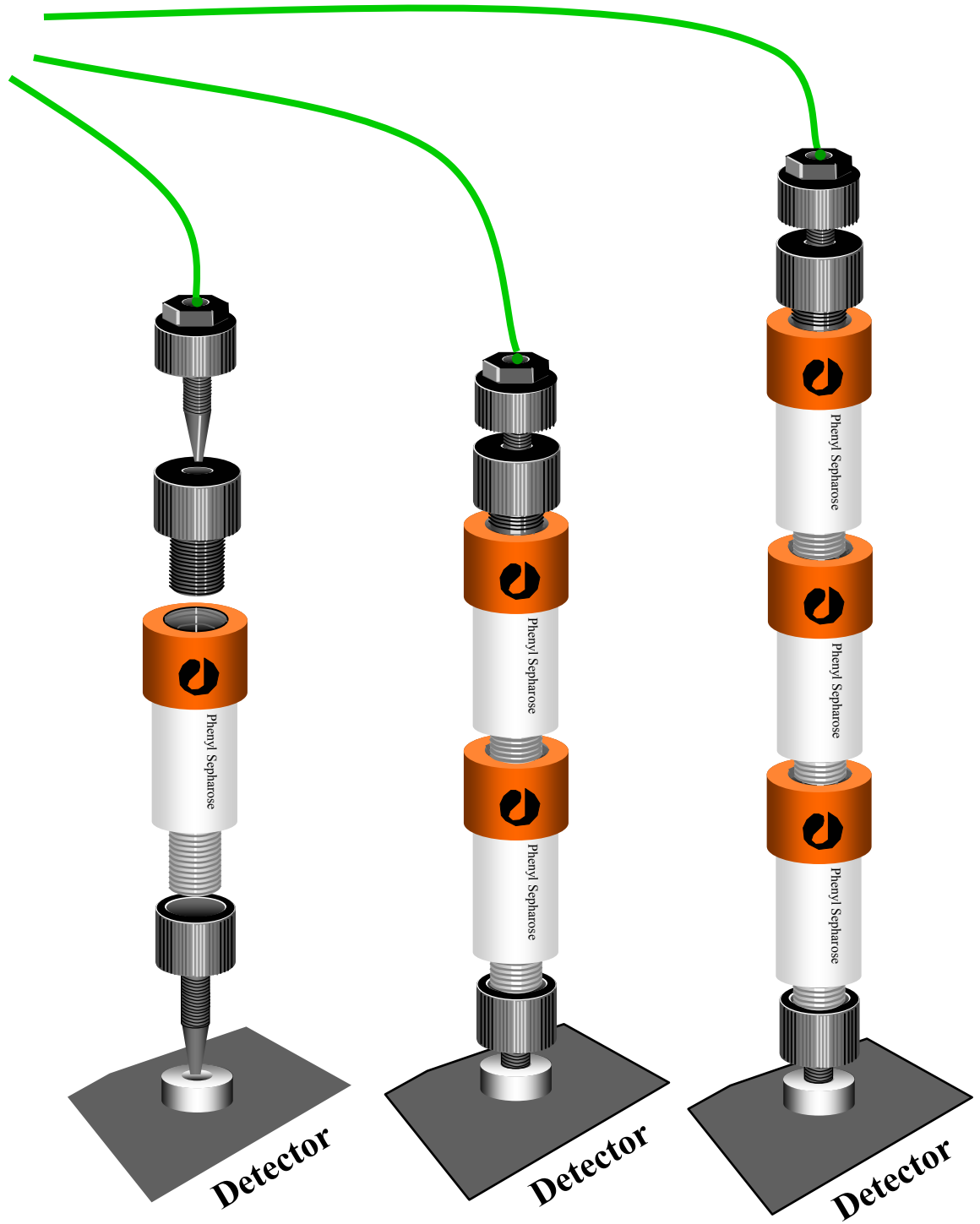
Fraction Collection



HiTrap Connections

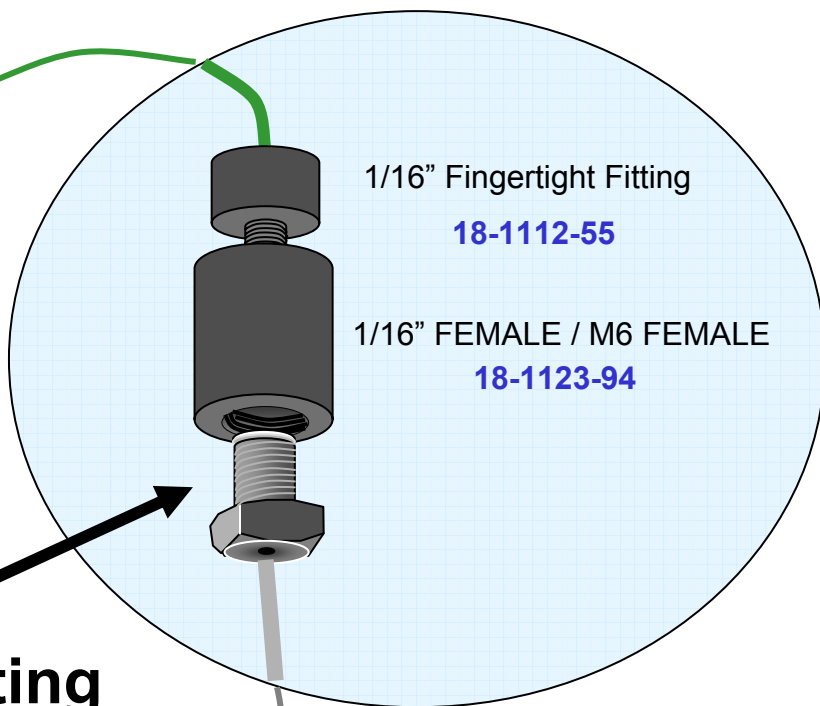
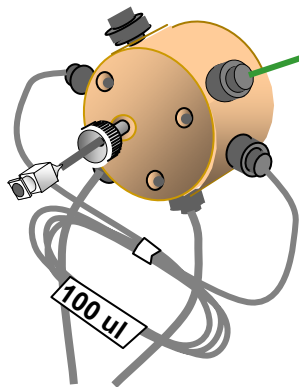


Multiple HiTrap Arrangement (Series)

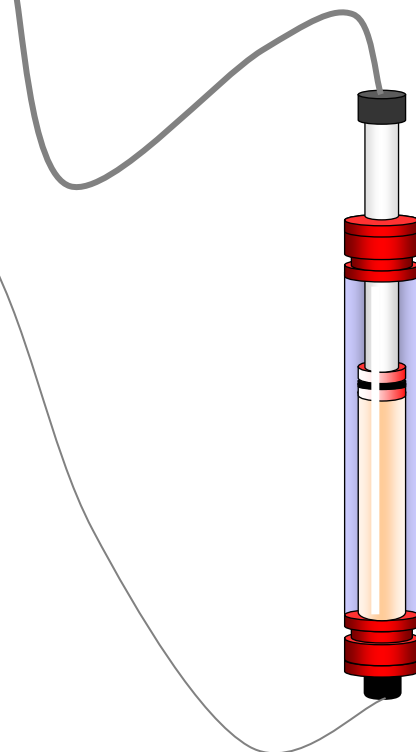
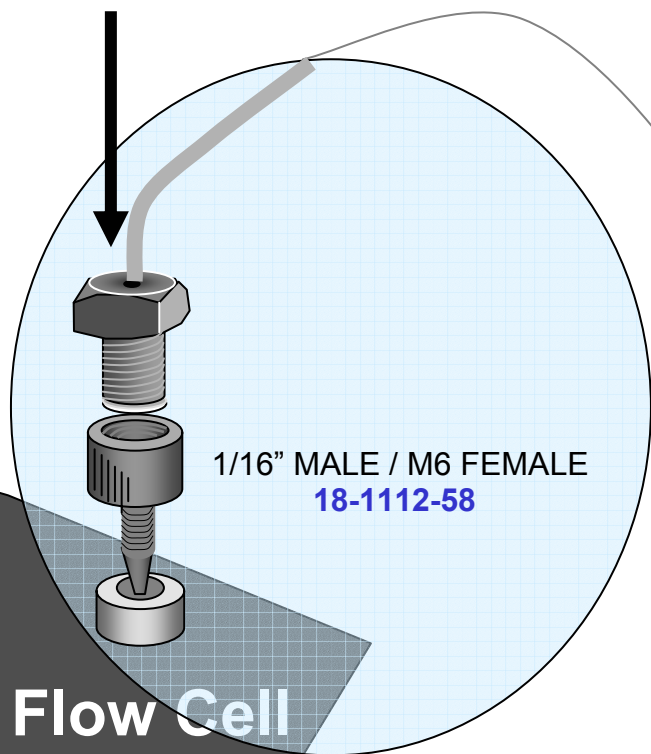


