

AIroFlow-200

Suitable for pipeline cleaning and for process tank cleaning

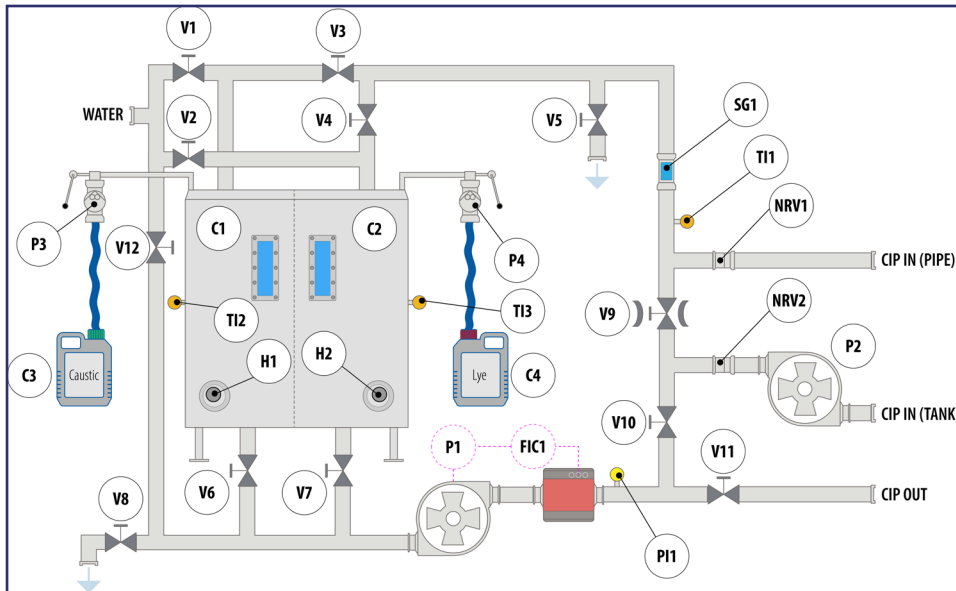
- Two section tank for two different cleaning solution, caustic and acid or sterile water with possible needed disinfectant
- Fresh water inlet for intermediade rinsing
- CIP solutions heating with electrical heaters
- CIP detergent dosing safely with manual operated pumps
- CIP temperature control with local gauges
- CIP pressure control with local gauge
- CIP flow adjusting and control possibility with flowmeter and local display (optional)
- The whole unit can be automated upon customer request
- Automated conductivity sensor can also be added for more accurate phase separation (optional)



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Description of operation

Portable CIP station is suitable for pipeline cleaning and for process tank cleaning purposes.

Standard max capacity is 15 m³/h, 4.0 bar, but the CIP-pressure pump configuration can be changed for customer needs.

The cleaning solution tank has two sections, left one (C1) and right one (C2). Both sections can be used for acid solution or caustic solution or just for hot water or cold water. The total section volume is appr. 200 l. Water filling for both sections happens via water inlet using shut-off butterfly valves V1 and V2. The station has the complete hose connector (Water) to be connected to the customers water supply. Water filling level can be controlled with help of rectangular sight glasses. CIP detergent dosing from detergent cans C3 and C4 (20 l each), located inside lockable stainless steelbox, can be done with manual dosing pumps P3 and P4.

The amount of CIP detergent can be controlled through rectangular tank sight glass. Level

scale is marked beside of the sight glass. The CIP liquids are heated with electrical heaters H1 and H2 (7,5-15,0 kW) located on the bottom of the tank sections. Efficiency of the heating can be increased by local circulation via tank section bottom valve V6 / V7 and via circulation valve V10, back to tank section via top valve V3 / V4 with help of pressure pump P1. The throttle valve V9 is used for adjusting the suitable back pressure for CIP- pressure pump P1, with help of the multiposition handle. The speed of the circulation can be adjusted by variable speed drive equipped with potentiometer or giving the set point for flowmeter control FIC1 (optional).

The section liquid temperature can be controlled by local temperature gauges located on the tank wall TI2 and TI3. After main heating, the heaters can maintain the correct section temperatures without local circulation. When the water filling, heating and detergent dosing are done, the station is ready for use.

Heating, using also the local circulation is

preferable to be done before detergent dosing, otherwise CIP detergent mixing in the local circulation might happen which is not desirable. CIP-out is common for both type of cleaning targets (pipeline cleaning and tank cleaning). CIP out has complete hose connector to be connected to the customers CIP target starting point.

CIP return (CIP-in) for pipeline cleaning has also the complete hose connector, but no return pump, because it is not needed. Optional CIP return (CIP-in) for tank cleaning has complete hose connector, non return valve (NRV2) and CIP-return pump P2, needed for pumping the cleaning solution away from customers process tank. When CIP station has been connected (CIP-out, CIP-in) by hoses and the route is opened to the CIP target and the CIP station supply / return lines are opened by manual butterfly valves V6/V7, V11, V3/V4 and the local circulation is closed by V10 valve, the needed pumps can be started (Pressure pump P1 and possible needed return pump P2). In case of tank cleaning, the needed back pressure for return pump P2 can be created by V9 valve with help of multiposition handle. The flow rate for CIP target can be adjusted by variable speed drive equipped with potentiometer or giving the set point for flowmeter control FIC1 (optional). Additionally the supply pressure can be controlled by local pressure

gauge P11 (Useful for tank cleaning device pressure needs).

If both sections are used for CIP solutions / hot water, the cold water for intermediate rinsing purposes can be supplied to the customers CIP target via valve V12 from water inlet.

CIP liquids and hot water return can be directed back to its liquid section or directly to the drain with help of manually operated butterfly valves (V3, V4, V5) and with help of sight glass SG1 and local temperature gauge TI1 located into return pipeline. Different liquid (water/caustic/acid) temperatures indicates what is coming back to CIP station, so that operator can decide where to direct flows (back to correct tank section or to the drain). With help of sight glass the operator can direct dirty liquids to the drain until clean liquid comes back to the station to be directed back to its correct section. When its time to take dirty liquids away from tank sections, the operator can open bottom valve (V6/V7) and drain valve V8. The whole unit can be automated upon customer request (to be quoted separately). Automated conductivity sensor can also be offered for more accurate phase separation.

