

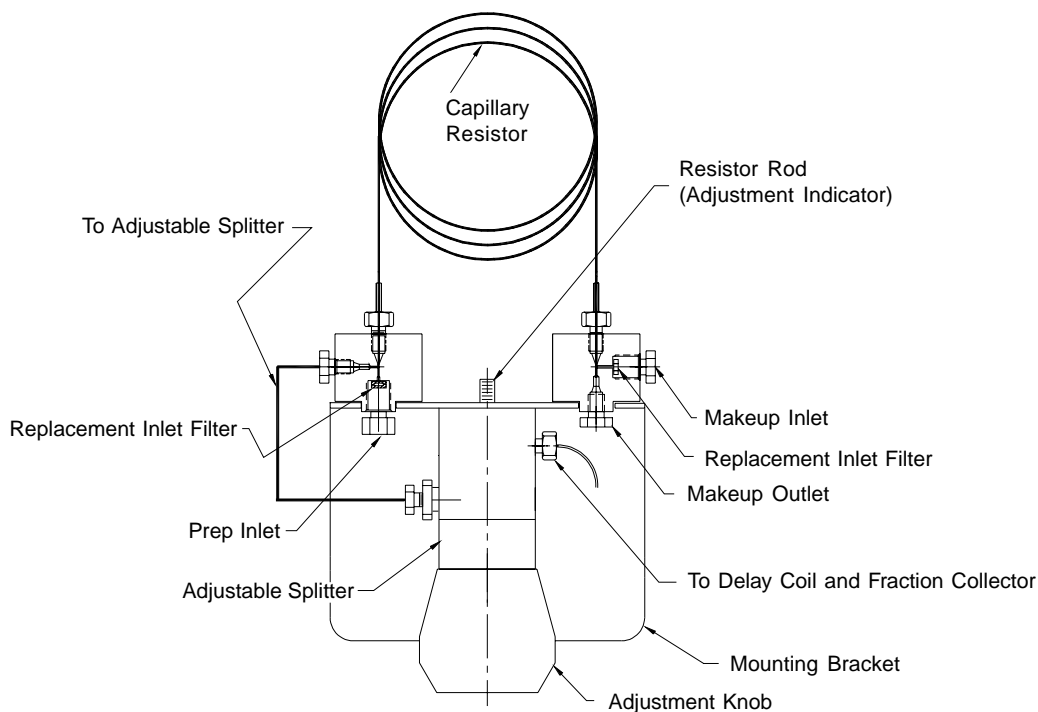
Makeup-Flow Splitter Installation Instructions

ASI Adjustable Makeup-Flow Splitters, Series 690-POXX-XX

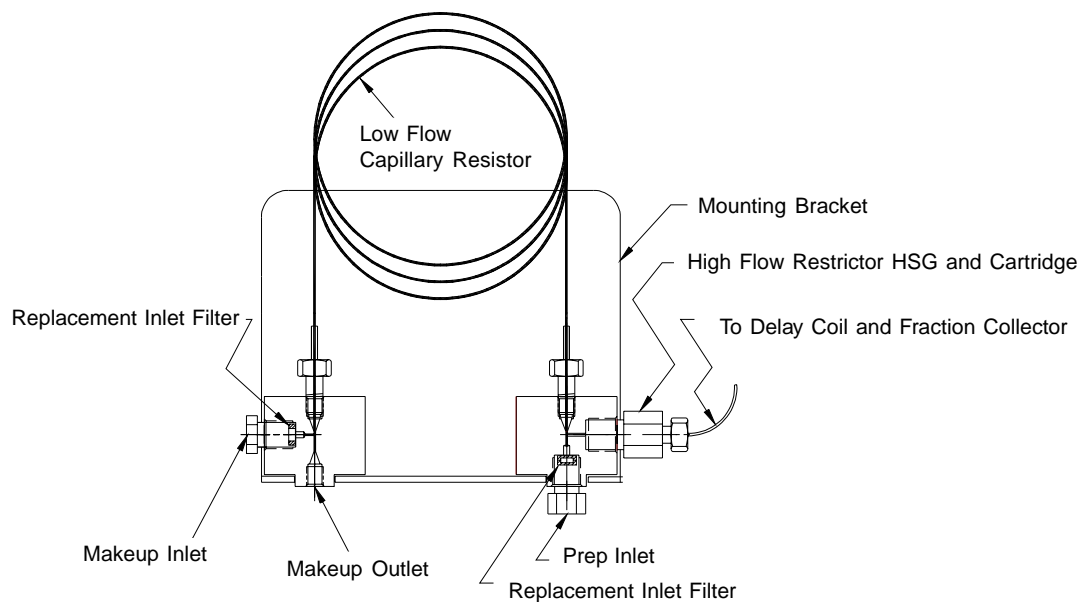
ASI Fixed Makeup-Flow Splitters, Series 692-POXX-XX



Analytical Scientific Instruments



Adjustable Makeup-Flow Splitters



Fixed Makeup-Flow Splitters

Connections

All inlet and outlet ports on ASI splitter valves accommodate female 10/32 thread type fittings made from stainless steel or PEEK. Connect all ports with Parker Hannifin or equivalent bushings and ferrules for 1/16" OD tubing. Connecting the splitter valves with tubing smaller than 1/16" OD may require special fittings.

