Installation Instructions

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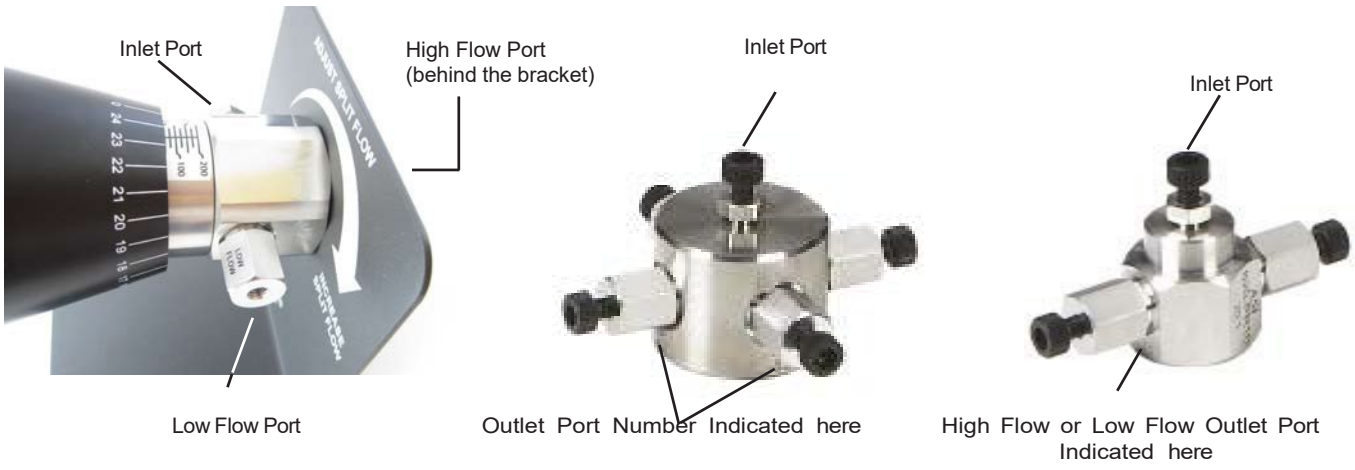

Series 610 **Series 630/640** **Series 62**

Connections:
The standard ports on ASI splitters accommodate male 10-32 thread fittings made from 316 Stainless Steel or PEEK. Connect these ports with Parker Hannifin or equivalent nuts and ferrules for 1/16" OD tubing. Splitters may also be ordered with ¼-28 flat bottom, or 5/16-24 CPI ports at inlet and high flow ports.

Inlet Port/Inlet Frit:
The inlet port is machined into the inlet nut for all splitters. The inlet nut houses a replaceable inlet frit. The frit volume varies with the type of splitter. The inlet frit can be accessed and changed by removing the inlet nut.

High Flow Port:
The inner diameter of tubing connected to this port should be large enough to avoid generating excessive back pressure, which can affect the split ratio. This change in split ratio may be corrected with further adjustment on adjustable splitters. If this flow is routed to a chromatography detector or a fraction collector, the choice of tubing ID may affect peak dispersion.

Low Flow Port:
The tubing ID connected to this port should be small enough to minimize peak dispersion and large enough to eliminate additional back pressure downstream from the splitter. Please refer to Table 1 as a guide to estimate the back pressure from various connecting tubing. Install the HPLC column prior to testing all **precolumn** flow splitters.

Multiport Splitters:
ASI Multiport splitters are generally configured for custom applications. Please contact ASI for the custom configurations.

Fluid Resistor Cartridge Replacement:
A resistor cartridge is located in the low flow outlet housing on the Series 610 (except Nano Adjustable Splitters) and in both the low and high flow outlet housings on the Series 620 (except High Split Ratio Fixed Splitters), and all outlet housings on the 630 and 640. Unscrew the housing to replace the resistor cartridges. The cartridge flow is bidirectional.

CAUTION:

Flow splitters must generate significant back pressure in order to do their work. A fixed splitter's tested inlet flow rate, and its pressure drop at that flow rate, are listed on the Product Specifications sheet provided with the splitter. The Manufacturing Test Log sent with each adjustable splitter lists pressure drops, per setting, at stated inlet flows. Please observe the Maximum Operating Pressure rating (MOP) of any devices upstream from the splitter. Small bore tubing may also add significant back pressure. If you have maximum pressure drop requirements for your splitter, please let us know when you order.

Table 1: Pressure drop, PSI per inch of tubing with water

	Tubing I.D. (microns)									
Flow mL/min.	10	15	20	30	40	50	75	100	127	254
0.0001	413 psi	82 psi	26 psi	5 psi	2 psi	1 psi	0	0	0	0
0.001	4,130 psi	816 psi	258 psi	51 psi	16 psi	7 psi	1 psi	0	0	0
0.01		8,158 psi	2,581 psi	510 psi	161 psi	66 psi	13 psi	4 psi	2 psi	0
0.1				5,099 psi	1,613 psi	661 psi	131 psi	41 psi	16 psi	1 psi
0.5					8,065 psi	3,304 psi	653 psi	206 psi	79 psi	5 psi
1.0						6,608 psi	1,305 psi	413 psi	159 psi	10 psi

Important Equations

$$R = Q1 / Q2$$

$$R = (Q-Q2) / Q2$$

R = Split ratio

Q1 = High flow rate

Q2 = Low flow rate

Q = Input flow

Maintenance and Trouble Shooting Guide

General considerations

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 calibration flow rate (refer to Test log came with a splitter). 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 blockage, try replacing the inlet filter. If the problem persists, then 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 the blockage can be localized to a specific resistor cartridge, you may try to sonicate the cartridge and reverse the flow to dislodge any contaminates. 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 port or high flow port by plugging one of the 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 counterclockwise) to the lowest split (max clockwise) a couple of times. Caution! Please do not turn the adjustable knob all the way to the left or right because it might cause damage of mechanism inside. 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.