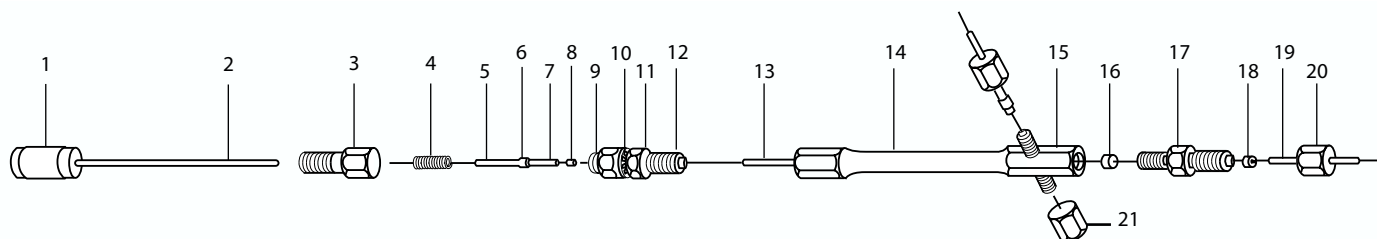


OSS-1

OUTLET SPLITTER SYSTEM



This outlet splitter system can be used with both 1/8" and 1/4" packed columns as well as flexible fused silica capillary columns.

The micro control valve provides a continuously variable range of split ratios between the two outlets of the valve and can be operated at 300°C.

The base connector of the valve can be shut off allowing flow only through the side arms.

Reducing unions for packed columns as well as a connector for capillary columns that incorporates the facility to introduce make up gas are provided.

INSTALLATION OF THE VALVE

NOTE:

1. Each valve is fitted with a torque limiting control knob which prevents over tightening of the needle and subsequent damage to the seal.
2. The stainless steel 1/8" OD stem body (14) and the lower section of the valve where the column and the gas connections are made may be heated to 300°C. However, the control assembly at the top of the valve must be located outside the hot zone and should be positioned so as not to exceed 100°C.

Locate or drill in a suitable position on the chromatograph oven wall a 4mm hole for the valve to be located.

Loosen the control knob (1) and unscrew the control assembly from the body (14).

Remove the locknut (11) and washer (10).

Insert the valve body (14) through the hole in the GC oven wall. Should you desire to provide a more substantial support for the valve an optional support bracket is available. Described as a mounting bracket for OSS - 1 and OSS - 2 VALVES, P/no. 1236010, the bracket is secured to a convenient place on the GL with self tapping screws. The valve is mounted on the bracket and the design allows for three dimensional positioning for ease of connection of the plumbing.

Insert the control knob assembly through the appropriate holes in the mounting strip and refit the washer (10) and locking nut (11) to hold assembly in place.

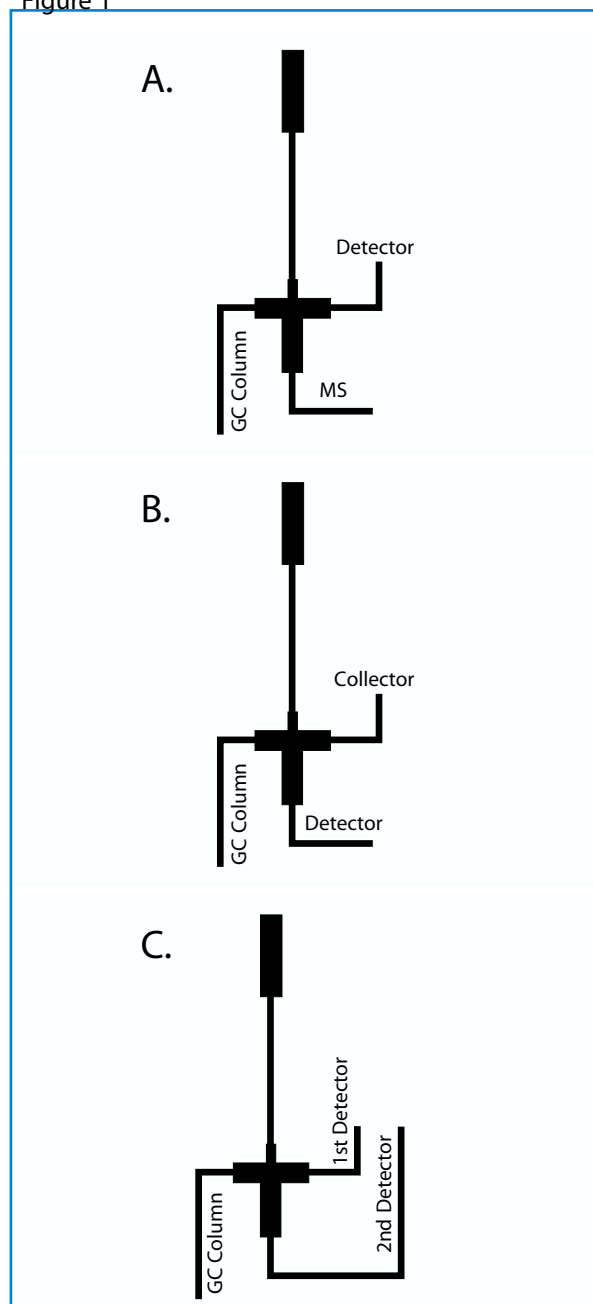
The valve body (14) may not be refitted to the control knob assembly.

