

## Sampling Valves and Systems



Inline Sampling Valves  
Sampling Ball Valves  
Reactor / Vessel Sampling Systems  
Sampling Options

## Inline Sampling Valves SIV

DN15 – DN150 / ½" – 6"

The Inline Sampling Valve SIV is available in a wide range of materials and has a durable design to guarantee safe performance even under extreme pressure and temperature. It is suitable for sampling of corrosive, aggressive, and gaseous media via a by-pass system or directly at the main pipeline.

### Main Features

- Easy and safe operation
- No dead space for representative sampling
- Zero stem leakage provided by an innovative stem sealing mechanism according to EN ISO 15848-1 and TA-Luft (VDI 2440 / VDI 3479)
- Large outlet bore and adjustable spindle stroke
- Fugitive emission inspection port
- Adapter with quick clamp system
- Stainless Steel body
- Suitable for operating pressures up to 40bar, depending on material specification
- Wide selection of options and accessories
- Compatible with closed sampling system
- Lockable handlever or handwheel

### Technical Data

Versions	DIN, ISO ANSI
Flanges	DIN PN16 / 40 resp. ANSI 150lbs / 300lbs
F / F	DIN EN 558-1 range 1 resp. range 3 and ASME B16.10
Body	Cast stainless steel 1.4408 (A351 CF-8M) or 1.4409 (A351 CF-3M) or alloys C-22, C-276, C-2000, Titanium Gr. 2 or Gr. 7
Spindle	1.4404 (SS316L) or alloys (see above)
Lining	PFA, PFA-AS (conductive)
Spindle seal	unlined only: PTFE-V, PTFE-R Stuffing box or bellow stem seal system

### Options

- Metallic spindle seal for liquid media with solids
- Heating jacket
- Activated carbon filter
- Higher pressure ratings at request

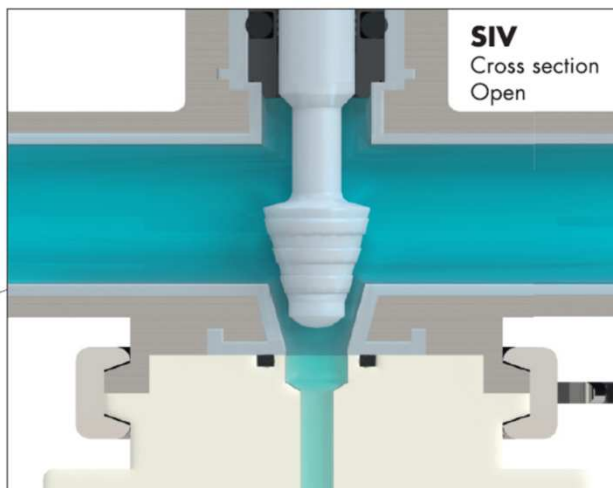
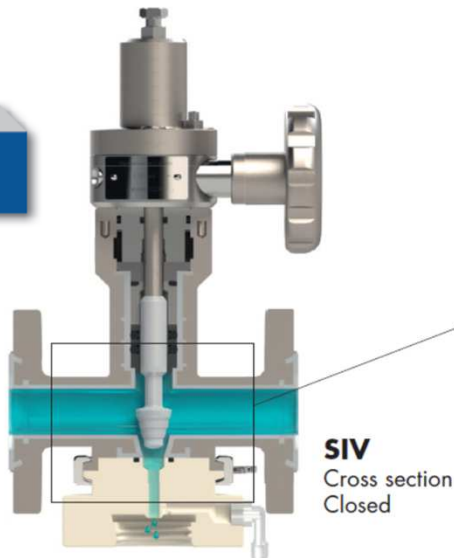


*SIV Flanged / 1.4408-PFA / Deadman Lever*

### Operating Conditions (depending on material selection / spindle sealing)

- Pressure: 0.1 mbar (0.014 psi) up to 40 bar (580 psi)
- Temperature: -40°C (-40°F) up to 280°C (536°F)

See page 6 and 7  
for more options



## Structure of the Valve

### Operations:



Handwheel HW



Deadman lever DL  
(spring lateral and lockable)



Handwheel HS-S  
(spring lateral and lockable)



