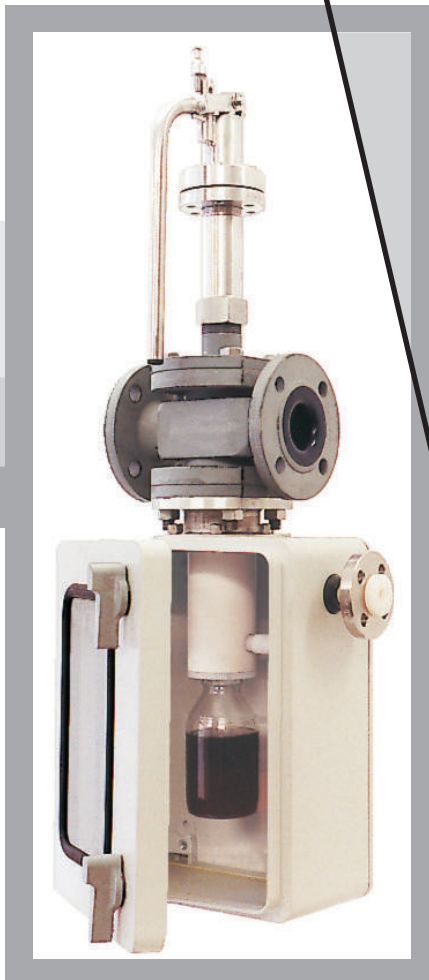


SAMPLING SYSTEMS



Yes

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- to meet every demand

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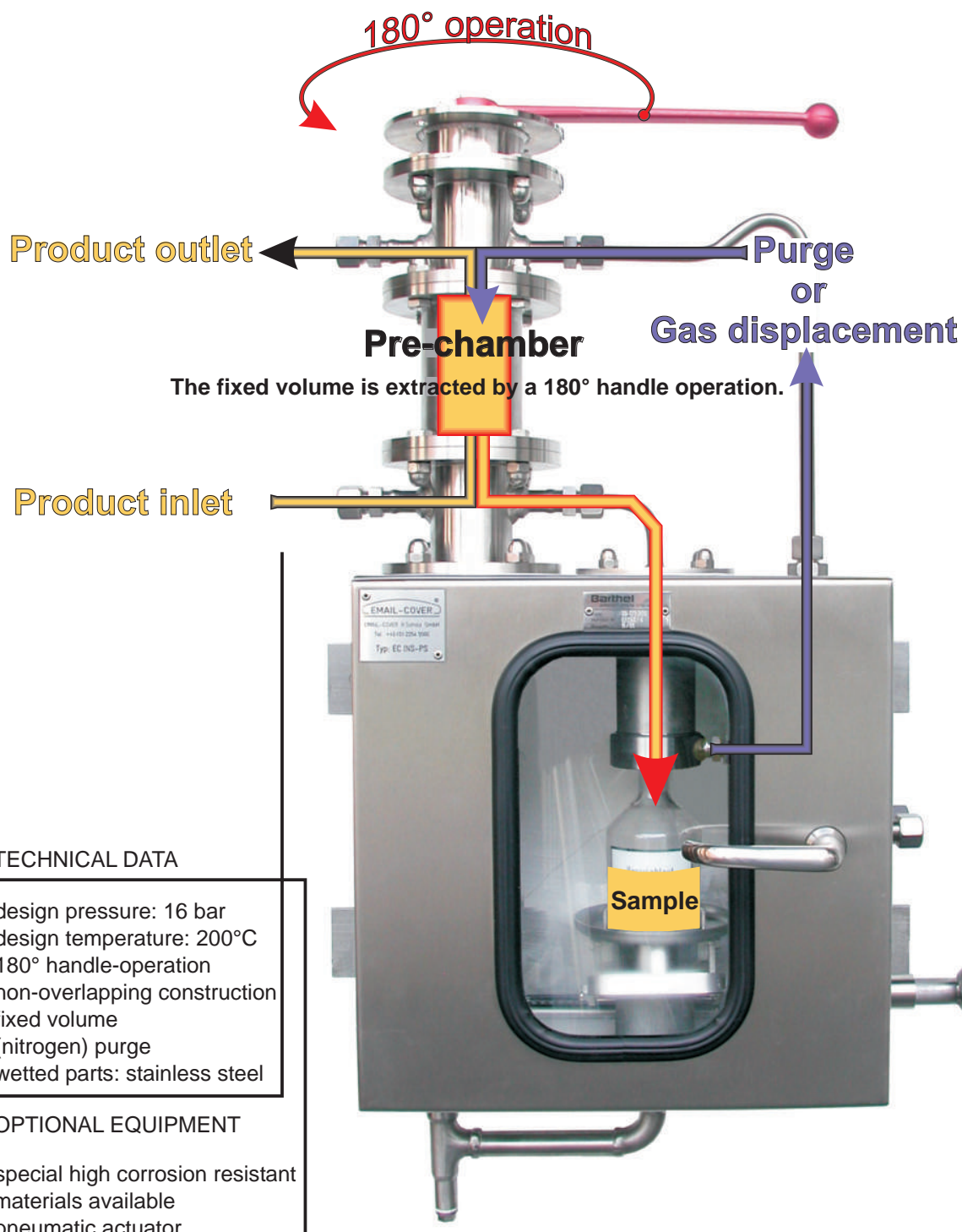
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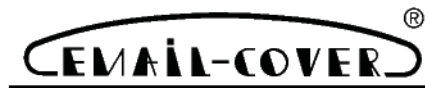
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Sampling cock for fixed volume type EC INS-PS



