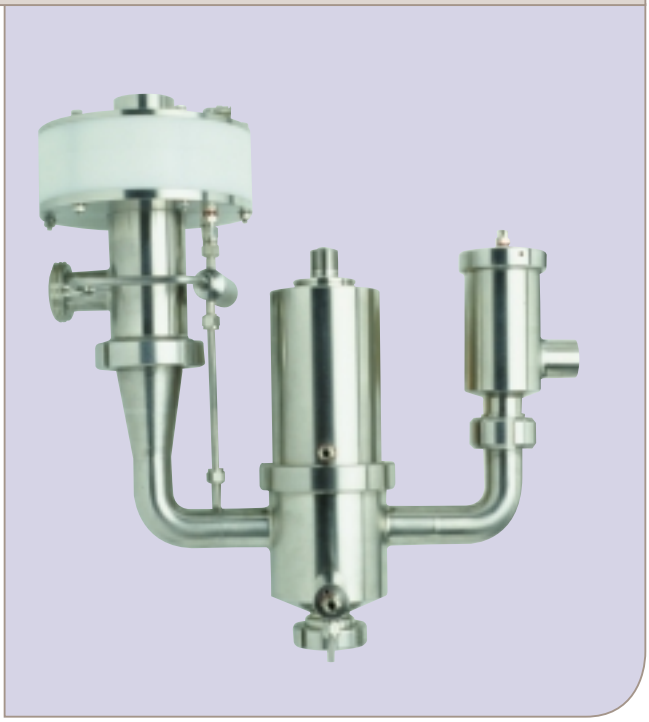
SCANDI BREW® Constant pressure system

Tank top systems



Application

To obtain an accurate top pressure system for remote control in tanks during filling, storage and emptying conditions. The constant pressure system is applicable for control of one or more tanks working with the same top pressure.

Construction

The Constant pressure system is a modulating system that comprises a Pressure Supply (PS) valve and a Pressure Exhaust (PE) valve, which can be connected to a tank top system by means of a T-piece, a mixproof T-valve or directly installed in the gas line.
The system is available in two standard sizes:
1½" and 2", with the following recommended capacities:

Dimension	Filling/Emptying Speed
1½" 2"	Max. 500 hl/h Max. 1000 hl/h

Working pressures: 0,5 - 4 bar.
Gas supply: 1-2 bar above working pressure
max. 6 bar (86 psi).

Please see PD leaflets on the individual PE, PS and mixproof T-valve for further detailed information.

Operation

The PS and PE valves are controlled by means of the same set point pressure, which is identical to the required working pressure. The set point pressure is applied to the top of each valve and together with the reference pressure (actual tank pressure connected to the lower side of the PS valve) the two valves will maintain the preset tank pressure automatically.

Gas supply takes place through the PS valve, which will open when working pressure falls below set point pressure, i.e. when tank is emptied.

When working pressure exceeds the set point pressure, i.e. during tank filling, the PS valve will close and the PE valve will open and blow off for collection or atmospheric discharge.

A dead band built into the PS valve ensures that the two valves are never open simultaneously and thus avoiding gas losses.

Benefits

- *Automatic control of working pressure*
- *Reduced loss of CO_2*
- *Low investments and fast pay back in terms of reduced CO_2 usage*
- *Fully CIP'able of all parts in contact with product*
- *Easy variation of set point pressure*
- *Applicable to manual or computerized control*

When the PS and PE valves are mounted together with a mixproof T-valve, CIP of gas mains and valves can take place independently of vessel cleaning and with product in the tank.

Cleaning

When including the Constant pressure system in the CIP of gas mains, the connection to the tank top must be closed with a mixproof T-valve.
Furthermore, a 6 mm change-over valve can be included in the pressure transmission pipe of the PS valve to secure cleaning of the above pipe and to avoid CIP liquid going into the housing.

With CIP flow in the same direction as gas flow and set point pressure still on, the PE valve should further have a control signal for force opening to establish correct cleaning conditions.

In special applications cleaning of the PE valve should take place from the CIP nozzle in the valve housing. In such cases the valve should also be force opened (see PD leaflet on PE valve).

Mounting

Vertical mounting of the PE and PS valves is recommended. Under special circumstances other positions of the PE valve are acceptable. Please note that connection of the PS valve always requires a conical pipe connection on tank side for free operation of valve disc (see PD leaflet on the PS valve).

Maintenance

It is important that the valves are inspected regularly. The PE valve and the PS valve are equipped with small holes in the side of the housing. These holes will indicate a possible leakage. Routine checks for leakages of gas or liquid from these holes should be made regularly. Gaskets and O-rings to be replaced approx. every 2-3 years.

Extra Equipment

- 6 mm CIP valves for (PS) pressure transmission pipe & PE valve
- Connecting mixproof T-valve
- Connecting butterfly valve and T-piece