



Cleaning In Place

CIP Unit

APC Series



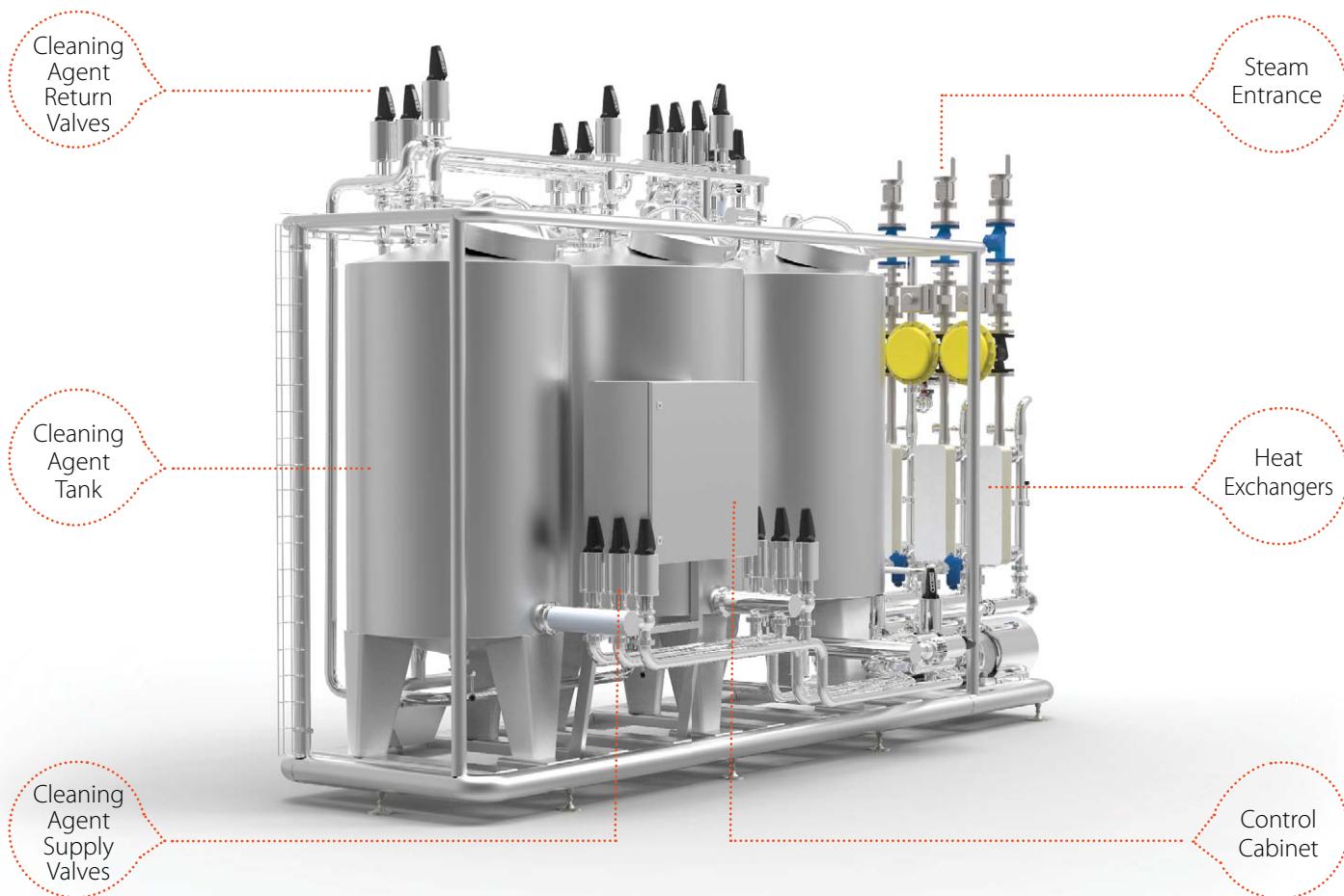


CIP Units – The Principle Function:

Automatic "Cleaning In Place" Systems

The highly flexible cleaning system, from the APC series, is solidly built and easy to operate. The APC series CIP systems are designed to produce an extremely high hygienic standard and provide the possibility of cleaning highly sensitive process equipment like: process reactors, storage tanks, pasteurisation units, filling machines, and many other types of equipment that require a strict hygienic cleaning.

The APC Series is available with a flow rate output from 1 to 100m³ per hour per every cleaning cycle and the ability to clean and sterilise up to 10 units of process equipment at the same time, depending upon the equipment. The systems are designed with high flexibility, so that all cleaning cycles and recipes are fully controllable from the control panel.



in which Industries are the Automatic CIP Cleaning Systems are used:

- › Pharmaceutical Industries
- › Cosmetic / Personal Care Industries
- › Chemical Industries
- › Food Industries

Working Principles

The CIP Cleaning System has several cleaning cycles: Prewash Cycle, Lye Cycle, Acid Cycle, Final Rinse, and Sterilisation Cycle. Not all cleaning cycles are needed for every plant. For this reason the CIP system can have from 1 to 5 cleaning tanks. The classic CIP system includes five tanks: Return water from the final rinse, lye tank, acid tank, fresh water tank, and sterilisation tank (hot or cold). The CIP system will be adapted for the cleaning needs of each individual plant.