Linear stroke actuator FC

### Spindle Options:

Encapsulated spindle



Stuffing box

Solid spindle

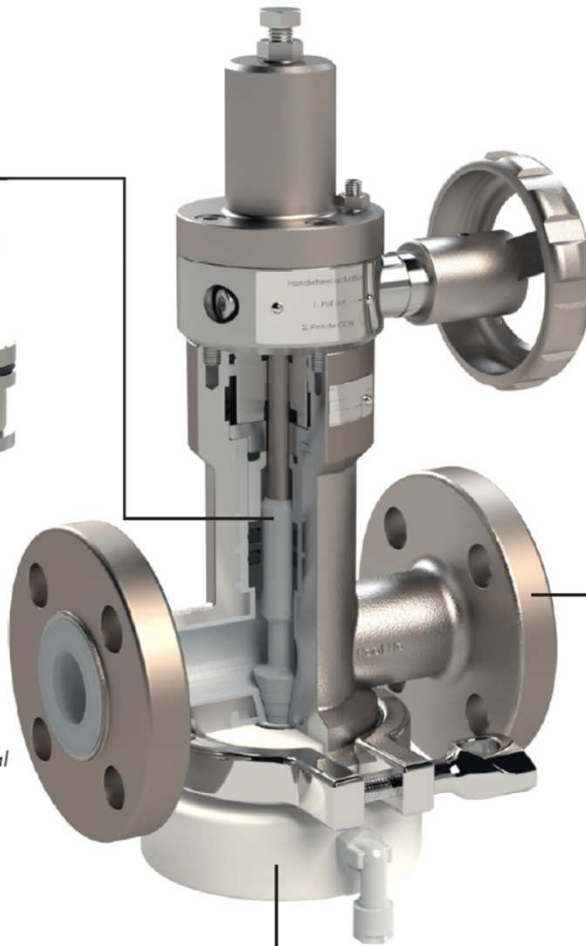


Stuffing box

Solid spindle



Bellow seal



### Body Styles:



Flanged, unlined



Flanged, lined



Wafer, unlined

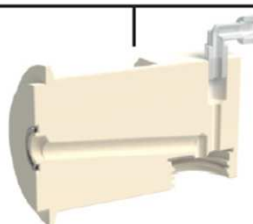


Wafer, lined

### Adapter Options:



Flanged, horizontal



Flanged, vertical



Wafer, horizontal



Wafer, vertical

See page 6 and 7  
for more options



## Sampling Ball Valves SSB

DN15 – DN100 / ½" – 4"

The Sampling Ball Valve SSB allows a predefined quantity of the media to be removed without process interruption. The optional purge connection guarantees easy cleaning of the wetted surfaces.

### Main Features

- Full port design, no pressure drop
- Fixed sample volume of approx. 40 ml (1.35 oz)
- Sample isolated from process as valve is operated
- Only one opening to the atmosphere
- Lockable handle with two travel stops for easy 180° degree motion
- Mounting-flange according to ISO 5211 allows direct automation with pneumatic or electric actuators
- Zero stem leakage provided by an innovative live-loaded stem sealing mechanism according to EN ISO 15848-1 and TA-Luft (VDI 2440/VDI 3479)
- Minimal components allow for easy maintenance
- Horizontal and vertical sampling position

### Technical Data

Versions	DIN, ISO, ANSI
Flanges	DIN PN16 / 40 resp. ANSI 150 lbs / 300 lbs
F / F	EN 558-1 Series 1, resp. ASME B16.10
Body	Cast stainless steel 1.4408 (A351 CF-8M)
Lining	PFA, PFA-AS (conductive)
Ball	encapsulated with ETFE, options: PFA, PFA-AS (conductive) or alloys C-22, C-276, C-2000, Titanium Gr. 2 or Gr. 7
Volume	40 ml, options: 5 ml, 12 ml, 25 ml
Ball seat	PTFE-T, options: PTFE-T-AS (conductive) PTFE, PFA Ball seat spring-loaded

### Options

- Heating jacket
- Active carbon filter
- Purge connection



SSB Flanged  
1.4408-PFA  
with vertical  
adapter and  
pneum. actuator

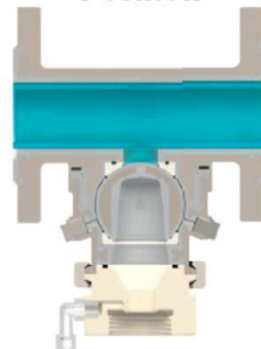


SSB Flanged / 1.4408-PFA / Handle 180°

### Operating Conditions (depending on material selection)

- Pressure: 1 mbar (0.014 psi) up to 16 bar (232 psi)
- Temperature: -40°C (-40°F) up to 200°C (400°F)

### Standard and Draining Position

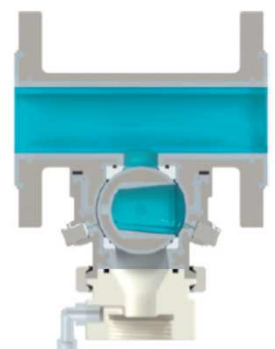


### 180° Rotation

#### Sampling



#### Pressure Lock



## Vessel Sampling Valves

DN15 – DN100 / ½" – 6"

For taking representative samples directly from different storage vessels, stirring vessels, fermenters, bio-reactors and other containers without interrupting the operation.

### Main Features

- Easy and safe operation
- Wetted parts made of stainless steel, PFA or PFA-AS
- Self draining design
- Zero stem leakage provided by an innovative stem sealing mechanism according to EN ISO 15848-1 and TA-Luft (VDI 2440 / VDI 3479)
- Fugitive emission inspection port
- Flanges according to vessel connection specifications
- Handwheel and handle with spring to close function to provide fast and save operation
- Handwheel and handle with lock-in position to provide correct handling
- Predefined sample volume possible
- Lockable handle and handwheel

### Technical Data

Version	DIN, ISO, ANSI
Flanges	DIN PN16 / 40 resp. ANSI 150 lbs / 300 lbs
Body	Cast stainless steel 1.4408 (A351 CF-8M) or 1.4409 (A351 CF-3M) or alloys C-22, C-276, C-2000, Titanium Gr. 2 or Gr. 7
Body lining	PFA, PFA-AS (conductive)
Higher pressure ratings on request	

### Operating Conditions (depending on material selection)

- Pressure: 1 mbar (0.014 psi) up to 16 bar (232 psi)
- Temperature: -40°C (-40°F) up to 200°C (400°F)



SIV with purge connection



SIV with threaded connections



SSB Vessel mounting



SIV Vessel mounting with purge connection

## Options for Sampling

Our sampling valves can be enhanced with a variety of options in various designs.