Traditional FPLC fitting to ÄKTA / HPLC

Injector



Flange M6 Fitting



Tubing Fittings



18-1112-55

1/16" Fingertight Fitting



18-1112-58

Flange Fitting Adapter



18-1112-51

Luer Fitting Adapter



18-1112-52

Fingertight Stop Plug



Flangless Inlet Connector

3/16" 18-1112-49

1/8" 18-1121-17

1/16" 18-1127-07



18-1112-57

M6 male / 1/16" Female



18-3955-01

1/16"female X 1/16"female Union Ti

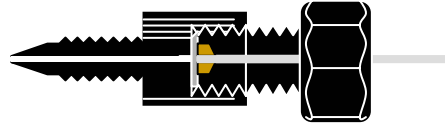


18-1123-94

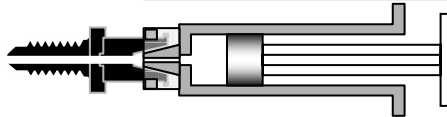
M6 female X 1/16"female Union



1/16" PEEKTM Tubing



FPLC Flange Fitting



Luer Syringe



18-1112-50

5/16" Stop Plug



Flangless Buffer Inlet Ferrule

3/16" 18-1112-48

1/8" 18-1121-18

1/16" 18-1127-06

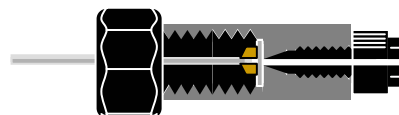


18-1017-98

Tubing Connector
M6 male / O - ring

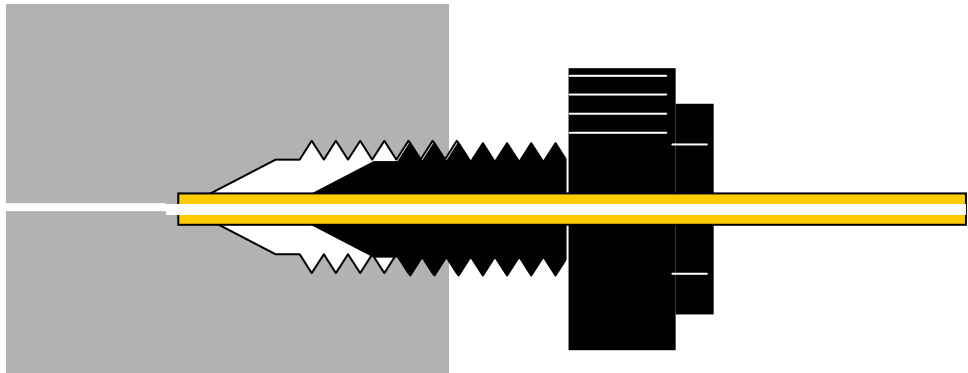


Union + 2 Fingertight Fittings

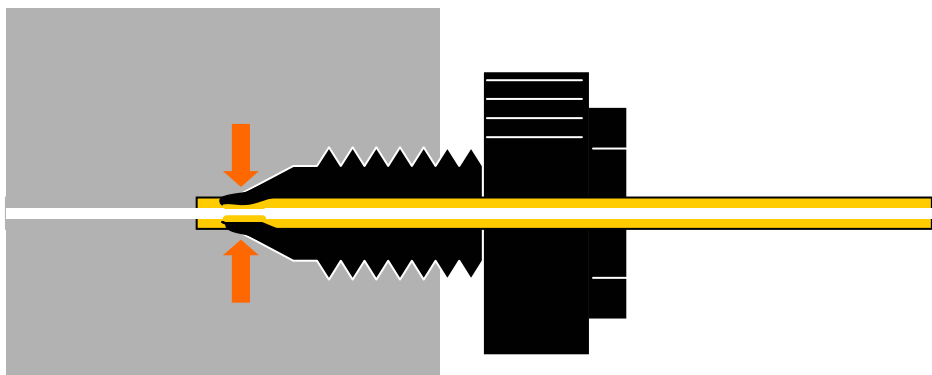


FPLC Flange - 1/16" Fingertight

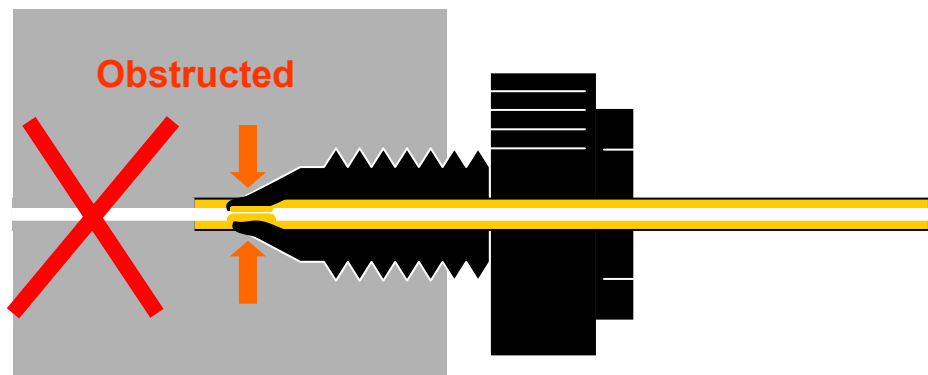
COMPRESSION FITTINGS



Untightened

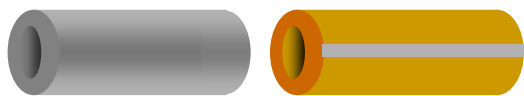


Correctly tightened



Over tightened Tubing Restricted

PEEK™ Tubing



Gray, 1/16" x 1.0 mm (7.85ul / cm)



Green, 1/16" x 0.75 mm (4.42ul / cm)



Orange, 1/16" x 0.5 mm (1.96ul / cm)



Blue, 1/16" x 0.25 mm (0.49ul / cm)

Teflon / Tefzel Tubing



3/16" OD

[18-1112-47](#)



1/8" OD

[18-1121-16](#)

