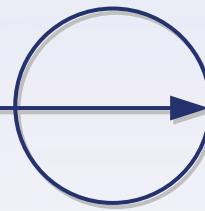


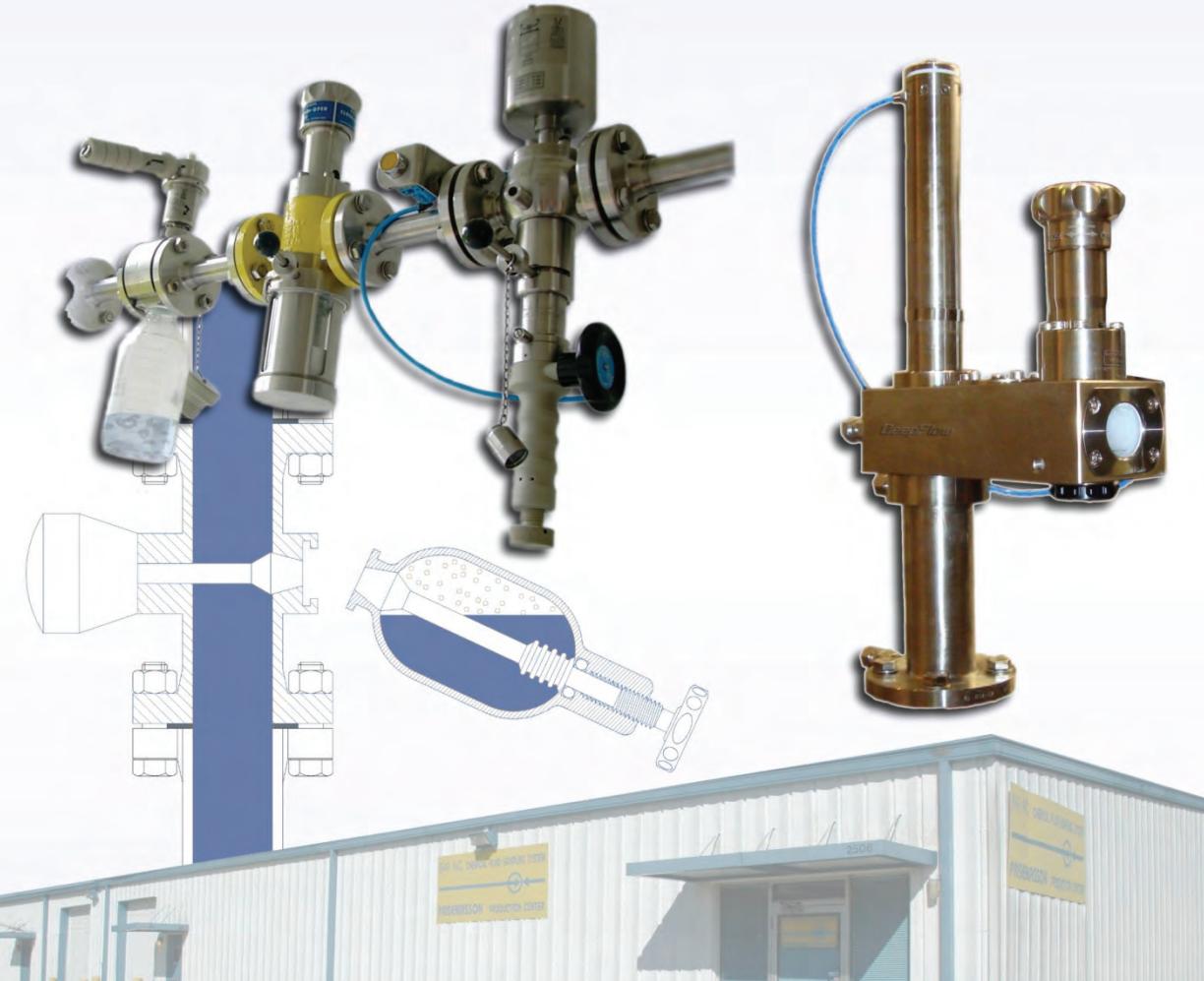
BIAR SAMPLING SYSTEMS

Expert solutions for difficult sampling requirements
since 1980.



