

Sampling Valves and Systems



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

SWISS fluid

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 40 bar, 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 150 lbs / 300 lbs
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 bellows stem seal system

Options

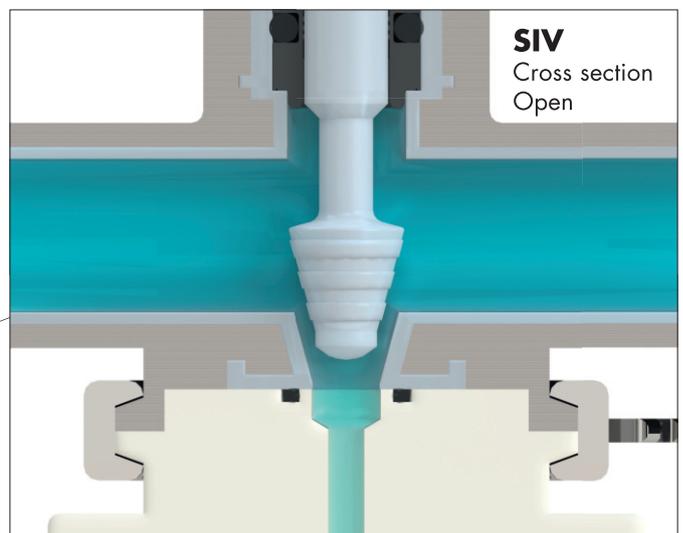
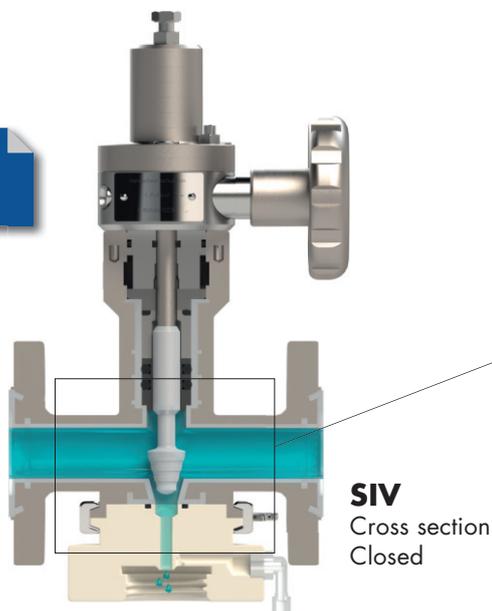
- Metallic spindle seal for liquid media with solids
- Heating jacket
- Activated carbon filter
- Higher pressure ratings at request



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)



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

Solid spindle

Solid spindle

Stuffing box

Stuffing box

Bellow seal

Body Styles:



Flanged, unlined



Flanged, lined

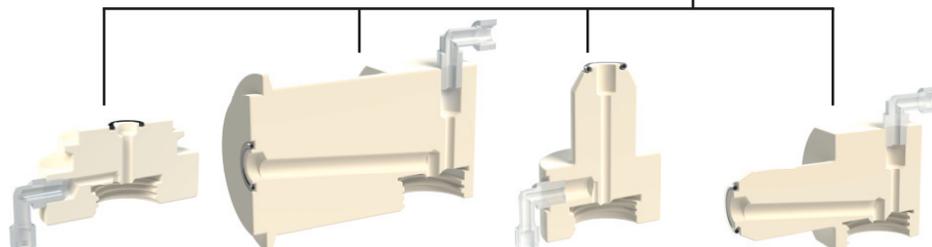


Wafer, unlined



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 150lbs / 300lbs
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

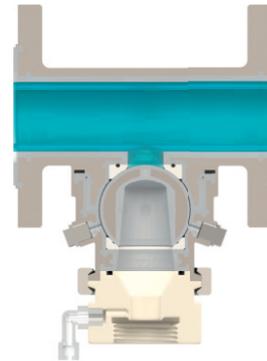


SSB Flanged / 1.4408-PFA / Handle 180°

Operating Conditions (depending on material selection)

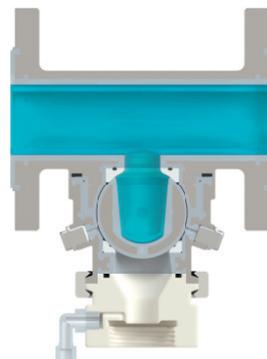
- Pressure: 1 mbar (0.014 psi) up to 16 bar (232 psi)
- Temperature: -40°C (-40°F) up to 200°C (400°F)