### SSO-CA Safety Cabinets

Our stainless steel safety cabinets are available in several versions. Vent and drain connections (G1/2") are standard. Viewing windows are made of ESG safety glass with EPDM seals to offer optimum visibility and protection.

#### Versions

- Small: 300x200x150 mm
- Large: 400x300x200 mm
- Polypropylene with PVC or glass windows

### BCS Bottle Closure System

Our BCS seals the sample bottle within a safety cabinet providing greater safety for the end user. The sampling and closing of the bottle takes place in a closed safety cabinet. The bottle is moved to the adapter via external operating elements and the cap can be screwed on simply and intuitively.



### Bottle Support

For hot media or unthreaded bottles. Compatible with all sampling valves. Allows easy and accurate bottle placement.



### Metal Safety Basket

The metal safety basket protects the bottle at exposed sampling valves.

### Purge Connection

Easy to use and efficient. The purge connection allows the adapter to be cleaned in between samples, reducing the risk of cross contamination. The bottle can also be purged with an inert gas.

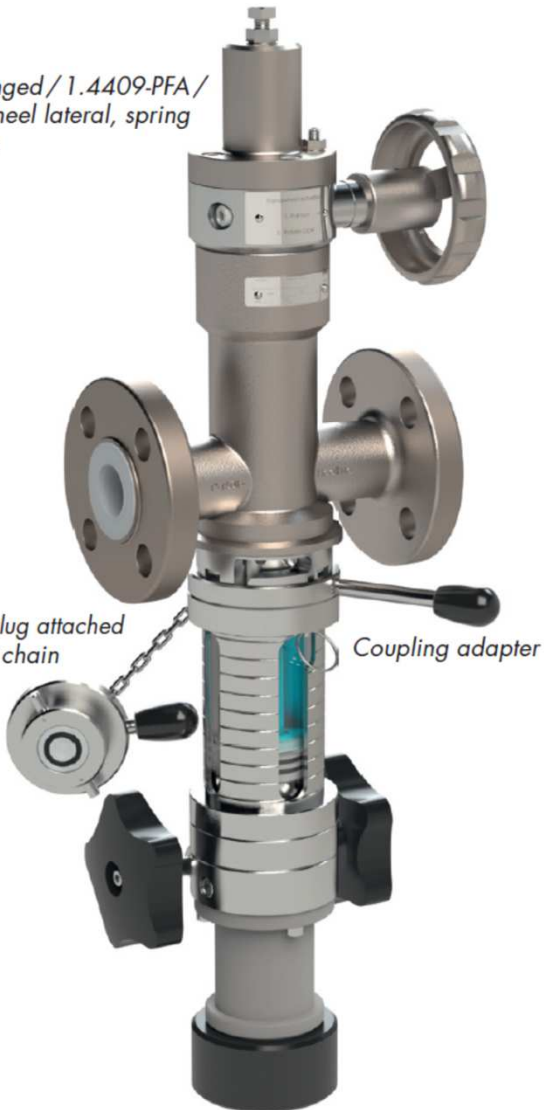




*SIV Flanged / 1.4409-PFA /  
Handwheel lateral, spring  
to close*

*Safety plug attached  
with SS chain*

*Coupling adapter*



**SSO-PI Piston Injector**

The SSO-PI Piston Injector is suitable for sampling and transporting toxic and aggressive media, taken from pipelines under pressure or vacuum.

The Piston Injector also allows the return of the medium or the inoculation of up to 100ml additives up to a line pressure of approx. 5 bar (73 psi).

Each SSO-PI Piston Injector comes in a carrying case with numerous accessories.



*Laboratory stand (optional)  
for safe sample collection*



*Carrying case for SSO-PI  
(standard)*



**SSO-SC Collector**

Can be used in any position in combination with Inline SIV to take samples under high pressure.

**Details:**

- All stainless steel SS316L
- Robust and safe construction
- SS Needle valve
- Sample volume 100 ml / 250 ml



**SSO-NA Needle Adapter**

The SSO-NA needle adapter protects the user from toxic emissions. It can be installed horizontally or vertically.

**Details:**

- Can be combined with safety cabinet
- Wetted surfaces made of SS316L or Hastelloy C

## Reactor Sampling Systems SRS

DN25 – DN100 / 1" – 4"

For safe, representative and closed sampling of liquid media from reactors and vessels – reliable and fast, without process interruption.

### Main Features

- Simple and safe sampling from tanks and reactors
- Application-specific system design
- No dead space for representative sampling
- Compact design
- Advanced system for mounting additional customer specified components
- User-friendly design with maximum safety
- Permanent monitoring possibility before and during sampling

### Safety

SRS systems from Swissfluid meet the highest safety requirements. The self-draining unit is mounted at the top, eliminating the possibility of leakage. In addition, the unit is easy and safe to operate by the user.

