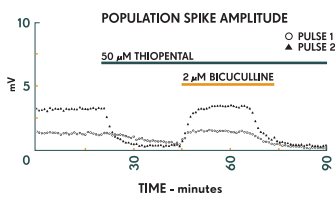


"I am writing to tell you how pleased I am with the ValveBank8 Perfusion System. It's great that I can load the reservoirs, press go, and start recording. I can read papers rather than fussing with solutions and switching valves every 10-15 minutes. Since solutions are switched at exactly the same time from one experiment to the next, I have been able to automate my data analysis protocols as well."

Brain Slice Field Recording



Unattended solution delivery using a ValveBank8 AutoPrime Perfusion System

Dr. M. Bruce MacIver,
M.Sc., Ph.D.

Department of Anesthesia
Stanford University
Medical Center

Increase reproducibility with fewer hours in lab.



Gravity Perfusion Systems

- Unattended solution switching**
 Avoid vibrations from switching valves by hand. The ValveBank® or ValveLink® controller handles all solution delivery so you can watch results – not switch stopcocks. Many special features are included for easy perfusion control. Low noise circuitry.
- Increased reproducibility**
 Valve switching is accurate to 0.01 seconds with programs up to 99 hours long under microprocessor control. Consistent liquid delivery means better data.
- Pinch, PTFE-Inert and Lee™ Valves**
 Choose between speed, cost, and ease of cleaning. Several options are available for fittings and reservoirs.
- Manual and external valve control**
 Flexible design. Easy cleaning and calibration. Primary/secondary mode valve operation controlled by your computer, pClamp, Patchmaster, SutterPatch, LabView, AxoGraph, etc.

Valve Choices:

- **Pinch Valves for Reduced Maintenance**

Easiest valves to clean and switch tubing. Liquids never touch the valves. Switches in 30-50 ms. 1/32" i.d. silicone tube passes through, and is pinched closed by solenoid activation. All AutoMate Scientific valves include an individual indicator LED. Our aluminum enclosure keeps the valves dry from spills and offers luer lock ports for syringe reservoirs.

- **PTFE-Inert Valves for Fast Switching**

Required for fast kinetics applications. Excellent chemical and corrosion resistance. Non-stick surface resists particles and chemical deposits. Switches in less than 10 ms, with 20 μ l of dead volume from port to port. Threaded female inlet and outlet ports accept Hose Barb, Luer Lock and Nut & Ferrule fittings (see diagrams next page).

- **Lee™ Mini Valves for Extremely Fast Switching and Minimal Pressure Pulse**

For the most demanding applications AutoMate Scientific offers tiny valves from the Lee Company. Enclosed in our aluminum box with luer locks for syringe reservoirs, these valves can open and close in 1.5-4 ms with a ValveLink8.3 controller.

Perfusion Systems Include:

Controller, valves, 60 ml syringe reservoirs, 2-way stopcocks, (reservoir bracket and drippers in PTFE-Inert systems only), ringstand, 1/16" i.d. tubing and four-, eight- or sixteen-into-one micro-manifold with built-in flow control. 5, 15, 35, 60 or 140 ml syringe reservoirs available.

The Economy Pinch Valve System includes a ValveLink8 controller, four pinch valves, 35 ml syringes, 2-way stopcocks, ringstand, 1/16" i.d. tubing and four-into-one micro-manifold with built-in flow control.

Computer Interfacing:

Perfusion systems can be controlled by a computer using data acquisition hardware (i.e., DigjData, ITC-16, or National Instruments board) and software (i.e., pCLAMP, Patchmaster, SutterPatch, or LabView). Both ValveBanks and ValveLinks accept real-time TTL inputs to control valves. Most acquisition software already being used in your experiments can talk to our controllers. AutoMate Scientific offers an optional program called EasyCode® for the Macintosh and PC/Windows to program ValveBanks (not ValveLinks). This software is used before an experiment – valve sequences are downloaded into the memory of the ValveBank where they are run. An article by AutoMate Scientific can be found in Axon Instrument's AxoBits 17 newsletter outlining these strategies – accessible on our web site.

Pinch Valves



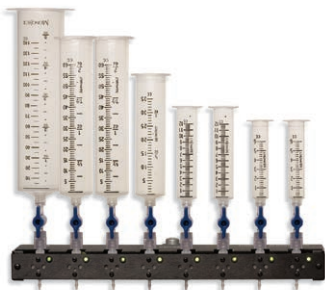
PTFE-Inert Valves



Lee™ Valves



Luer-lock Fittings in PTFE-Inert Valves



Luer-lock fittings in PTFE-Inert valves allow direct connection of syringe reservoirs for minimal dead volume.