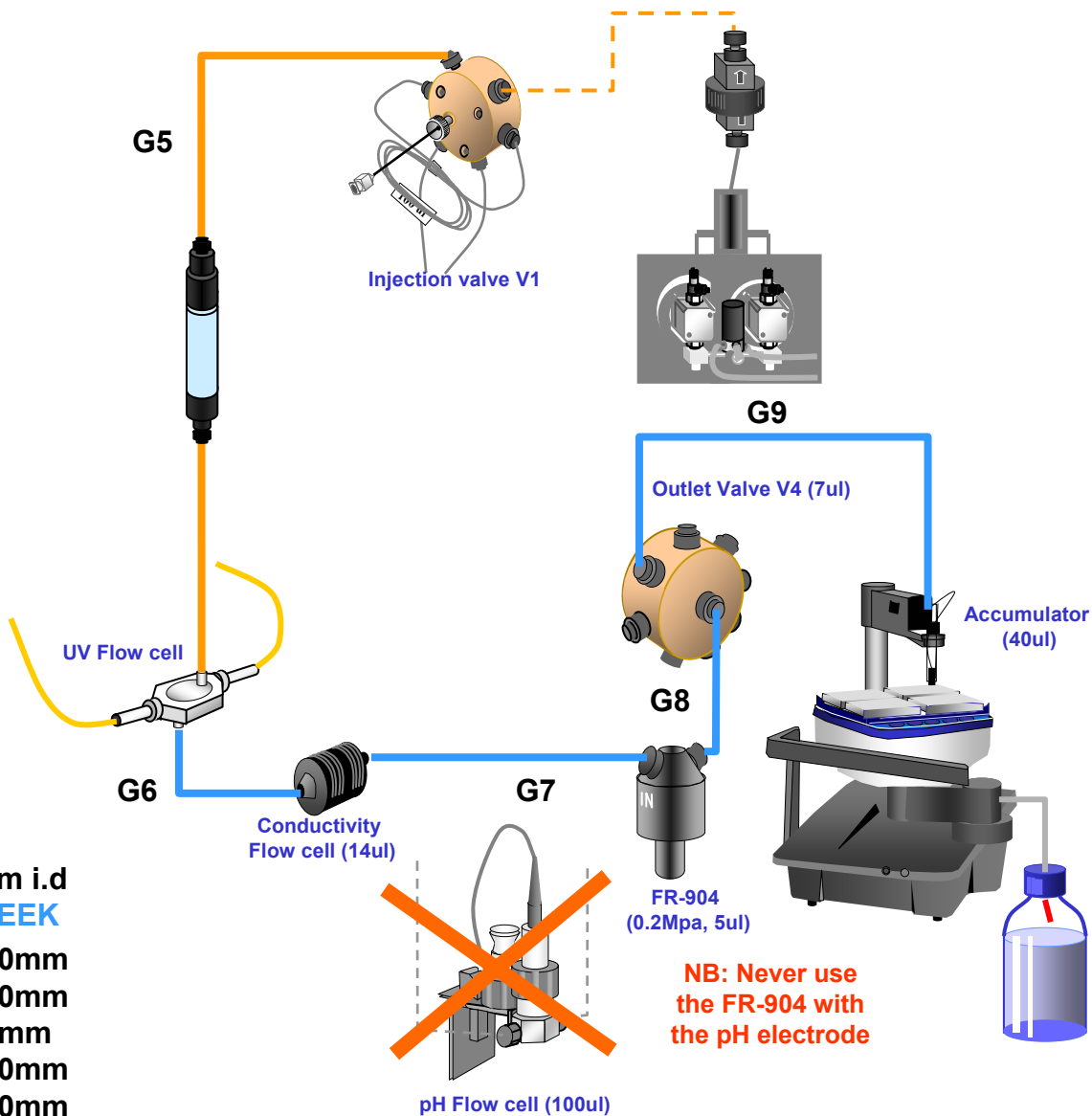


1/16" OD

[18-1119-74](#)

Tubing Kit Changes - ÄKTApurifier 10

GENERAL FLOW (at delivery)



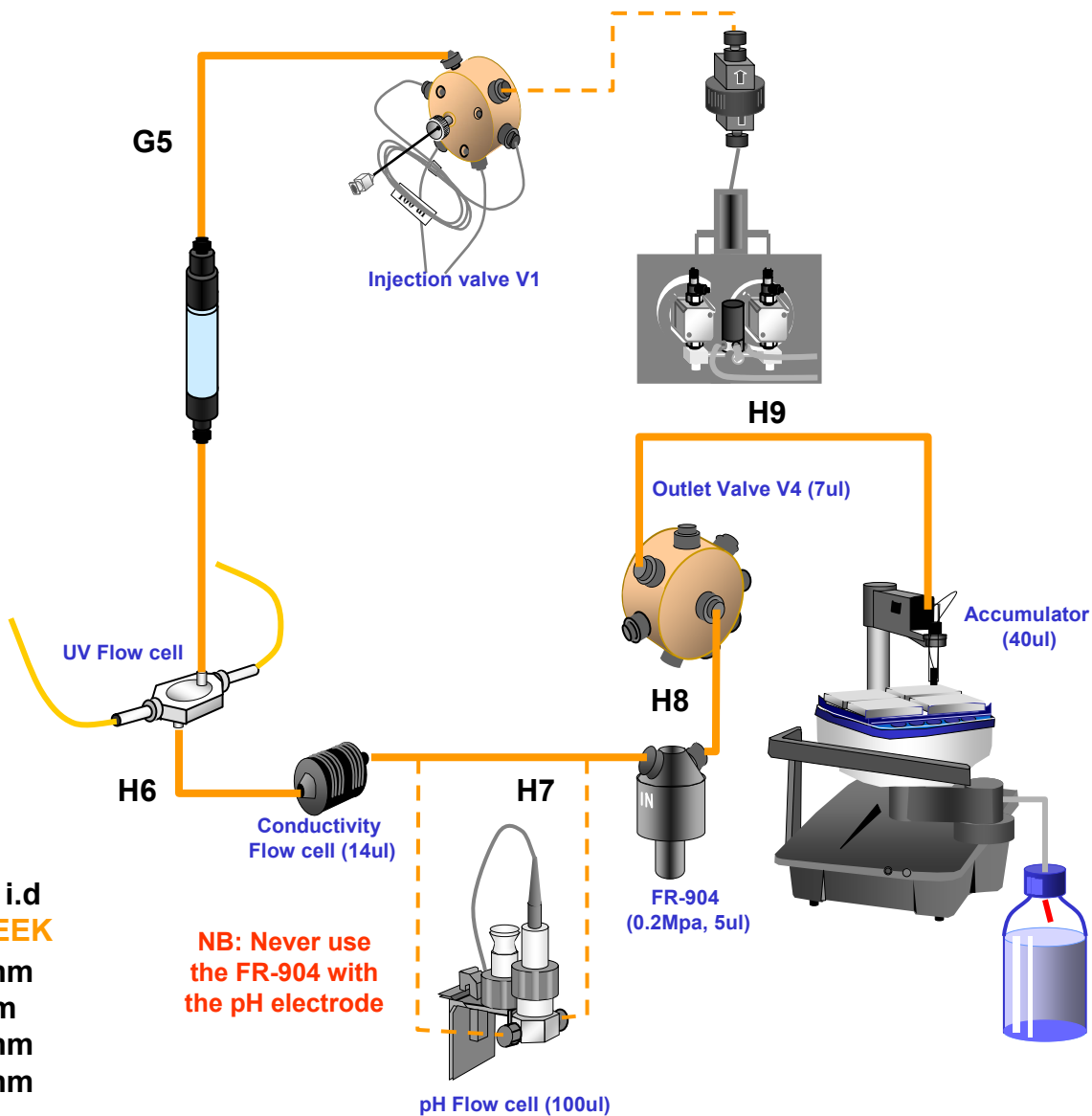
0.25 mm i.d
Blue PEEK

G5 400mm
G6 160mm
G7 80mm
G8 130mm
G9 500mm

Tubing Kit	No Frac	Frac 901	Frac 950
AKTApurifier 10 , 0.50 tubing kit		232	382
AKTApurifier 10 , 0.50 tubing kit + pH electrode		354	504
AKTApurifier 10 , 0.25 tubing kit		88	238