Safety, efficiency, simplicity

- ✓ In-line and top of reactor Sampling Valves
- ✓ Hazardous applications – liquid, gas or liquefied gas
- ✓ Maximum safety, simplest process in the industry



Company presentation & product overview

ABOUT US

BIAR is specialized in the design and manufacture of inline sampling valves and top of reactor sampling devices. Originally engineered for hazardous applications where safety is the prime concern, our products benefit from 30 years of experience and are solutions to complex sampling problems. Our aim is to supply sampling systems that are safe, simple to use and yet efficient in meeting your requirements.

TIME LINE

- 1980** The first sampling valve was designed and implemented
- 1983** An international patent was granted
- 1985** BIAR in Switzerland was founded
- 1988** The engineering office and manufacturing facility were constructed
- 1993** BIAR in the USA was founded
- 2009** Expansion of the engineering office and manufacturing facility



20,000ft² Manufacturing center, Switzerland



8,000ft² Sales & Services center, Louisiana

PARTNERSHIP

Throughout the years, we have worked closely with our partners to develop solutions to the most complex problems. Success is achieved by sharing knowledge and experience. Members of this network include:



WHAT IS SAMPLING AND WHY SAMPLE

All chemical manufacturers strive to generate products of the highest quality possible. Samples of the product and its components must be taken to determine if it is within specifications.

Best practice suggests that only the required quantity is taken, implying a directly representative sample to prevent:

- ✗ Waste
- ✗ Pollution
- ✗ Security hazards

Additional risks to avoid:

- ✗ Toxic fumes and vapors
- ✗ Contamination of the process
- ✗ Deterioration of the environment

TRUST THE SPECIALIST

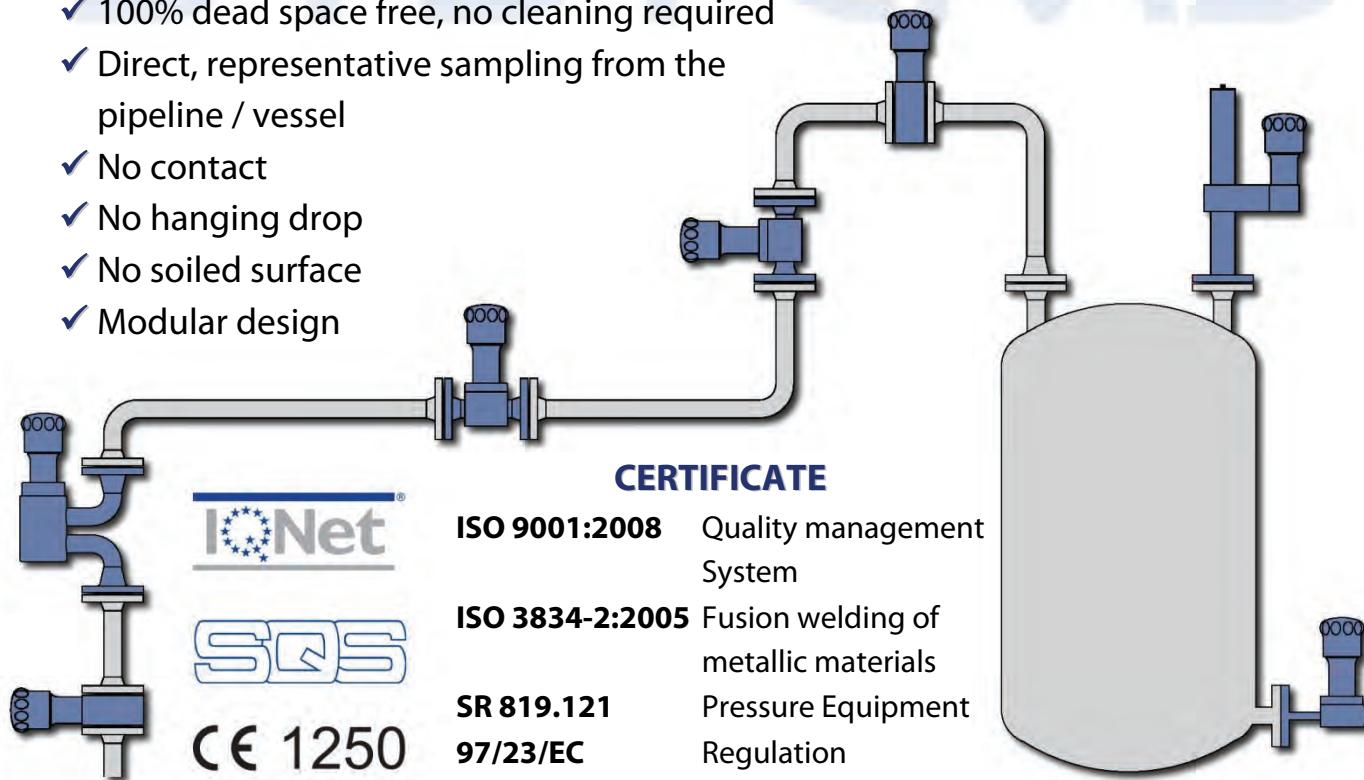
At BIAR, our goal is to eliminate those risks and provide solutions to sampling problems. With 30 years of expertise in highly hazardous products sampling, we have designed systems for processes as diverse as nerve gas, polluted water or gaseous acid. Concentrating our efforts on sampling systems, we are considered specialists in the field. Applications include:

- ✓ High toxicity
- ✓ High / low pressure (vacuum to 600 psi / 40bar)
- ✓ High / low temperature (-40°F to 580°F / -40°C to 300°C)
- ✓ Horizontal & vertical line (½" to 6" / DN15-DN150)
- ✓ Side & top of vessel



INLINE AND REACTOR / VESSEL SAMPLING VALVES

- ✓ 100% dead space free, no cleaning required
- ✓ Direct, representative sampling from the pipeline / vessel
- ✓ No contact
- ✓ No hanging drop
- ✓ No soiled surface
- ✓ Modular design



CUSTOMIZING YOUR INLINE SAMPLING VALVE

1. Select the valve model according to line specifications
2. Choose the actuator type
3. Decide on the receptacle

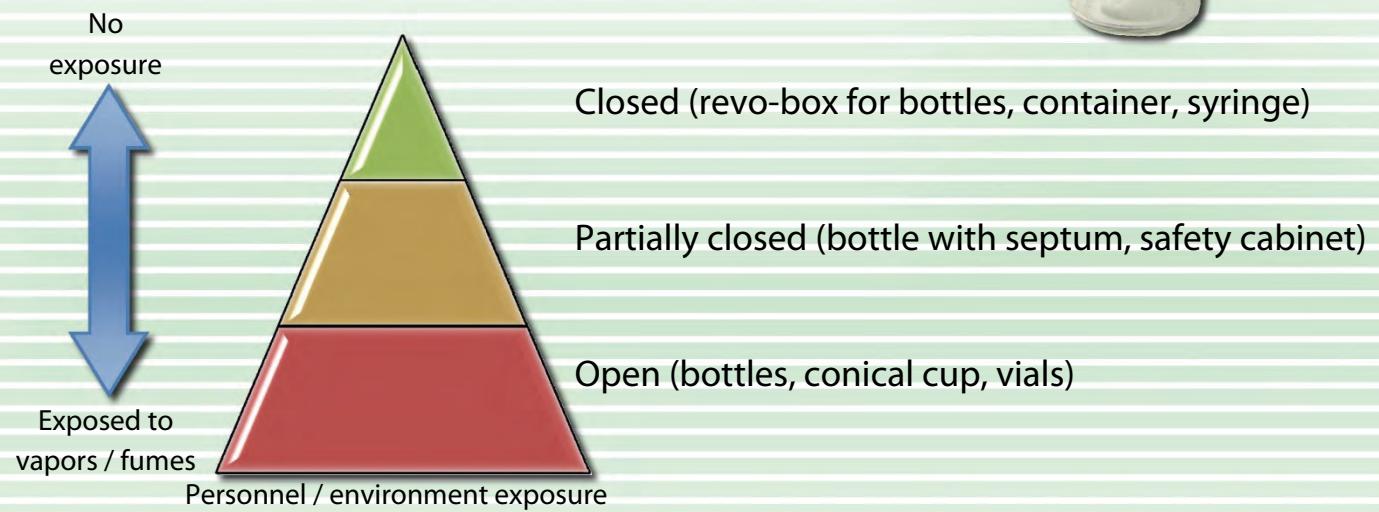
ACTUATORS

- ✓ High security: automatic closing - "Dead man handle"
- ✓ High pressure: guaranteed tightness
- ✓ Dust and waterproof
- ✓ Easy to operate

VALVE MODELS

Size:	1/2" to 6" (DN15 - DN150)
Pressure:	Vacuum to 600 psi (40bar)
Temperature:	-40°F to 580°F (-40°C to 300°C)
Connection:	ANSI B16.5, DIN EN1092-1, DIN 2633, DIN 2526 Form C, butt weld ends
Material:	Stainless steel 316L (1.4435), PFA-lined, Hastelloy®, Monel®
Option:	Heating / cooling jacket
Other:	Customization possible

RECEPTACLES



SPRING TO CLOSE HANDWHEEL "MAGIC HANDWHEEL"