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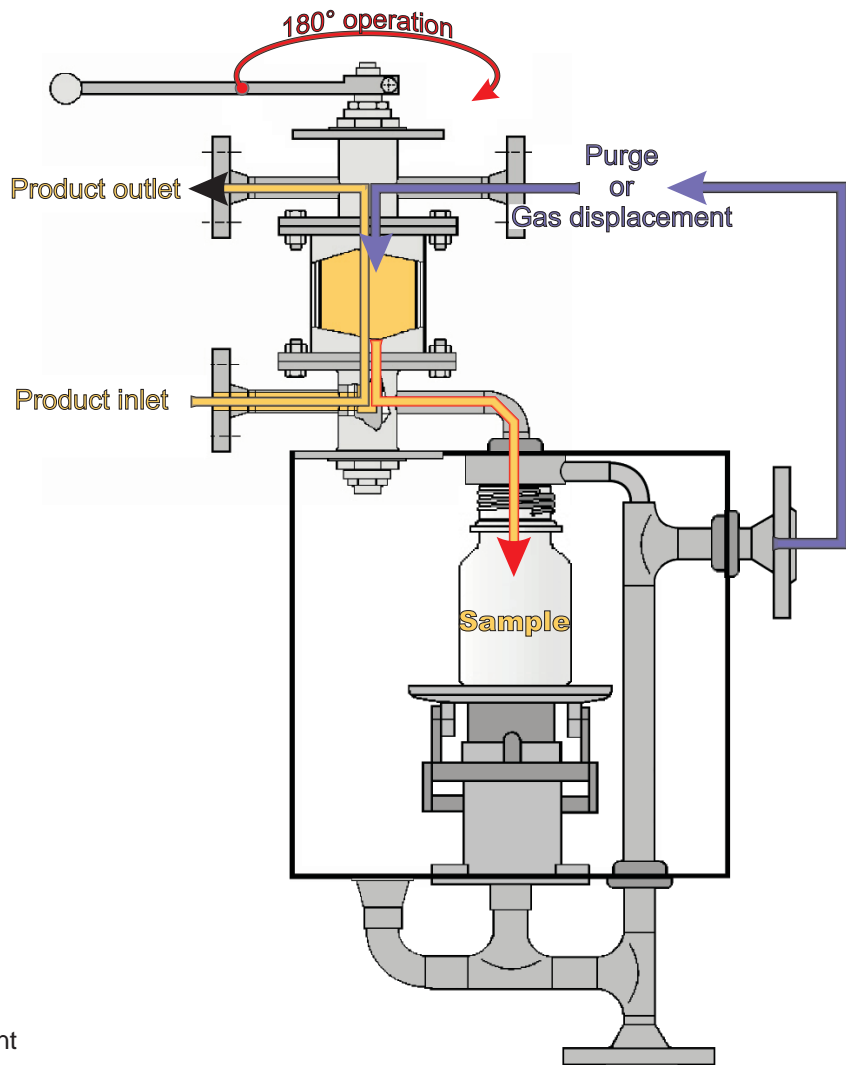
Sampling cock for fixed volume type EC INS-PS

Sampling cock for extracting a fixed volume from process lines.

