

# **Sample Collecting Devices**

## ***Reactor Sampling Device Type RSD***

- **RSD-BP/VP: manual version with vacuum lift**
- **RSD-BP/CP: manual version with circulation pump**
- **RSD-BP/PC: pneumatic version with circulation pump**

## ***In-Line Sampling Valve Type SVL-FM***

**DN 15 - DN 150 (PN 10/16) or ANSI ½ " - 6 " (150 lbs)**

## Reactor Sampling Device

DIN and ANSI

## Manual Operation with Circulation Pump

RSD-BP/CP

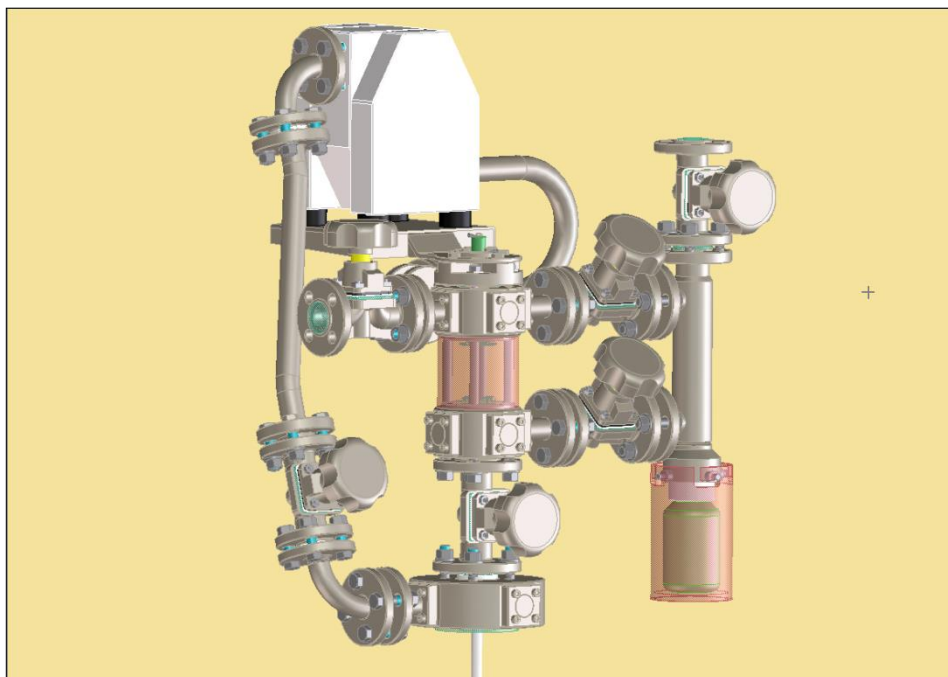
### Reactor Sampling Device Type RSD-BP/CP

The manual FLOWTEF® Reactor Sampling Device with connected circulating pump allows the take-up of samples from a reactor without interruption of the ongoing process. Requirements of safety and security as well as environmental demands are closely adhered to.

The Sampling System RSD-BP/CP is designed to maintain a safe release of corrosive and dangerous liquidities from operating reactors. Besides Borosilicate-Glass all wetted parts are PTFE- or PFA-lined. Critical (gaseous) wastes can be isolated in case of necessity

### Technical Features

- Wetted areas consist of Borosilicate Glass, Kalrez® or is PTFE-/PFA-lined
- Manual operated diaphragm valves, PFA-lined; Membranes PTFE/EPDM
- Terminals for inert gases or cleaning liquidities (i. e. Nitrogen)
- Retention of toxic or environmentally critical waste
- Return transfer of surplus sample quantities
- Supplementary measuring functions, such as pH, temperature and conductivity



### Technical Data

Operating Pressure	max. 10 bar (depending on accessories)
Test Pressure	15 bar
Operating Temperature	max. 120 °C (maximum temperature for circulation pump)
Sample Volume	185 ml (Standard) 295 ml (Option)
Thread Size Sample Bottle	ISO GL 45 (further sizes on request)
Reactor Flange Connection	DN 50 PN 16, 2" ANSI 150 lbs (further sizes upon request))