Tubing Kit Changes - ÄKTApurifier 10

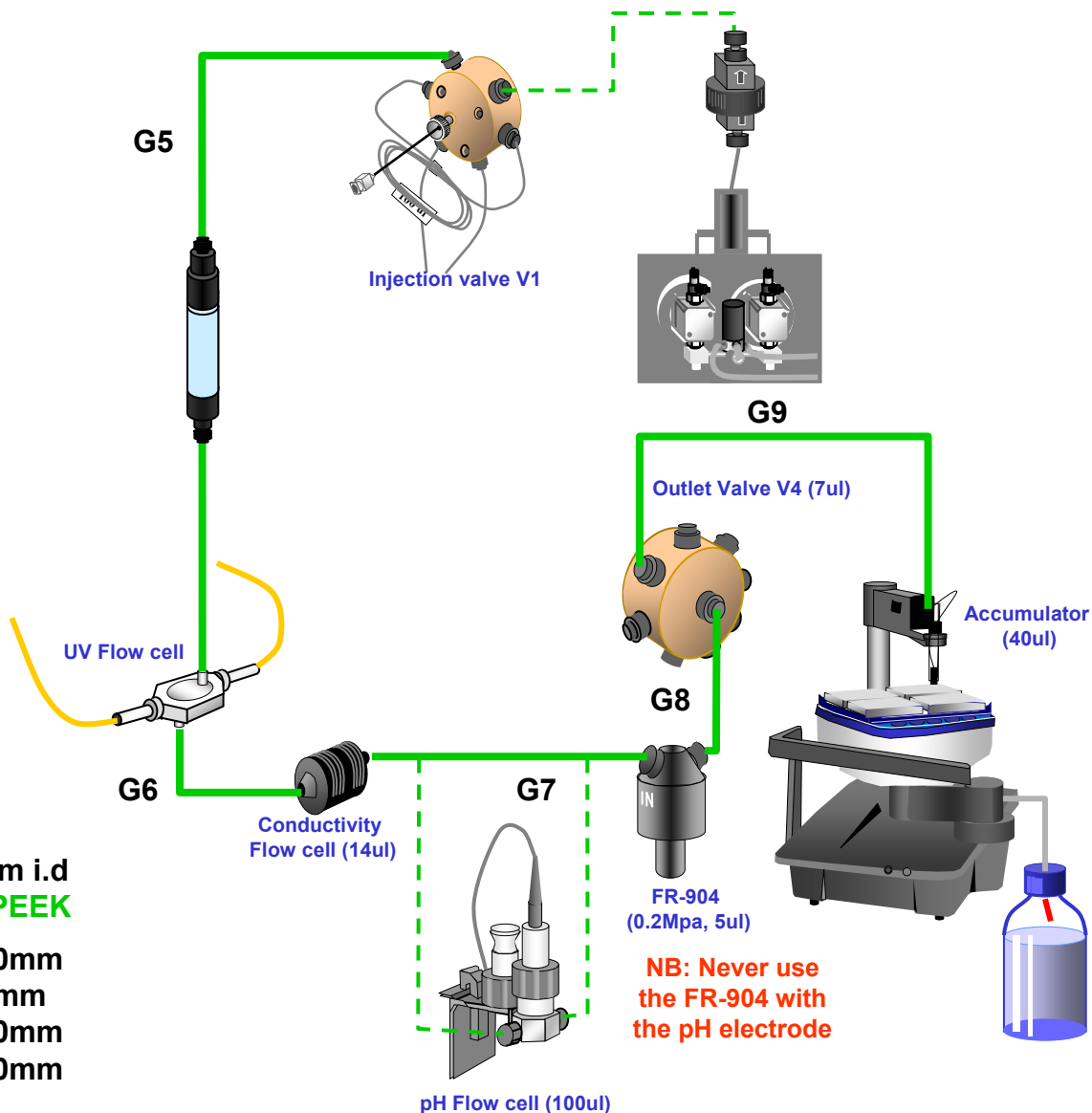
HIGH FLOW



Tubing Kit	No Frac	Frac 901	Frac 950
AKTApurifier 10 , 0.50 tubing kit		232	382
AKTApurifier 10 , 0.50 tubing kit + pH electrode		354	504
AKTApurifier 10 , 0.25 tubing kit		88	238

Tubing Kit Changes - AKTApurifier 100

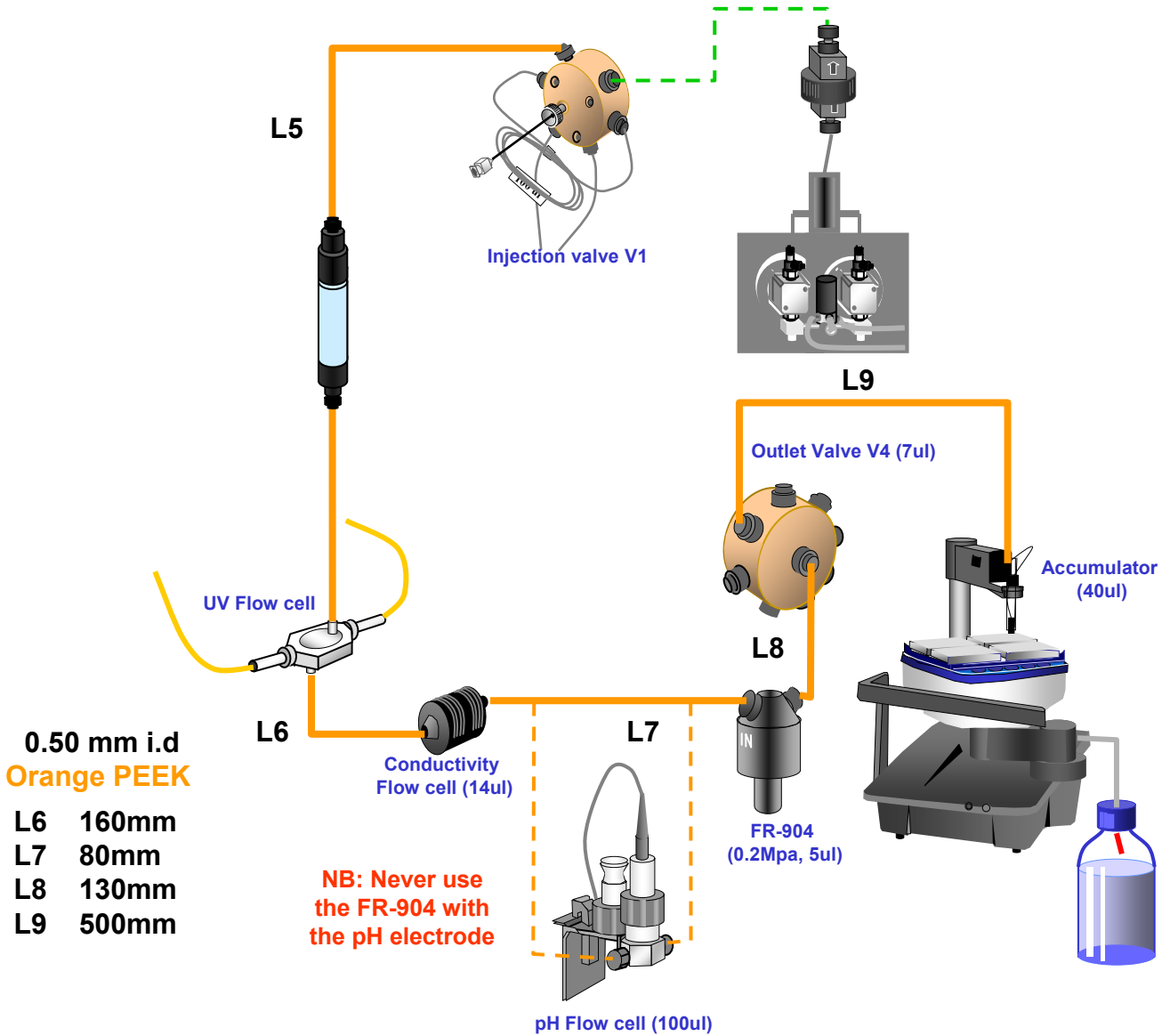
HIGH FLOW (at delivery)