Standard and Draining Position

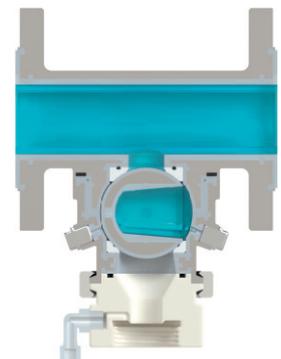


180° Rotation

Sampling



Pressure Lock



See page 6 and 7 for more options

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 150lbs / 300lbs
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



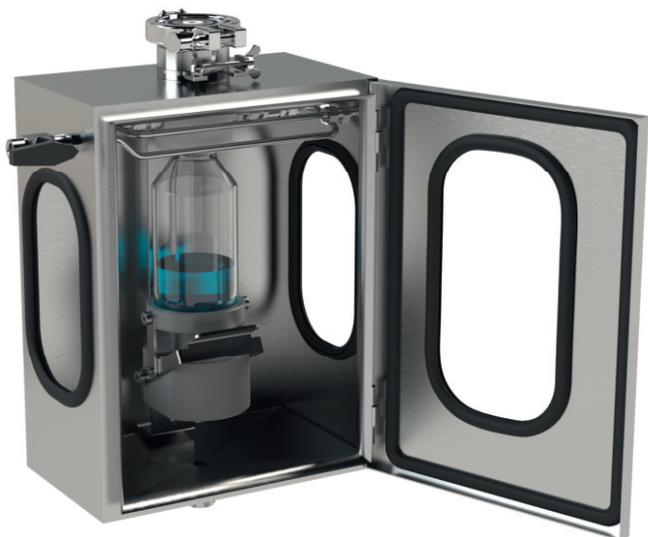
SSB Vessel mounting



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

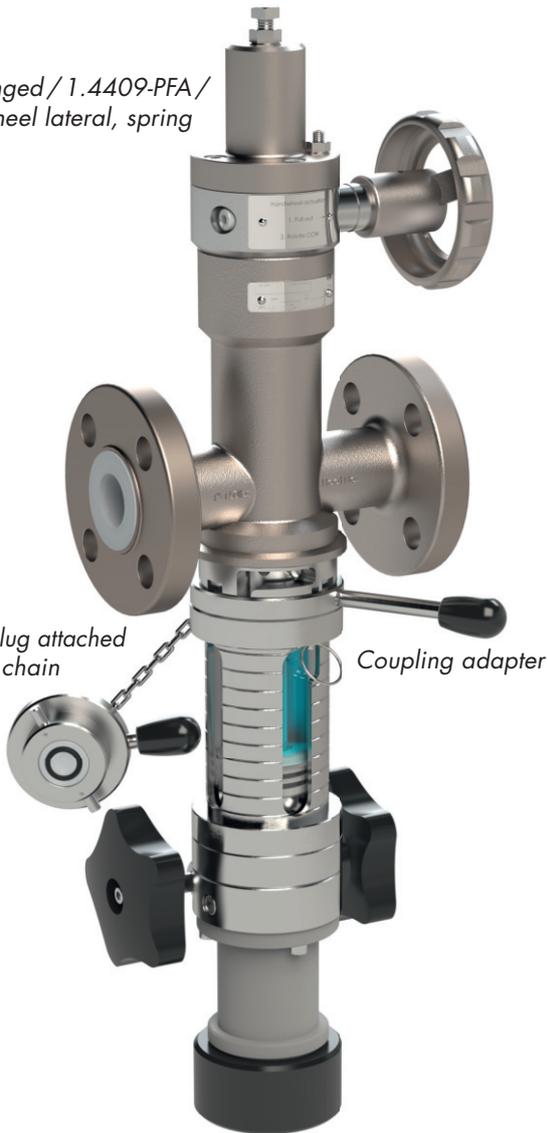
Easy to use and efficient. The purge connection allows the adapter to be cleaned in between samples, reducing the risk of cross contamination. The bottle can also be purged with an inert gas.



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 100ml/250ml



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.

