

# Alfa Laval Swing bend centralised sampling system

## Sample taking from beer tanks

### Introduction

Because of the position of the sampling valve on vertical fermenters or bright beer tanks, access to sampling point often needs catwalks or platforms. To take a sample outdoor from such platforms is often done under less favourable climatic conditions thus giving the possibility of unacceptable samples as well as increasing the risk of work related accidents. A centralised sampling system allows for placing the sample valve at the optimal point for sampling: on the middle of the cylindrical part of the vessel, independent of whether there is easy access to this point or not.

### Application

Swing bend centralised sampling system facilitates sample taking from beer tanks in- or out-doors.

### Benefits

- Easy and safe sampling from selected tanks
- "Fool proof" operation
- Highly sanitary sampling
- Economic solution compared to "cat-walk" installations
- Optimal sampling point position on tank regardless of tank construction and access.

### Design

The Swing bend centralised sampling system is a modular system and each section is equipped for taking out samples from up to 12 tanks. See flow sketch on reverse. In the left side of the flow sketch, you will find the SCANDI BREW® pneumatic sample valves that are mounted on the tanks.

For mounting the pneumatic sample valve different methods are foreseen. For new stainless steel tanks the valve is welded into the tank wall and for existing tanks, the valve can be supplied with special thread to fit a socket.

The sampling panel is placed for easy access and handy operation. However, as straight and simple pipe mains as possible is recommended. Due to pressure loss the distance from the panel to the sample valves should be maximum 100–120 pipe metre.

Service utilities are connected to the bottom side of the sampling panel and the tank sample valves to the top of the sampling panel.



The sampling panel, which is mounted on adjustable legs, is connected via pipes of  $\varnothing 10$  mm to the pneumatic sample valves on the tanks. The connections can either be stainless steel pipes or Teflon hoses, with or without insulation, depending on local conditions. As can be seen from flow sketch, the pipe work creates a ring main between the sampling panel and the sample valve.

### Options

- Extra sample module for sampling from up to 24 tanks
- Hot water heater (up to 90°C) for hot water sterilisation instead of using steam
- Feedback signal from sample valve on tank
- More valves on the same tank.

### Working principle

When taking a sample there are two possibilities; either sterile or non-sterile sampling. A sample is taken in the following way: The swing bend on the sample panel is connected to the tank from which sampling shall take place.

**Sterile sampling:** Thereafter the "start sampling" button is activated and steam will then run through the ring pipe. The

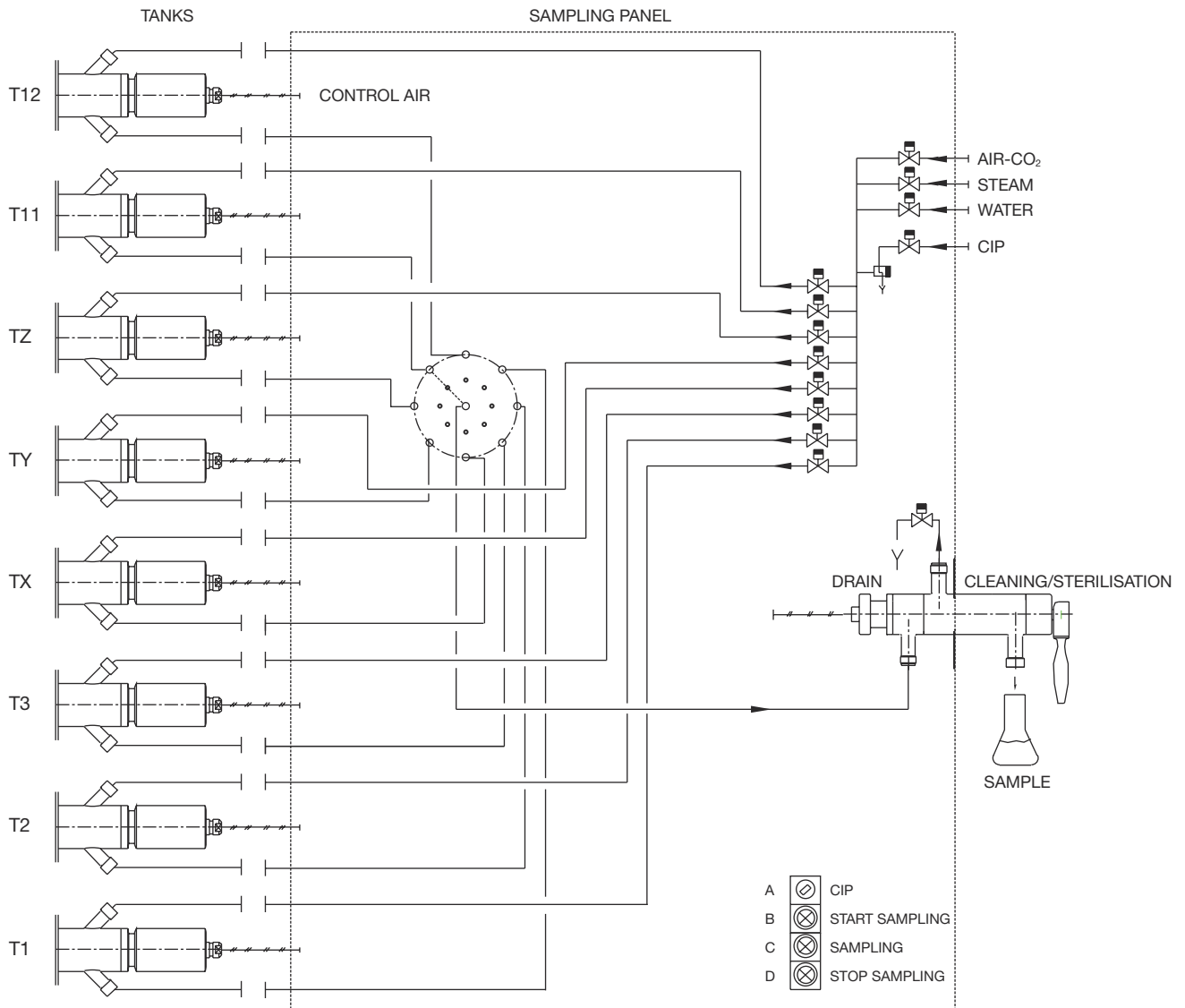
steam sterilises the pipe and line, the pneumatic sample valve on the tank and the central sample valve as well.

By activating the "sampling" button the sample valve on the tank opens.

**Non-sterile sampling :** The "sampling" button is activated immediately skipping the sterilisation step. It is now possible, manually to open the central sample valve and take out the sample.

When sampling has finished the "stop sampling" button is activated and the operator can now leave the panel. The system will automatically be flushed with water, sterilised with steam and blown through with sterile air or CO<sub>2</sub>.

The sampling valve and ring main for each tank is CIP'ed together with the tank.



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