Tubing Kit	No Frac	Frac 901	Frac 950
AKTApurifier 100 , 0.50 tubing kit		232	382
AKTApurifier 100 , 0.75 tubing kit		470	620
AKTApurifier 100 , 1.00 tubing kit		769	809
AKTApurifier 100 , 0.50 tubing kit + pH electrode		354	504
AKTApurifier 100 , 0.75 tubing kit + pH electrode		672	862
AKTApurifier 100 , 1.00 tubing kit + pH electrode		955	995
AKTAbasic 100 , 0.75 tubing	290		

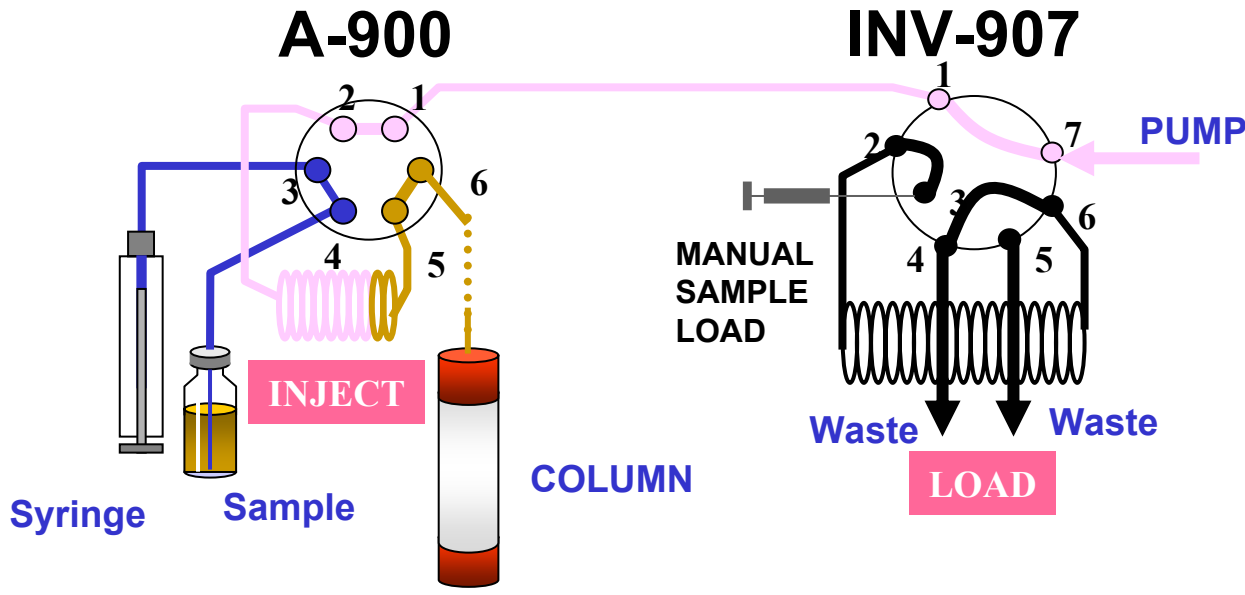
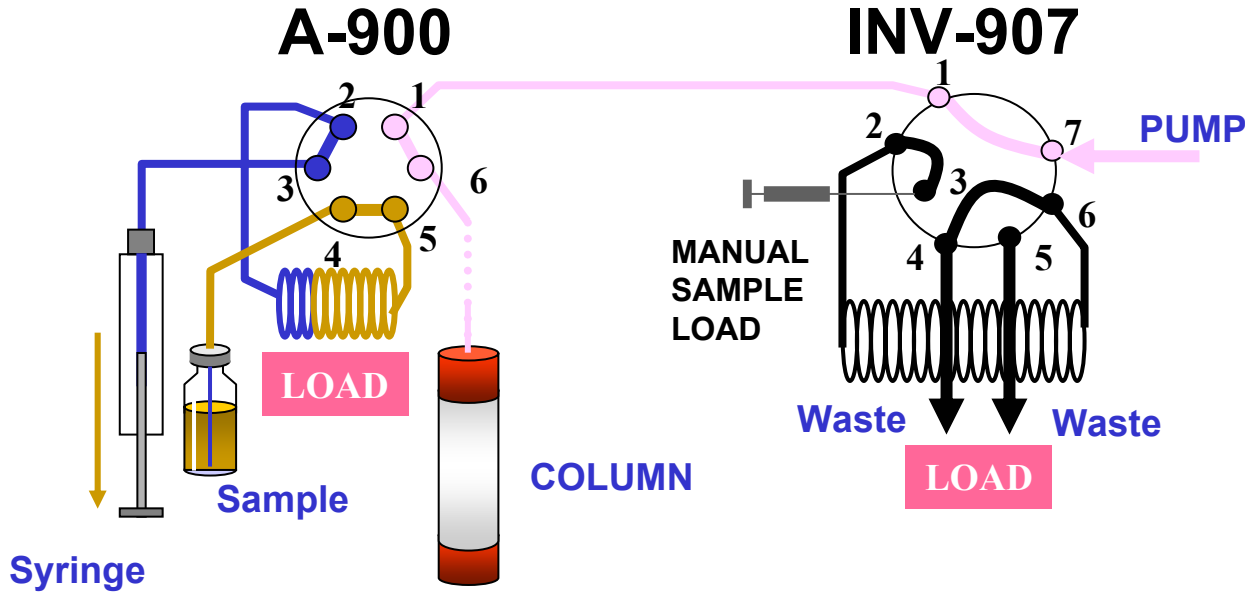
Tubing Kit Changes - ÄKTApurifier 100

LOW FLOW



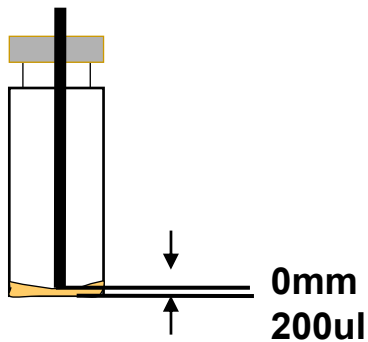
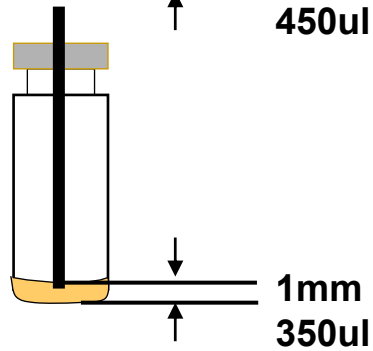
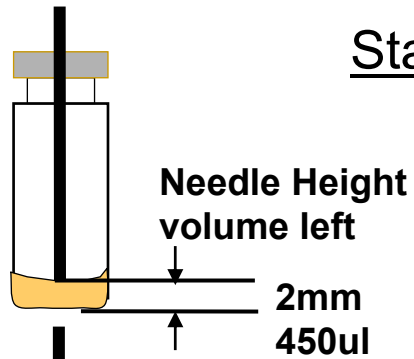
Tubing Kit	No Frac	Frac 901	Frac 950
AKTApurifier 100 , 0.50 tubing kit		232	382
AKTApurifier 100 , 0.75 tubing kit		470	620
AKTApurifier 100 , 1.00 tubing kit		769	809
AKTApurifier 100 , 0.50 tubing kit + pH electrode		354	504
AKTApurifier 100 , 0.75 tubing kit + pH electrode		672	862
AKTApurifier 100 , 1.00 tubing kit + pH electrode		955	995

