



## Reactor Sampling Systems SRS Series

for safe, representative and closed sampling of aggressive or toxic media out of reactors and tanks – quick, reliable, without process interruptions.

### Modular Design

Reactor Sampling Systems are available as basic versions such as SRS-P (PFA-lined) resp. SRS-P-P, PFA-lined with air driven diaphragm pump.

The systems operate, i.e. extract the required sample by means of vacuum or under pressurized conditions. In addition to the basic units, a large variety of accessories and options can be selected and the system will be assembled easily and complete, just according to the given specification.



### Main Features

- Robust construction, assuring easy and safe operation at any time
- Simple extension with additional components resp. upgrading of existing systems
- Main valve standard 1"-150lbs, PFA-lined, manually operated
- 2-hole mounting plates for easy installation of additional valves or connections
- Various reserve connections
- Ball seat made of Perfluor, for wear-free and reliable sealing of the PTFE hollow ball
- Flange connections acc. to DIN or ANSI

### Operating Conditions

- |                                     |   |
|-------------------------------------|---|
| • Operating pressure main valve     | 16 bar  |
| • Operating pressure sight glass    | 10 bar  |
| • Temperature range main valve      | -30°C up to +200°C (depending on lining material) |
| • Vacuum (suction head approx. 3 m) | 500 mbar abs.                                     |
| • Sampling volume standard          | 150 / 250 ml                                      |

### Testing / Marking

- Pressure- and tightness testing acc. to EN 12266-1, leakage rate A, and spark testing at 35 kV to assure lining integrity. Marking of system components acc. to EN 19.
- Material- resp. test certificate acc. to EN 10204-3.1

### Systems PFA-lined

- |                |                          |
|----------------|--------------------------|
| <b>SRS-P</b>   | Basic unit               |
| <b>SRS-P-P</b> | with PTFE diaphragm pump |
| <b>SRS-P-I</b> | with PTFE suction nozzle |

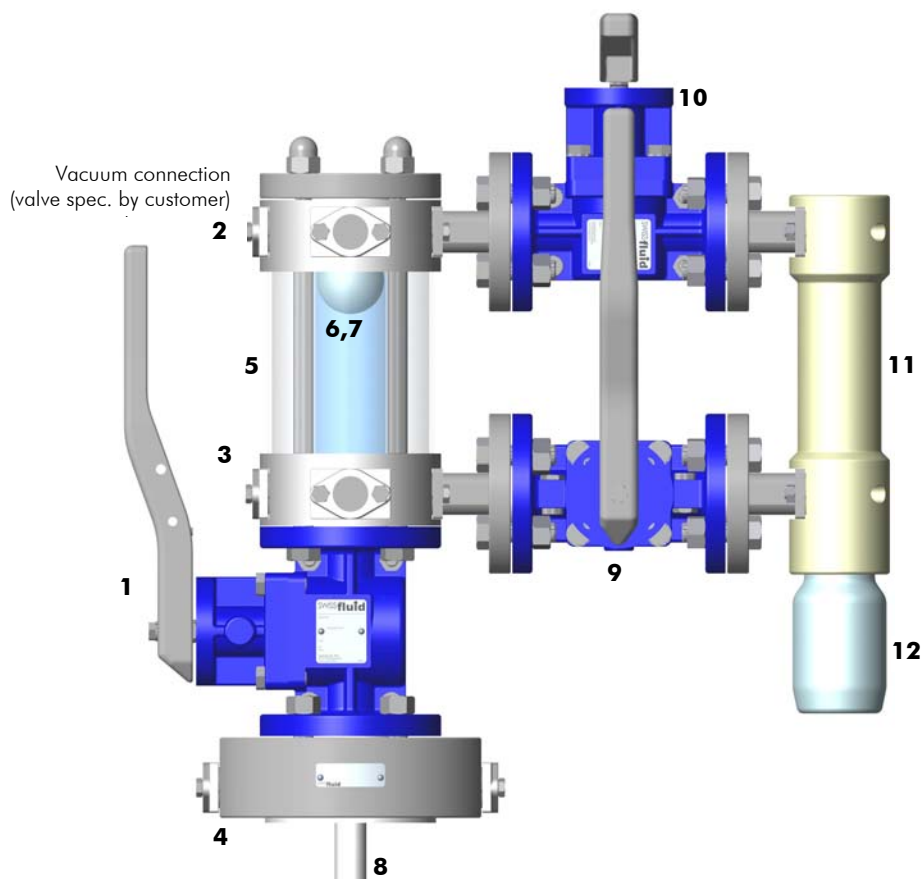
Special systems, options and accessories acc. to detailed specification



## Function of manually operated systems

A dip pipe conforming to the tank configuration is mounted onto an existing tank flange. Flange dimensions, length, configuration and type of dip pipe must be clearly specified by the customer. The dip pipe is needed for the protection and proper guidance of the flexible PTFE suction hose (8) supplied with the sampling system.

Starting point for sampling: Prior to start-up, system needs to be cleaned – all valves to be in closed position.