Type EC INS-PS (patented)

The fixed volume 230 ml is isolated by turning the operation handle about 180°. In the end position of the 180° operation movement the sample volume runs out into the bottle.

In the base position the product flows through the pre-chamber of the sampling cock. The sample is extracted with a single operation. During the process of sampling the product inlet and outlet are closed first in order to pre-chamber the sample volume. Now you can open the outlet and the purge by turning the handle to the end position. The sample volume is filled into the sampling bottle and ready for further handling. The sampling bottle is located in a protective cabinet.



TECHNICAL DATA

- design pressure: 16 bar
- design temperature: 200°C
- 180° handle-operation
- non-overlapping construction
- fixed volume
- (nitrogen) purge
- wetted parts: stainless steel

OPTIONAL EQUIPMENT

- special high corrosion resistant materials available
- pneumatic actuator

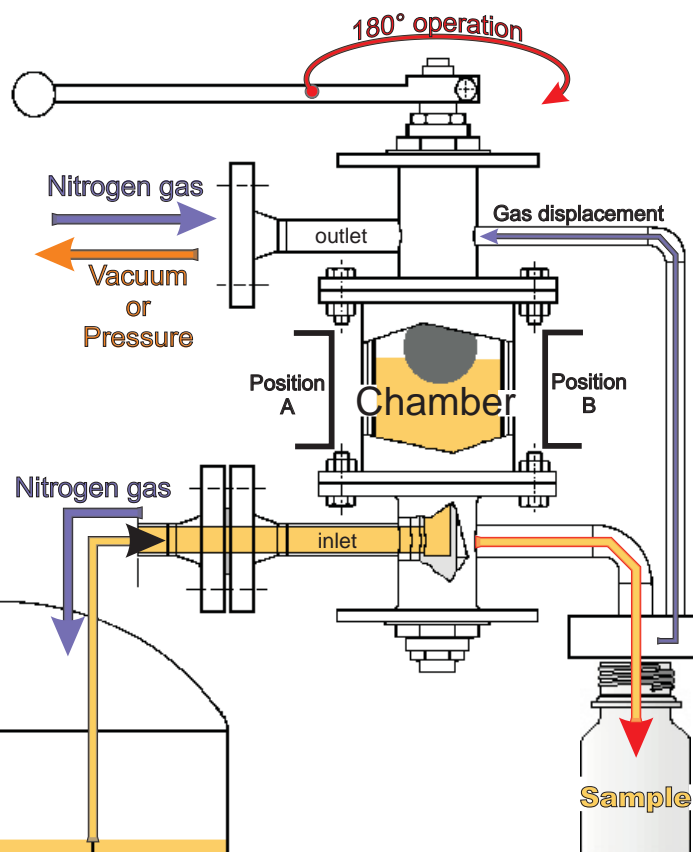
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Top reactor sampler for fixed volume type EC VH-S

Top reactor sampler for fixed volume Type EC VH-S (patented)

The top reactor sampler is installed on top of a dip pipe. First the sample chamber and the dip pipe are purged with nitrogen gas. When vacuum is applied to the sampling cock liquid is drawn up from the vessel into the sample chamber. The operating pressure of the reactor or a vacuum connection can be used to draw the sample into the chamber. Only a single 180° turn of the lever is necessary to extract the sample. While turning the lever first the product inlet and outlet are closed and the sample-volume is pre-chambered. Reaching the end position of the lever the sample outlet and the gas-displacement (vent) to the sample-bottle are opened. The sample volume flows into the sample-bottle and is ready for further handling.

The excess sample in the dip pipe can be drained back to the vessel. Nitrogen may be used to push it back and to keep the sample chamber inert.