A-900 Autosampler



Needle Height

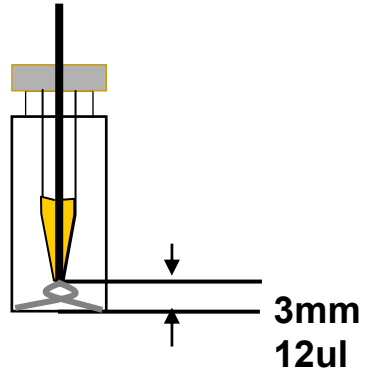
Standard Vial



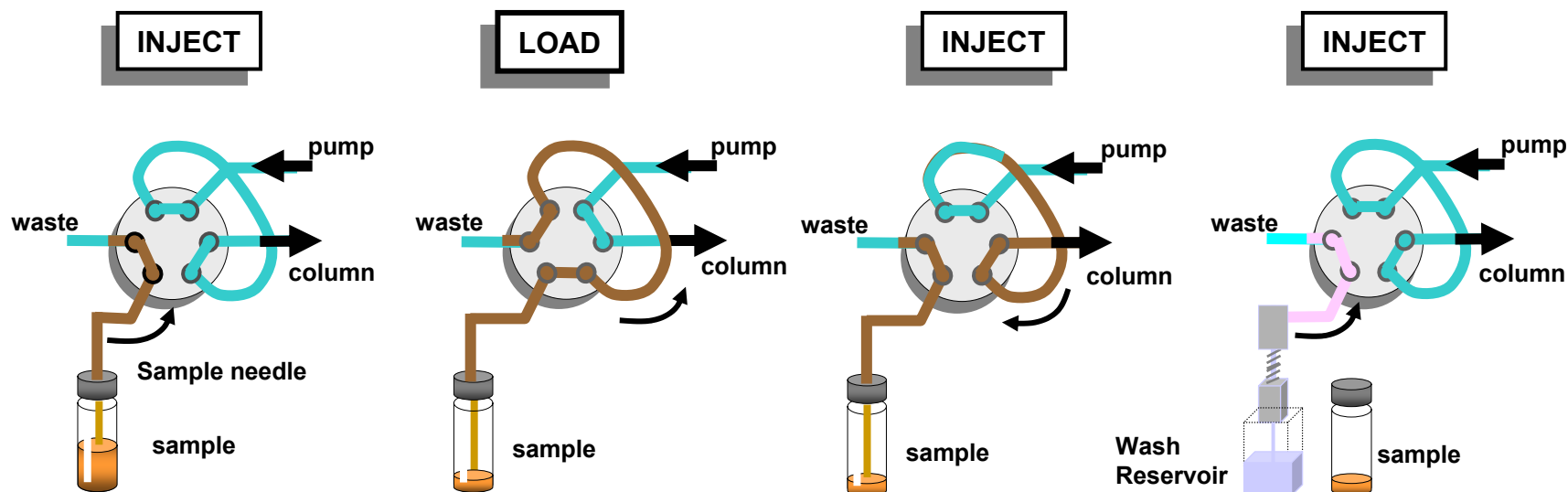
Standard Vial

+

Insert



A-900 Sample Injection (Flushed Loop Injection)



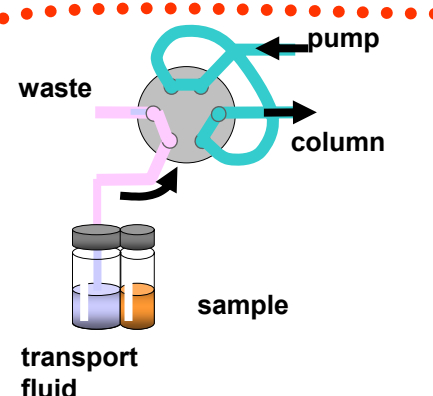
In INJECT, sample flushes the valve channel.
Min. (30ul) with Air Segment
Min. (35ul) without Air segment

In LOAD The sample is drawn up to completely fill the loop.
(no less than twice loop volume recommended)

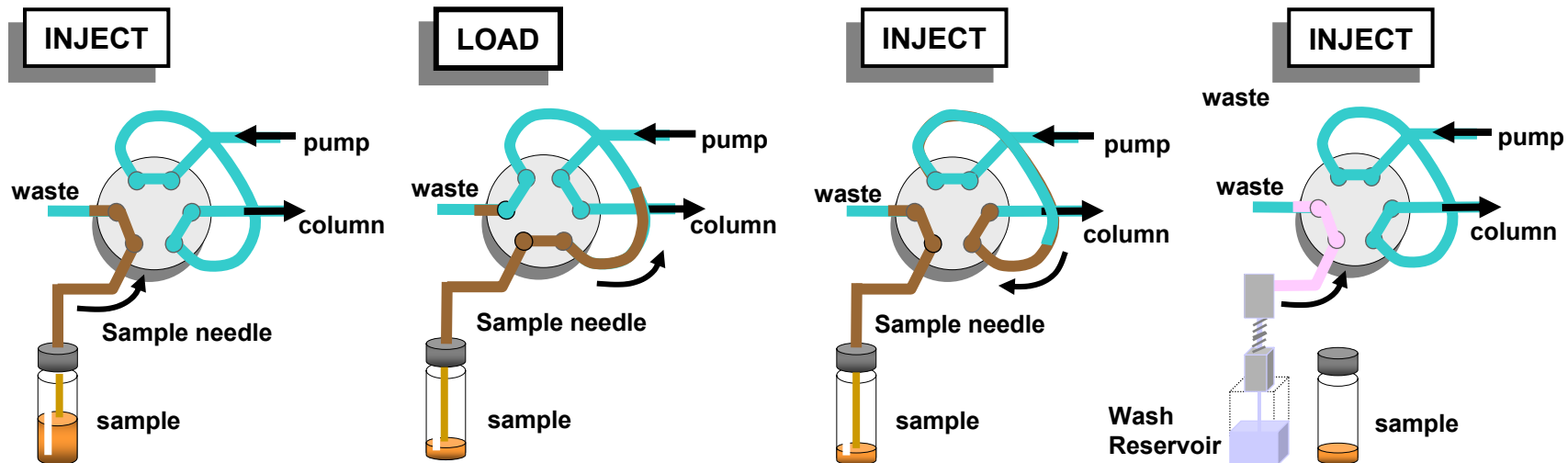
In INJECT sample is washed onto the column.

Final internal needle wash.

Optional External needle wash.