### Operating Conditions SRS-P (depending on material selection)

- **Pressure: Main Valve:** 500 mbar (7.25 psi) up to 16 bar (232 psi)  
**Sight Glass Unit:** 500 mbar (7.25 psi) up to 10 bar (145 psi)
- **Temperature:** -40°C (-40°F) up to 200°C (392°F)



### Technical Data

Version	DIN, ISO, ANSI
Flange	DIN PN16 / PN25 / PN40 resp. ANSI 150 lbs
Lining	PFA, PFA-AS (conductive)
Glass cylinder	Borosilicate
Hollow ball / seat	PTFE / FFPM (Perfluror)
Sample volume	150 / 250 ml
Pump	PTFE, PTFE-AS (conductive)

### Modular Design

SRS Reactor Sampling Systems are available in the following versions:

#### SRS-P (PFA-lined)

Sampling is carried out via additional fittings by means of vacuum or overpressure.

#### SRS-P-P (PFA lined, with PTFE diaphragm pump)

Automation of a loop system. Sampling is carried out by forced circulation of the process media by means of a compressed air diaphragm pump.

This system takes the desired sample with vacuum or overpressure. A wide range of accessories are available for the basic versions. Each system is tailor-made according to detailed specifications.

### Operating Conditions SRS-P-P (depending on material selection)

- **Pressure: Main Valve:** 500 mbar (7.25 psi) up to 16 bar (232 psi)  
**Pump:** up to max. 7 bar (102 psi)
- **Temperature:** -40°C (-40°F) up to 120°C (248°F) pump dependent

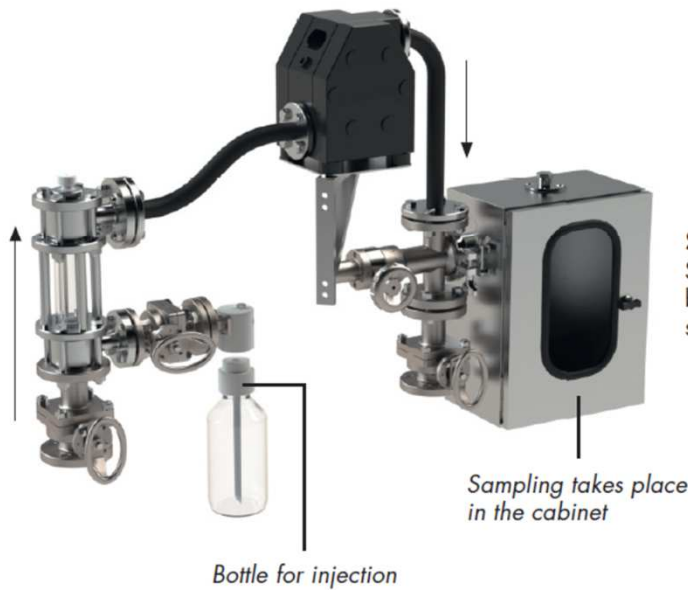
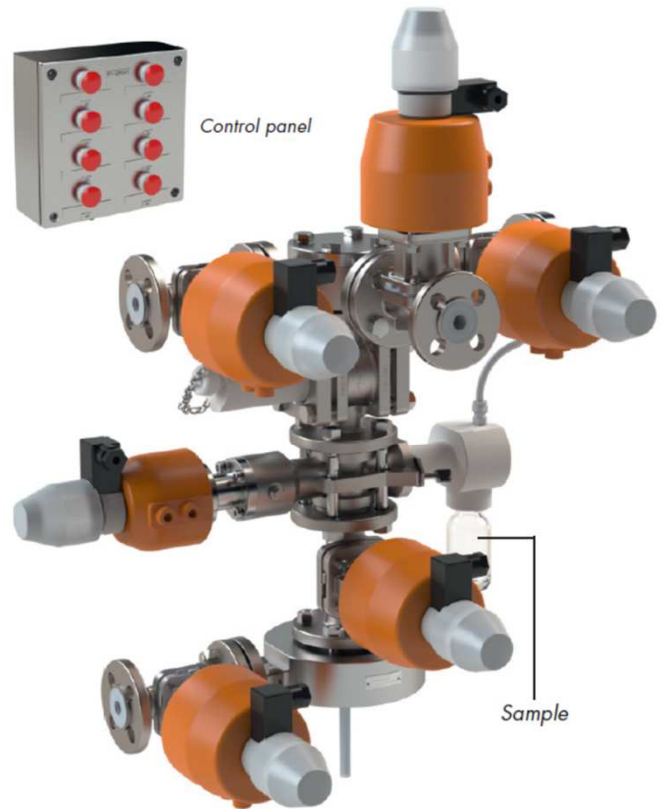




## Custom Variations

### SRS-P Sampling System automated

The fully automated version of the SRS-P allows pre-purging or cleaning of the entire system. It also has an integrated pH/temperature or Redox port. Robust construction, assures easy and safe operation at any time.



### SRS-P-P Sampling System with Pump

Separate flow and return lines ensure greater stability and flexibility for a compact installation. pH/temperature or redox measurement are additional options.