## Sampling under vacuum conditions

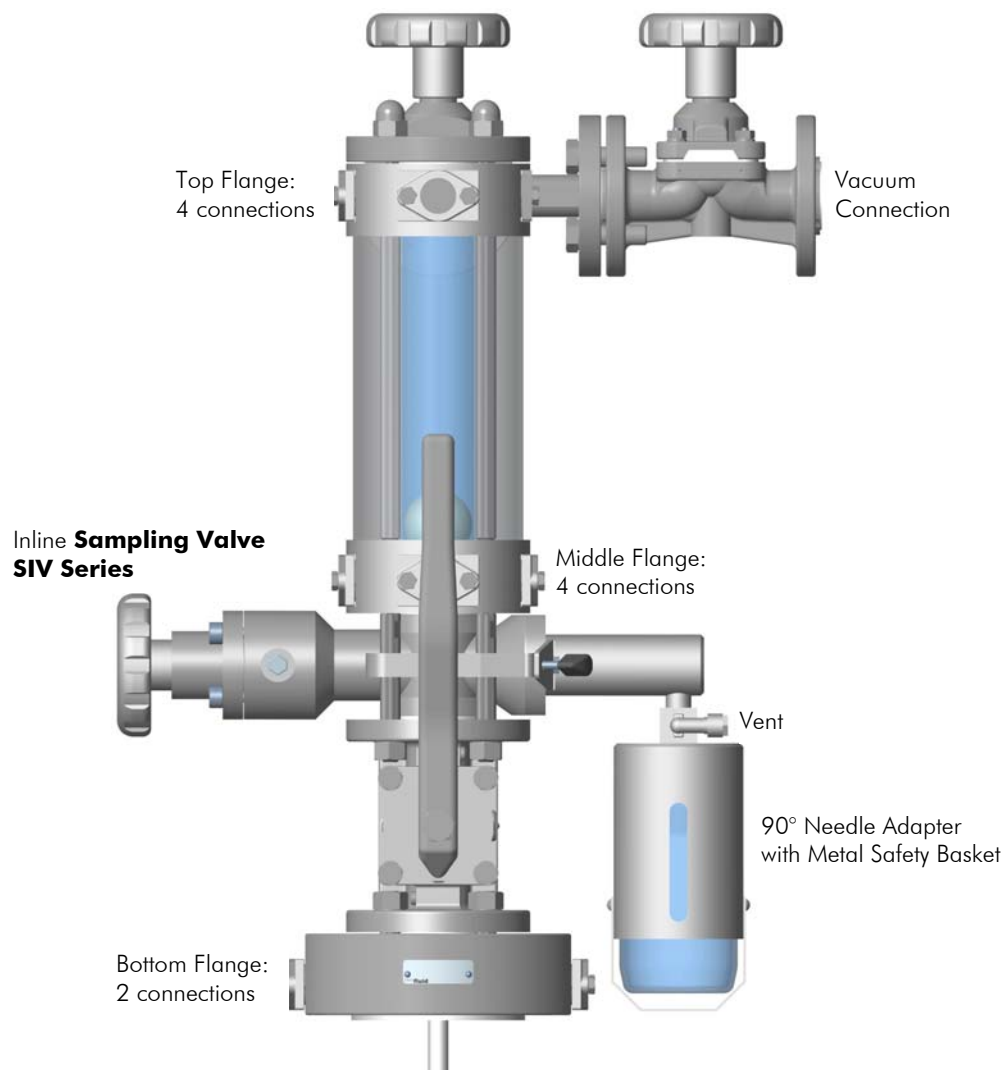
Open charging valve (1) slowly. Open vacuum valve installed at top flange (2). Through the vacuum created in the system, tank content rises through the suction hose (8), main valve (1) and sight glass (5). With the rising of the liquid level, the hollow ball (6) is lifted and finally pressed smoothly against the ball seat (7), stopping the suction flow. Close main valve (1) and vacuum valve. Open drain valve (9) and vent valve (10). Sample now can flow into the sampling bottle (12).

Entrapped gases are released through by-pass (11, solid PTFE or hose) resp. vent valve (10) back into the tank. Remaining sample liquid can be forced back into the tank through the suction hose with nitrogen gas introduced through the connection in the top flange (2) or middle flange (3). The system can be purged with nitrogen through the same connections. After conclusion of sampling and purging of the system, all valves must be closed again for starting new sampling procedure. Independant of sampling, any gas or add products can be provided through the connection in bottom flange (4).

Special systems, options and accessories acc. to detailed specification

**Option: with Inline Sampling Valve SIV Series**

Instead of using a by-pass, at critical applications we recommend to install the proven bottle system SIV Series. With this alternative, return circuit of gas will be released by the vent connection of the 90° adapter to the atmosphere or into activated carbon filter device. With needle adapter and bottle with septa the probe is free of any contaminations.