A-900 Sample Injection (Partial Loop Injection)



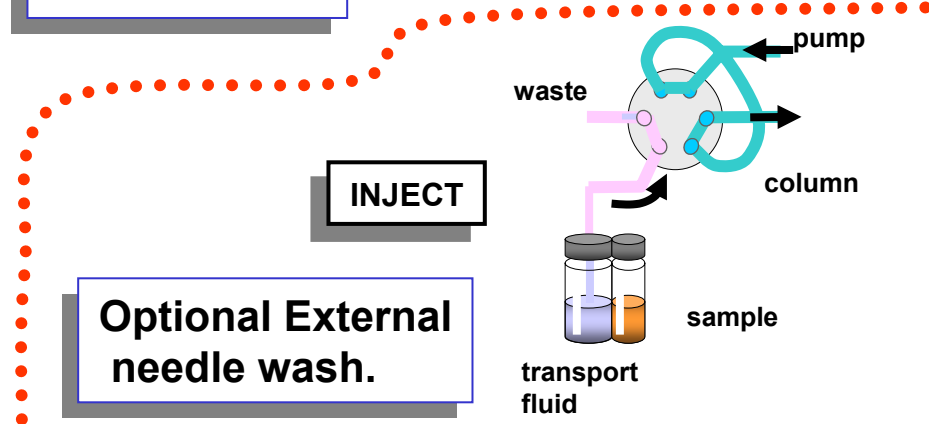
In INJECT, sample flushes the valve channel.
Min. (30ul) with Air Segment
Min. (35ul) without Air segment

The sample is drawn up to partially fill the loop with programmed volume.
(no more than half loop volume recommended)

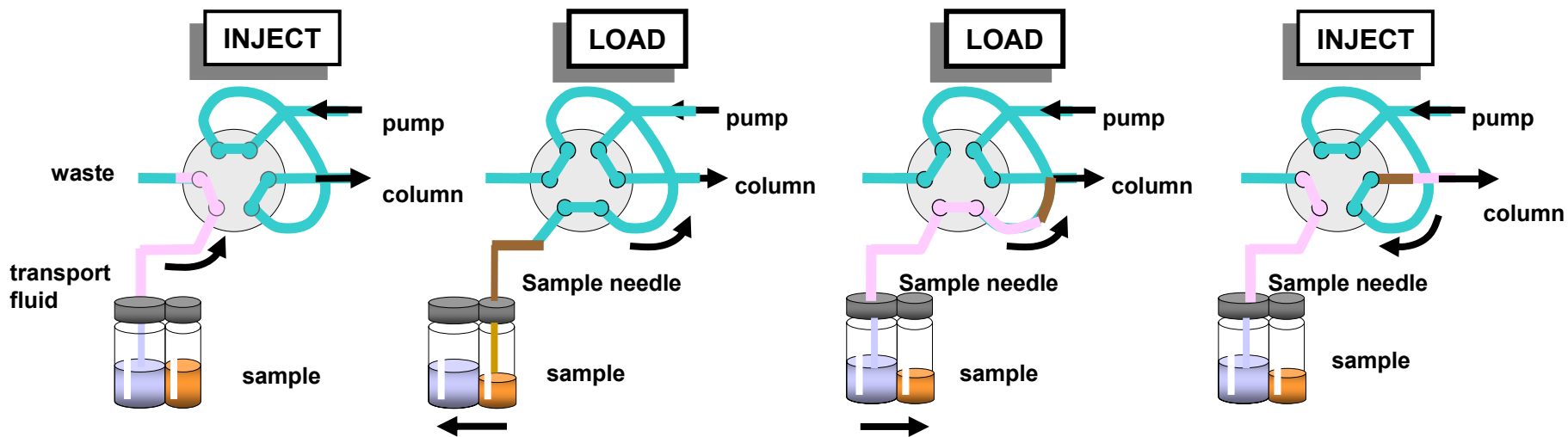
In inject sample is washed onto the column.

Final internal needle wash.

Optional External needle wash.



A-900 Sample Injection (ul Pick-up Injection)



In inject, valve flushes with transport fluid

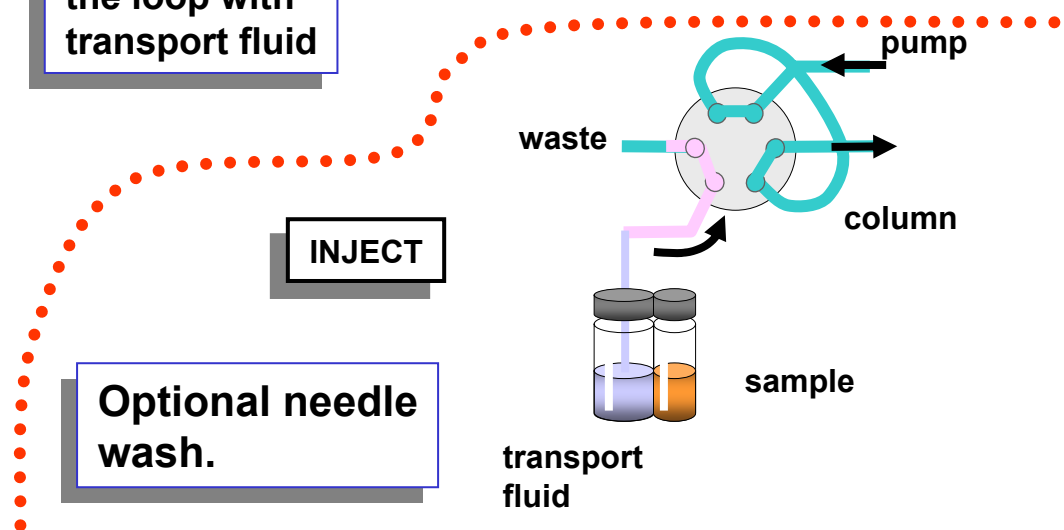
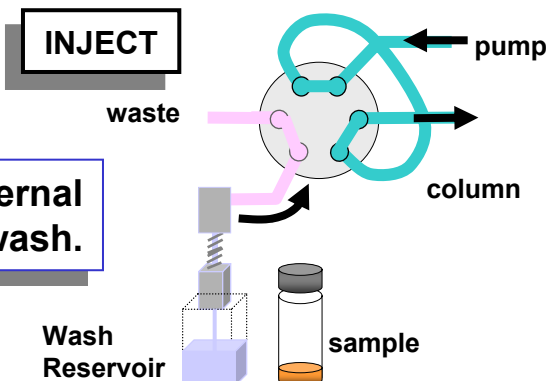
The sample is drawn up from the sample vial