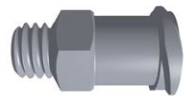
PTFE-Inert Valve Fitting Choices

Hose Barb



- Standard
- Available for 1/8" and 1/16" i.d. soft tubing

Lure-Lock



- For direct attachment of syringes
- Eliminates extra tubing between reservoirs and valves
- Includes 2-way stopcocks and syringes

Nut & Ferrule



- HPLC-like, screw-in fittings for rigid, small-diameter (1/16" o.d.) tubing



**AUTOMATE
SCIENTIFIC**

Ordering Information

Part No.	Perfusion Systems
17-21-20	ValveLink [®] 4.3 Economy Pinch Valve Perfusion System
13-01-23	ValveBank [®] 4 PTFE-Inert Perfusion System
13-pp-24	ValveBank4 Pinch Valve Perfusion System - 1/32" i.d. silicone tube
13-21-27	ValveBank4 Lee Mini Valve Perfusion System
17-01-23	ValveLink4.3 PTFE-Inert Perfusion System
17-pp-24	ValveLink4.3 Pinch Valve Perfusion System - 1/32" i.d. silicone tube
17-21-27	ValveLink4.3 Lee Mini Valve 1.5 to 4 ms Perfusion System
13-01-53	ValveBank8 PTFE-Inert Perfusion System
13-pp-54	ValveBank8 Pinch Valve Perfusion System - 1/32" i.d. silicone tube
13-21-57	ValveBank8 Lee Mini Valve Perfusion System
17-01-53	ValveLink8.3 PTFE-Inert Perfusion System
17-pp-54	ValveLink8.3 Pinch Valve Perfusion System - 1/32" i.d. silicone tube
17-21-57	ValveLink8.3 Lee Mini Valve 1.5 to 4 ms Perfusion System
17-01-83	ValveLink16.3 PTFE-Inert Perfusion System
17-pp-84	ValveLink16.3 Pinch Valve Perfusion System - 1/32" i.d. silicone tube
17-11-87	ValveLink16.3 Lee Mini Valve 1.5 to 4 ms Perfusion System

U.S./Canada prices shown. International prices add 15%. Email or visit web store for latest prices.

xx-[TB]-xx Indicate [T]op inflow and [B]ottom outflow PTFE-Inert valve fittings:
 [0]=1/8" i.d. hose barb, [1]=1/16" i.d. hose barb, [2]=Luer-lock female with stopcocks and 35 ml syringes,
 [3]=10-32 threaded nut & ferrules for 1/16" o.d. tubing (add \$30/set of 4), [p]=Pinch valves have no fittings

Systems include: Controller, user manual, valves, 35 ml or 60 ml syringes, stopcocks, (reservoir bracket and drippers in PTFE-Inert systems only), ringstand, 1/16" i.d. Tygon tubing, and 4-, 8- or 16-into-1 micro-manifold with flow control. 5, 15, 35, 60 or 140 ml syringe reservoirs available.

Visit <https://www.autom8.com/build-your-own/> to configure a perfusion system and quote.

Ordering Information

Part No.	Valves & Fittings
	Each pair of 4 valves ordered together will be mounted in a case of 8.
02-01-02	Set of 4 PTFE-Inert valves - cabled and mounted
02-pp-04	Set of 4 Pinch valves - cabled and mounted, 1/32" i.d. silicone tube
02-21-07	Set of 4 Lee mini valves - cabled and mounted
02-01-02i	Individual PTFE-Inert replacement valve
02-pp-04i	Individual Pinch replacement valve
02-21-08i	Individual Lee mini replacement valve
01-05	Low-noise, valve and case grounding package (per 4 valves) A grounding wire attached to all valves extending back to the controller. This item is recommended for electrophysiology and required for CE conformity.
02-06	Valve extension cables - 2 meter RCA M/F (set of 4 cables)
05-01	Luer-lock fittings - with 2-way stopcocks (set of 4)
05-02	Nut & ferrule fittings - for 1/16" o.d. tubing (set of 4)

U.S./Canada prices shown. International prices add 15%. Email or visit web store for latest prices.

02-[TB]-02 Indicate [T]op inflow and [B]ottom outflow PTFE-Inert valve fittings:
 [0]=1/8" i.d. hose barb, [1]=1/16" i.d. hose barb, [2]=Luer-lock female with stopcocks,
 [3]=10-32 threaded nut & ferrules for 1/16" o.d. tubing (add \$30/set of 4),
 [p]=Pinch valves have no fittings