### SRS-P-P Sampling System automated with Pump

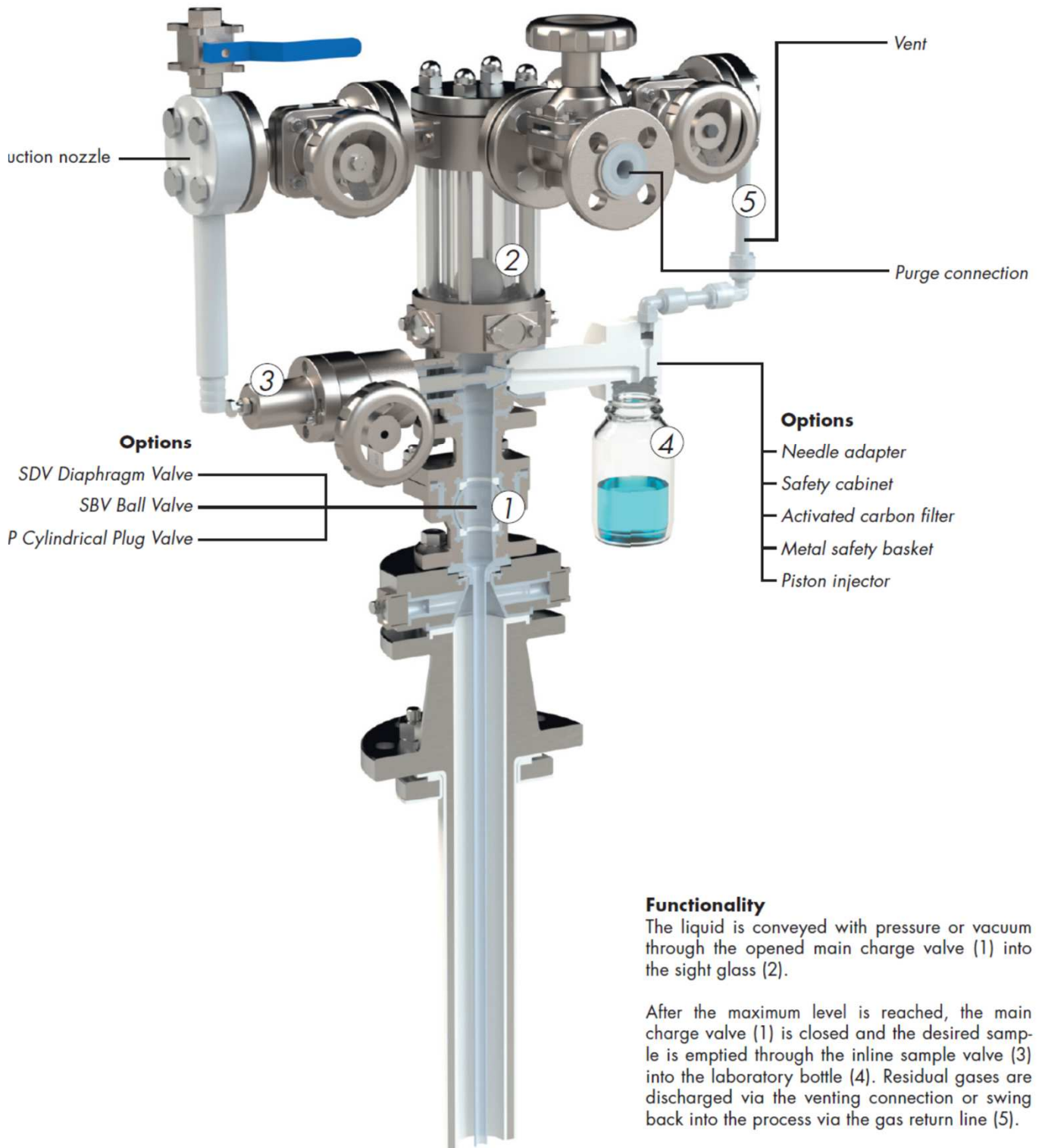
Suction line and pressure line are separate allowing a direct and representative sample in the loop. Main valves are automated for easy and safe operation.



## SRS-P-E Sampling System for Reactors and Vessels

The SRS-P-E is light weight, economical and is suitable for almost all vessels and reactors. It can be configured many different ways.