✓ Accurate outflow control

SPRING TO CLOSE HANDLEVER

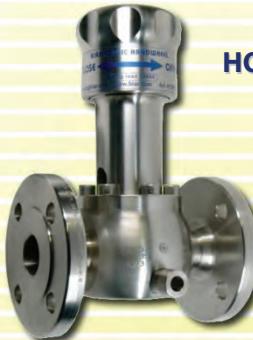


✓ Fully open / close - ideal for liquid containing solid particles

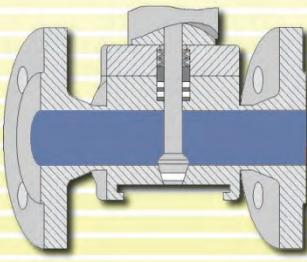
SPRING TO CLOSE PNEUMATIC ACTUATOR



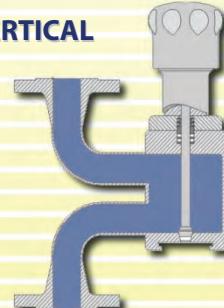
✓ Remote control



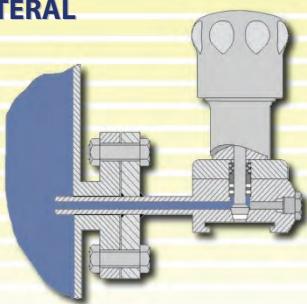