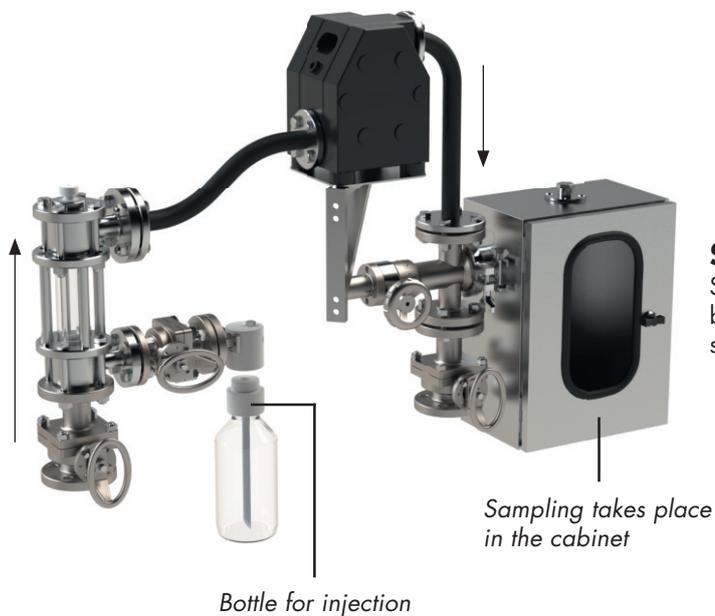
Operating Conditions SRS-P-P (depending on material selection)

- **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

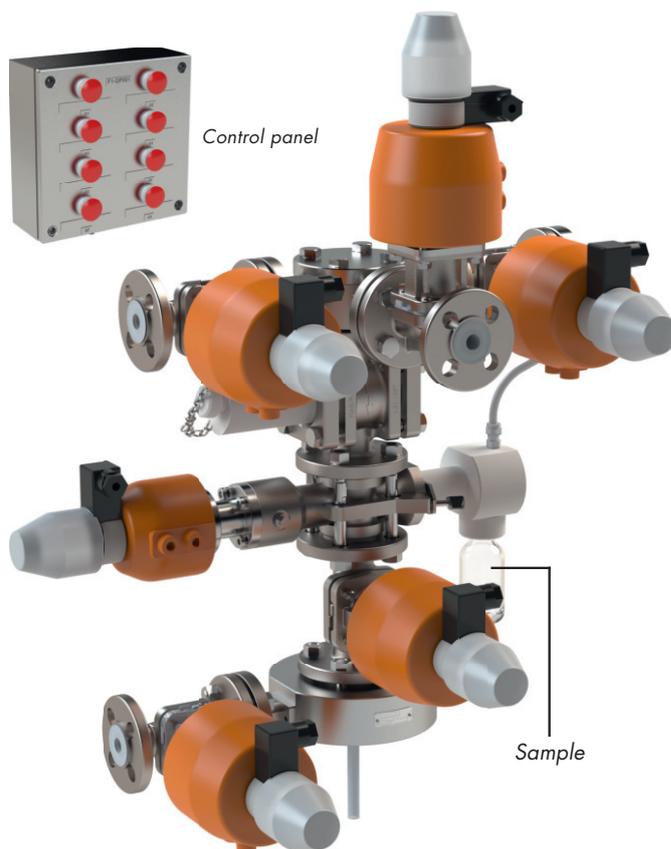
SRS-P Sampling System automated

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 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-P Sampling System with Pump

