



Take the Best – Separate the Rest

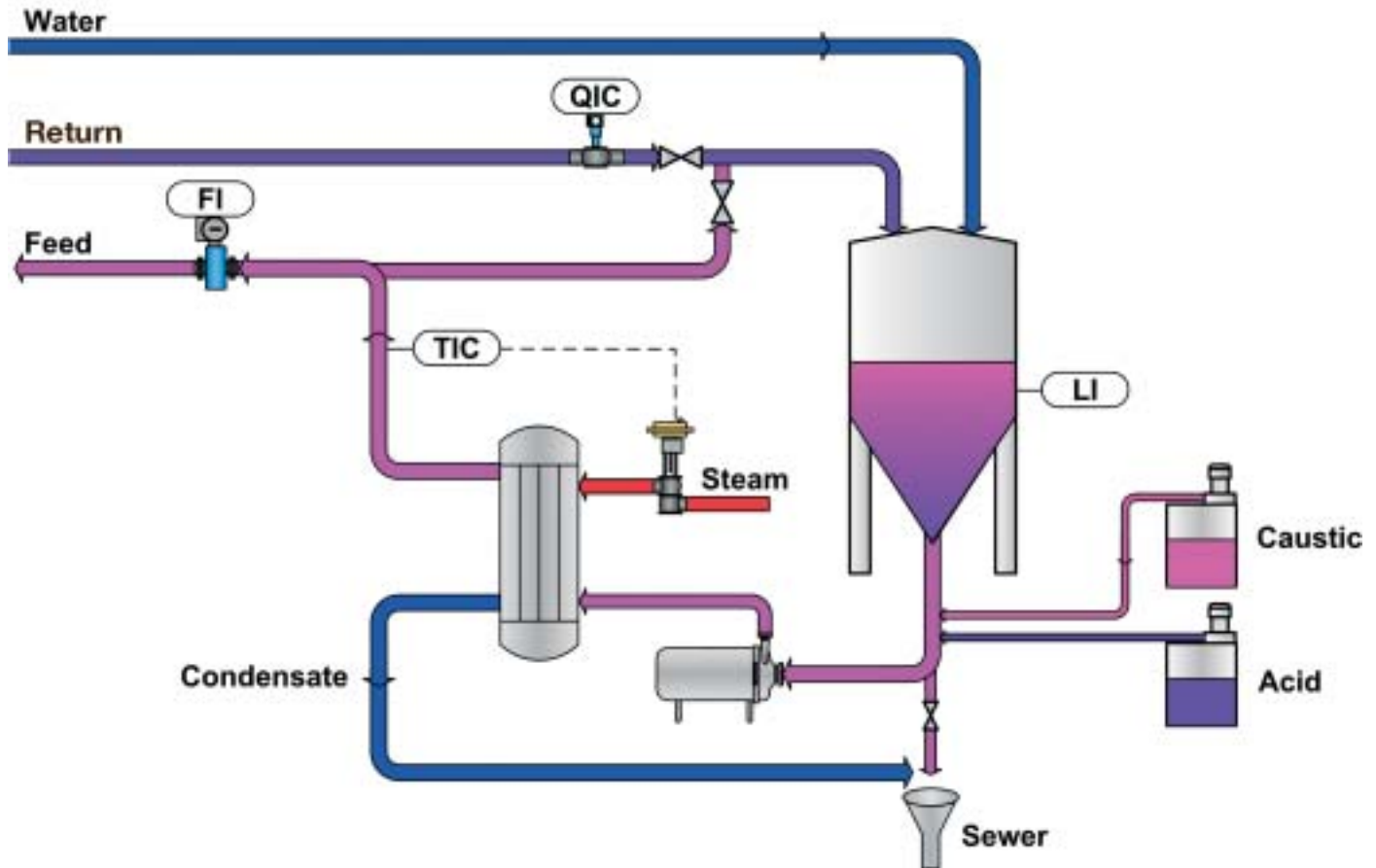
**Cleaning Unit
PharmaCIP
PCA 5
PCA 10**

Function

Cleaning-in-place (CIP) as a stand-alone cleaning module or integrated in a master process control system.