Plan where the end of the chromatographic column will terminate and determine which if the three column connectors or reducing unions will be fixed to the end of the column.

With packed columns the column can simply be connected to either the SSU8/16 union for 1/8" OD columns and SSU4/16 union for the 1/4" columns.

With capillary columns the make-up tee supplied is used for connecting the column. Make up gas should be used to ensure there is a sufficiently high gas velocity through the system and therefore no dead volume. It is recommended that at least 10ml/min of make up gas is used.

Figure 1



The GLT transfer lines from the column to the valve and the valve to the detectors must be bent to the desired shape. Work out what bends are required and follow the directions for bending the GLT. DO NOT ATTEMPT TO BEND THE GLT IN THE COLD CONDITION as the glass lining will be permanently damaged.

The tubing can be bent without damage to the glass lining by heating with a gas air burner in the region where the bend is required. When the metal turns a medium red (approximately 800°C) it can slowly be bent to the desired angle while still in the flame.

Ideally the GLT should be cut to length using a wet silicon carbide cut off wheel then the ends ground the square, washed and dried. To overcome and chipping of the glass, the end should be flame polished by heating to a medium red.

An alternative method of cutting the GLT is to use the Terry Tool which is available from SGE (P/No. 082780). The glass in the end of the tube may be fractured after cutting and should be flame polished.

NEEDLE CARE AND REPLACEMENT

Seal (16) Replacement

With extensive use or from over tightening, the valve may not give adequate sealing and/or flow control due to a worn or damaged valve seat. Spare valve seats (VSV-6) are provided in the kit.

Remove the fused silica flow line (19) and disconnect the double ended union (17). Fully tighten the control knob (1) onto assembly (3). This action pushes the Vespel seat from a support shoulder inside the valve body (15). To protect needle, unwind the control knob (1) to the extremity of thread on assembly (3). The valve seat (16) should then dislodge from the valve body (15). If not unscrew (12) from (14) and dislodge seat using seat/seal removal tool provided. Insert the tool through (13) to dislodge seat. To fit seat, reconnect (12) from (14) and wind control knob about five turns to allow seat to fall into position. Reconnect double ended union (17) and firmly tighten. Connect flow line (19) and screw on nut (20).

Finer needle Valve Control

To obtain finer control at low flows (10-15 ml/min) the following procedure is necessary.

- i) Connect a test gas at approximately 2 atmospheres (30psi) to side arm.
- ii) Screw down control knob to shut-off point then open one half of one turn. If a flow is detected, further tighten the union (17) until flow stops.

Connect the appropriate column connector to the outlet of the GC column. A piece of 0.3mm ID GLT must be used for the transfer line between the column and the micro needle valve. This line must be connected to one of the sidearms of the valve as shown in figure 2. The flow path from this arm to the opposite arm is always open.

The detector or collection device (required to be open), is connected to the opposite sidearm. For this transfer line the other piece of 0.3mm ID GLT should be used.

At the bottom of the tee, the GLT can be inserted into the valve. The GLT must be the piece with 0.5mm ID, otherwise the valve's needle will be damaged. The flow from this arm is infinitely variable.

The outlets from the valve may be connected to two detectors, for this reason detector fittings are provided to connect to either two 1/8" or two 1/4" detectors.

Valve PTFE Seal (8) Replacement

Two spare seals are provided in the unlikely event replacement is required. The seal is simply a small PTFE tube 1.6mm OD x 1mm ID x 2mm long, and is located inside fitting 9-12.

The method for replacement is as follows.

Unwind the control knob (1) to the extremity of thread on assembly (3). Unscrew assembly (3) and withdraw thrust tube (5) and compression spring (4).

Remove seal (8) with wire tool provided.

Place new seal in top of male thread (9) and push into place with thrust tube (7). The shorter length beneath the stop (6) on the thrust tube should be pushed in to the valve body and when the thrust tube touches the seal, the stop should be nominal 2mm above the face of the male thread.

Place compression spring (4) onto other exposed (longer) end (5) of the thrust tube.

Thread needle (2) into the thrust tube and tighten assembly (3).

Reset control knob.

Part Numbers

2 Detector ConnectorLHR4/16	103451
5 GFF/4 Graphite Ferrules	072601
5 GFF/8 Graphite Ferrules	072602
10 GFF/16 Graphite Ferrules	072603
Instruction Manual	MN-0022-A



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