



# LC AND LC/MS

Your Essential Resource for Columns & Supplies



The Measure of Confidence



**Agilent Technologies**



Injection Valve Assembly, 0101-0921


## Valve Supplies

Agilent's industry-leading Manual Injection Valves are designed to ensure trouble-free operation with your HPLC System.

Our valves also feature patented "Make-Before-Break" architecture that allows you to switch between LOAD and INJECT positions without interrupting the flow. So you can analyze more samples in less time.

## Valve Maintenance Notes

- Vespel is a polyimide with low wear and high chemical resistance. Vespel tolerates a pH range of 0 to 10. More basic solutions 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
- Tefzel is recommended for use in applications where PEEK cannot be used, such as methylene chloride or DMSO in higher concentrations

 pH Range	pH Range		
	0-7	7-10	10-14
Vespel			
PEEK			
Tefzel			

# Injection Valves

## Injection Valves

Valve	Use With	Part No.	RheBuild Kit	Rotor Seal Material	Rotor Seal	Stator	Stator Face
2 position/6 port injection valve, 400 bar	G1313A, G1329A, G1367A/B, 1120	0101-0921	0101-1257	Vespel	0100-1853	0100-1850	0100-1851
				Tefzel	0100-1849		
				PEEK	0100-2231		
2 position/6 port micro injection valve, 400 bar	G1377A, G1389A	0101-1050		Vespel	0100-2088	0100-2089	
2 position/6 port injection valve, 600 bar	G1329B, G1367C SL, G1367D SL Plus, G1367E, 1220 Infinity LC	0101-1422		PEEK	0101-1416	0101-1417	
10 port, dual loop valve, 400 bar	G2258A	0101-1385		Vespel	0101-2415	0101-1390	
2 position/6 port MBB injection valve, 400 bar	G2260A	0101-1267	0101-1268	PEEK	0101-1268*	0100-2195	
2 position/6 port ultra high pressure valve, 1200 bar	G4226A	5067-4114		Vespel	5068-0007	5068-0006	

\*Includes seal and stator face



Stator for 2 position/6 port ultra high pressure valve, 1200 bar, 5068-0006



Switching valve

## Switching Valve Supplies

A set of valve types specially designed for Agilent HPLC systems allows you to extend your HPLC applications. New valve offerings give you:

- More flexibility in solvent selection and column selection
- New automation capabilities in sample preparation
- Increased sample throughput through alternating column regeneration
- Increased separation performance with multidimensional chromatography

### External Switching Valve Replacement Parts

Description	Use With	Valve Head	Rotor Seal		Stator Face	Stator Head	Repair Kit	Bearing Ring
			Material	Rotor Seal				
2 position/6 port valve head, 600 bar	G4231A	5067-4131	PEEK	0101-1409	N/A	0101-1417	N/A	1535-4045
2 position/6 port valve head, 1200 bar	G4231B	5067-4117	Vespel	5068-0008	N/A	5068-0006		
2 position/10 port micro valve head, 600 bar	G4232A	5067-4144	PEEK	0101-1415	N/A	0101-1421		
2 position/10 port valve head, 1200 bar	G4232B	5067-4118	Vespel	5068-0012	N/A	5068-0011		
6-Column selector valve head, 600 bar	G4234A	5067-4146	PEEK	5068-0076	N/A	5068-0077		
6-Column selector valve head, 1200 bar	G4234B	5067-4142	Vespel	5068-0067	N/A	5068-0077		
Bio-inert 12 position/13 port valve POD, 210 bar	G4235A	5067-4159	PEEK	Repair Kit	Repair Kit	5068-0097	0101-1288	
Bio-inert 2 position/6 port, 600 bar	G5631A	5067-4148	PEEK	0101-1409	0100-1851	5068-0060	N/A	
2 position/10 port valve head Bio-inert, 600 bar	G5632A	5067-4132	PEEK	5068-0041	5068-0095	5068-0040		
Bio-inert 4-Column selector, 600 bar	G5639A	5067-4134	PEEK	5068-0045	5068-0093	5068-0044		