Operating principles and constructional features



Field of application

The **PharmaCIP** cleaning unit is used for cleaning-in-place.

The unit runs in the following modes:

- Cleaning with freshly prepared media

- Operation as stand-alone cleaning module
- Integration of the cleaning unit in a master process control system.
- Single-use cleaning to avoid cross-contamination
- Cleaning and control customized to the separators used
- Test run of the cleaning unit with the separator plant
- Optional: evidence of cleaning effect by means of a riboflavin test



Applications

- Automatic cleaning cycles in the chemical and pharmaceutical industries
- Freely selectable cleaning programs
- Cleaning of machines, vessels, components, and pipe systems

Operation and process control

Operation and process control are realized by means of a PLC (programmable logic control).

When using a stand-alone cleaning unit, this is done with a C7 635 control which is, together with the motor starters, incorporated in the control cabinet on the cleaning unit. The control system additionally offers the possibility of connecting a Profibus. The cleaning unit is connected by means of an ET200S with data exchange via a Profibus.

Functional description

The cleaning unit is controlled by means of a programmable logic control. The program sequence for cleaning depends on the production plants to be cleaned and the required cleaning cycles. The program can be adapted to meet specific requirements.

The cleaning agents are dosed by means of the installed metering pumps. The concentration of the media in the respective cleaning circuits is adjusted and monitored by means of a conductivity meter.

Acid and caustic are supplied in commercially available drums and fed in by means of a suction pipe.

The cleaning media are heated up indirectly via a tubular heat exchanger. The temperature is measured in the feed with a temperature measuring device.

Design of the cleaning unit

Cleaning unit on stainless steel frame in stationary design with height-adjustable feet. The PCA5 is optionally available as a mobile installation. The process connections can be in the form of hose couplings. The power supply is via cables with cable plugs.

All fittings have been selected and tested for the chemicals and pharmaceuticals sector.

The piping is pharmaceutically-compatible, inner surface of the CIP lines is $Ra \leq 0.8 \mu m$.

The connections are sterile unions or clamp couplings.

Materials: 1.4301 for frame, brackets and supports. 1.4571, 1.4404 and 1.4435 for the piping, acid and caustic lines in plastic, gaskets EPDM.

The valve/control cabinet is mounted, connected and cabled direct on the unit.

The units are supplied with complete CE-compliant documentation. Calibration certificates are included for the measuring instruments. The installation components are correspondingly marked.



Optionally, further documentation can be provided: weld documentation, material documentation, surface certificates and FDA certificates for the gasket materials. The units are pressure tested and undergo an electrical test.

Main components

- CIP tank
- CIP circulation pump
- Tubular heat exchanger
- Metering pumps with caustic and acid with suction pipe
- Water supply, CIP feed and return with valves and fittings
- Conductivity meter
- Level measurement in the CIP tank
- Capacity regulation of the CIP feed
- Steam line with control valve
- Condensate discharge with fittings
- Control cabinet with integrated control unit and pilot valves

Product overview

- **BevCIP**
for the beverage industry
- **BioCIP**
for industrial biotechnology
- **DairyCIP**
for the milk industry
- **PharmaCIP**
for the pharmaceutical industry and biotechnology
- **WECIP**
individually customized for all further applications



Technical data

Technical data

	PharmaCIP PCA 5	PharmaCIP PCA 10
Effective capacity	500 – 5,000 l/h	2,000 – 10,000 l/h
Capacity control with frequency converter	4...20 mA	4...20 mA
CIP tank volume	250 l	500 l
Connection rating		
CIP pump	1.1 kW	3.0 kW
Metering pump acid	0.18 kW	0.18 kW
Metering pump caustic	0.18 kW	0.18 kW
Water supply	approx. 5,000 l/h	approx. 10,000 l/h
Compressed air (free of oil and water)	approx. 6 bar	approx. 6 bar
Saturated steam	approx. 600 kg/h at 2.5 to 3.0 bar	approx. 600 kg/h at 2.5 to 3.0 bar
Length x width x height	approx. 1,800 x 950 x 2,000 mm	approx. 2,000 x 1,200 x 2,100 mm
Weight (net)	approx. 450 kg	approx. 650 kg



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