HORIZONTAL



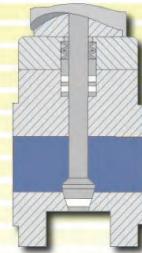
VERTICAL



LATERAL



WAFER-TYPE

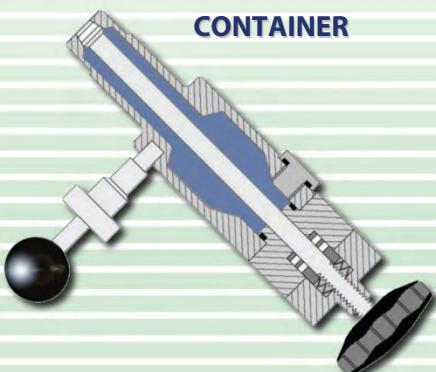


BOTTLES

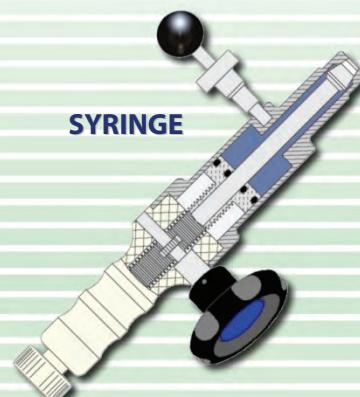


✓ With/without septum

CONTAINER



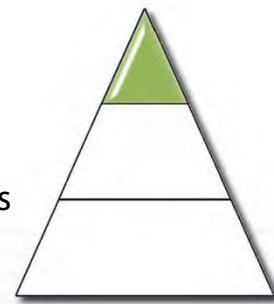
SYRINGE



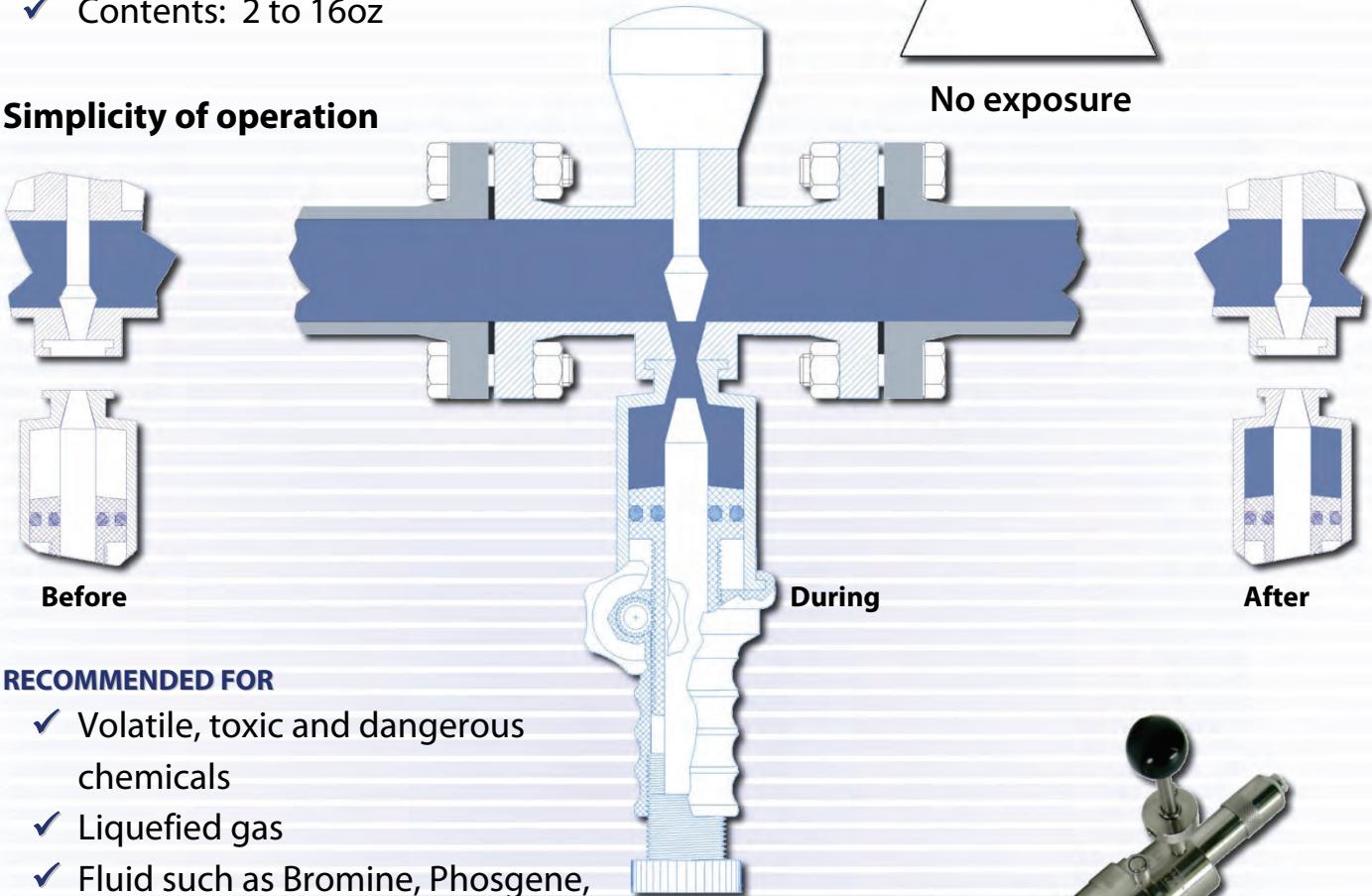
See page 5 & 6 for details on receptacles