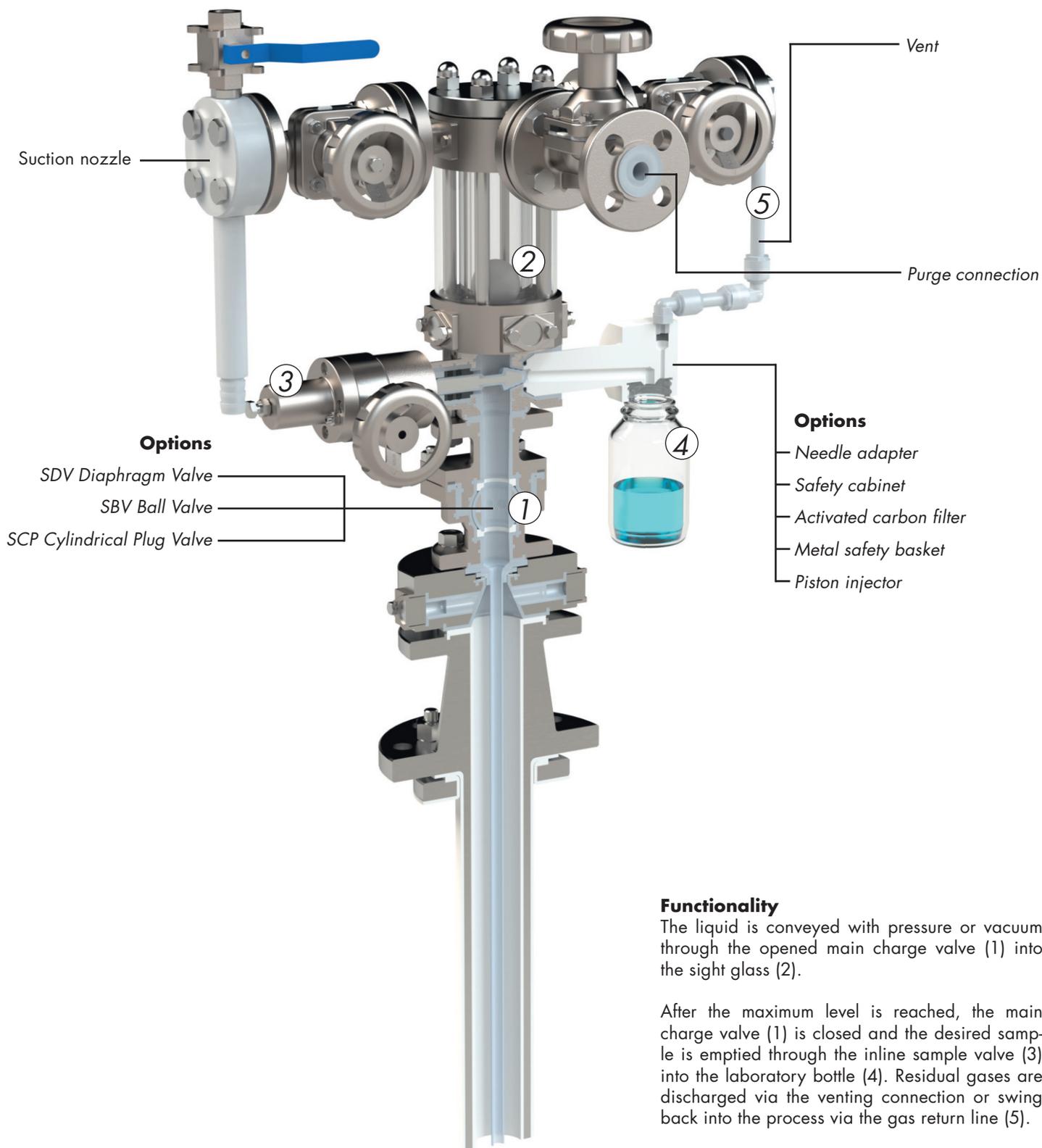
Separate flow and return lines ensure greater stability and flexibility for a compact installation. pH/temperature or redox measurement are additional options.



