

IDEX Injection Valves | Manual

IDEX MANUAL INJECTION VALVES

PART NO	DESCRIPTION	POS. SENSING SWITCH	MAX PSI	FITTING	FITS TUBING OD	WETTED MATERIAL	SAMPLE LOOP VOL
HIGH PRESSURE, ANALYTICAL (accepts a 22 gauge needle)							
★ 7725i	2-Position, 6-Port	Yes	6,000	10-32	1/16"	SST, Ceramic, Vespel	20 µL ¹
7725i-188	2-Position, 6-Port	Yes	9,000	10-32	1/16"	SST, PEEK, Ceramic	Front Loading
7725	2-Position, 6-Port	No	6,000	10-32	1/16"	SST, Ceramic, Vespel	20 µL ¹
9725i	2-Position, 6-Port	Yes	6,000	10-32	1/16"	PEEK, ETFE, Ceramic	20 µL ¹
9725	2-Position, 6-Port	No	6,000	10-32	1/16"	PEEK, ETFE, Ceramic	20 µL ¹
HIGH PRESSURE, PREPARATIVE (accepts a 16 gauge needle)							
3725-038	2-Position, 6-Port, Dual Mode	No	6,000	5/16-24	1/8"	SST, PEEK	10 mL ¹
3725i	2-Position, 6-Port, Dual Mode	Yes	6,000	5/16-24	1/8"	PEEK	10 mL ¹
3725i-038	2-Position, 6-Port, Dual Mode	Yes	6,000	5/16-24	1/8"	SST, PEEK	10 mL ¹
MEDIUM PRESSURE (in order to accept needle, requires P-295 see below)							
V-450 ²	2-Position, 6-Port, 0.040" thru passage	No	1,000	1/4-28	1/16"	Polyimide, PTFE	sold separately ⁴
V-451 ²	2-Position, 6-Port, Bulkhead Version	No	1,000	1/4-28	1/16"	Polyimide, PTFE	sold separately ⁴
V-540 ³	2-Position, 6-Port, 0.063" thru passage	No	1,000	1/4-28	1/8"	Polyimide, PTFE	sold separately ⁴
V-541 ³	2-Position, 6-Port, Bulkhead Version	No	1,000	1/4-28	1/8"	Polyimide, PTFE	sold separately ⁴

1) Ships with a sample loop attached to ports 1 and 4

2) Includes (6) XP-235, See "Upchurch Scientific Flangeless Fittings..." on pg 220

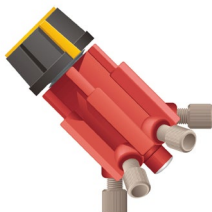
3) Includes (6) XP-335, See "Upchurch Scientific Flangeless Fittings..." on pg 220

4) See "IDEX Sample Loops" on pg 271

★ TOP SELLER!



7725i-188



V-540

TECH TIP

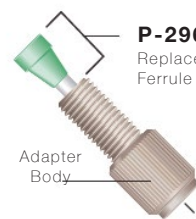
A **Dual Mode** Injection Valve allows either partial or complete filling of the loop, and introduces sample by syringe through the needle port built into the valve shaft. Complete filling of the sample loop provides greater repeatability, injection to injection. **Bulkhead** Injection Valves utilize the mounting bracket M-615-2, found on pg 278.

1/4-28 Flat-Bottom Injection Port Adapter

This simple, biocompatible adapter is designed specifically for the Upchurch Scientific Injection Valves and can also convert any 1/4-28 flat-bottom port into a port that can accept a standard 22 gauge HPLC injection needle. This injection port adapter is adjustable, so you can create a snug fit around the needle to prevent any leaking of the analyte. In addition, this product features an internal stop that prevents you from inserting the needle too far, eliminating the possibility of damaging the valve with the needle tip.

P-295

1/4-28 Flat-Bottom Injection Port Adapter



Adapter Body

Needle Port

P-296

Replaceable Tubing and Ferrule Assembly (included)

1/4-28 FLAT-BOTTOM INJECTION PORT ADAPTER

PART NO	DESCRIPTION
P-295	Adjustable Injection Port Adapter, accepts a 22 gauge needle
P-296	Replacement Tubing/Ferrule Assembly

IDEX Injection Valves | Actuated

IDEX ACTUATED INJECTION VALVES

PART NO	DESCRIPTION	MAX PSI	FITTING	FITS TUBING OD	WETTED MATERIAL
HIGH PRESSURE INJECTION VALVES					
MXP7920-000	2-Position, 6-Port, Vertical Port	6,000	10-32	1/16"	DuraLife*

*DuraLife is a proprietary material combination of SST and an advanced polymer.



MX units are stackable

IDEX Sample Loops

IDEX STAINLESS STEEL SAMPLE LOOPS

PART NO	VOLUME	BORE ID	TUBING OD
RHEODYNE® STAINLESS STEEL LOOPS FOR MXT715-000			
7755-300	5 µL	0.18 mm (0.007")	1/16"
RHEODYNE STAINLESS STEEL LOOPS FOR 7125, 7010 INJECTION VALVES (DO NOT USE FOR 7725)			
7020	5 µL	0.18 mm (0.007")	1/16"
7021	10 µL	0.30 mm (0.012")	1/16"
7022	20 µL	0.51 mm (0.021")	1/16"
7023	50 µL	0.51 mm (0.021")	1/16"
7024	100 µL	0.51 mm (0.021")	1/16"
7025	200 µL	0.76 mm (0.030")	1/16"
7026	500 µL	0.76 mm (0.030")	1/16"
7027	1.0 mL	0.76 mm (0.030")	1/16"
7028	2.0 mL	1.0 mm (0.040")	1/16"
7029	5.0 mL	1.0 mm (0.040")	1/16"
1876	10 mL	2.0 mm (0.080")	1/8"
1877	20 mL	2.0 mm (0.080")	1/8"
RHEODYNE STAINLESS STEEL LOOPS FOR 3725-038, 3725I-038 INJ VALVES			
3065-018	2.0 mL	2.0 mm (0.080")	1/8"
3065-019	5.0 mL	2.0 mm (0.080")	1/8"
3065-023	10 mL	2.0 mm (0.080")	1/8"
3065-025	20 mL	2.0 mm (0.080")	1/8"
RHEODYNE STAINLESS STEEL LOOPS FOR 7725, 7725I, PR/EV700-100, PR/EV703-100, MX MODULE INJECTION VALVES (DO NOT USE FOR 7125)			
7755-020	5 µL	0.18 mm (0.007")	1/16"
7755-021	10 µL	0.30 mm (0.012")	1/16"
7755-022	20 µL	0.30 mm (0.012")	1/16"
7755-023	50 µL	0.51 mm (0.021")	1/16"
7755-024	100 µL	0.51 mm (0.021")	1/16"
7755-025	200 µL	0.76 mm (0.030")	1/16"
7755-026	500 µL	0.76 mm (0.030")	1/16"
7755-027	1.0 mL	0.76 mm (0.030")	1/16"
7755-028	2.0 mL	1.0 mm (0.040")	1/16"
7755-029	5.0 mL	1.0 mm (0.040")	1/16"
1876	10 mL	2.0 mm (0.080")	1/8"
1877	20 mL	2.0 mm (0.080")	1/8"

RHEODYNE STAINLESS STEEL LOOPS FOR 8125 INJECTOR (USE 7755-024 TO 7755-029 FOR VOLUMES > 50 µL)

PART NO	VOLUME	BORE ID	TUBING OD
8020	5 µL	0.20 mm (0.008")	0.020"
8021	10 µL	0.20 mm (0.008")	0.020"
8022	20 µL	0.25 mm (0.010")	0.020"
8023	50 µL	0.25 mm (0.010")	0.020"
8125-084	Ferrules for 0.020" (0.5 mm) Tubing		
8125-086	Ferrules for 0.020" (0.5 mm) Tubing 4/pk		

Accuracy of SS loop volume designations (due to tubing ID tolerance): 0.040" ID ± 5%; 0.020" ID ± 10%; and 0.007" ID ± 30%.