### Cutaway Model showing Options



#### Functionality

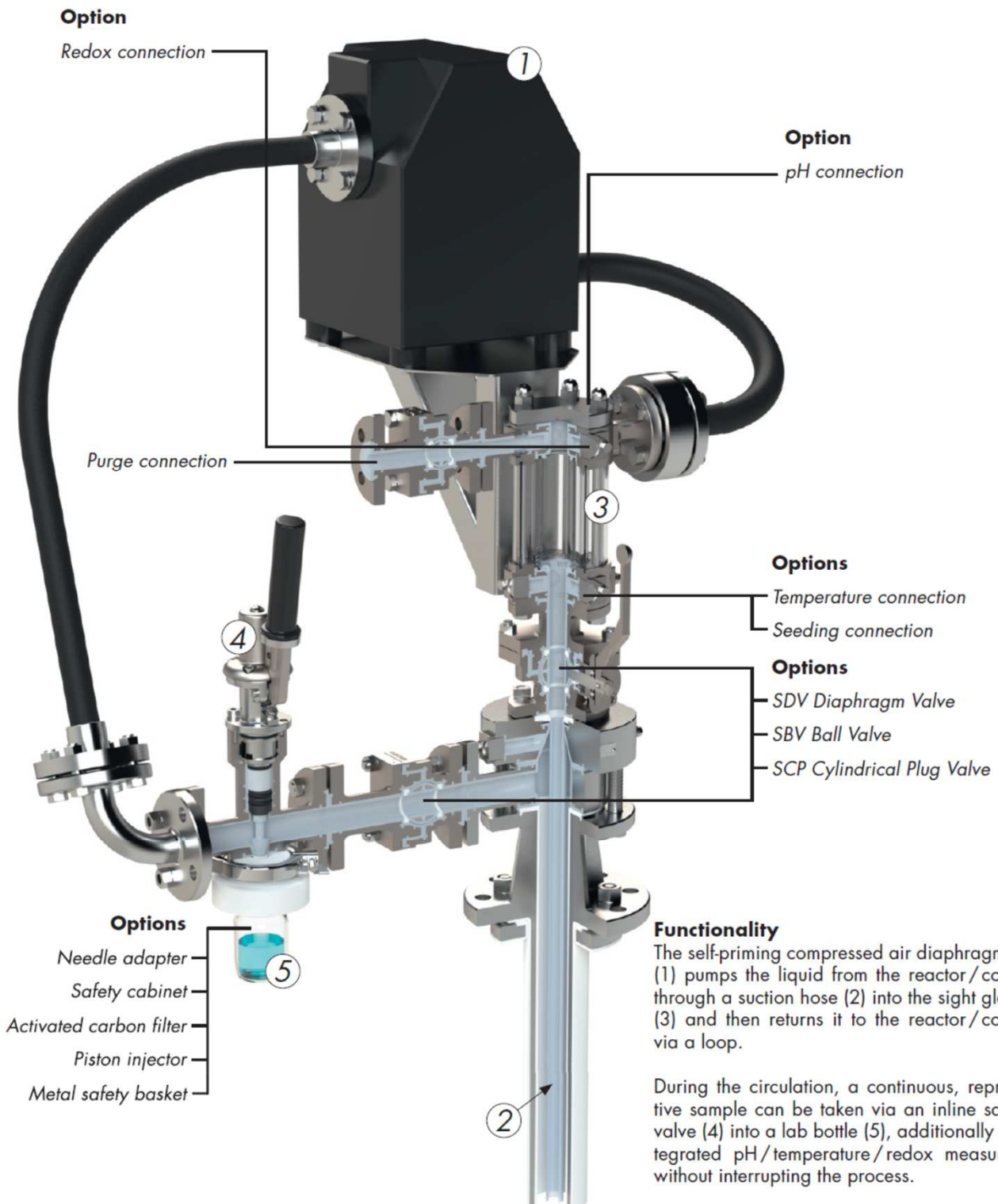
The liquid is conveyed with pressure or vacuum through the opened main charge valve (1) into the sight glass (2).

After the maximum level is reached, the main charge valve (1) is closed and the desired sample is emptied through the inline sample valve (3) into the laboratory bottle (4). Residual gases are discharged via the venting connection or swing back into the process via the gas return line (5).

## SRS-P-P Sampling System with Pump for Reactors and Vessels

The SRS-P-P excels with simple operation and variable sampling. The pump generates a constant flow and allows multiple samples to be taken in one cycle.

### Cutaway Model showing Options





## Sampling-Stations SSO

DN8 – DN25 / ¼" – 1"

Sampling station in custom built according to application. By separating a fixed volume from the main flow it offers a representative sampling of pressurized liquid media without compromising the safety of the operator.

The sampling station SSO is easy to install and operate. Depending on customer requirements, extended versions with additional options and accessories are available.

### Main Features

- Sampling systems for liquid media
- Easy operation and purge
- Additional safety for operator and environment
- Contamination-free sampling of toxic media
- Forced control functions «Closed – Sample – Purge» eliminates handling errors
- Sampling at a high system pressure
- Pre-dosing of the sample volume

### Technical Data

Versions	DIN, ISO, ANSI
Pressure	PN16 / 25 / 40 / 64 / 100, ANSI 150 / 300 / 600 lbs
Connections	Flange, Thread, Quick clamp
Materials	Stainless steel 1.4404, AISI 316, AISI 316L