SRS-P-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

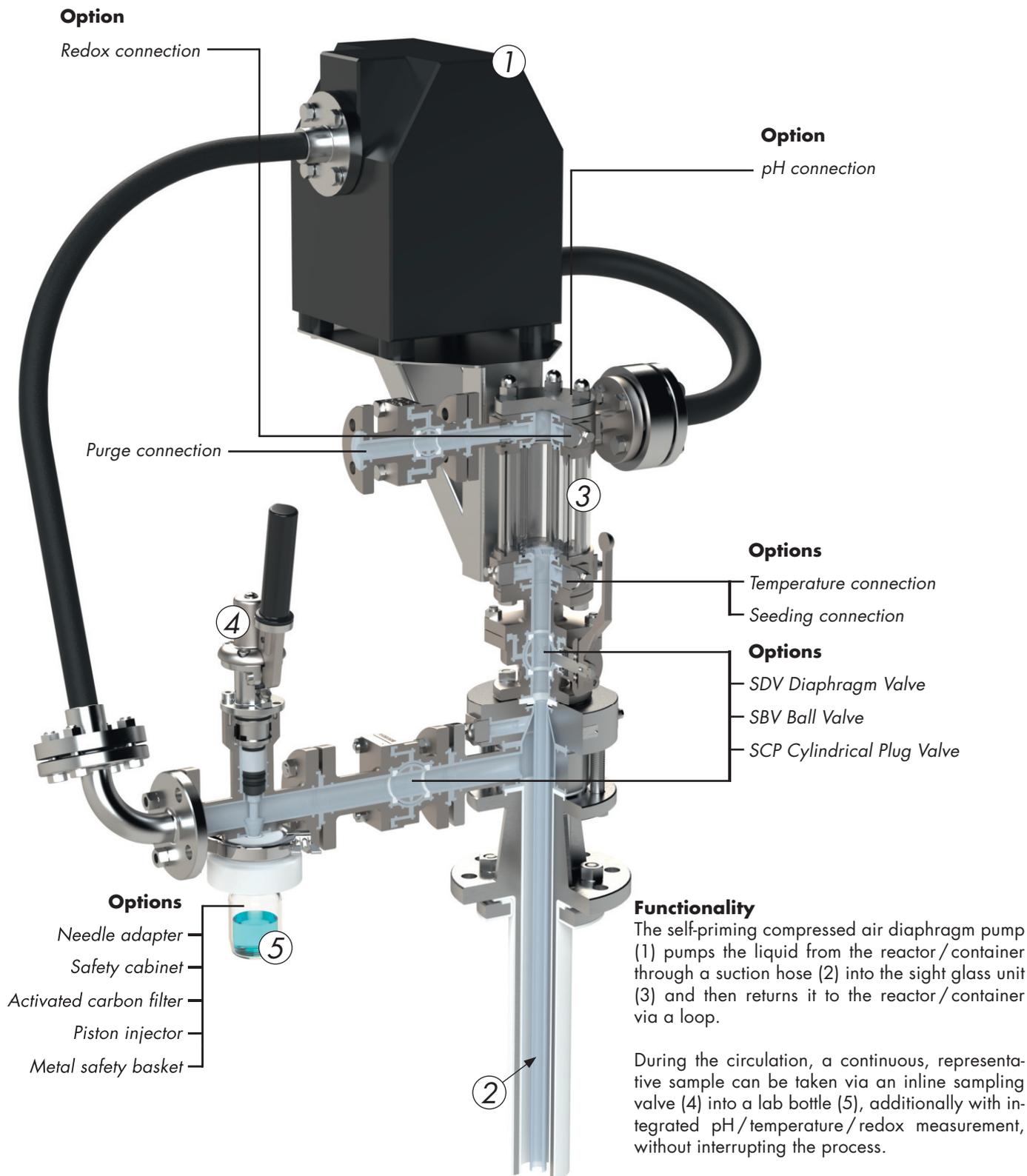
The liquid is conveyed with pressure or vacuum through the opened main charge valve (1) into the sight glass (2).

