

# SELECTIVE SAMPLER

(MODEL : SS-1010E)

\*\*\*Flow Switching System Utilizing Gas Pressure Difference\*\*\*

Patent Pending

*With this device installed, any set of peaks in the Evolved Gas Analysis curve from Double-Shot Pyrolyzer or Thermogravimetry (TG) can be heart-cut, and solvent peaks and high-boiling species can also be removed. The technique also eliminates flow path contaminations with polar species, and tars on the metal surfaces which are the problems of conventional rotary valve systems, resulting in reduced analysis time and easy maintenance of separation column and detector*

## FEATURES

### 1. HEART-CUTTING DESIRED PEAKS

Any set of peaks in an evolved gas curve can be heart-cut. The components can then be introduced into a capillary column for a specific analysis, allowing significant reduction of time required for analysis.

### 2. FLOW SWITCHING SYSTEM

New flow switching system: an inlet adaptor with a flow path switching system utilizing pressure difference of carrier gas has been employed. The flow path is made of deactivated Ultra ALLOY® capillary tube giving no dead volume or cold spots. Automatic adjustment of purge gas pressure: the system automatically adjusts the purge gas pressure against changes of the separation column length and its inner diameter. Manual or automatic flow switching: the timing of flow path switching can be programmed from Double-Shot Pyrolyzer temperature controller. Also flow path switching can be manually performed. Various atmosphere gases (He, Ar, etc.) can be used: Using air as a sample atmosphere gas gives thermal information under oxidative environment.

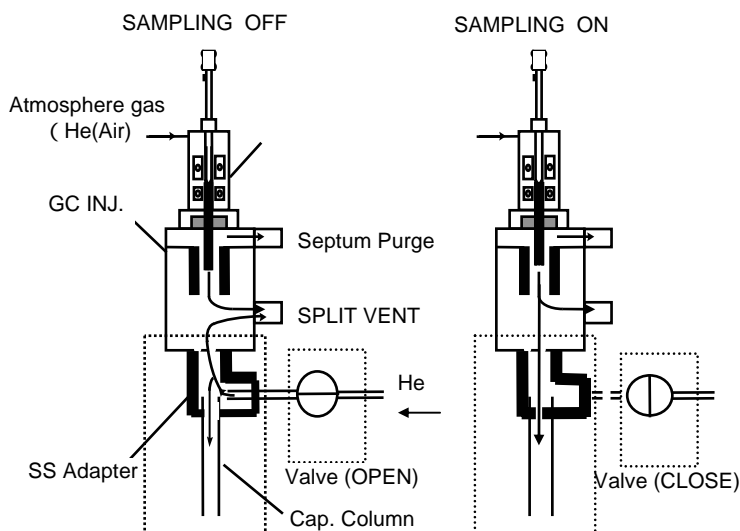
### 3. SIMPLE CONSTRUCTION WITH EASY INSTLLATION

The installation is simple and easy. Just attach a selective sample introduction adaptor to the split / splitless inlet.

## FRONT VIEW OF THE DEVICE (FLOW CONTROLLER)



## FLOW PATH



## APPLICATION 1: HEART-CUTTING ANY PEAK IN THE EVOLVED GAS CURVE

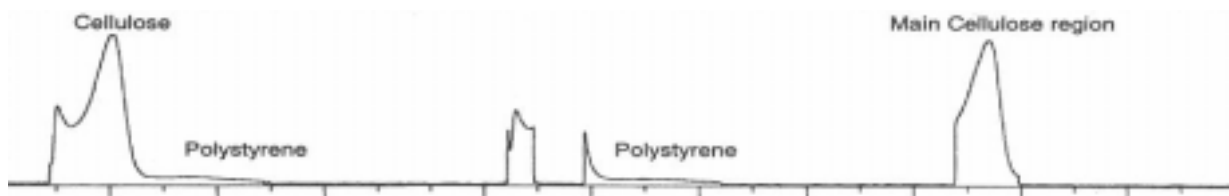
(This is especially useful when this device and double-shot pyrolyzer or TG are used.)

Experiment: A piece of copy paper (3mm x 3mm) was heated from 200 to 500 at 20 / min in He carrier has Double-Shot Pyrolyzer. The evolved gas was directly detected by FID.

(A) Before heart-cutting

(B) Regions before and after the major components are heart-cut.

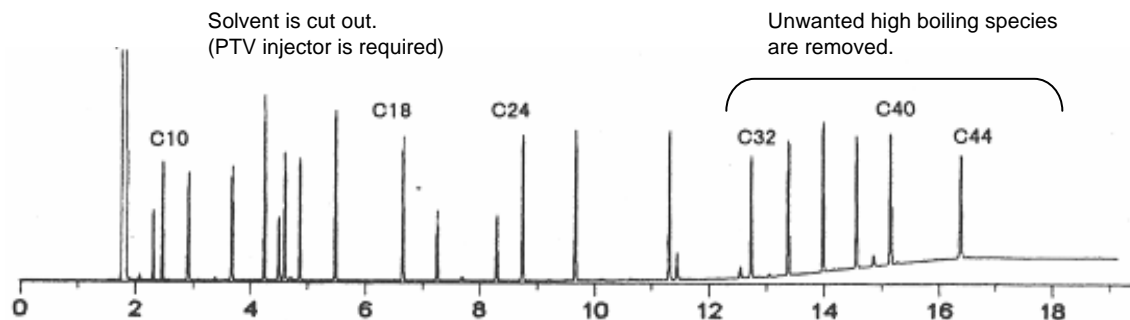
(C) Major components are heart-cut



As shown in this example, any thermal region can be heart-cut. Components that have been heart-cut can be analyzed directly by a mass spectrometer or atomic emission detector (AED), or by a capillary GC after cold-trapping at the separation column head. If air is used as a carrier gas, pyrolytic changes under oxidative atmosphere can be analyzed.

## APPLICATION 2: WITH Py-GC or WITH GC or GC/MS WITHOUT PYROLYZER

Analytical conditions: Ultra ALLOY-1, 30m(0.25mm id), 0.1 $\mu$ m, Temp: 70 20 /min 400



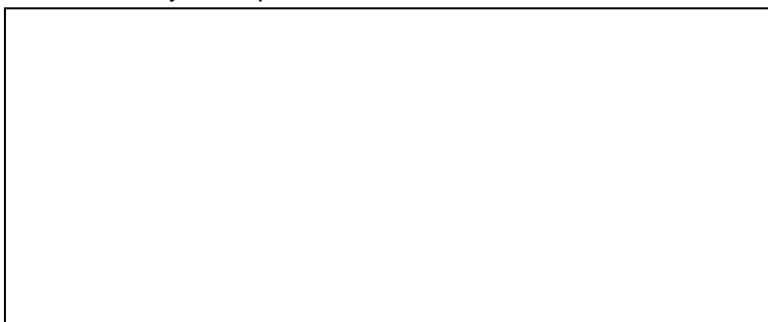
Detector contaminations are minimized by eliminating unwanted solvents such as TMS agent, etc. This is extremely useful in ECD and GC/MS experiments. Removing high boiling species results in significant reduction of analysis time and column baking time, leading to extended life of separation columns.

## PRODUCT

1. Flow path switching system by automatic pressure control.
2. Maximum use temperature: 420 (inlet adaptor temperature)
3. Power requirement: AC 100/115V, 1A
4. Gas chromatographs that can be used with this device: Agilent 6890, HP5890, Shimadzu 2010

## SPECIFICATIONS

Please direct your inquiries to:



Ultra ALLOY and Double-Shot Pyrolyzer are the trademarks of Frontier Lab Ltd

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