The sample is washed into the loop with transport fluid

In inject sample is washed onto the column

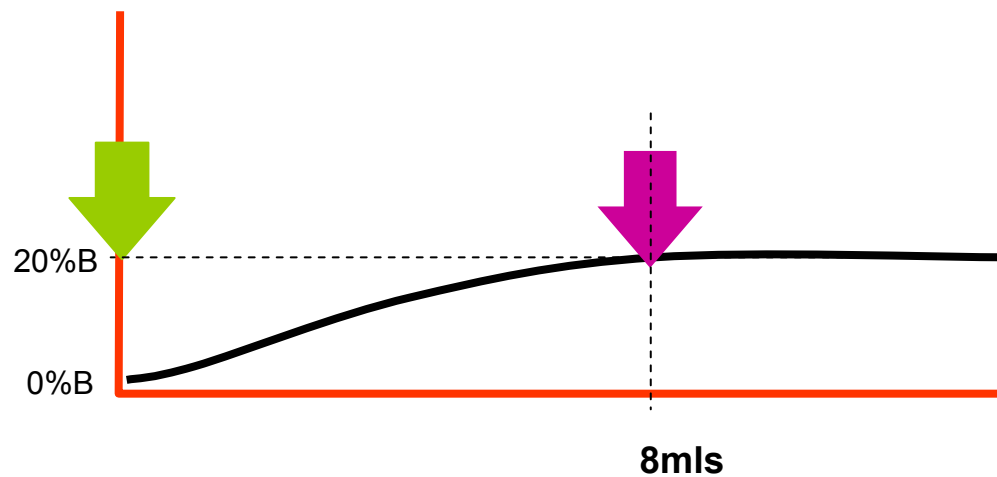
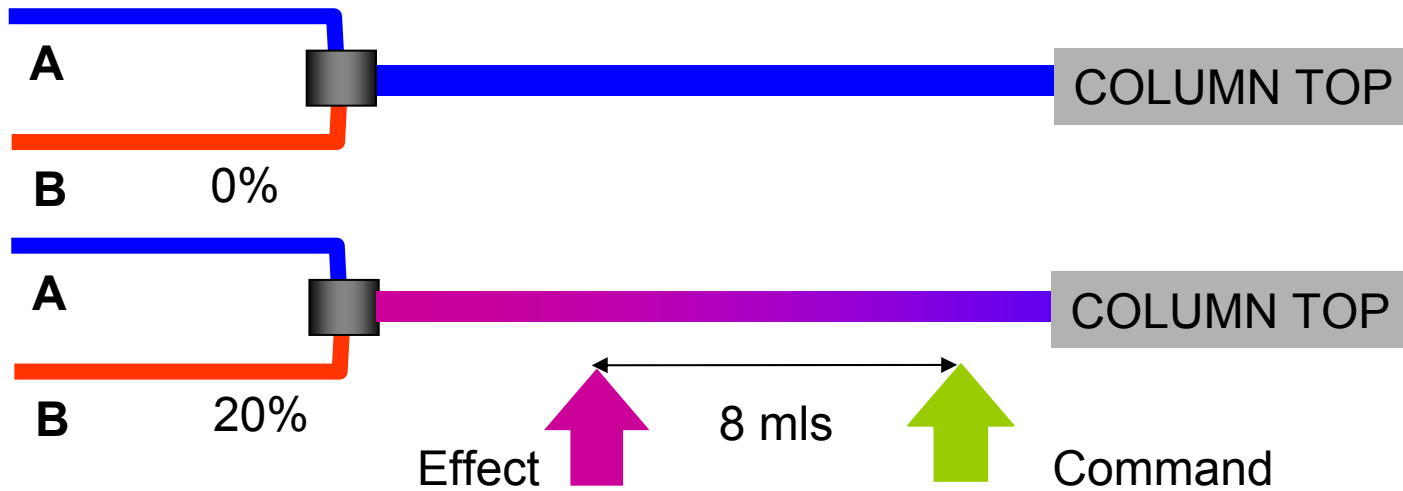
Final internal needle wash.

Optional needle wash.

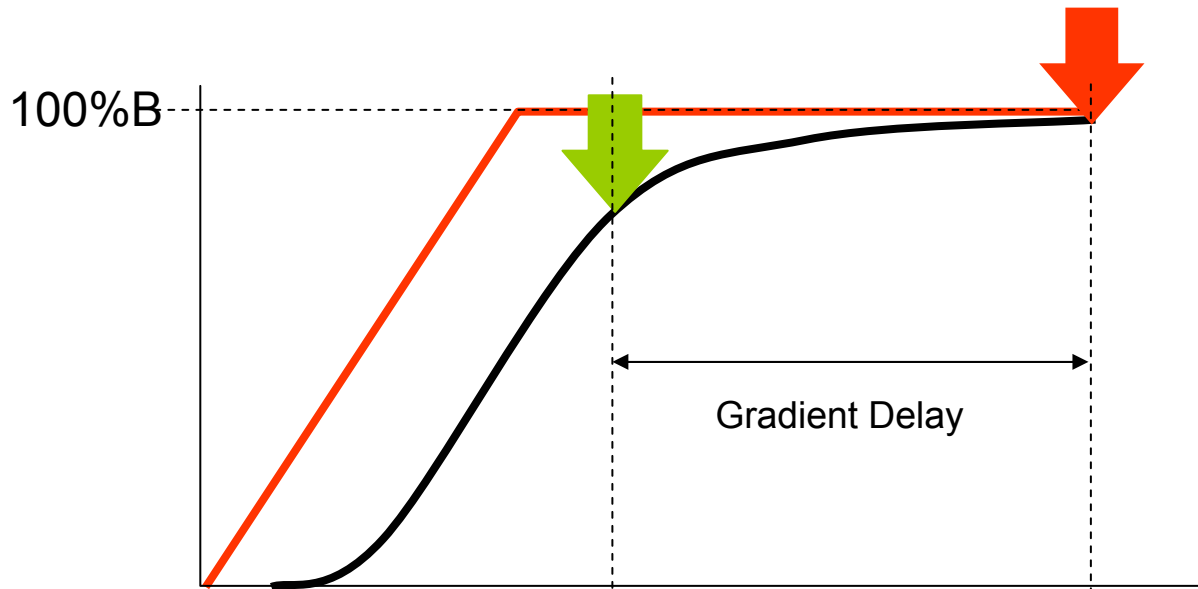
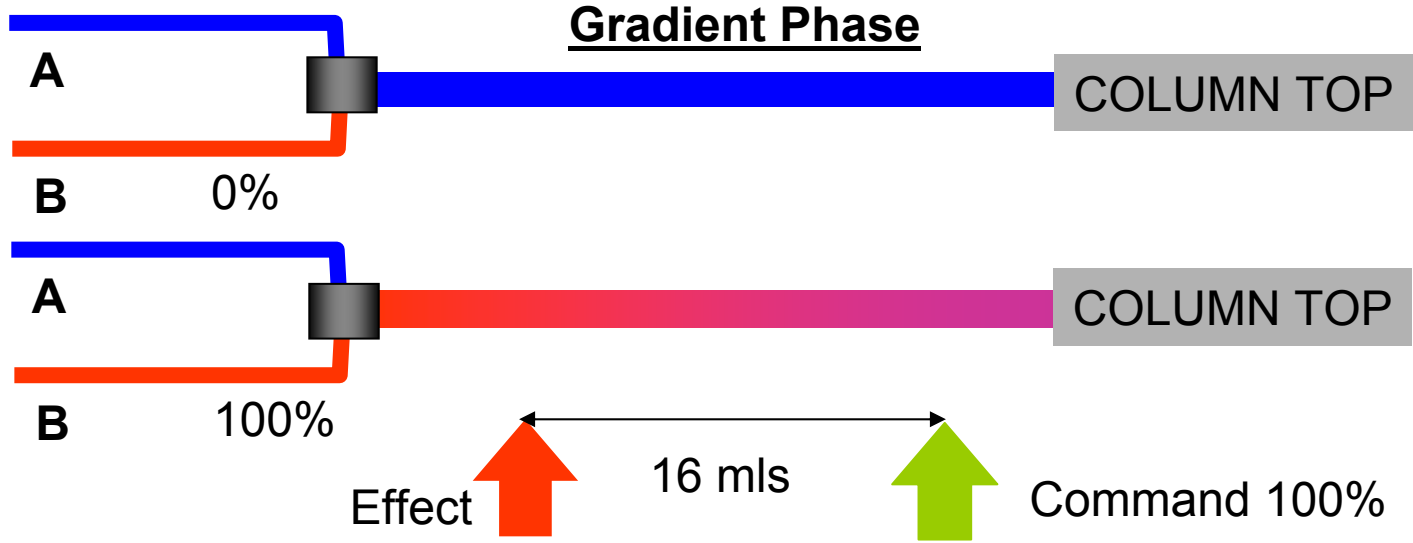


System Compensation Volume

Equilibration Phase



Gradient Delay Volume



Column Pressure (compensation) Flow Restrictor