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

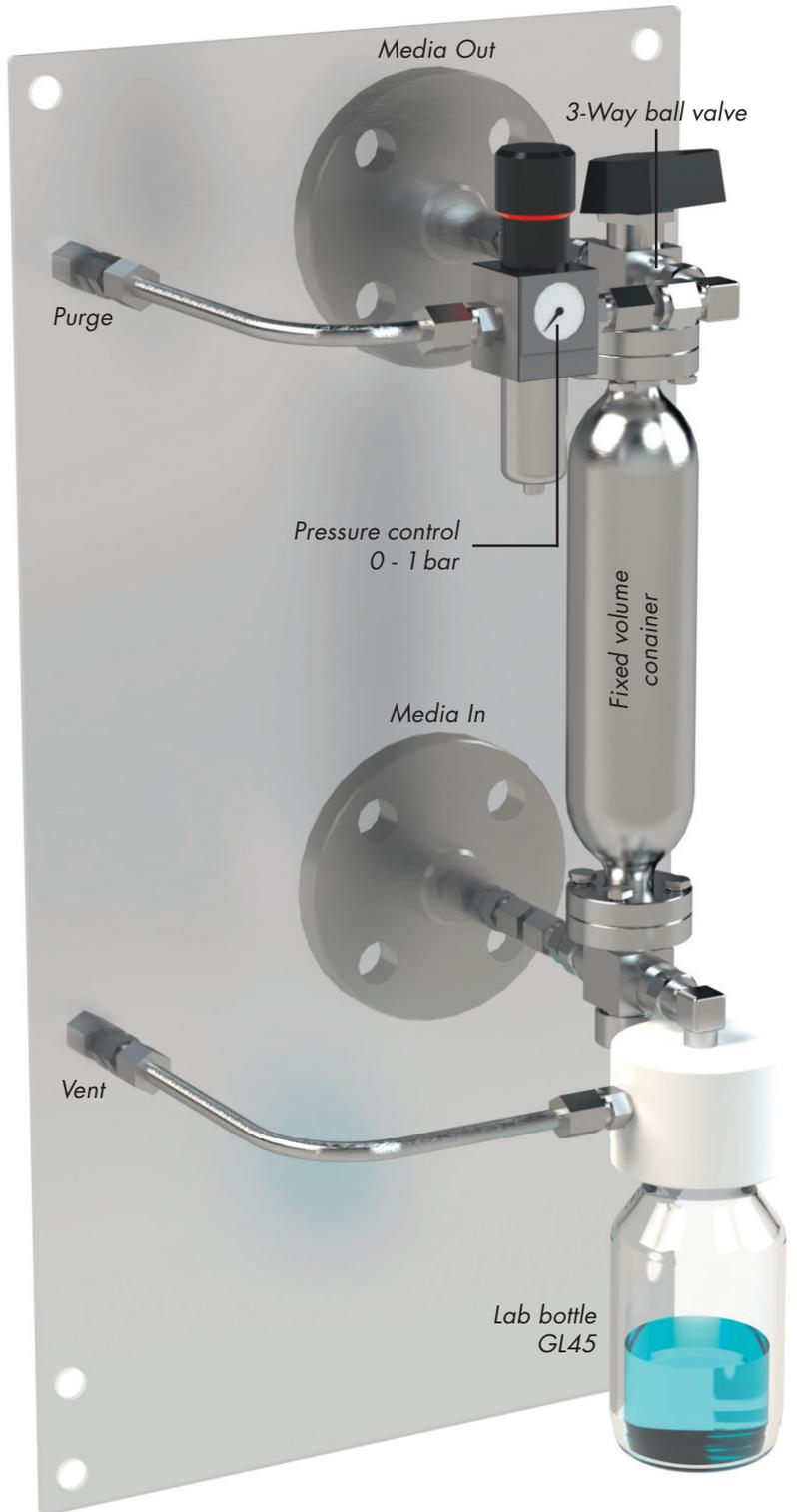
Options

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 (0.014psi) up to 124bar (1800psi)
- 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