### Options

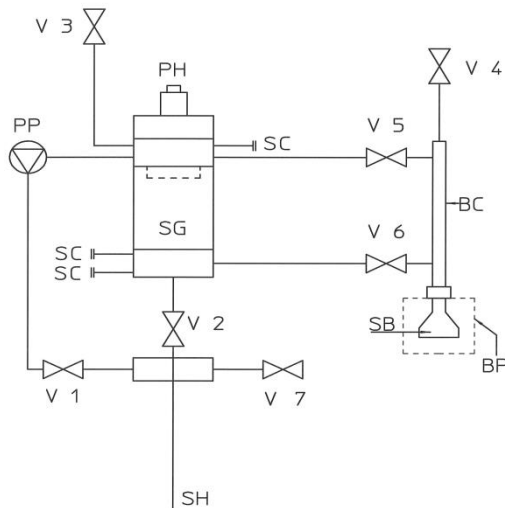
- PFA-Lined Ball Valves or Stainless Steel Ball Valves instead of Diaphragm Valves
- Special make-up for use of fluorinated chemistries
- PTFE-Plug for Bottle Connection

## Reactor Sampling Device

## DIN and ANSI

# Operating Instructions

# RSD-BP/CP



### Legend Flow Chart

Marking	Component
V1	Sample Return Valve
V2	Charging Valve
V3	Flushing Valve
V4	Vent Valve
V5	Sight Glass Vent Valve
V6	Sample Release Valve
V7	Service Valve
PP	Circulation Pump
PH	pH-Probe Connector
SG	Sight Glass
SB	Sample Bottle
SH	Suction Hose
BP	Bottle Protector
BC	By-pass-Collector
SC	Service-Connections

### Flushing and Clearance

1. Bring all valves into "closed" position
2. Attach sample bottle and bottle protector
3. To rinse the by-pass open valves V4 und V5 and release Nitrogen or suitable cleaning agent by opening valve V3. Open valve V6 and close valve V5 subsequently
4. For flushing and cleaning of the suction hose open valves V3 and V2 and close valves V4 und V6
5. Close valves V2 and V3 as next step
6. Repeated opening and closing of the valves V4 and V6 will relieve remaining pressure in the entire sample collector
7. The system is now ready for sampling

### Sampling

1. Ensure all valves are in closed position. Attach sampling bottle plus bottle protector
  2. Set air pressure for the circulation pump
  3. Open charging valve V2 und sample return valve V1. Start circulation pump
- Attention:**  
Reassure open charging valve V2 prior to pump start to prevent damage of the pump
4. Allow temporary circulation, than close sample return valve V1. Switch off the pump and close charging valve V2
  5. Open sight glass vent valve V5 and sample release valve V6 in succession. The sample liquidity will be transferred into the sample bottle
  6. Close sight glass vent valve V5 and open vent valve V4. The systems gets cleaned by help of nitrogen after opening the flushing valve V3
  7. Subsequent to the closing of valves V3, V4 and V6 the sample bottle may be taken off after removal of the bottle protector
  8. Adjust new sampling bottle and replace the bottle protector. The system is now ready for consecutive sampling.

## Reactor Sampling Device

DIN and ANSI

## Manual Operation with Vacuum Lift

RSD-BP/VP

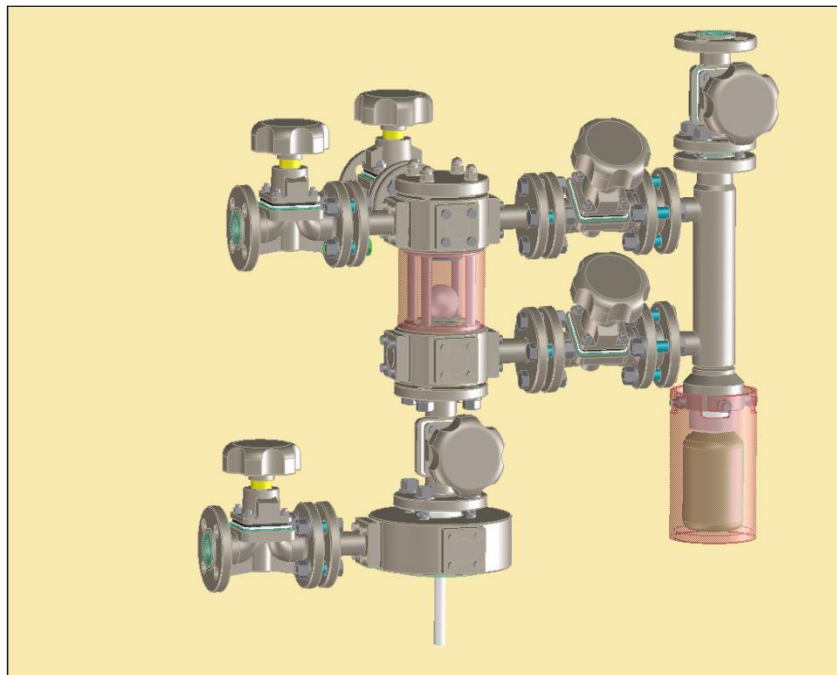
### Reactor Sampling System Type RSD-BP/VP

The manual FLOWTEF® Reactor Sampling Device with vacuum lift allows the take-up of samples from a reactor without interruption of the ongoing process. Requirements of safety and security as well as environmental demands are closely taken into account.