**Internal Switching Valves Replacement Parts**

Description	Use With	Part No.	Rotor Seal		Stator Face	Stator Head	Bearing Ring	Repair Kit
			Material	Rotor Seal				
2 position/6 port, 400 bar	G1316A/B	G1316-67005	Tefzel	0100-1854	0100-1851	0100-1850	0100-1852	0101-1258
			Vespel	0100-1855				
			PEEK	0100-2233				
2 position/10 port CSV, 400 bar	G1316A	G1316-67007	PEEK	Repair Kit	Repair Kit	0101-1362	0100-1852	0101-1360
2 position/6 port HP CSV, 600 bar	G1316A 1260 Series/G1316B	G1353-68750	PEEK	0101-1409	N/A	0101-1417	1535-4045	N/A
2 position/6 port micro CSV, 400 bar	G1316A	G1316-67006	Vespel	0100-2087	N/A	0100-2089		
2 position/10 port CSV, 600 bar	G1316B	G1316-67009	PEEK	0101-1415	N/A	0101-1421		
2 position/6 port valve head, 600 bar	G1316C	5067-4137	PEEK	0101-1409	N/A	0101-1417		
2 position/6 port valve head, 1200 bar	G1316C	5067-4117	Vespel	5068-0008	N/A	5068-0006		
2 position/10 port micro valve head, 600 bar	G1316C	5067-4144	PEEK	0101-1415	N/A	0101-1421		
2 position/10 port valve head, 1200 bar	G1316C	5067-4118	Vespel	5068-0012	N/A	5068-0011		
6-Column selector valve head, 600 bar	G1316C	5067-4146	PEEK	5068-0076	N/A	5068-0077		
6-Column selector valve head, 1200 bar	G1316C	5067-4142	Vespel	5068-0067	N/A	5068-0077		
8 position/9 port valve head, 400 bar	G1316C	5067-4108	PEEK	5067-4113	5067-4113	5067-4112		
8 position/9 port valve head, 600 bar	G1316C	5067-4107	PEEK	5067-4111	N/A	5068-0001		
8 position/9 port valve head, 1200 bar	G1316C	5067-4121	Vespel	5068-0002	N/A	5068-0001		
2D-LC, valve head, 1200 bar	G1316C	5067-4170	Vespel	5068-0116	N/A	5068-0115		
Bio-inert 12 position/13 port valve POD, 210 bar	G1316C	5067-4159	PEEK	0101-1288	0101-1288	5068-0097		
Bio-inert 2 position/6 port, 600 bar	G1316C	5067-4148	PEEK	0101-1409	0100-1851	5068-0060		
Bio-inert 4-Column selector, 600 bar	G1316C	5067-4134	PEEK	5068-0045	5068-0093	5068-0044		
2 position/10 port valve head Bio-inert, 600 bar	G1316C	5067-4132	PEEK	5068-0041	5068-0095	5068-0040		



Valve head, 2 position/6 port, 600 bar, 5067-4137



2 position/6 port ultra high pressure valve, 5067-4117



Valve head, 2 position/10 ports for ultra high pressure, 1200 bar, 5067-4118



Stator for 2 position/6 port ultra high pressure valve, 600 bar, 0101-1417



Rotor seal, 2 position/6 port, 600 bar for C1316B, 0101-1409

## Manual Injection Valves

Agilent provides the latest developments in LC injection technology from Rheodyne.

- Continuous flow path with "Make-Before-Break" design
- Sample capacity
- Choice of stainless or PEEK flow path
- Easy access to fittings due to wide 30° port angles

### Series 7725i and 9725i Analytical Injection Valves

Stainless steel (SS) 7725i and PEEK 9725i valves are the most popular injection valves for analytical HPLC. Features include:

- A 20  $\mu$ L loop (installed). Loops are also available in stainless steel or PEEK from 5  $\mu$ L to 5 mL (10 mL for PEEK)
- Make-Before-Break (MBB) technology allows switching without flow interruption
- Wide 30° port angles offer easier access to fittings
- Built-in position sensing switch provides the chromatograph with a reproducible start signal

### Series 3725i-038 and 3725i Preparative Injection Valves

The series 3725i-038 (stainless steel) and 3725i (PEEK) are the most suitable manual valves for large sample volumes, high flow rates, and preparative columns sized 1.0-10 cm in diameter.

