

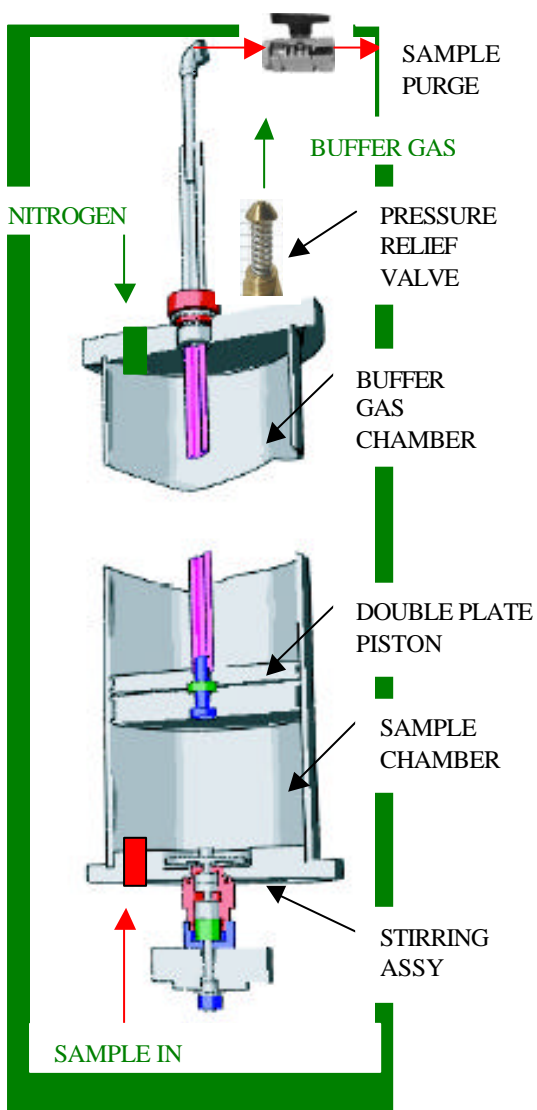
# SPLIT PHASE PRODUCTS

## SPOT SAMPLING

### FLOATING PISTON CONTAINER

#### PURPOSE:

Manual collection of split phase samples according to the latest guideline ISO 3170: 2004 such as gasoline for NIR CHEMOMETRIC/ RVP/ FLASH-POINT/ MON- RON/ DISTILLATION/ BAO/ CHROMATOGRAPHY analysis or collection of samples containing volatile substances to be analysed such as ULTRA LOW SULFUR in gasoline or diesel-oil.



#### 1- ISOSAMPLE 1500 MAIN FEATURES:

- \*Sample is drawn into floating piston cylinder at pipeline pressure and kept under this pressure during transportation, homogenisation and handling. This technology is specified by ISO 3170:2004 as the best method giving analytical results that agree closely with on line analysis.
- \*Patented double plate piston barrier prevents weathering and off-gasing.
- \*Cylinder wall autocleaning by piston scrapper and sample chamber reduced to the nominal zero volume before use and during purging.
- \*All parts in 316 L.S.S. polished to  $0.2 \mu\text{m Ra}$  and PTFE, no wetted soldered seams: prevents contamination and accepts oxygenates.
- \*Optional mixing device to keep standard homogeneity and enable representative subsampling.
- \*Closed level indicator; pressure gauge and relief valve on buffer gas exhaust and sample purge valve are supplied.
- \*Full range of optional ancillaries: sample take-off probe – Flow control needle valve – Sample purge hose - separator

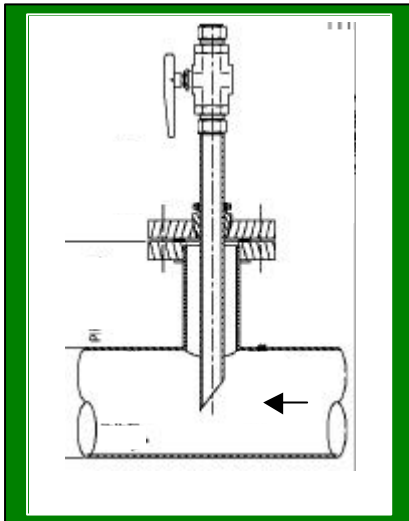
#### 2- SAMPLING PREPARATION:

##### **PRE-CHARGE:**

The constant pressure piston cylinder must be pre charged with a buffer gas (typically Nitrogen) at pipeline pressure + 1barg by tuning the pressure relief valve vernier. The piston is fully displaced against the sample inlet end plate.