RECEPTACLES - CONTAINER AND SYRINGE

- ✓ Guaranteed pure uncontaminated samples
- ✓ Absolutely no exposure to chemicals, vapors & fumes
- ✓ Contents: 2 to 16oz

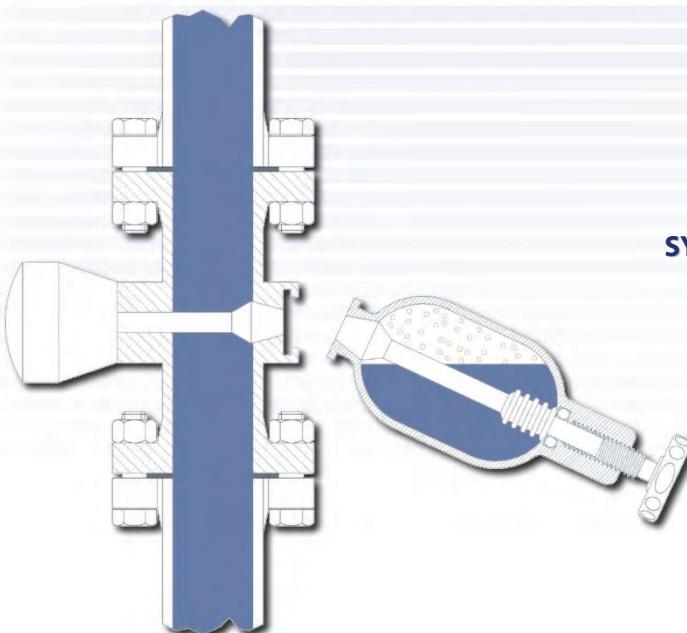


Simplicity of operation



RECOMMENDED FOR

- ✓ Volatile, toxic and dangerous chemicals
- ✓ Liquefied gas
- ✓ Fluid such as Bromine, Phosgene, Chlorine, Hydrofluoric acid
- ✓ Chemicals which cannot come in contact with the atmosphere



SYRINGE vs CONTAINER

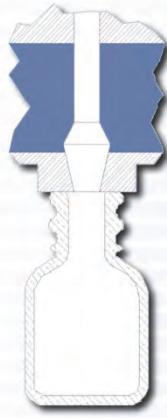
The syringe has a piston which allows the (re)injection of product into the process.

Without this feature, the container is more suitable for very toxic and dangerous chemicals.

