

# gc-BackFlush SYSTEM

- **Reduce analysis time**
- **Increase column lifetime**
- **Reduce column bleed deposits on detectors (eg. FID and MS)**
- **Removes semi-volatile and non-volatile material from the front end of the capillary column**
- **Lower final oven temperatures – faster cycle time**
- **Less maintenance required of the GC**

## WHAT IS THE BACKFLUSH SYSTEM?

The BackFlush system reverses the flow through the column at a pre-determined time. This allows the heavier compounds in a mixture to be flushed out of the injection port instead of traveling slowly through the column until they reach the detector. This results in much shorter run times than would normally be expected for the analysis.

### The BackFlush system consists of :

- A control unit that monitors internal and downstream carrier gas pressures and supplies carrier gas to the outlet of the capillary column

- A low dead volume tee piece that allows carrier gas to be switched in the forward and reverse directions
- Mounting brackets, 1/16" stainless steel tubing, spare nuts and ferrules, comprehensive instructions and fused silica restrictors to suit most column types

## HOW DOES THE BACKFLUSH SYSTEM WORK?

When the compounds of interest have eluted from the analytical column, the system will terminate the analysis and enter BackFlush mode. The carrier gas will begin to flow in the opposite direction and flush all the remaining compounds out of the injection port instead of the detector.



The gc-BackFlush system is suitable for GCs which have EPC/EFC control of the column flow (auxiliary EPC/EFC is not required) and at least one spare external events control.

# gc-BackFlush SYSTEM

The BackFlush system has two modes of operation:

## 1. Analysis Mode

In analysis mode the injection port pressure is on and the BackFlush valve is off. The carrier gas flows through the column in the normal direction and passes through the BackFlush tee before reaching the detector, as shown in **Figure 1**.

## 2. BackFlush Mode

In BackFlush mode the column head pressure is set to 0 (via inlet pressure programming) and the BackFlush valve is switched on (via timed events). This reverses the flow through the column, but the flow through the restrictor remains in the forward direction, so the detector is unaffected. **Figure 2** shows the operation of the system in BackFlush mode.

### WHY USE THE BACKFLUSH SYSTEM?

The BackFlush system eliminates the need to "bake" heavy sample fractions off the capillary column. Oils, tars and other semi volatile matter can be flushed back out of the injection port while the oven remains at a relatively low temperature. This increases column lifetime dramatically. Run times will also be significantly shorter because the system allows the run to be terminated as soon as the compounds of interest have eluted from the column, with everything else being flushed out the split vent. This results in shorter cycle times, lower maximum oven temperatures, longer column life and no carryover between samples.

Figure 1 - BackFlush system in analysis mode

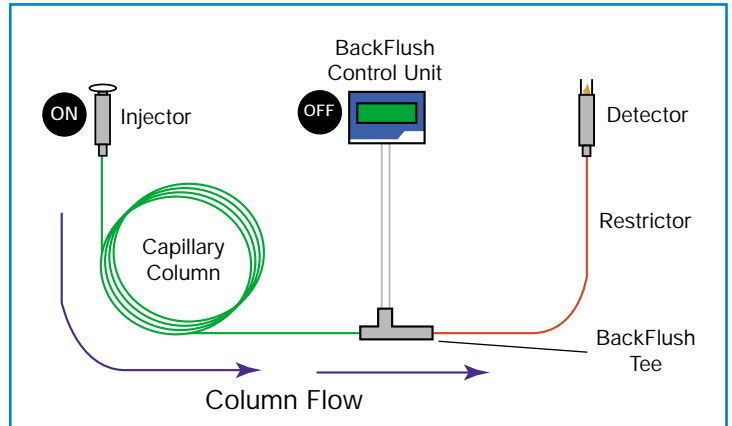
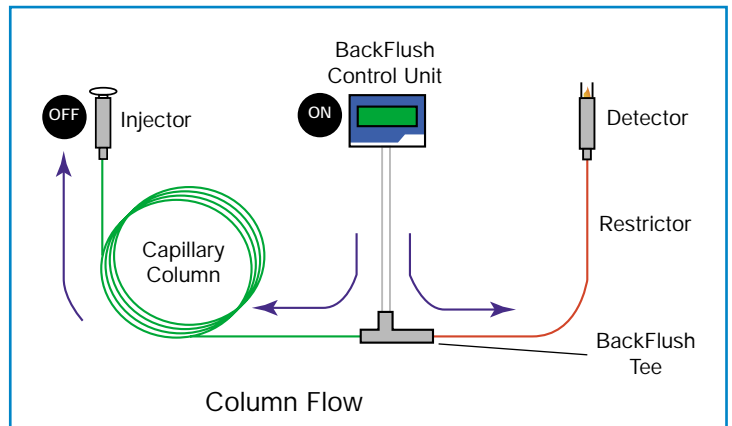


Figure 2 - The system in BackFlush mode



## Ordering Information

Description	Part No.
BackFlush System	093352



Publication No. PD-0212-A Rev 02 11/01

<b>SGE International Pty. Ltd.</b> Toll Free: 1800 800 167 Tel: +61 (0) 3 9837 4200 Fax: +61 (0) 3 9874 5672 email: support@sge.com	<b>SGE Incorporated (USA)</b> Toll Free: (800) 945-6154 Fax: (512) 836-9159 email: usa@sge.com	<b>SGE (France) Sarl</b> Tel: +33 (0) 1 6929 8090 Fax: +33 (0) 1 6929 0925 email: france@sge.com	<b>SGE Deutschland GmbH</b> Tel: +49 (0) 6151 860486 Fax: +49 (0) 6151 860489 email: germany@sge.com	<b>SGE Japan Inc.</b> Tel: +81 45 222 2885 Fax: +81 45 222 2887 email: japan@sge.com
<b>SGE Europe Ltd. (UK)</b> Tel: +44 (0) 1908 568 844 Fax: +44 (0) 1908 566 790 email: uk@sge.com	<b>SGE (Italia) Srl.</b> Tel: +39 06 4429 0206 Fax: +39 06 4429 0724 email: sge.italia@tin.it	<b>SGE China Service Centre</b> Tel: +86 (10) 6588 8666 Fax: +86 (10) 6588 6577	<b>SGE India</b> Tel: +91 (022) 471 5896 Fax: +91 (022) 471 6592 email: sgeindia@vsnl.com	