TECH TIP

3725 Series have the 5/16-24 Coned ports. Other Rheodyne valves have 10-32 Coned ports.

IDEX PEEK SAMPLE LOOPS

PART NO	VOLUME	BORE ID	TUBING OD
PEEK LOOPS FOR 3725, 3725I INJECTION VALVES			
3055-018	2.0 mL	1.6 mm (0.062")	1/8"
3055-019	5.0 mL	1.6 mm (0.062")	1/8"
3055-023	10 mL	2.0 mm (0.080")	1/8"
3055-025	20 mL	2.0 mm (0.080")	1/8"
PEEK LOOPS FOR 9725, 9010, PR/EV750-100, PR/EV753-100 INJ VALVES			
1800	2 µL	0.13 mm (0.005")	1/16"
9055-020	5.0 µL	0.18 mm (0.007")	1/16"
9055-021	10 µL	0.25 mm (0.010")	1/16"
9055-022	20 µL	0.25 mm (0.010")	1/16"
9055-023	50 µL	0.51 mm (0.021")	1/16"
9055-024	100 µL	0.51 mm (0.021")	1/16"
9055-025	200 µL	0.51 mm (0.021")	1/16"
9055-026	500 µL	0.76 mm (0.030")	1/16"
9055-027	1.0 mL	0.76 mm (0.030")	1/16"
9055-028	2.0 mL	0.76 mm (0.030")	1/16"
9055-029	5.0 mL	0.76 mm (0.030")	1/16"
9055-033	10 mL	0.76 mm (0.030")	1/16"

PEEK LOOPS FOR 7725, 7725I, PR/EV700-100

7123-227	1 µL	Internal groove (models PR/EV700-100, EV750-100 only)
7755-015	2 µL	Internal groove (models 7725, 7725I, and 9725(i) only)

Accuracy of PEEK loop volume designations (due to tubing ID tolerance): 0.030" ID ± 14%; 0.020" ID ± 21%; and 0.007" ID ± 65%. PEEK loops are supplied with unswaged RheFlex® fittings (see pg 224).



CHROM TECH RELATED PRODUCTS

RHEODYNE FITTINGS

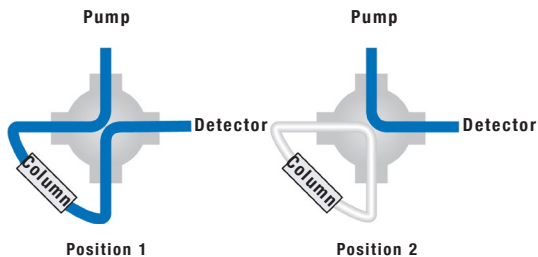
PART NO	DESCRIPTION	PORT	MATERIAL	QTY
6000-082	Fitting, 1/8" OD	5/16-24 Coned	SST	ea
6000-083	Ferrule, 1/8" OD	5/16-24 Coned	SST	5/pk
7010-011	Fitting, 1/16" OD, Long	10-32 Coned	SST	ea
6000-211	Fitting, 1/16" OD, Long	10-32 Coned	SST	10/pk
7010-010	Ferrule, 1/16" OD	10-32 Coned	SST	ea
6000-210	Ferrule, 1/16" OD	10-32 Coned	SST	10/pk
6000-078	Fitting, 1/8" OD	5/16-24 Coned	PEEK, Nat	ea
6000-079	Ferrule, 1/8" OD	5/16-24 Coned	PEEK, Nat	5/pk
6000-054	Fitting, 1/16" OD, Long	10-32 Coned	PEEK, Nat	5/pk
6000-254	Fitting, 1/16" OD, Long	10-32 Coned	PEEK, Nat	10/pk

ADAPTERS

6000-076	5/16-24 C, Male to 10-32 C, Female	PEEK	ea
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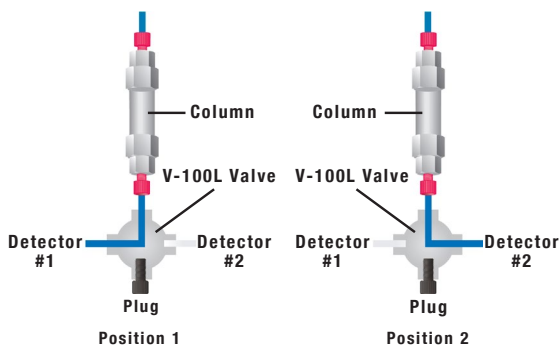
IDEX Switching Valves

Upchurch Scientific® Switching Valve Applications



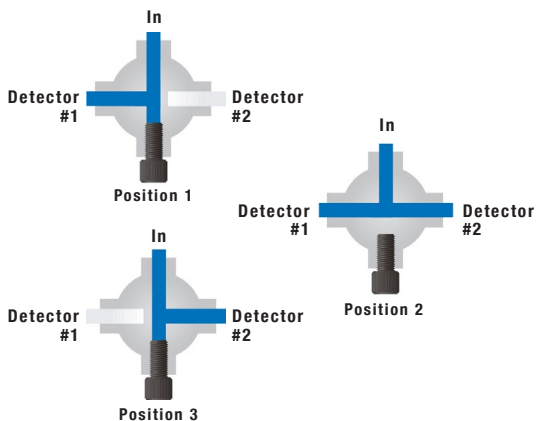
4-Way Diagonal Flow Switching Valves (V-100D, V-101D)

Protect sensitive system components (such as a column) during a cleaning cycle with our Diagonal Flow Switching Valve ("D"). This valve eliminates the need to remove, plug and reconnect a low pressure column



3-Way Flow Switching Valves (V-100T, V-101T)

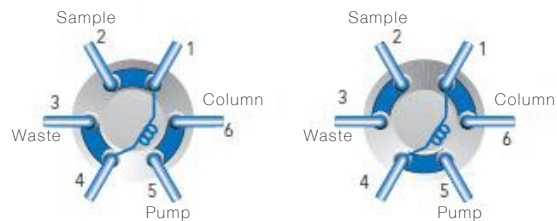
Your detector switching application may require the flexibility of routing the column effluent to both detectors simultaneously while retaining the ability to isolate each detector. Use our 3-Way Flow Switching Valve ("T"), plugging off the fourth port with the included plug.



Right Angle Flow Switching Valves (V-100L, V-101L)

A typical application for a Right Angle Flow Switching Valve ("L") is column switching, allowing two columns to use one detector. Detector switching is another common application for this valve Plug off the extra port with the included plug

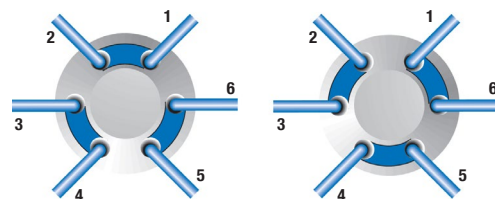
Rhebuild Kits and Valve replacement parts are found on pages 276 – 277.



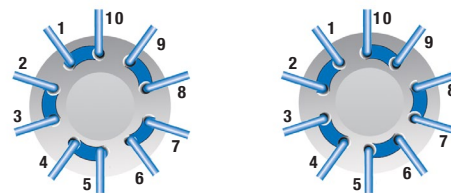
Flow path of Two-Position, Six-Port Injection Valve

Rheodyne® injection valves are a form of switching valve. Injection valves can be automated or manual, and they are generally utilized in the two-position, six-port (2/6) configuration and have a sample loop attached.

The purpose of an injection valve is to introduce a sample of a solution into a flowing stream of liquid. Some switching valves become Injection valves by the addition of a Sample Loop (a defined length of tubing and fittings configured to match the angle of the valve ports). Sample is loaded and held in the loop until injection is triggered, either manually or mechanically.



Flow path of Two-Position, Six-Port Switching Valve



Flow path of Two-Position, Ten-Port Switching Valve

Switching valves dynamically alternate between two fluid paths without manually disconnecting plumbing. In Chromatography, these valves can be used for column switching, backflushing, sample enrichment, and other techniques. In diagnostic or sequencing applications, the switching valve may alternate flow paths to enable back flushing or other fluidic tasks within the instrument.

IDEX Switching Valves | Manual

IDEX MANUAL SWITCHING VALVES

PART NO	DESCRIPTION	MAX PSI	FITTING	FITS TUBING OD	WETTED MATERIAL	CONFIGURATION
HIGH PRESSURE						
7000	2-Position, 6-Port, Large Bore	6,000	10-32	1/16"	SST & Vespel®	-
7000L	2-Position, 6-Port, Large Bore	6,000	10-32	1/16"	SST & Vespel	-
3000	2-Position, 6-Port, Prep Scale	6,000	5/16-24	1/8"	PEEK	-
3030	2-Position, 6-Port, Prep Scale	6,000	5/16-24	1/8"	PEEK	Double 3-Way
7030	2-Position, 6-Port	6,000	10-32	1/16"	SST & Vespel	Double 3-Way
7030L	2-Position, 6-Port, Large Bore	6,000	10-32	1/16"	SST & Vespel	Double 3-Way
MEDIUM PRESSURE						
V-100D ¹	4-Position, 4-Port	500	1/4-28	1/16"	PEEK, PTFE	Double Diagonal
V-101D ¹	4-Position, 4-Port, Bulkhead	500	1/4-28	1/16"	PEEK, PTFE	Double Diagonal
V-100L ²	4-Position, 4-Port	500	1/4-28	1/16"	PEEK, PTFE	Right-Angle "L"
V-101L ²	4-Position, 4-Port, Bulkhead	500	1/4-28	1/16"	PEEK, PTFE	Right-Angle "L"
V-100T ²	4-Position, 4-Port	500	1/4-28	1/16"	PEEK, PTFE	Single "T"
V-101T ²	4-Position, 4-Port, Bulkhead	500	1/4-28	1/16"	PEEK, PTFE	Single "T"

1) Includes (4) P-218BLK, (4) P-240

2) Includes (4) P-218BLK, (4) P-240, (1) P-309



7000
Manual Switching Valve



V-101L
Manual Switching Valve

TECH TIP

Bulkhead Switching Valves utilize the mounting bracket M-615-1, found on pg 278.