- Versatile ports accommodate 1/8 in (3.2 mm) and 1/16 in (1.6 mm) od tubing.
  - Note:** 1/16 in od tubing requires an adapter, P/N 5067-1503
- 1.0 mm diameter passages allow flow rates up to 800 mL/min with virtually no pressure drop
- Make-Before-Break technology allows switching without flow interruption
- High reproducibility for both partial-filling and complete-filling methods
- Sample range is 100  $\mu$ L to 20 mL (10 mL loop is installed)
- Flow range is 10 to 800 mL/min
- Built-in position sensing switch gives the chromatograph a reproducible start signal



7725i manual injection valve, 5063-6502

## Manual Injection Valves with Position Sensing Switches

Description	Comments	Part No.	Rotor Seal Material	Rotor Seal	Stator Face	Stator Head	Bearing Ring	Isolation Seal	Repair Kit	Needle Port Adaptor
2 position/ 6 port valve, 400 bar, for G1328A/B	Analytical	5063-6502	Tefzel	0101-0620	0100-1859	0100-1860	1535-4045	1535-4046	0101-1254	N/A
			Vespel	0101-0623						
			PEEK	0101-1255						
2 position/ 6 port valve, 600 bar, for G1328C	Analytical	5067-4141	PEEK	5068-0052	N/A	5068-0053	1535-4045	1535-4046	N/A	N/A
2 position/ 6 port valve, 400 bar, for 1120	Analytical	5067-4104	PEEK	5067-4105	N/A	0100-1850	1535-5045	N/A	N/A	5067-1581
2 position/ 6 port, 600 bar, for 1220	Analytical	5067-4202	PEEK	0101-1409	N/A	0101-1417	1535-4045	N/A	N/A	5067-1581
2 position/ 6 port valve, 600 bar, for Bio-inert	Bio	5067-4158	PEEK	5068-0082	0100-1851	5068-0060	1535-4045	N/A	N/A	5067-1581
2 position/ 6 port valve, 400 bar PEEK	Analytical	0101-1253	Tefzel	0101-0620	0100-1859	1535-5082	N/A	1535-4046	N/A	N/A
Manual prep injection valve, SSt 400 bar, for 3725i	Preparative	0101-1232	PEEK	0101-1233	N/A	N/A	N/A	1535-4046	N/A	N/A
Manual prep injection valve, PEEK	Preparative	0101-1231	PEEK	0101-1233	N/A	N/A	N/A	1535-4046	N/A	N/A

## Manual Injection Valve Replacement Parts

- Rotor seals wear with use and need routine replacement
- Stators only need replacement if the ports are damaged
- PEEK rotor seals are incompatible with concentrated nitric and sulfuric acids



Stainless steel sample loops

## Manual Injection Valve Sample Loops

The right mix of injection valve sample loops are available for your application needs. Agilent offers factory-cut and finished loops of the highest quality.

- Stainless steel loops are square cut and free of burrs for a flush connection
- Flexible PEEK loops have a clean, straight cut for low dead volume connections

### Stainless Steel Sample Loops

- Sample loops for Rheodyne 7725 Series and 7125 Series valves are not interchangeable due to the change in port angle
- Actual volumes can differ due to tolerance of metal tubing bore
- Accuracy of large metal loops is  $\pm 5\%$ , intermediate loops  $\pm 10\%$ , small loops  $\pm 30\%$

### PEEK Sample Loops

- Inert to most organic solvents
- Wall thickness, temperature, exposure time and concentration of organic solvents affect the durability of PEEK tubing
- Concentrated nitric acid and sulfuric acid weaken PEEK tubing
- THF, methylene chloride and DMSO cause PEEK to swell
- Actual volumes can differ because of tolerance of tubing bore
- Accuracy of large PEEK loops is  $\pm 14\%$ , intermediate loops  $\pm 21\%$ , small loops  $\pm 65\%$