Product

dip pipe

TECHNICAL DATA

- design pressure: 16 bar
- design temperature: 200°C
- 180° handle-operation
- non-overlapping construction
- fixed volume
- dead space free sample
- gas displacement to sample-bottle
- wetted parts: stainless steel

OPTIONAL EQUIPMENT

- special materials available
- protective cabinet
- pneumatic actuator

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GLASS-LINED SAMPLING

Top reactor sampler for enamelled vessel type EC ACRS-VH

Glass-lined sampling system for enamelled vessel Type EC ACRS-VH

By designing the sampling system EC ACRS-VH completely out of glass-lined steel, we have achieved ideal conditions regarding material, temperature and pressure for the enamelled vessel.

The sampling system is installed on the top of the dip pipe of the vessel. First the system is purged with nitrogen gas, so that representative medium can flow back into the dip pipe. When applying operation pressure on the vessel the sampling system is filled. If this pressure is missing, vacuum can be applied to draw up the liquid from the vessel. When the filling height, indicated on the sight glass, is reached the valve on the dip pipe is closed, in addition a further valve, which was opened on the standpipe. The float ball valve is a safety measure to prevent overfilling of the standpipe. At this point the representative sampling is ready to be withdrawn from the glass-lined sampling valve EC ACRS 50-S. The glass-lined sampling valve EC ACRS 50-S and a valve for gas displacement on the top of the standpipe are now opened. Now the sample volume flows into the sample-bottle.

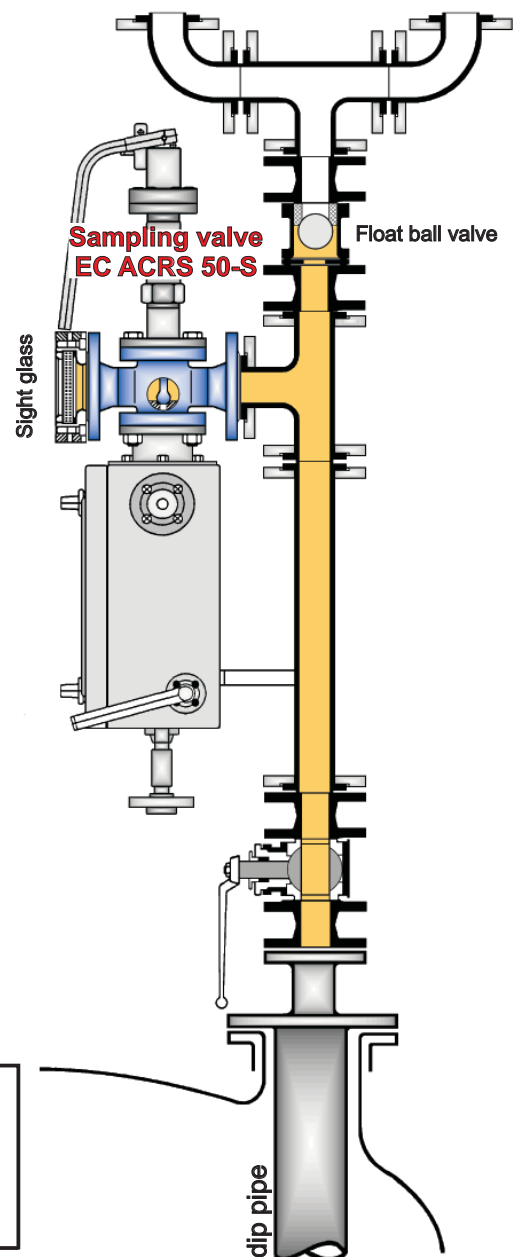
To guarantee the protection of the operator safety engineering is used in the manufacture of this sampling system. For the protection of individuals the glass-lined sampling valve EC ACRS 50-S is equipped with a protective cabinet, a vent and a lockable dead man circuit.