Switching Valves | Actuated

IDEX ACTUATED SWITCHING VALVES

PART NO	DESCRIPTION	MAX PSI	FITTING	FITS TUBING OD	WETTED MATERIAL
ULTRA HIGH PRESSURE					
MXT715-000	2-Position, 6-Port	15,000	10-32	1/16"	UltraLife
MXT715-102	2-Position, 10-Port	15,000	10-32	1/16"	UltraLife
HIGH PRESSURE					
MXP7900-000	2-Position, 6-Port	6,000	10-32	1/16"	DuraLife® ¹
MXP7960-000	2-Position, 10-Port	6,000	10-32	1/16"	DuraLife
MXP7980-000	2-Position, 6-Port, Nano	5,000	M4	1/32"	DuraLife II ²
MXP7986-000	2-Position, 10-Port, Nano	5,000	M4	1/32"	DuraLife II
MXP9900-000	2-Position, 6-Port, Biocompatible	5,000	10-32	1/16"	PEEK
MXP9960-000	2-Position, 10-Port, Biocompatible	5,000	10-32	1/16"	PEEK
LOW PRESSURE					
MXX777-601	2-Position, 6-Port	125	—	1/8" or 1/16"	RPC-7 ³
MXX777-603	2-Position, Double Three Way	125	—	1/8" or 1/16"	RPC-7
MXX777-612	2-Position, 6-Port, Large Bore	125	—	1/8" or 1/16"	RPC-7

All of these MXX valves include a set of 1/16" and 1/8" ferrules.

1) DuraLife is a proprietary material combination of SST and an advanced polymer.

2) DuraLife II is a proprietary material combination consisting of Titanium and an advanced polymer.

3) RPC-7 Proprietary Polymer Combination.



MX units are stackable

IDEX Selection Valves

Selection valves enable discrete connections among multiple system liquids (mobile phase, reagents, buffers) by means of a common port (inlet or outlet) connected to a number of different reciprocal ports. In Diagnostic or Sequencing applications, the selection valve alternates between different reagents or sample streams. Selection valves also enable fractionation for multiple sample analyses.

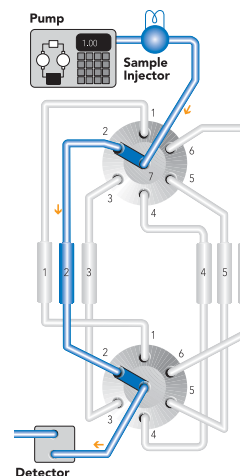
Numerous configurations exist among selection valves (e.g., 6-position 7-port, or 10-position 11-port), but these valves always operate between more than two positions. The ports are usually spaced radially, or outward in some manner around the center port of the stator.



Flow path of Six-Position, Seven-Port Selector Valve

Column Selection

Use Two 6-Position 7-Port Selection Valves to enable multiple column selection



Selection Valves | Manual

IDEX MANUAL SELECTION VALVES						
PART NO	DESCRIPTION	MAX PSI	FITTING	FITS TUBING OD	WETTED MATERIAL	CONFIGURATION
HIGH PRESSURE						
7060	6-Position, 7-Port	6,000	10-32	1/16"	SST & Vespel®	6-Way
MEDIUM PRESSURE						
V-240 ¹	6-Position, 7-Port	1,000	1/4-28	1/16"	Polyimide, PTFE	Multi-port Selection
V-241 ¹	6-Position, 7-Port, Bulkhead Version	1,000	1/4-28	1/16"	Polyimide, PTFE	Multi-port Selection
V-340 ²	6-Position, 7-Port	1,000	1/4-28	1/8"	Polyimide, PTFE	Multi-port Selection
V-341 ²	6-Position, 7-Port, Bulkhead Version	1,000	1/4-28	1/8"	Polyimide, PTFE	Multi-port Selection

1) Includes (6) XP-235

2) Includes (6) XP-335



7060 Manual Selection Valve

TECH TIP

Bulkhead Injection Valves utilize the mounting bracket M-615-2, found on pg 278.

Selection Valves | Actuated

IDEX ACTUATED SELECTION VALVES					
PART NO	DESCRIPTION	MAX PSI	FITTING	FITS TUBING OD	WETTED MATERIAL
ULTRA HIGH PRESSURE					
MXX715-105	6-Position, 7-Port	15,000	10-32	1/16"	UltraLife
HIGH PRESSURE					
MXP7970-000	6-Position, 7-Port	6,000	10-32	1/16"	DuraLife II ¹
LOW PRESSURE					
MXX777-605	6-Position, 7-Port	125	—	1/8" or 1/16"	RPC-7 ²
MXX777-616	6-Position, 7-Port, Large Bore	125	—	1/8" or 1/16"	RPC-7
MXX778-605	10-Position, 11-Port	125	—	1/8" or 1/16"	RPC-7

All of these MXX valves include a set of 1/16" and 1/8" ferrules.

1) DuraLife II is a proprietary material combination consisting of Titanium and an advanced polymer.

2) RPC-7 Proprietary Polymer Combination.



MX units are stackable

Shut-Off Valves

Stop a flow stream quickly with Upchurch Scientific® biocompatible Shut-Off Valves. The blue colorant used in some valve configurations has proven not to leach out with common HPLC solvents.

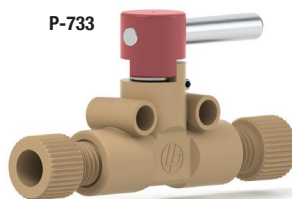
SHUT-OFF VALVES					
PART NO	TUBING OD	THRU-HOLE	INTERNAL VOL. ¹	MATERIAL	INCLUDES
P-721 ²	1/8"	0.040" (1.0 mm)	10.0 µL	PCTFE, ETFE, Natural	(2) P-335, (2) P-300N
P-732 ²	1/16"	0.020" (0.5 mm)	2.5 µL	PCTFE, PEEK, Natural	(2) XP-235
P-733 ²	1/8"	0.040" (1.0 mm)	10.0 µL	PCTFE, PEEK, Natural	(2) XP-335
P-782	1/16"	0.020" (0.5 mm)	2.5 µL	PCTFE, ETFE, Blue	(2) XP-235
P-783	1/8"	0.040" (1.0 mm)	10.0 µL	PCTFE, ETFE, Blue	(2) XP-335

1) Maximum internal volume, with valve fully open.

2) To order valve without fittings, add an "A" to the end of the part number.



P-721



P-733

Micro-Splitter Valves

The Upchurch Scientific line of Micro-Splitter Valves is designed to accurately split and control a low-flow stream off a single incoming supply. The Graduated Valve offers many of the benefits and features of Micro-Splitter Valves, plus the ability to adjust and set the split flow to repeatable settings. This allows documentation of settings and the resulting flow rates for easier method development. The graduations also make it easier to employ the valve in a system used to run multiple analyses that require different split flow rates.

MICRO-SPLITTER VALVES					
PART NO	DESCRIPTION	THREADS	INTERNAL VOL.* (open/closed)	MAX PRESSURE	INCLUDES
P-450	Standard, Biocompatible	1/4-28	2.14 / 4.1 µL	800 PSI (55 bar)	(3) XP-235
P-451	Standard, Biocompatible	10-32	1.2 / 2.8 µL	800 PSI (55 bar)	(3) F-120
P-460S	High Pressure, SS Needle	10-32	1.2 / 2.8 µL	4,000 PSI (276 bar)	(3) F-120
P-460T	High Pressure, Titanium Needle	10-32	1.2 / 2.8 µL	4,000 PSI (276 bar)	(3) F-120
P-470	HP Graduated, SS Needle	10-32	1.2 / 2.8 µL	4,000 PSI (276 bar)	(3) F-120

*The supply and waste port thru-holes have IDs of 0.020" (0.50 mm). The ID for the split-stream port thru-hole is 0.020" (0.50 mm) in standard versions; in capillary versions it is 0.010" (0.25 mm).