The Sampling System RSD-BP/CP is designed to maintain a safe release of corrosive and dangerous liquidities from operating reactors. Besides Borosilicate-Glass all wetted parts are PTFE- or PFA-lined. Critical (gaseous) wastes can be isolated in case of necessity

### Technical Features

- Wetted areas consist of Borosilicate Glass, Kalrez® or is PTFE-/PFA-lined
- Manual operated diaphragm valves, PFA-lined; Membranes PTFE/EPDM
- Terminals for inert gases or cleaning liquidities (i.e. Nitrogen)
- Retention of toxic or environmentally critical waste
- Return transfer of surplus sample quantities
- Supplementary measuring functions, such as pH, temperature and conductivity



### Technical Data

Operating Pressure	max. 10 bar (depending on accessories)
Test Pressure	15 bar
Operating Temperature	max. 150 °C (maximum 200 °C when using of PFA-lined ball valves)
Sample Volume	185 ml (Standard) 295 ml (Option)
Thread Size Sample Bottle	ISO GL 45 (further sizes on request)
Reactor Flange Connection	DN 50 PN 16, 2" ANSI 150 lbs (further sizes upon request))

### Options

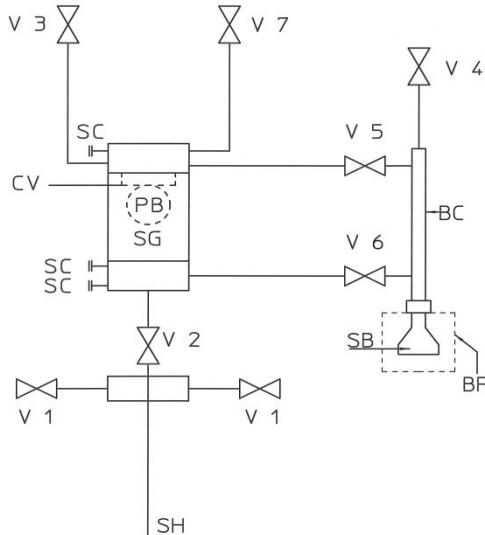
- PFA-Lined Ball Valves or Stainless Steel Ball Valves instead of Diaphragm Valves
- Special make-up for use of fluorinated chemistries
- PTFE-Plug for Bottle Connection

## Reactor Sampling Device

## DIN and ANSI

# Operating Instructions

# RSD-BP/VP



### Legend Flow Chart

Marking	Component
V1	Sample Return Valve
V2	Charging Valve
V3	Flushing Valve
V4	Vent Valve
V5	Sight Glass Vent Valve
V6	Sample Release Valve
V7	Vacuum Valve
PB	Hollow Sphere (PTFE)
CV	pH-Probe Connector
SG	Sight Glass
SB	Sample Bottle
SH	Suction Hose
BP	Bottle Protector
BC	By-pass-Collector
SC	Service-Connections

### Flushing and Clearance

1. Bring all valves into "closed" position
2. Attach sample bottle and bottle protector
3. To flush the by-pass open valves V4 und V5 and release Nitrogen or suitable cleaning agent by opening valve V3. Open valve V6 and close valve V5 subsequently
4. For flushing and cleaning of the suction hose open valves V3 and V2 and close valves V4 und V6
5. Close valves V2 and V3 afterwards
6. Repeated opening and closing of the valves V4 and V6 will relieve remaining pressure in the entire sample collector
7. The system is now ready for sampling

### Sampling

1. Ensure all valves are in closed position. Attach sampling bottle plus bottle protector
2. Create vacuum inside the sampling unit by opening vacuum valve V7 and charging valve V2. Liquidity gets transported from the reactor through the suction hose into the sight glass area. The hollow sphere will float and interrupt the vacuum as soon as the hollow sphere attaches the seat of the ball check valve
3. Charging valve V2 and vacuum valve V7 are closed subsequently
4. Open sight glass vent valve V5 and sample release valve V6 in succession. The sample liquidity will be transferred into the sample bottle
5. Close sight glass vent valve V5 and open vent valve V4. The systems gets cleaned by help of nitrogen after opening the flushing valve V3
6. Subsequent to the closing of valves V3, V4 and V6 the sample bottle can be taken off after removal of the bottle protector
7. Adjust new sampling bottle and replace the bottle protector. The system is now ready for consecutive sampling.