**Manual Injection Valve Sample Loops**

Volume	ID (mm)	Material	Use With	Part No.
5 $\mu$ L	0.18	SS	7125 and 7010	1535-4860
	0.18	SS	7725	0101-1248
	0.18	PEEK	9725	0101-1241
10 $\mu$ L	0.30	SS	7125 and 7010	0101-0376
	0.30	SS	7725	0100-1923
	0.25	PEEK	9725	0101-1240
20 $\mu$ L	0.51	SS	7125 and 7010	0101-0377
	0.30	SS	7725	0100-1922
	0.25	PEEK	9725	0101-1239
50 $\mu$ L	0.51	SS	7125 and 7010	0101-0378
	0.51	SS	7725	0100-1924
	0.51	PEEK	9725	0101-1238
100 $\mu$ L	0.51	SS	7125 and 7010	0101-0379
	0.51	SS	7725	0100-1921
	0.51	PEEK	9725	0101-1242
200 $\mu$ L	0.76	SS	7125 and 7010	0101-1252
	0.76	SS	7725	0101-1247
	0.51	PEEK	9725	0101-1237
500 $\mu$ L	0.76	SS	7125 and 7010	0101-1251
	0.76	SS	7725	0101-1246
	0.76	PEEK	9725	0101-1236
1 mL	0.76	SS	7125 and 7010	0101-1219
	0.76	SS	7725	0101-1245
	0.76	PEEK	9725	0101-1235
2 mL	1.00	SS	7125 and 7010	0101-1250
	1.00	SS	7725	0101-1244
	0.76	PEEK	9725	0101-1234
	1.6	PEEK	3725	0101-1229
5 mL	1.00	SS	7125 and 7010	0101-1249
	1.00	SS	7725	0101-1243
	0.76	PEEK	9725	0101-1230
	1.6	PEEK	3725	0101-1228
10 mL	2.0	PEEK	3725	0101-1227
20 mL	2.0	PEEK	3725	0101-1226



PEEK sample loops

## Syringes for Manual Injection

Agilent syringes for manual injection valves have a blunt-tip point style needle to prevent damaging the valve's internal parts. They can be used with any type/brand of manual injection valve.

### LC Manual Syringes with Fitted Plungers

Volume (μL)	Description	Unit	Needle	Part No.
5	Fixed		22 gauge/2 in/LC tip	5190-1480
10	Fixed		22 gauge/2 in/LC tip	5190-1484
	Removable		22 gauge/2 in/LC tip	5190-1485
	Replacement needle for 10 μL syringe	3/pk		5190-1486
25	Fixed		22 gauge/2 in/LC tip	5190-1494
50	Fixed		22 gauge/2 in/LC tip	5190-1501
100	Fixed		22 gauge/2 in/LC tip	5190-1508
250	Fixed		22 gauge/2 in/LC tip	5190-1515
500	Fixed		22 gauge/2 in/LC tip	5190-1522



Syringe, 100 μL FN LC tip, 5190-1508

**LC Manual Syringes with PTFE-Tipped Plungers**

Volume (µL)	Description	Unit	Needle	Part No.
10	Removable		22 gauge/2 in/LC tip	5190-1492
	Replacement needle for 10 µL syringe	3/pk		5190-1486
	Replacement plunger with PTFE tip for 10 µL syringe			5190-1558
25	Removable		22 gauge/2 in/LC tip	5190-1499
	Replacement needle	3/pk		5190-1571
	Replacement plunger with PTFE tip for 25 µL syringe			5190-1560
50	Removable		22 gauge/2 in/LC tip	5190-1505
	Replacement needle	3/pk		5190-1571
	Replacement plunger with PTFE tip for 50 µL syringe			5190-1561
100	Removable		22 gauge/2 in/LC tip	5190-1512
	Replacement needle	3/pk		5190-1571
	Replacement plunger with PTFE tip for 100 µL syringe			5190-1562
250	Removable		22 gauge/2 in/LC tip	5190-1520
	Replacement needle	3/pk		5190-1571
500	Removable		22 gauge/2 in/LC tip	5190-1526
	Replacement needle	3/pk		5190-1571
	Replacement plunger with PTFE tip for 500 µL syringe			5190-1564

**TIPS & TOOLS**

Agilent has made vial, cap and septum selection easy with its new Interactive Vial Selection Tool, available online in both desktop and mobile versions. The tool identifies the right vial and closures for your particular application, and provides the rationale for the choices offered. Visit [www.agilent.com/chem/SelectVials](http://www.agilent.com/chem/SelectVials)