P-450

TECH TIP

All Micro-Splitter Valves have been tested at flow rates to 100 mL/min, with a maximum resulting pressure drop of only 45 PSI (3.1 bar) when the valve is fully opened.

Micro-Metering Valves

For fine control of fluid flow rates, Micro-Metering Valves can reduce outgoing flow to as low as 3.5 µL/min*. These needle valves are perfect for use with peristaltic pump fluid-transfer applications, mass spectrometry, and fraction collection.

Upchurch Scientific Micro Metering Valves can also be used to regulate gas flow in helium sparging lines and as a flow-dependent variable back pressure regulator.

MICRO-METERING VALVES					
PART NO	TUBING OD	THRU-HOLE	INTERNAL VOL. ¹	MATERIAL	INCLUDES
P-445 ²	1/16"	0.020" (0.50 mm)	7.7 µL	PEEK, Back	(2) XP-230
P-446 ²	1/16"	0.020" (0.50 mm)	7.2 µL	PEEK, Back	(2) F-120
P-447	1/8"	0.020" (0.50 mm)	7.7 µL	PEEK, Back	(2) XP-330

1) Maximum internal volume, with valve fully open.

2) To order valve without fittings, add "NF" to the end of the part number.



P-445

RheBuild® Kits, Rapid Replacement Pods & MXX Replacement Fittings

RheBuild® Kits

RheBuild Kits are available for all Rheodyne brand products. Included in each individual RheBuild Kit: rotor seal; stator face assembly; isolation seal; needle guide; needle port cleaner; tools and instructions to maintain precision performance of your valve. RheBuild Kits eliminate individual part ordering.



Rapid Replacement Pods

Replacement pods are easily exchanged as part of scheduled preventive maintenance, or in an emergency, a pod can be substituted quickly while the original is examined and cleaned at your convenience.



RAPID REPLACEMENT PODS

PART NO	FOR VALVE PART NO
PD715-000	MXT715-000
PD715-102	MXT715-102
PD715-105	MXT715-105
PD7900	MXP7900-000
PD7960	MXP7960-000
PD7986	MXP7986-000
PD9900	MXP9900-000
PD9960	MXP9960-000
PD7920	MXP7920-000
PD7970	MXP7970-000
PD7980	MXP7980-000

MXX Replacement Fittings

Use these replacement Ferrules and O-rings for 1/8" and 1/16" tubing with the MXX Series II valves.

MXX REPLACEMENT FITTINGS

PART NO	DESCRIPTION	QTY
7770-039	Ferrules for 1/8" OD Tubing	25/pk
7770-040	Ferrules for 1/8" Tubing	50/pk
7770-041	Ferrules for 1/8" Tubing	100/pk
7770-044	Ferrules for 1/16" OD Tubing	25/pk
7770-046	Ferrules for 1/16" Tubing	100/pk
7770-124	O-Rings for 1/16" OD Tubing	25/pk

RHEBUILD KITS

PART NO	DESCRIPTION
RHEBUILD KITS FOR MX SERIES II™ VALVES	
7150-999	RheBuild Kit for MXT715-000 (includes 2 rotor seals)
7152-999	RheBuild Kit for MXT715-102 (includes 2 rotor seals)
7155-999	RheBuild Kit for MXT715-105 (includes 2 rotor seals)
7920-999	RheBuild Kit for MXP7920-000 and MXP7900-000
7960-999	RheBuild Kit for MXP9960-000 (includes rotor seal and stator face seal)
7961-999	RheBuild Kit for MXP7960-000
7970-999	RheBuild Kit for MXP7970-000
79801-999	RheBuild Kit for MXP7980-000
79861-999	RheBuild Kit for MXP7986-000
7900-999	RheBuild Kit for MXP9900-000 (includes rotor seal and stator face seal)

RHEBUILD KITS FOR MANUAL VALVES

3725-999	RheBuild Kit for models 3725, 3725i, 3725-038, 3735i-038
7010-996	Conversion Kit including Stator Face Assembly for model 7010
7010-997	RheBuild Kit including Stator for model 7010
7010-999	RheBuild Kit for model 7010 and 7010-type Valves
7125-999	RheBuild Kit for models 7125 and 7126
7410-999	RheBuild Kit for model 7410
7520-999	RheBuild Kit for models 7520 and 7526 (includes inlet stator and seal)
7725-999	RheBuild Kit for models 7725 and 7725i
7788-999	RheBuild Kit for model 7725i-188
8125-999	RheBuild Kit for models 8125 and 8126
9010-999	RheBuild Kit for model 9010
9125-999	RheBuild Kit for models 9125 and 9126
9725-999	RheBuild Kit for models 9725 and 9725i; 7725(i) pH upgrade kit

RHEBUILD KITS FOR MX SERIES I™ VALVES

7900-999	RheBuild Kit for models MX7900-000, MX7925-000, MX9900-000, MX9925-000
7960-999	RheBuild Kit for model MX7960-000
7980-999	RheBuild Kit for model MX7980-000
7986-999	RheBuild Kit for model MX7986-000

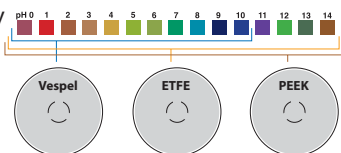
RHEBUILD KITS FOR LABPRO™ & EV AUTOMATED FLUIDIC INSTRUMENTS

1006-999	RheBuild Kit for model PR/EV100-106
5001-999	RheBuild Kit for models PR/EV500-101 and PR/EV550-101
5100-999	RheBuild Kit for models PR/EV500-100 and PR/EV550-100
5104-999	RheBuild Kit for models PR/EV500-104 and PR/EV550-104
7004-999	RheBuild Kit for models PR/EV700-104 and PR/EV750-104
7112-999	RheBuild Kit for models PR/EV700-112 and PR/EV750-112
7501-999	RheBuild Kit for models PR/EV700-100 and PR/EV750-100
7502-999	RheBuild Kit for models PR/EV700-102 and PR/EV750-102
7507-999	RheBuild Kit for models PR/EV700-107 and PR/EV750-107
7531-999	RheBuild Kit for models PR703-100 and PR753-100

Rotor Seals & Stators

Rotor Seals

The standard rotor seal in many Rheodyne® manual valves is made from a Vespel® blend. This polyimide has low wear and high chemical resistance. Vespel tolerates a pH range of 0 to 10. Solutions more basic than pH 10 dissolve Vespel which damages the rotor seal. PEEK offers a high chemical resistance and versatility, and will tolerate the entire pH range from 0 to 14. ETFE blend rotor seals are appropriate for use in applications where PEEK is not generally acceptable, such as when methylene chloride or DMSO in higher concentrations is being used.



Please Note: Rotor seals for MX Series I & Series II Modules are available in the RheBuild Kits section.

ROTOR SEALS		
PART NO	FOR VALVE MODEL NO	DESCRIPTION
ETFE BLEND ROTOR SEALS		
7000-017	7000L, 7040L	ETFE Rotor Seal
7010-071	7010, 7010-087, 7000, 7040	ETFE Rotor Seal
7030-015	7030, 9030	ETFE Rotor Seal
7060-074	7060, 7066, 9060	ETFE Rotor Seal
7125-079	7125, 7125-081, 7725	ETFE Rotor Seal
7410-075	7410	ETFE Rotor Seal
8125-097	8125	ETFE Rotor Seal
9010-051	9010	ETFE Rotor Seal
9125-082	9125, 9725	ETFE Rotor Seal
PEEK BLEND ROTOR SEALS		
3725-018	3725, 3725-038	PEEK Rotor Seal
9010-065	7000, 7010, 9010	PEEK Rotor Seal
8125-119	8125	PEEK Rotor Seal
9125-095	7125, 7725, 9125, 9725	PEEK Rotor Seal
VESPEL BLEND ROTOR SEALS		
7000-016	7000L, 7040L	Vespel Rotor Seal
7010-039	7010, 7000, 7040	Vespel Rotor Seal
7030-003	7030, 9030	Vespel Rotor Seal
7030-014	7030L	Vespel Rotor Seal
7060-070	7060, 7066	Vespel Rotor Seal
7060-064	7060L	Vespel Rotor Seal
7125-047	7125, 7725, 9725	Vespel Rotor Seal
7410-038	7410	Vespel Rotor Seal
7413-013	7413	Vespel Rotor Seal
8125-038	8125	Vespel Rotor Seal