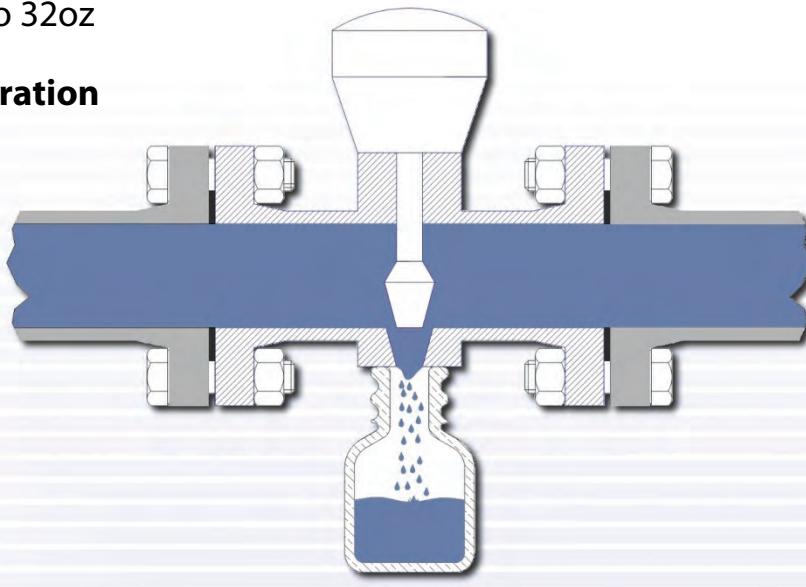
RECEPTACLES - BOTTLES AND RELATED ACCESSORIES

Contents: 1.5ml to 32oz

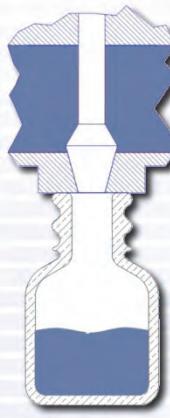
Simplicity of operation



Before



During



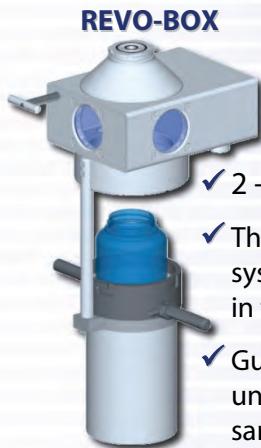
After

RECOMMENDED FOR

- ✓ Stable liquid

NOT RECOMMENDED FOR

- ✗ Volatile, toxic and dangerous chemicals
- ✗ Liquefied gas
- ✗ Fluid such as Bromine, Phosgene, Chlorine, Hydrofluoric acid



REVO-BOX



- ✓ 2 - 32 oz
- ✓ The only closed system for bottle in the industry
- ✓ Guaranteed pure uncontaminated samples