TECHNICAL DATA

- design pressure: 10/16 bar
- design temperature: 180°C
- protective cabinet
- lockable dead man circuit
- glass-lined steel

OPTIONAL EQUIPMENT

- steam jacket
- inertable outlet



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SAMPLING VALVE

PATENT

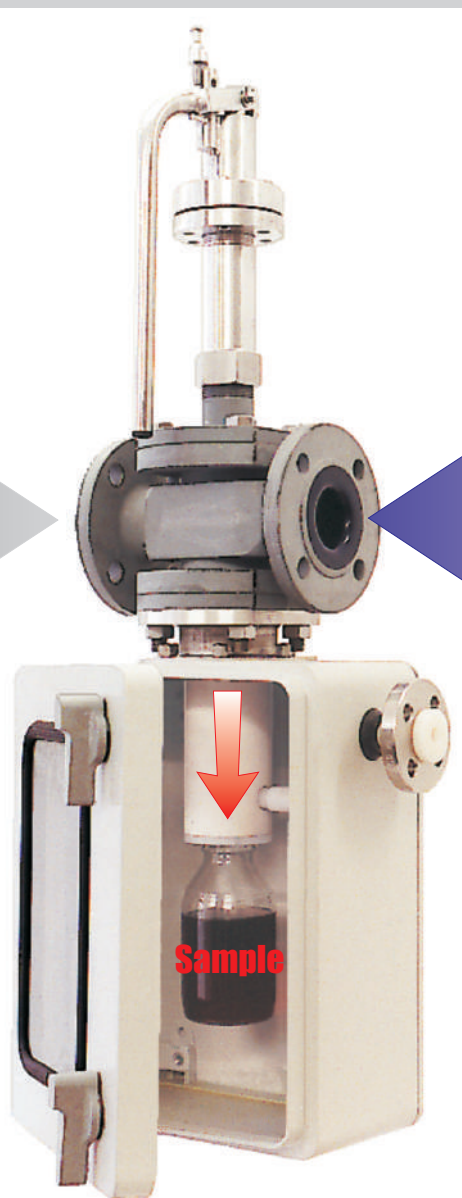
glass lined

safe ■

acid resistant ■

representative ■

dead space free ■



**Type
EC-ACRS 50**

acid resistant

TECHNICAL DATA

- hand wheel
- enamelled body DN 50
- enamelled stem
- two way sealed
- outlet rinsable
- outlet inertable

OPTIONAL EQUIPMENT

- lockable dead man circuit
- protective cabinet
- heating by double jacket

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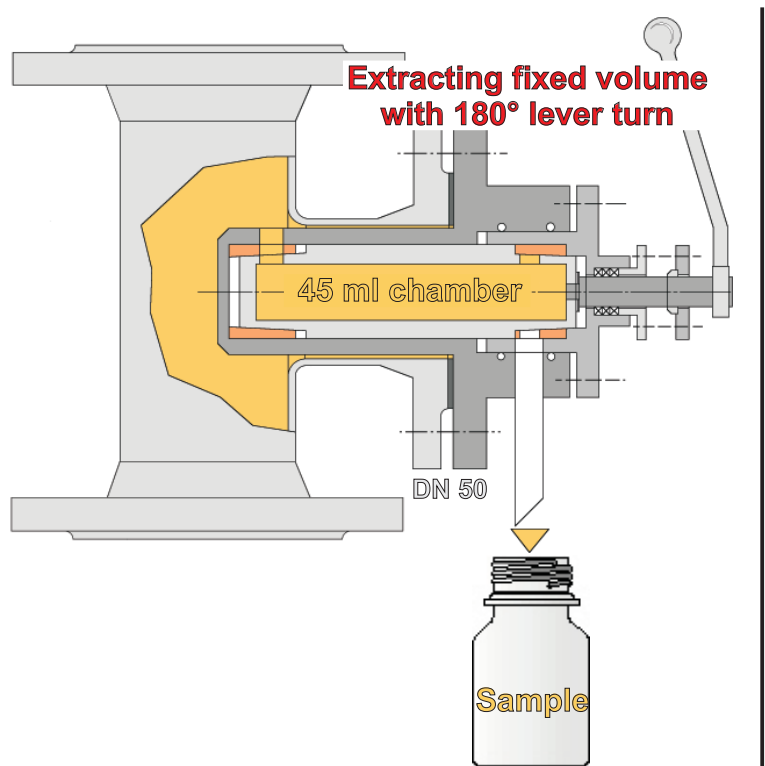
SAMPLING COCK

Sampling cock for fixed volume type EC INS-S “safety locking”

Sampling cock for fixed volume Type EC INS-S (patented)