##### **PROBE:**

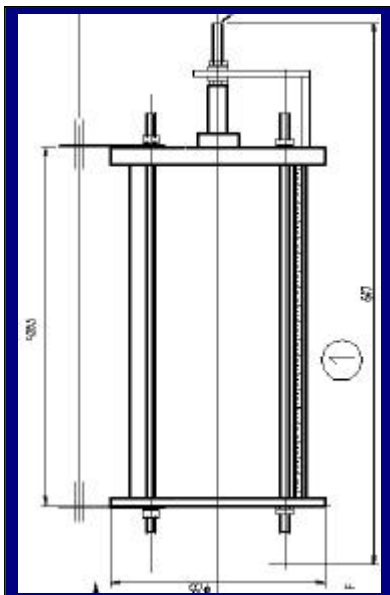
A sample take-off probe (optional ancillary N°1) shall extend into the pipeline so that the point of sample entry is not nearer to the pipe wall than a quarter of the internal diameter. The probe entry shall face into the direction of the flow.



SAMPLE TAKE-OFF PROBE



METERING VALVE



### **FLOW CONTROL:**

A metering valve (optional ancillary N°2) must be provided to control the flow-rate injected in the cylinder sample chamber. This metering valve is equipped with a differential pressure gauge to check that the pressure difference between the sample and inert gas buffer chambers of the piston should not exceed 1 barg at any time during sampling. For example the vernier graduation 10 will correspond to 0.5 bar differential pressure for a gasoline.

### **TEMPERATURE CONTROL:**

It will be checked on thermometer (optional ancillary N°4) and pressure gauge that sampling line pressure at transportation temperature is at 1 bar minimum above of expected vapor pressure.

### **3- SAMPLING PURGING**

The buffer gas chamber been pre charged with piston in down position and the sampling connected with metering valve vernier tuned at the 10 graduation the sample purge valve is turned to open for purging the tiny volume between piston/end plate trough the piston shaft venting to atmosphere. For a sampling line of 2 m with 4 mm ID tubing electropolished a purging cycle of 1min will be operated, then the purge valve shall be closed.

### **4- SAMPLE COLLECTION**

Slowly open the probe valve, the piston shall not move as the buffer gas pressure (BP) is higher than the pipeline pressure (PP); by tuning the buffer gas pressure relief valve to reduce BP to PP- 0.35 bar the buffer and sample gas of both side of piston are unbalanced and the sample chamber is fed at constant flow while the level indicator is progressively rising.

When the level reaches the 80% course graduation the sampling is turned-off.

### **5- SAMPLE HANDLING :**

The liquid sample is maintained at line pressure during transportation and subsequent subsampling.

### **6- HOMOGENISATION:**

An optional mechanical mixer is proposed for this function. Typically a mixing time of 5 min is sufficient but nature of sample can affect the homogenisation time. For critical applications such as water in oil measurements a special high shear mixer with counter-rotating blades operating at 3 000 r/min is available.

### **7- SPECIFICATIONS:**

Sample chamber capacity: 4 dm<sup>3</sup>

Design pressure: 18 barg as standard or 30 barg as option.

Sample temperature: -20 to 120°C.

Material: all wetted parts in 316 L S.S. and PTFE seals.



8 Av. de Bretteville – 92 200 – NEUILLY sur SEINE – FRANCE

Tel : 33 (0)6 85 43 82 78 – Fax : 33 (0)6 07 18 28 07

e-mail : barere.opta@wanadoo.fr