NEEDLE SUPPORT



Moderate exposure

- ✓ Bottles with septum
- ✓ 1.5ml-32 oz

SAFETY CABINET



Moderate exposure



- ✓ Stainless steel / polyester

PROTECTION BOX



✓ 2 - 32 oz

- ✓ Pressure max.: 87psi
- ✓ Ideal for vacuum

PLATE SUPPORT



High exposure

- ✓ Height adjustable
- ✓ 2 - 32 oz

THREAD ADAPTER



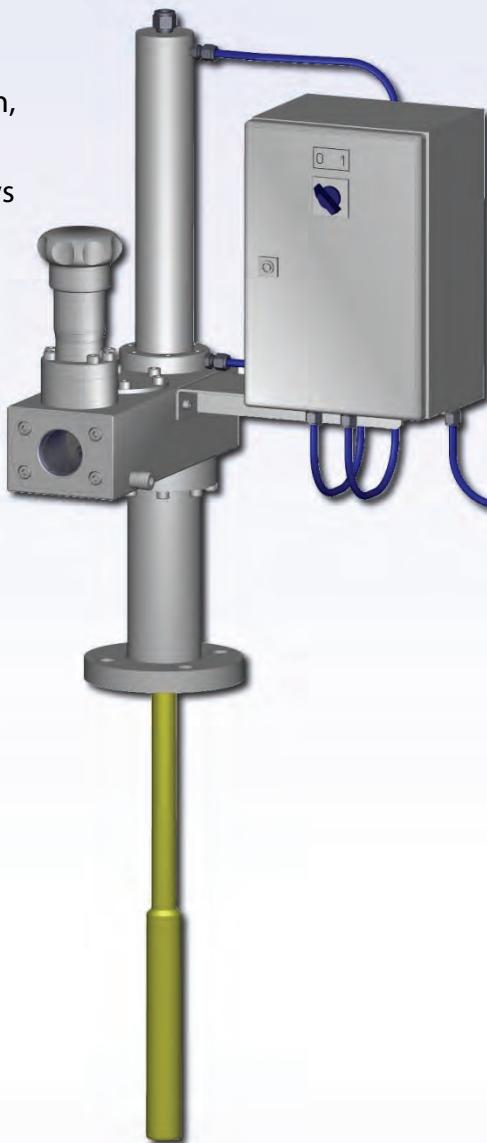
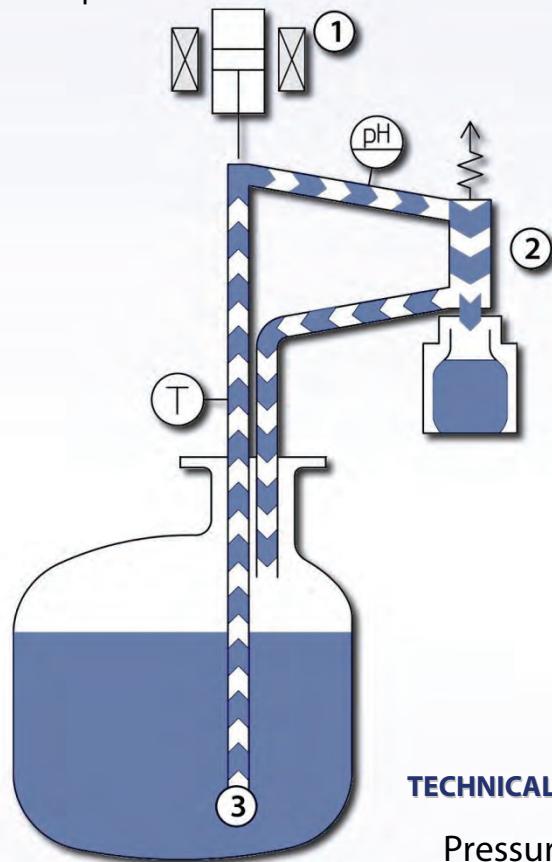
High exposure

- ✓ PP28 - GL32 - GL45
- ✓ Manufactured to fit requirement

TOP OF REACTOR SAMPLING VALVE

Top of reactor sampling system - closed loop:
To avoid dynamic seal and external contamination,
a magnetic drive (1) is used to pull the piston (3)
that pushes the liquid upward. The fluid then flows
back down through a sampling valve (2).

Temperature and pH probes can be used for
continuous measurement without process
interruption.



TECHNICAL CHARACTERISTICS

- ✓ No suction
- ✓ Compact design
- ✓ Simple operation
- ✓ Self-cleansing

Pressure:	Vacuum to 230 psi (16bar)
Temperature:	60°F to 400°F (20°C to 200°C)
Material:	Stainless steel 316L (1.4435), PFA-lined, Hastelloy®
Option:	Heating / cooling jacket

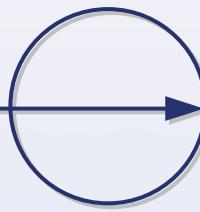
Actuator type and receptacles are 100% compatible with our inline sampling valves (see pages 4, 5 & 6).

BIAR SAMPLING SYSTEMS

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Safety, efficiency, simplicity



biar.com