Stators



STATORS	
PART NO	FOR VALVE MODEL NO
STATORS FOR MX SERIES II MODULES	
7123-548	MXT715-000
7123-550	MXT715-105
7123-568	MXT715-102
7770-229	MXP7920-000
7980-004	MXP7980-000
7986-004	MXP7986-000
7900-146	MXP9900-000
7900-179	MXP7900-000
7900-183	MXP7970-000
7960-014	MXP7960-000
9960-002	MXP9960-000
STATORS FOR OTHER RHEODYNE VALVES	
3725-006	3725, 3710-038, 3000-038, 3030-038
7010-069	7000L, 7030L, 7040L
7010-040	7010, 7125, 7000, 7030, 7040
7010-066	7125-081, 7010-087
7060-039	7060, 7066
7060-065	7060L, EV501-100
7123-047	PR/EV500-100
7123-128	PR/EV700-107
7123-142	PR/EV500-104, EV501-104
7123-180	PR703-100, EV700-105
7123-223	PR/EV700-112
7410-041	7410, 7413
7520-035	7520 (outlet)
7650-002	PR/EV700-102
7725-010	7725(i)
7750-070	7750
7750-038	PR/EV700-100
8125-098	8125
9125-043	9125, 9010, 9030, 9725(i)
9650-009	PR/EV750-102
9750-021	PR/EV750-100

Valve Accessories

Valve Wrenches

The smartly designed IDEX Wrench is a double-ended slotted socket wrench that fits over 1/16" and 1/8" OD tubing. It easily loosens and tightens 1/4" and 5/16" hex head stainless steel or PEEK fittings. The "2" shape of the IDEX Wrench provides ideal leverage for changing sample loops and fittings, and keeps one end from restricting the use of the other.



VALVE WRENCHES

PART NO	DESCRIPTION
6810	IDEX Wrench

Mounting Brackets

Rheodyne® mounting brackets and panels of different shapes and sizes organize and provide a sturdy support for Rheodyne valves. The Ring Stand Mounting Bracket now allows the valves to mount onto lab equipment.



MOUNTING BRACKETS

PART NO	DESCRIPTION
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MOUNTING BRACKET ACCESSORIES

7160	Mounting Panel
7160-010	Valve Angle Bracket
7160-029	Ring Stand Mounting Bracket

VALVE MOUNTING BRACKET

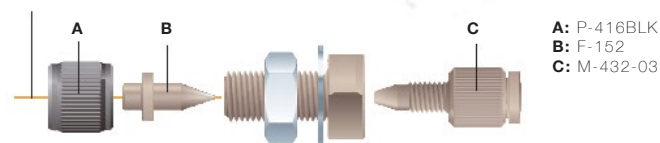
M-615-1	For Upchurch Scientific Switching Valves
M-615-2	For Upchurch Scientific Injection and Selection Valves

Injection Port Adapters

To introduce sample, connect 360 µm OD capillary tubing to an Upchurch Scientific® Injection Port Adapter Assembly. This adapter accepts standard 22-gauge Hamilton-style injection syringe needles. No additional swept volume is added to the fluid pathway, as the needle is positioned directly against the connecting tubing during injections. This adapter can be bulkhead mounted or mounted with the V-447 Kits. To introduce a sample directly into a 10-32 port, purchase a M-432-03 separately.



Tubing
(not included)



A: P-416BLK
B: F-152
C: M-432-03

M-432

Micro Injection Port Adapter Assembly

This simple, biocompatible adapter is designed specifically for the Upchurch Scientific Injection Valves and can also convert any 1/4-28 flat-bottom port into a port that can accept a standard 22 gauge HPLC injection needle. This injection port adapter is adjustable, so you can create a snug fit around the needle to prevent any leaking of the analyte. In addition, this product features an internal stop that prevents you from inserting the needle too far, eliminating the possibility of damaging the valve with the needle tip.



P-296

Replaceable Tubing and Ferrule Assembly
(included)

Adapter
Body

Needle Port

P-295

1/4-28 Flat-Bottom Injection Port Adapter

INJECTION PORT ADAPTERS & ACCESSORIES

PART NO	DESCRIPTION
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MICRO INJECTION PORT ADAPTER FOR 360 µm OD TUBING

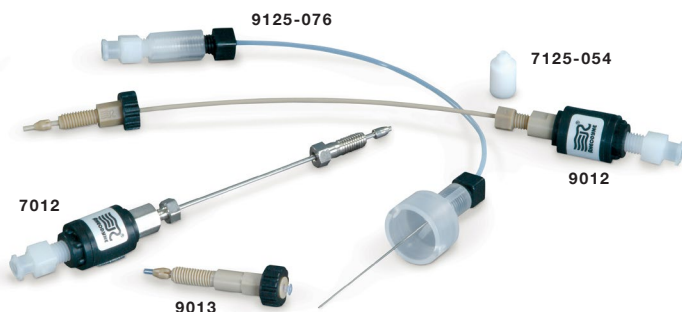
M-432	Micro Injection Port Adapter Assembly
V-447	Micro Injection Port Adapter Assembly Actuator Mounting Kit Includes (1) M-432 with mini-actuator bracket, (2) mounting screws
F-152	Replacement MicroFerrule for M-432, Natural PEEK
M-432-03	Replacement Tubing/Fitting Assembly for M-432 & M-433
P-416BLK	Replacement Ferrule Nut for M-432, Black PEEK

1/4-28 FLAT-BOTTOM INJECTION PORT ADAPTER

P-295	Adjustable Injection Port Adapter, accepts a 22 gauge needle
P-296	Replacement Tubing/Ferrule Assembly

Valve Accessories

Needle Port Accessories



The Rheodyne® adaptable Loop Filler Ports (Part #7012 and 9012) are used to load sample from syringe needles or luer tips. The Needle Port (Part #9013) conserves sample by minimizing the volume between the needle and the valve.












NEEDLE PORT ACCESSORIES

PART NO	DESCRIPTION
7012	Stainless Steel Loop Filler Port
7125-054	Needle Port Cleaner
9012	PEEK Loop Filler Port
9013	Peek Needle Port
9125-076	Suction Needle Adapter (for Model 9725)

Hamilton Syringes for Manual HPLC Valves

- ➔ Point style 3, 22 or 22s gauge needle
- ➔ For IDEX analytical valves (Rheodyne & Upchurch)



HAMILTON 700 SERIES SYRINGES								
		VOLUME	10 µL	25 µL	50 µL	100 µL	250 µL	500 µL
		MODEL	701	702	705	710	725	750
*s" indicates thicker wall for added strength		GAUGE	22s	22s	22s	22s	22	22
		Cemented Needle (N) Syringe	80365	80465	80565	80665	80765	80865
HAMILTON 1700 SERIES SYRINGES								
		VOLUME	10 µL	25 µL	50 µL	100 µL	250 µL	500 µL
		MODEL	1701	1702	1705	1710	1725	1750
		GAUGE	22s	22s	22s	22s	22s	22
		Cemented Needle (N) Syringe	N/A	80275	80975	81075	81175 ²	81216 ²
		Removable Needle (RN) Syringe	80065	80265	80965	81065	81165 ¹	81265
		Removable Needle (RN) Syringe (needle sold separately)	7653-01	7654-01	7655-01	7656-01	7657-01	7658-01
		Replacement Needles (sold separately)	Point Style	Small RN	Small RN	Small RN	Small RN	Large RN
			3	7770-01	7770-01	7770-01	7770-01	7780-03
		Luer Tip (LT) Syringe (needle sold separately)	80001	80201	80901	81001	81101	81201
		PTFE Luer Lock (TLL) Syringe (needle sold separately)	N/A	N/A	80920	81020	81120	81220
		Replacement Needles (sold separately)	Point Style	Metal Hub	Metal Hub	Metal Hub	Metal Hub	Metal Hub
			3	91038	91038	91038	91038	91038
			3	Kel-F Hub	Kel-F Hub	Kel-F Hub	Kel-F Hub	Kel-F Hub
				90534	90534	90534	90534	90134

For Syringe Calibration Service, add the prefix "CAL" to the beginning of the syringe's part number.

Note: Needles are 51 mm

1) 22 gauge

2) LTN Termination



See Hamilton Manual Syringes (pg 408)

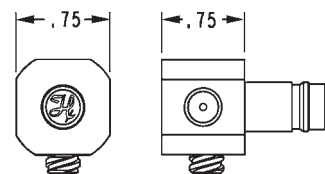
Hamilton (HV) Plug Valves

- ➔ Wetted paths are chemically inert PTFE and Kel-F® materials (100 PSI or less)
- ➔ Valves are for stand alone use or HVX and HVP valves can be panel mounted
- ➔ Valve position is controlled manually via a handle attached to the valve stem
- ➔ Valve connections are via 1/4-28 UNF-2B (Unified Fine) fittings; see specific valve information - thread depths vary

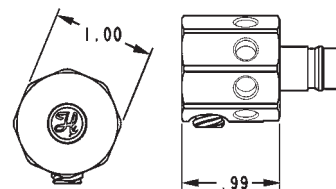
The HV valve is physically the smallest valve and constitutes a basic unit for the control of fluids. It is ideal for low pressure applications; from a basic on/off flow to a four-way distribution system.