Inlet Port/Inlet Frit

The inlet port is machined into the inlet nut for all splitter valves. The inlet nut houses a replaceable inlet frit. The frit volume varies with the type of splitter valve. Standard frit dimensions are provided in the Product bulletin shipped with each valve. The inlet frit can be accessed and changed by removing the inlet nut.

Makeup Inlet Port/Inlet Frit

The makeup inlet port is identical to the inlet port described above and also houses a replaceable inlet frit. The makeup inlet port is used to add solvent to the split flow. If a makeup flow is not necessary the port can be plugged off but the residual flow path will add some dispersion to the split flow.

High Flow Port

The tubing connected to this port should be 0.020" ID or larger. Use 0.030 ID or larger for flow rates over 20mL/min. Smaller ID tubing can be used as long as it does not generate any back pressure. If this flow is routed to a chromatography detector or fraction collector, choice of tubing ID may affect peak dispersion. Model 690/692-POXX-XX has a delay coil connected to the outlet port which should be connected to a fraction collector. Delay coil specifications are described in the QuickSplit Flow Splitter product bulletin.

Low Flow Port

The tubing ID connected to this port should be small enough to minimize peak dispersion yet large enough to prevent additional back pressure downstream from the splitter. Please refer to Table 1 as a guide to estimate pressure drop across various connecting tubing.

Fluid Resistor Cartridge Replacement

A replaceable resistor cartridge is located in the high flow resistor housing on the Series 620-PO20 and 620-PO90. Unscrew the housing to replace the resistor cartridge. The cartridge flow is bidirectional.

Important Equations	
$R = Q_1/Q_2$	R = Split ratio
$R = (Q-Q_2)/Q_2$	Q1 = High flow rate
	Q2 = Low flow rate
	Q = Input flow

Table 1: Pressure Drop from Tubing

Flow	Tubing I.D. (inches)		
	0.0025	0.005	0.010
0.1 mL/min.	15.4 PSI	1.0 PSI	0.06 PSI
1.0 mL/min.	154 PSI	9.6 PSI	0.6 PSI
10 mL/min.	1,540 PSI	96 PSI	6.0 PSI
	PSI per inch of tube length, H ₂ O		

QuickSplit Maintenance and Trouble Shooting Guide

General considerations

Cleaning:

All wetted surfaces in the QuickSplit 620/PO20/PO90 fixed series flow splitters are either PEEK or stainless steel. Both materials can be sonicated in a variety of solvents and back flushed without problem. Only the low flow resistor cartridge in the QuickSplit 600 adjustable series flow splitters can be sonicated and flushed.

Routine Maintenance:

Replace inlet filter every six months or if the pressure drop across the splitter increases more than 200PSI. Never store the splitter with pure water, as biological growth may cause clogging. Please refer to the QuickSplit product bulletin for inlet filter ordering information.

Loss of MS Sensitivity:

In some cases QuickSplit flow Splitters can build up a static charge resulting in a loss of sensitivity at the MS. This behavior is typically limited to MS systems using an electrospray source. The problem is solved by grounding the Flow splitter to a suitable ground.

Connecting Tubing:

Post-column flow splitters are manufactured assuming there is no pressure drop down stream from the splitter. Any pressure drop created by the connecting tubing will affect the accuracy of the split ratio. If the splitter is exhibiting high pressure (>40 bar) as delivered remove all down stream connecting tubing and test with water at the flow rate the product was ordered. Precolumn flow splitters must have the HPLC column installed prior to testing.

QuickSplit Fixed and Multiport Flow Splitters

Leaks:

Make sure all threaded connections are secure and tight. Inlet filter must be seated properly in the inlet nut to insure leak free operation. If leak persists call *ASI* technical support.

High Pressure or Blockage:

If the high pressure is due to a blockage isolate the blockage to the low or high flow resistor cartridge by plugging one of the resistor ports while checking the flow at the other. If both high and low flow channels appear plugged check the splitter body by removing both resistors, inlet filter, sonicate and flush. If the blockage can be localized to a specific resistor cartridge sonicate the cartridge and reverse the flow to dislodge any contaminants. If the restrictor cartridge function cannot be restored you will need to purchase a new resistor(s).

QuickSplit Adjustable Flow Splitters

High Pressure or Blockage:

Isolate the blockage to the low flow (fixed resistor cartridge) or high flow (adjustable resistor) by plugging one of the resistor ports while checking the flow at the other. If the blockage is isolated to the low flow resistor cartridge follow the recommendations above for Fixed Splitters.

If the blockage is localized to the adjustable portion of the splitter remove the low flow resistor housing and cartridge and flush the splitter with water (1ml/min) while adjusting the valve from the highest split ratio (max clockwise) to the lowest split (max counterclockwise) a couple of times. If this procedure does not solve the problem the splitter will need to be repaired at *ASI*.

Leaks:

Make sure all threaded connections are secure and tight. Inlet filter must be seated properly in the inlet nut to insure leak free operation. If the leak appears to be coming from the main body of the splitter call *ASI* technical support.