The extraction of liquid from system components (tubes and containers) that are under pressure must be carried out in such a way as to prevent spraying or unintentional vapor leaks. For this purpose the sampling area must be blocked off. The product can be left in this blocked-off area to drop to normal pressure and - if required - to cool off, before a sample of a fixed volume is extracted. Thus is the configuration used in the EC INS-S sample-extraction cock. The substance is separated in the 45ml pre-chamber of the cock. The extraction inlet protrudes into the product-flow area (e.g. located in the center of the flow tube when installed in pipework), thus canceling out the effect of dead volume. The blocked-off area can be filled by turning the lever of the filler cock to “Open” (i.e. “Fill”), allowing the sample liquid to pour in. A simple 180° turn of the operating lever separates the area once more. The filling inlet of the cock is then shut, hermetically sealing the sample from the main product-flow. With the same operation, a further turn causes the liquid to flow into the sample collection bottle, which by the way of construction cannot be overfilled.

All operations are mutually exclusive, making it impossible to turn the lever to an incorrect position. The EC INS-S sample-extraction cock is easy to fit to containers outlets, or to the actual pipework -via a T-piece and flange-.



TECHNICAL DATA

- design pressure: 16 bar
- design temperature: 200°C
- 180° handle-operation
- non-overlapping construction
- fixed volume
- wetted parts: stainless steel

OPTIONAL EQUIPMENT

- special materials available
- protective cabinet
- pneumatic actuator

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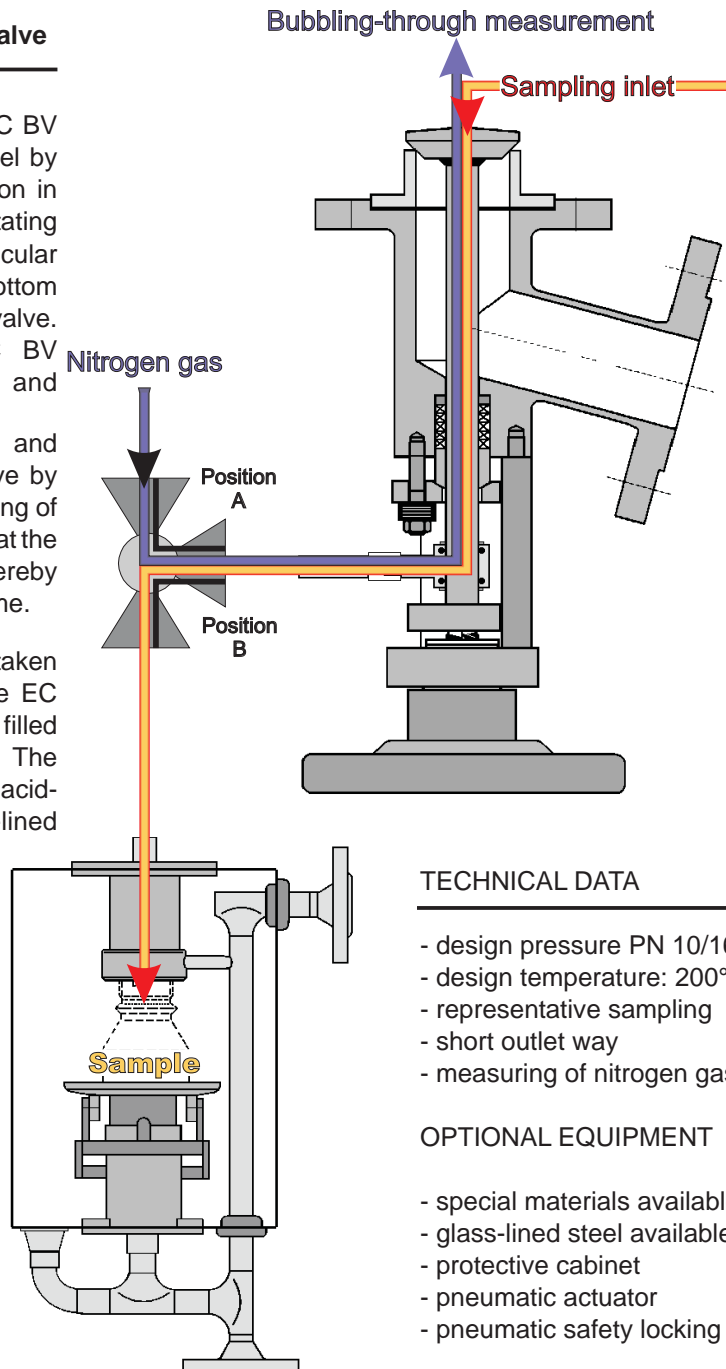
Reactor sampler - bottom valve type EC BV