The HVP valve is essentially the same as the HV valve except the HVP can be mounted into panels allowing for custom installation into control panels or instruments.

HVX valves are physically the largest valves. A larger port internal diameter allows increased fluid flows even with moderately viscous fluids. HVX valves can be used free standing or panel-mounted using an optional locking nut, Part # 35121. 6- and 8-port distribution and loop valves are available only in the HVX body style.



HV Configuration



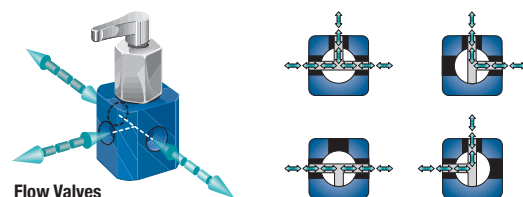
HVX Configuration

HAMILTON MINIATURE INERT VALVES			
	HV	HVP	HVX
Description	Small Body	Panel Mount, Small Body	Large Body
Valve Outer Body Dimension	3/4"	3/4"	1"
Port Orifice	.059"	.059"	.118"
Panel Mounting	No	Yes	Yes
Panel Thickness	N/A	.150" (3.8 mm)	.625" (15.9 mm)

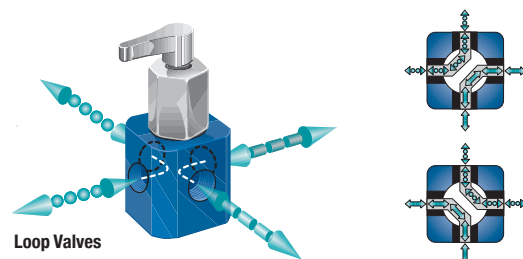
*The port orifice for 6- and 8-way distribution HVX valves is .059".
 The port orifice for 6- and 8-way loop HVX valves is .040".
 HVX valves require optional locking nut, part #35121, for panel mount applications.



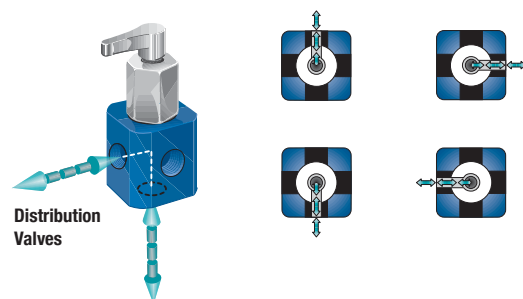
Flow Valves are used to direct or redirect fluids. 2-, 3-, and 4 -port valves are available with straight through (180°), 90°, or "T" type plugs for seven different valves. All seven flow configurations are available as HV, HVP and HVX valves. The flow configuration drawings show the possible fluid flow paths for a three port flow valve with a "T" type plug.



Loop valves are used to direct and redirect fluids. 4-, 6-, or 8- port valves are available with a loop type valve plug. The 4- port valve is available in HV, HVP and HVX body styles. The 6- and 8-port valves are only available in the HVX body style. The flow configuration drawings show the possible fluid flow paths for a 4-port valve with a loop type plug.

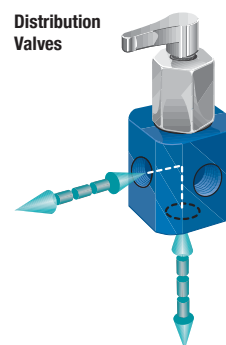
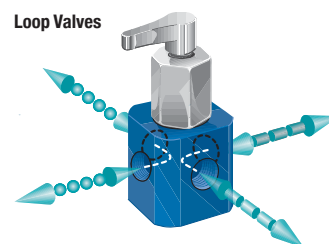
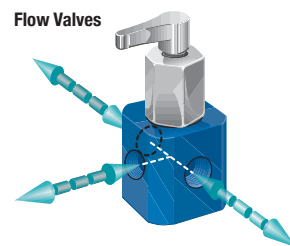


Distribution valves are used to direct fluid to a number of locations. 2-, 3-, 4-, 6- and 8-port valves are available with a distribution type valve plug. The 2-, 3-, and 4-port distribution valves are available in HV, HVP and HVX body styles. The 6- and 8-port valves are available only in the HVX body style. The flow configuration drawings show the possible fluid flow paths for a 4-port valve with a distribution type plug.



HAMILTON (HV) PLUG VALVES						
FLOW DIAGRAM	VALVE DESCRIPTION	VALVE MODEL	HV	HVP	HVX	
	180° Flow Path 2-ports	1-1	86725	86775	86901*	
	90° Flow Path 2-ports	2-2	86726	86776	86902*	
	"T" Flow Path 3-ports	3-3	86727	86777	86903*	
	90° Flow Path 3-ports	3-2	86728	86778	86904*	
	Loop Flow Path 4-ports	4-4	86729	86779	86905*	
	"T" Flow Path 4-ports	4-3	86730	86780	—	
	90° Flow Path 4-ports	4-2	86731	86781	86907*	
	180° Flow Path 4-ports	4-1	86732	—	—	
	Distribution Flow Path 2-ports	1-5	86735	86785	86910*	
	Distribution Flow Path 2-ports	2-5	86736	86786	86911*	
	Distribution Flow Path 3-ports	3-5	86737	86787	86912*	
	Distribution Flow Path 4-ports	4-5	86738	86788	86913*	
	Distribution Flow Path 6-ports	6-5	—	—	86915	
	Loop Flow Path 6-ports	6-6	—	—	86915**	
	Distribution Flow Path 8-ports	8-5	—	—	86918	
	Loop Flow Path 8-ports	8-7	—	—	86919**	

Note: All valves have .059"/1.5 mm diameter ports unless otherwise specified.
 * Valve has .118"/3 mm diameter ports. **Valve has .040"/1 mm diameter ports.
 Thread depth: All valves have 1/4" x 28 UNF 2B ↓ .250 threads unless otherwise specified.



- Green circle denotes there is a fixed fluid path in the face of the valve fluid always flows through
- ➔ Blue arrow is a path that rotates and can flow to any port, as indicated by the black directional arrows

ACCESSORIES FOR HV PLUG VALVES	
PART NO	DESCRIPTION
35121	Optional locking nut to panel mount HVX
P-208	Short Flangeless 1/4-28 nut for 1/16" OD, 10/pk
P-240	Small valve ferrule for 1/16" OD, 10/pk
P-340	Small valve ferrule for 1/8" OD, 10/pk

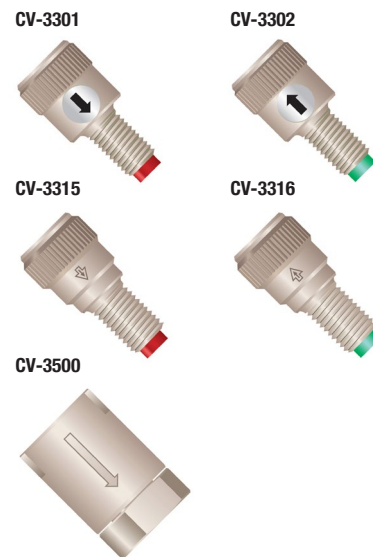
Standard 1/4-28 & Nonmetallic 10-32 Micro-Volume Inline Check Valves

The 1/4-28 Upchurch Scientific Inline Check Valve's spring-actuated sealing pattern eliminates back flow, helping to prevent upstream contamination or damage. In addition, the unique design of this product eliminates the additional tubing cuts and connections required to install conventional inline check valves.

With a swept volume of only 7.4 µL, the Upchurch Scientific Inline Micro-Volume Check Valve is perfect for applications where low flow path volume is critical, such as delivery to lab-on-a-chip, single-cell analysis and micro- or nano-LC post-column derivatization. Once installed, this check valve helps prevent back flow and the potential for contamination or damage to sensitive upstream equipment.