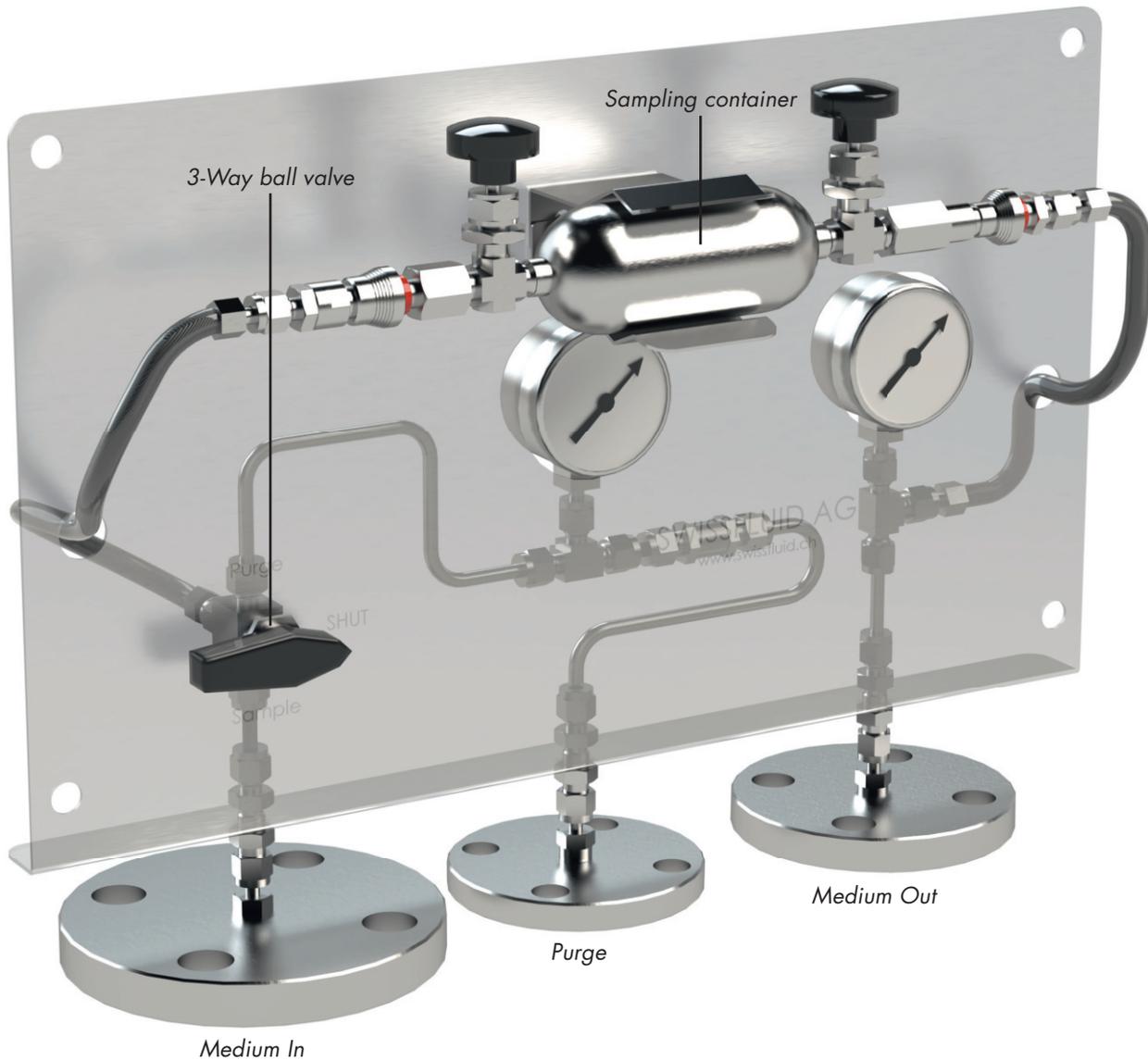
Options

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 cooperation 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)

Core Competence

Our focus lies in the area of specialized plastic-lined products that are used for the most severe corrosive or abrasive applications. Our valves and valve systems have been designed for maximum longevity and require little or no maintenance, resulting in low total cost of long-term ownership. Thanks to the modular design of our variable components we often arrive at customer-specific solutions using standard products. Driven by our penchant for innovation, our engineering capabilities keep pace with constantly changing technical, economic and social requirements. We are guided by our customer's wishes. We specialize in recognizing market-driven requirements and arrive quickly at products that meet or exceed these requirements. Our strategic orientation is geared towards customer service and professional advice.

Swissfluid AG in Lenzburg, Switzerland comprises over 5000 m² (50'000 ft²) of manufacturing, assembly, testing, inventory and office space. Our large inventory of raw materials at our Swiss headquarter keeps manufacturing times to a minimum. Having production and administration under one roof guarantees efficient and flexible handling of worldwide inquiries and orders. Being a highly specialized enterprise we see our call of duty and motivation to offer the customer market-relevant products and services. Closely following customer specifications, valves are assembled and tested at our facility.

Swissfluid (USA) Inc., strategically located in Houston TX, serves our North American customers with an expert sales team, extensive inventory, assembly, automation and repair capabilities.

Swissfluid (China) Co. Ltd., our subsidiary company in Shanghai holds the responsibility for sales and the local support of our customers in the Chinese market.

Innovative | Multi-Faceted | Reliable | Swiss Quality | Economical | Dynamic | Flexible



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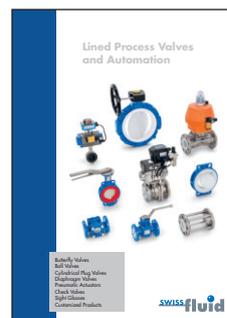


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