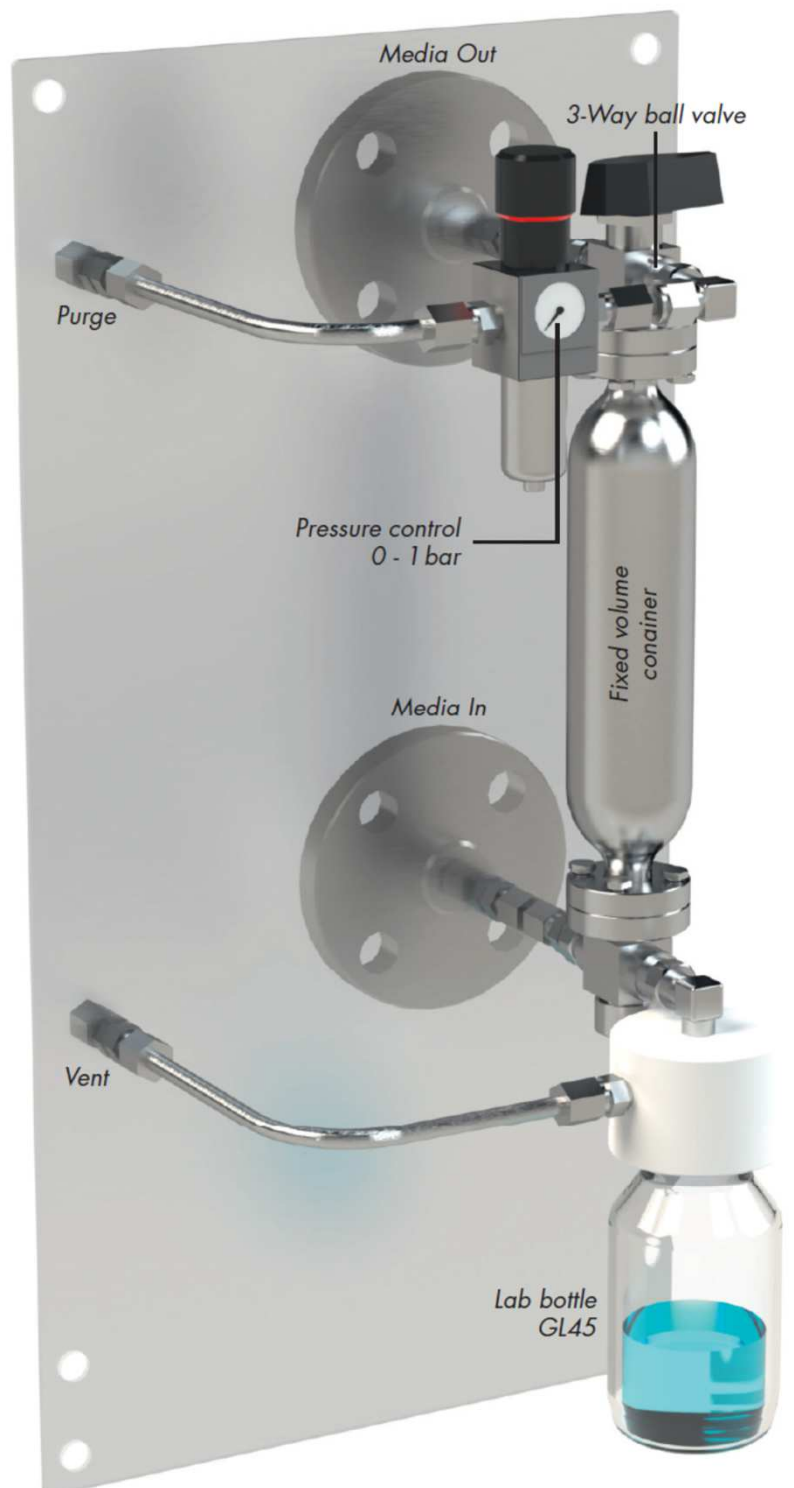
### Options

Installation Mounting stand, cabinet

Materials Alloy 400 and others

- Additions
- Fixed volume container
  - Heating- or cooling jacket
  - Safety cabinet
  - Needle adapter
  - Activated carbon filter

Connections customer specific



### Operating Conditions (depending on material selection)

- Pressure: 0.1 mbar (0.014 psi) up to 124 bar (1800 psi)
- Temperature: -100°C (-148°F) up to +300°C (+572°F)

## Sampling-Stations SSO

DN8 – DN25 / ¼" – 1"

For representative sampling of gaseous or liquid media, we offer systems developed specifically for the application and manufactured according to the customers requirements.

They enable safe and representative sampling and protect operators and the environment.

### Main Features

- Zero emission and representative samples
- Closed sampling systems for gaseous and liquid media
- Easy operation and purge
- Additional safety for operator and environment
- Contamination-free sampling of toxic media
- Forced control functions «Closed – Sample – Purge» eliminates handling errors
- Sampling at high system pressure

### Operating Conditions (depending on material selection)

- Pressure: 0.1 mbar (0.014 psi) up to 124 bar (1800 psi)
- Temperature: -100°C (-148°F) up to +300°C (+572°F)

### Technical Data

Versions	DIN, ISO, ANSI
Pressure	PN16 / 25 / 40 / 64 / 100, ANSI 150 / 300 / 600lbs
Connections	Flange, Thread, Quick clamp