TECH TIP

- ➔ **Cracking Pressure:** the pressure required for the valve to open in the direction of the arrow
- ➔ **Maximum Pressure:** the maximum pressure the valve can experience in the reverse direction without leaking backwards
- ➔ **Back Pressure Created:** the amount of back pressure generated by the check valve with 50 mL/min room temperature water flowing in the direction of the arrow

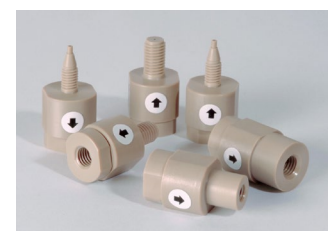


STANDARD 1/4-28 & NONMETALLIC 10-32 MICRO-VOLUME INLINE CHECK VALVES

PART NO	DESCRIPTION	THREADS	SWEPT VOL	THRU-HOLE	MAX PRESSURE	BACK PRESSURE	CRACKING PRESSURE
STANDARD 1/4-28 INLINE CHECK VALVES							
CV-3301	Inlet	1/4-28 FB, M to 1/4-28 FB, F	20 µL	0.020" (0.50 mm)	2,000 PSI (138 bar)	45 PSI (3.1 bar)	15 PSI (1 bar)
CV-3302	Outlet	1/4-28 FB, M to 1/4-28 FB, F	20 µL	0.020" (0.50 mm)	2,000 PSI (138 bar)	45 PSI (3.1 bar)	15 PSI (1 bar)
CV-3315	Inlet	1/4-28 FB, M to 1/4-28 FB, F	16 µL	0.020" (0.50 mm)	2,000 PSI (138 bar)	10 PSI (0.7 bar)	3 PSI (0.2 bar)
CV-3316	Outlet	1/4-28 FB, M to 1/4-28 FB, F	16 µL	0.020" (0.50 mm)	2,000 PSI (138 bar)	10 PSI (0.7 bar)	3 PSI (0.2 bar)
NONMETALLIC 10-32 MICRO-VOLUME INLINE CHECK VALVE							
CV-3500	Inlet/Outlet	10-32 C, F to 10-32 C, F	7.4 µL	0.010" (0.25 mm)	3,000 PSI (207 bar)	25 PSI (1.7 bar)	8 PSI (0.6 bar)

Nonmetallic 1/4-28 & 10-32 Inline Check Valves

Upchurch Scientific Nonmetallic Inline Check Valves provide excellent backflow protection for sensitive equipment along with outstanding chemical resistance guaranteed by the PEEK polymer and perfluoroelastomer construction. Metal-free composition makes these check valves perfect for use with corrosive fluids or biological samples. These check valves function well up to moderately-high pressure applications. Low internal volume allow them to be used in areas where flow path volume is important; however, higher flow rates can pass through with minimal pressure drop.



NONMETALLIC 1/4-28 & 10-32 INLINE CHECK VALVES

PART NO	DESCRIPTION	THREADS	SWEPT VOL	THRU-HOLE	MAX PRESSURE	BACK PRESSURE	CRACKING PRESSURE
CV-3320	Inlet	1/4-28 FB, M to 1/4-28 FB, F	37 µL	0.020" (0.50 mm)	2,000 PSI (138 bar)	30 PSI (2.1 bar)	1 PSI (0.07 bar)
CV-3321	Outlet	1/4-28 FB, M to 1/4-28 FB, F	37 µL	0.020" (0.50 mm)	2,000 PSI (138 bar)	30 PSI (2.1 bar)	1 PSI (0.07 bar)
CV-3322	Inlet	1/4-28 FB, M to 1/4-28 FB, F	49 µL	0.040" (1.0 mm)	2,000 PSI (138 bar)	30 PSI (2.1 bar)	1 PSI (0.07 bar)
CV-3323	Outlet	1/4-28 FB, M to 1/4-28 FB, F	49 µL	0.040" (1.0 mm)	2,000 PSI (138 bar)	30 PSI (2.1 bar)	1 PSI (0.07 bar)
CV-3324	Inlet	1/4-28 FB, M to 1/4-28 FB, F	182 µL	0.060" (1.60 mm)	2,000 PSI (138 bar)	30 PSI (2.1 bar)	1 PSI (0.07 bar)
CV-3325	Outlet	1/4-28 FB, M to 1/4-28 FB, F	182 µL	0.060" (1.60 mm)	2,000 PSI (138 bar)	30 PSI (2.1 bar)	1 PSI (0.07 bar)
CV-3330	Inlet/Outlet	1/4-28 FB, F to 1/4-28 FB, F	34 µL	0.020" (0.50 mm)	2,000 PSI (138 bar)	30 PSI (2.1 bar)	1 PSI (0.07 bar)
CV-3335	Inlet	1/4-28 FB, F to 10-32 C, M	49 µL	0.020" (0.50 mm)	2,000 PSI (138 bar)	30 PSI (2.1 bar)	1 PSI (0.07 bar)
CV-3336	Outlet	1/4-28 FB, F to 10-32 C, M	49 µL	0.020" (0.50 mm)	2,000 PSI (138 bar)	30 PSI (2.1 bar)	1 PSI (0.07 bar)
CV-3340	Inlet/Outlet	10-32 C, F to 10-32 C, F	34 µL	0.020" (0.50 mm)	2,000 PSI (138 bar)	30 PSI (2.1 bar)	1 PSI (0.07 bar)

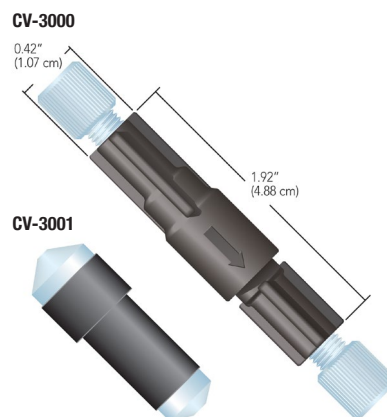
Quick-Stop Luer & Inline Cartridge Check Valves

The Quick-Stop Luer Check Valve is designed to provide inline luer connect/disconnect convenience without the mess and hazard of spills. Just connect the valve assembly to your inline tubing using standard 1/4-28 flat-bottom fittings. The check valve is automatically opened once the luer connection is engaged, allowing flow in either direction. Disconnecting the luer union causes the check valve to close.

Upchurch Scientific cartridge style Inline Check Valves are designed to limit flow to one direction. These assemblies withstand system pressures of 1,000 PSI (69 bar). The cracking pressures are 1.5 PSI (0.1 bar) for the CV-3001 and 3 PSI for the CV-3011. Tolerance on the cracking pressure for CV-3001 is ± 0.5 PSI (0.03 bar) and ± 1.5 PSI (0.1 bar) on CV-3011.



QUICK-STOP LUER & INLINE CARTRIDGE CHECK VALVES			
PART NO	DESCRIPTION	SWEPT VOLUME	INCLUDES
QUICK-STOP LUER CHECK VALVES			
P-696	Quick-Stop Luer Check Valve Assembly	127 μ L	(1) P-697, (1) P-655
P-697	Quick-Stop Luer Check Valve	107 μ L	
P-699	Bulkhead Quick-Stop Luer Valve	107 μ L	(1) nut/lock washer set
INLINE CARTRIDGE CHECK VALVES			
CV-3000	Inline Check Valve Assembly for 1/16" OD tubing	96 μ L	(1) CV-3001, (2) XP-215
CV-3001	Inline Check Valve Cartridge for CV-3000	91 μ L	
CV-3010	Inline Check Valve Assembly for 1/8" OD tubing	100 μ L	(1) CV-3011, (2) XP-315
CV-3011	Inline Check Valve Cartridge for CV-3010	92 μ L	



Application Note

- ➔ **Inlet Solvent Reservoir:** Quickly change your solvent on the low pressure end of an HPLC system, while preventing potentially hazardous spills. Just install a Quick-Stop Luer Check Valve Assembly between your solvent reservoir and the pump, with the valve towards the bottle. The valve will prevent solvent leakage from the line coming from the reservoir, while the check valves in your pump prevent spills from the line leading to the pump. With both lines still full of solvent, this system also helps reduce the need to reprime your pump.
- ➔ **FIA Sample Injection:** The Quick-Stop Luer Check Valve provides a practical means to introduce a sample into FIA and other low pressure systems, when used in conjunction with a P-612 Pressure Relief Valve Tee (page 285). Simply connect the Tee into the appropriate flow path line with the included fittings and thread the P-697 Quick-Stop Luer Valve onto the 1/4-28 male end of the Tee. Sample can then be introduced conveniently by using a standard luer-tipped syringe. The check valve is automatically opened when the syringe is attached and closed when the syringe is removed.
- ➔ **Post Column Derivatization:** For post-column derivatization, place a CV-3000 Inline Check Valve on the effluent side of your column to prevent derivatizing agents from flowing backwards and poisoning the column. Placement on the post-column reagent line will also prevent mobile phase from contaminating the reagent if the auxiliary pump fails.
- ➔ **Helium Sparging Tank Protection:** Try the CV-3010 Assembly, designed specifically for degassing (sparging) lines to prevent solvent backup if the sparging gas runs out. This check valve will help prevent potential solvent cross-contamination and damage to the gas regulating valve.