**Typical Applications**

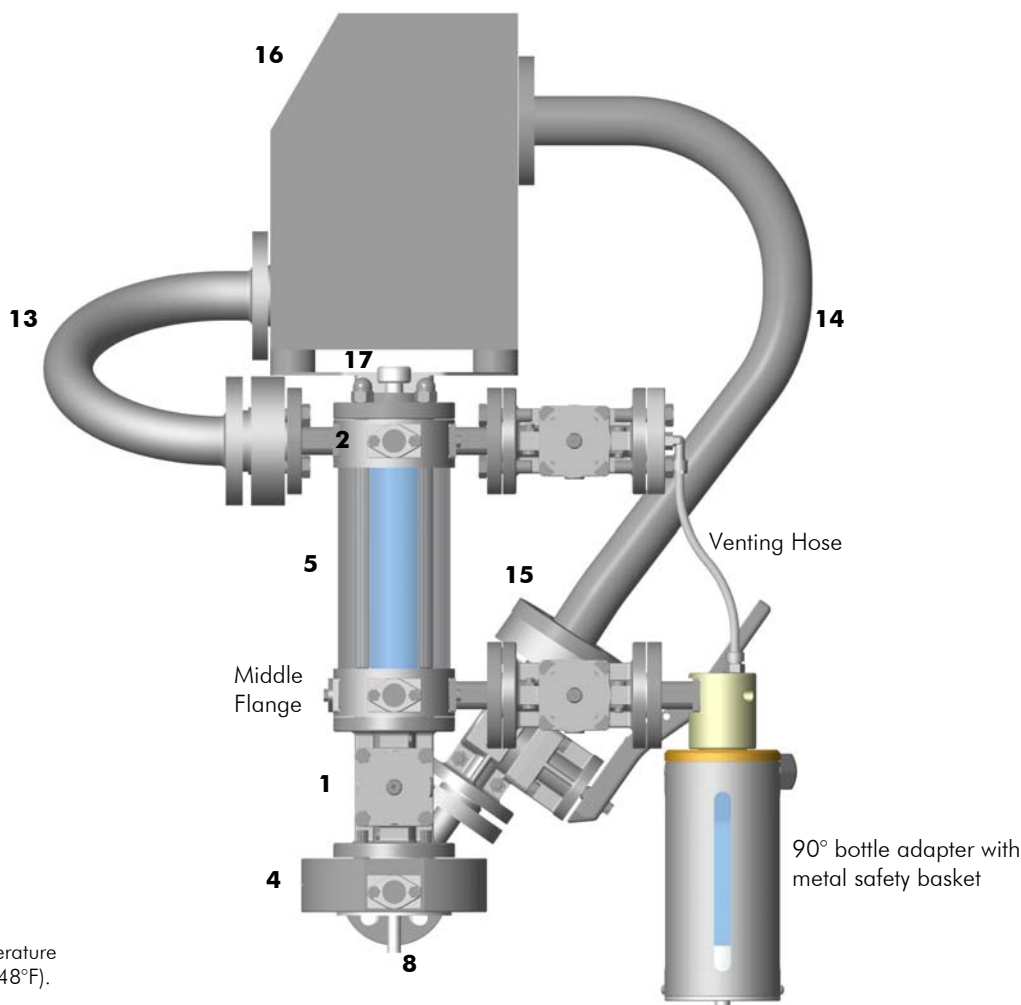
Sampling Systems SRS Series, ideally suited for continuous, fully enclosed monitoring of process data resp. performance, called for by modern process control systems: quick, totally confined – without any process interruptions!

Due to its modular conception, all Swissfluid sampling systems feature a highly flexible approach to service-driven sampling in most industrial processes!

**Function of SRS-P-P Series, with air driven diaphragm pump****Sampling and pH/temperature/Redox measuring – combined in one system!**

Structure: Basic unit SRS, w/o hollow ball (continuous flow circulation)

Self-priming, compressed air driven diaphragm pump (16) is mounted onto a support attached to the top flange (2). The suction end of the pump is connected with a stainless steel wire-braided PTFE flexible hose (13) to the top flange (2). The discharge end of the pump connects to the flow return port in bottom flange (4) by the same type of pressure hose (14) and the shut-off valve (15).

**Important:**

Allowable operating temperature of pump max. 120°C (+248°F).

**Operating principle with pump**

Open charging valve (1). Open pump discharge valve (15). Start diaphragm pump (16). With the self-priming effect at the pump, liquid rises through the suction hose (8), main valve (1), sight glass (5) and enters the pump through the suction hose of pump (13). After discharging from the pump, liquid returns through the discharge hose (14) and pump discharge valve (15) into bottom flange (4) and from there between dip pipe and suction hose (8) back into the tank. For sampling, valves (18) and (19) have to be opened. Sample now flows through 90° adapter into bottle, protected by a metal safety basket with spring loaded plate.

When circulating through the system, pH/temperature/Redox-values can be measured on a continuous basis by connecting the probe (17) on top flange (2). For sampling, the main valve (1) must be closed and the pump (16) simultaneously stopped.

Special systems, options and accessories acc. to detailed specification