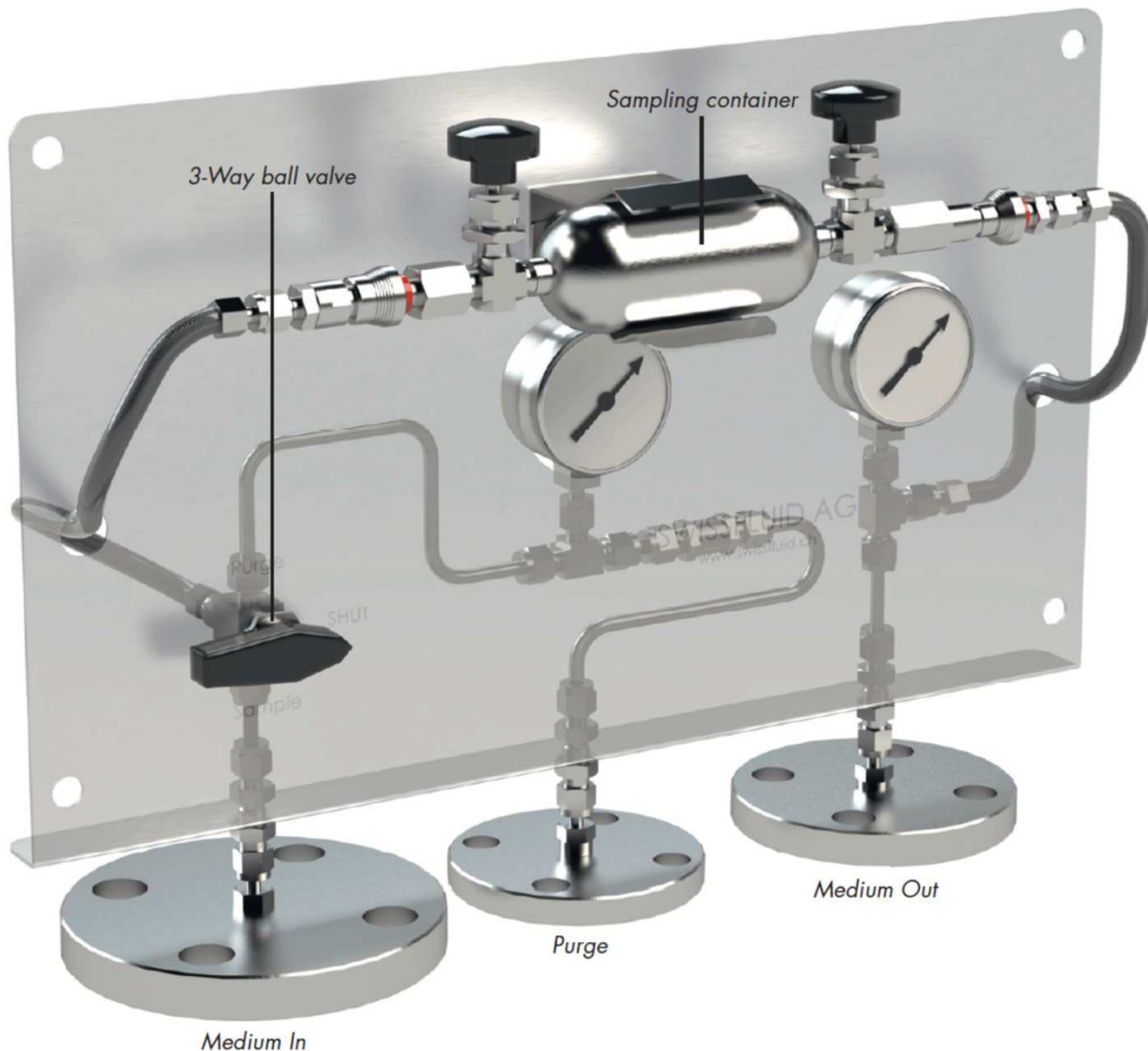
### Options

Installation Mounting stand, panel, mobile units

Materials Alloy 400 and others

- Additions
- Mobile sampling cylinder
  - Fixed pre-metering container
  - Heating- or cooling jacket
  - Safety relief unit for overpressure
  - Systems for several sampling points
  - Activated carbon filter

Connections customer specific



## Custom Variations

### SSO-C Combined

In combination with the SIV, inline sampling is guaranteed. In addition, the sample can be drawn over the loop (also gaseous).

The closed system allows the safe drawing of an extremely representative sample. In addition, handling and rinsing is very simple.



### SSO-P Panel

Available in different variations according to customer requirements.

This version allows several samples to be taken from different sampling points. The quick-closing locking mechanism allows the sample cylinder to be removed safely and quickly. The system can easily be switched to purge with flow indicator during the whole process.

### SSO-S with PP Safety Cabinet

The sample is drawn over a needle adapter by septum.

The PP safety cabinet offers additional full protection for the operator, who can operate the sampling station from outside.



### SSO-S with Heating Jacket

System with forced draining in the safety cabinet.

For temperature-critical media, a quick disconnect sampling cylinder with heating jacket is mounted in the protective cabinet.



## Customized Linings and moulded Parts

For pumps, piping components, vessels, valves etc.

We only use virgin fluoropolymer material (no reprocessed material), in order to achieve and ensure an equally high quality standard at any time. Solid parts as well as encapsulations and linings are made of corrosion resistant metal-fluoropolymer combinations such as PTFE, PTFE-T (modified), PTFE-AS (conductive), PFA, PFA-AS (conductive), PFA-HP (high purity), PVDF, PP, ETFE.



## Special Cleaning and Testing Methods

As a manufacturer of high quality process valves we meet the demands of the market and develop cleaning procedures designated for chlorine, high purity and oxygen service as well as «oil and lubrication free» applications. After the successful pressure tests with Inertgas, the valves are cleaned, dried, individually packed and marked for the intended service. Each process is designed to achieve the highest standard for our product.



## Quality

For our customers, quality, safety and environmental sustainability are the primary concerns. International standards, regulations and internal examination guarantee the compliance to these specifications. The certified management system according to ISO 9001:2015 with the integrated, European pressure equipment directive 2014/68/EU (PED) support us in our co-operation with partners and customers around the world. A comprehensive modular assortment of Swiss-made quality products is at your disposal for solving problems efficiently in applications for various industries such as chemicals, petrochemicals, pharmaceutical products, biochemistry, semiconductors, pulp and paper, power generation, mining, etc. Throughout all manufacturing and testing stages, Swissfluid maintains the highest levels of quality of its parts and finished products.



ISO 9001:2015



PED 2014/68/EU



TA-Luft VDI 2440  
ISO 15848-1

### Further Certificates:

ATEX

SIL Declaration of compliance

EAC TP 010/032

CRN (Canadian Registration Number)