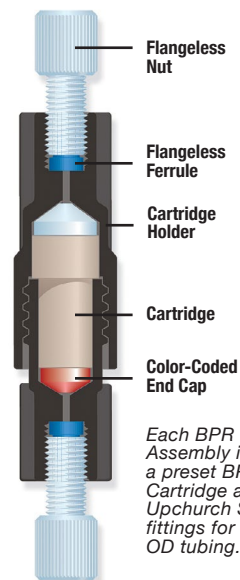
Back Pressure Regulators (BPRs)

Choose from Biocompatible and Stainless Steel BPR Assemblies, each complete with a replaceable, factory preset cartridge (except the 5 and 20 PSI versions).

Upchurch Scientific BPR Assemblies create incremental back pressures ranging from 5 – 1,000 PSI (0.3 – 69 bar). The Biocompatible BPR Assemblies feature a PEEK holder; polymer-based fittings; biocompatible BPR cartridges and wrenches for tightening. Stainless Steel BPR assemblies feature the same biocompatible BPR cartridges with a 316 stainless steel holder and polymer fittings.

The recommended operating flow rate range for our BPR Cartridges is 0.1 – 10 mL/min. Within this range, the amount of back pressure created by the BPR Cartridges and Assemblies will not vary more than $\pm 10\%$. Lower or higher flow rates may result in larger pressure fluctuations. Materials of construction include: PEEK, ETFE, perfluoroelastomer, and gold-plated stainless steel.

Please Note: These Back Pressure Regulator Holders are designed to allow each cartridge to operate at its stated pressure setting when tightened to 20 in-lbs. of torque. To approximate this level of torque, first finger tighten the Holder, then tighten an additional 1/8 – 1/4 turn with the supplied wrenches.



Each BPR Assembly includes a preset BPR Cartridge and Upchurch Scientific fittings for 1/16" OD tubing.

TECH TIP

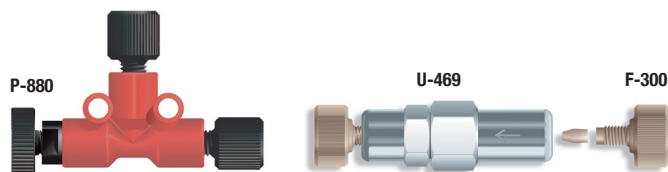
Small gas bubbles often form as solvent moves from the high pressure of an HPLC column to the low pressure environment leading to the detector. This outgassing can cause erratic baseline readings and loss of sensitivity. Placing an Upchurch Scientific BPR (usually a 40 – 100 PSI) after the detector provides an excellent, low-cost method for reducing this problem by maintaining enough back pressure on the mobile phase to keep gases dissolved in solution.

A back pressure regulator can also be used as a pump preload for low and fluctuating pressure applications. Many of today's pumps require a steady back pressure to function properly. Install an Upchurch Scientific BPR (usually 500 – 1,000 PSI) between the pump and the injector to enhance pump performance.

BACK PRESSURE ASSEMBLIES				
PART NO	PRESSURE SETTING	HOLDER MATERIAL	INCLUDES	SWEPT VOLUME
P-790	5 PSI	PEEK	(2) XP-215	134 μ L
P-791	20 PSI	PEEK	(2) XP-215	134 μ L
P-785	40 PSI	PEEK	(1) P-761, (2) XP-215	131 μ L
P-786	75 PSI	PEEK	(1) P-762, (2) XP-215	131 μ L
P-787	100 PSI	PEEK	(1) P-763, (2) XP-215	131 μ L
P-788	250 PSI	PEEK	(1) P-764, (2) XP-235	102 μ L
P-789	500 PSI	PEEK	(1) P-765, (2) P-250, (2) LT-115	96 μ L
P-455	1,000 PSI	PEEK	(1) P-796, (2) P-250, (2) LT-115	89 μ L
U-605	40 PSI	SST	(1) P-761, (2) XP-201	129 μ L
U-606	75 PSI	SST	(1) P-762, (2) XP-201	129 μ L
U-607	100 PSI	SST	(1) P-763, (2) XP-201	129 μ L
U-608	250 PSI	SST	(1) P-764, (2) XP-201	99 μ L
U-609	500 PSI	SST	(1) P-765, (2) XP-201	93 μ L
U-610	750 PSI	SST	(1) P-795, (2) P-250, (2) LT-115	91 μ L
HIGH PRESSURE ADJUSTABLE BPR ASSEMBLY				
P-880	2,000 – 5,000 PSI		(2) F-120BLK	9 μ L

REPLACEMENT CARTRIDGES				
PART NO	PRESSURE SETTING	BODY	ENDCAP	SWEPT VOLUME
P-761	40 PSI	Tan	Blue	125 μ L
P-762	75 PSI	Tan	Yellow	125 μ L
P-763	100 PSI	Tan	Red	125 μ L
P-764	250 PSI	Tan	White	95 μ L
P-765	500 PSI	Tan	Green	89 μ L
P-795	750 PSI	Black	Blue	87 μ L
P-796	1,000 PSI	Black	Green	83 μ L

BPR HOLDERS				
PART NO	HOLDER STYLE	HOLDER MATERIAL	INCLUDES	SWEPT VOLUME
P-465	Biocompatible BPR	PEEK	(2) P-250, (2) LT-115	7 μ L
U-469	High Pressure BPR	SST	(2) F-300	4 μ L



Ultra-Low Volume Back Pressure Regulators (BPR)

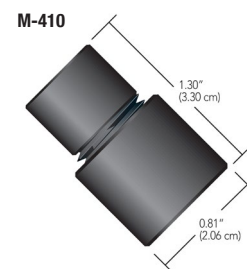
Ultra-Low Volume Back Pressure Regulators (BPRs) were developed to minimize swept volume, which is especially important for multi-detector applications. With a maximum swept volume of only 6 μL , it is nearly impossible to detect these BPRs as part of your fluid pathway.

ULTRA-LOW VOLUME BPR SPECIFICATIONS

PART NO	BACK PRESSURE SETTING	FLOW RATE RECOMMENDATIONS	RECOMMENDED PRESSURE RANGE PSI (BAR)	1/16" OD TUBING
M-410	100 ² (7) ²	Optimal: 100 μL – 1 mL/min Max: 4 mL/min	40 – 150 (3 – 10)	PEEK, 0.010" ID
M-412	500 ² (34) ²	Optimal: 100 μL – 1 mL/min Max: 4 mL/min	250 – 525 (17 – 36)	PEEK, 0.010" ID
M-420	100 ² (7) ²	Optimal: 3 – 8 mL/min Max: 10 mL/min	45 – 150 (3 – 10)	PEEK, 0.020" ID

ULTRA-LOW VOLUME BPR ORDERING INFORMATION

PART NO	DESCRIPTION	PRESSURE SETTING	TUBING OD	SWEPT VOLUME	INCLUDES
M-410	Low Flow	100 PSI (7 bar)	1/16"	6 μL	XP-230
M-412	Low Flow	500 PSI (34 bar)	1/16"	6 μL	XP-230
M-420	High Flow	100 PSI (7 bar)	1/16"	6 μL	XP-230

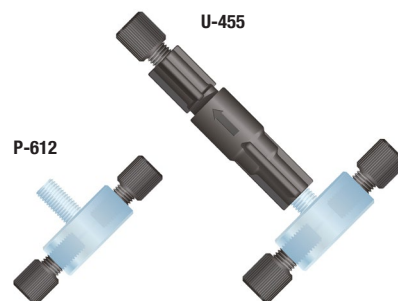


Pressure Relief Valves

Upchurch Scientific Pressure Relief Valves are ideal for preventing system over-pressurization. The 100 PSI version is a good, general purpose valve, while the 5 PSI version is perfect for protecting syringe and peristaltic pump systems.

PRESSURE RELIEF VALVES

PART NO	DESCRIPTION	PRESSURE SETTING	TUBING OD	SWEPT VOLUME	INCLUDES
U-455	Assembly	5 PSI (0.3 bar)	1/16"	148 μL	XP-201
U-456	Assembly	100 PSI (7 bar)	1/16"	139 μL	XP-201, wrenches
P-612	Tee		1/16"	14 μL	XP-201
P-612S	Tee		3/16"	348 μL	XP-201



Universal Prime/Purge Valves

The Upchurch Scientific Universal Prime/Purge Valve is easy to operate. Simply install a valve along the flow path with the included fittings and attach a luer-tipped syringe. Then, withdraw the plunger and watch as solvent residual bubbles are removed from the solvent line. The valve automatically closes when the syringe is removed.

The valve is designed to be used with 1/8" OD tubing. Optional mounting is made easy by the handy holes in the body of each unit.

PRESSURE RELIEF VALVES

PART NO	DESCRIPTION	INCLUDES
B-310	10 cc Disposable Luer-Tipped Syringe	
V-321	Universal Prime/Purge Valve	(2) P-300N, (2) P-335