Vessel sampling over bottom valve Type EC BV

The sampler bottom valve type EC BV allows measuring of the liquid level by means of gas measure introduction in addition the sampling from agitating vessels. Agitating vessels, in particular in glass lined steel with only one bottom nozzle are locked by a bottom valve. The sampler bottom valve EC BV integrates level measurement and sampling.

The valve stem is perforated and equipped with a 3/2 way ball valve by means of a special clutch. Measuring of liquid level (Position A) takes place at the deepest point of the vessel, thereby embracing (total) filling height volume.

The sample (Position B) is taken through the sampler bottom valve EC BV underneath the agitator and filled safely into a sampling bottle. The system can be supplied from acid-resistant materials (e.g. glass-lined steel).



TECHNICAL DATA

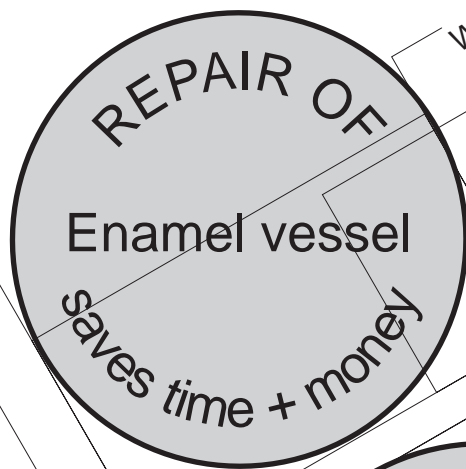
- design pressure PN 10/16
- design temperature: 200°C
- representative sampling
- short outlet way
- measuring of nitrogen gas

OPTIONAL EQUIPMENT

- special materials available
- glass-lined steel available
- protective cabinet
- pneumatic actuator
- pneumatic safety locking

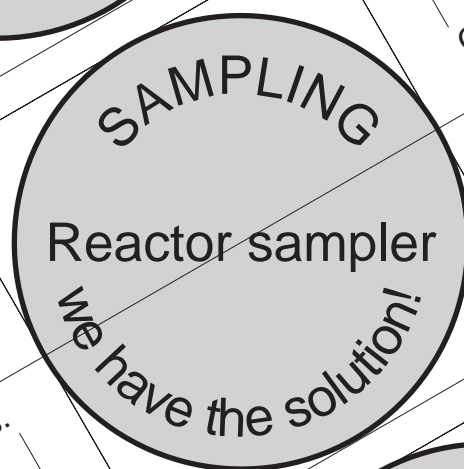
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We get to the *Point!*



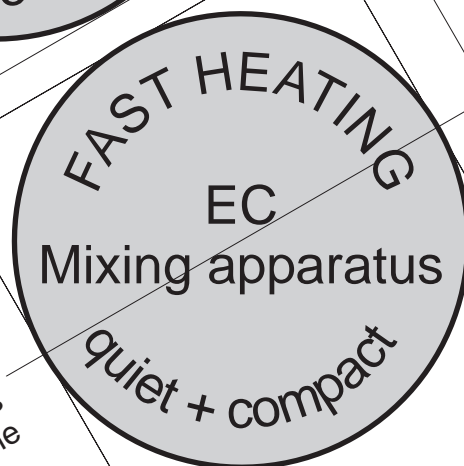
We gladly put our experience at your disposal, we even repair enamel damage in case of a wall break-through. The vessel of course keep its certification.

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Of course we manufacture in special high corrosion resistant materials, like glass-lined steel, that's our business.

Sampling systems used for a wide range of in-line and reactors, etc. - for all products. We engineer it!



Hot water production by mixing steam with water, but with low noise level. Steam shocks are avoided. The apparatus is adjusted to the power by the adjustable steam cartridge.

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