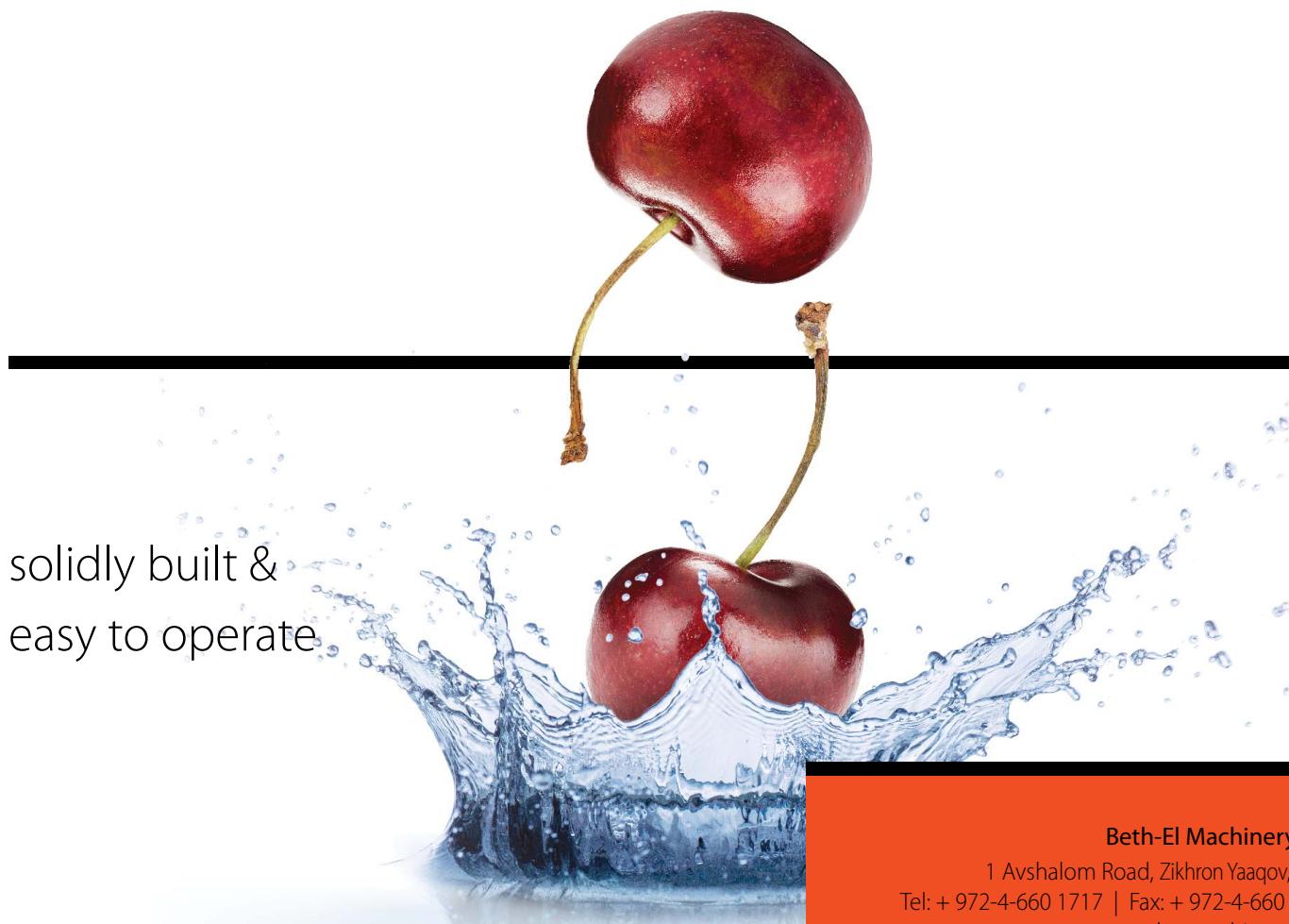
The cleaning function of the tanks include: "Pre-Rinse" to take the rough product remnants out of the process tank, "Lye Cycle" to take the fats and more resistant product remnants out of the process tank, "Acid Cycle" to break down the calcium and other build-up

on the wall of the tanks, "Final Rinse" to return the detergent to the CIP tank, and "Sterilisation Cycle" shortly before the product ingredients enter the tank. The Sterilisation Cycle can be made cold or warm, meaning; with chemicals, ozone, hot water, or steam.

In every cycle, parameters, such as temperature and cleaning detergent concentration, are measured and documented. Only when the specified temperature and concentration of the cleaning detergent are reached, will the CIP cleaning cycle time countdown begin. After completion of a cycle, the system switches automatically to the next cleaning sequence. All sequences are recipe controlled and fully documented.

Automatic CIP Cleaning Advantages

- › Validation enabled cleaning process
- › Recipe controlled repeatability for different cleaning parameters (cleaning time, order of cleaning cycles, concentrations of cleaning detergents, and flow rates)
- › Fast and safe cleaning cycles
- › Efficient use of process water
- › Economical use of cleaning detergent
- › Reduction of waste water / cleaning water
- › Remotely control the cleaning system
- › Increased shelf life of products by cleaning and sterilising the equipment
- › Potential to clean up to 10 pieces of process equipment at the same time
- › Full leakage separation between cleaning detergents and final rinsing water or sterilisation water



Beth-El Machinery Ltd.

1 Avshalom Road, Zikhron Yaaqov, Israel
Tel: + 972-4-660 1717 | Fax: + 972-4-660 1919
www.be-machinery.com



Beth-El Machinery Product Lines Include

The AFRB and AFRC series

High Clean Rotary Filler and Capper

These machines are designed for an extremely, high, hygienic standard, are able to provide products with a long shelf life, and have an output speed, depending upon the product, between 1,000 to 12,000 containers per hour.

A servo driven CNC filling machine, is designed so that all functions are fully servo or pneumatic driven, operable from the controller panel, and have an output speed of up to 6,000 containers per hour.

The High Clean Continuous Bottle Cleaner

From the AWC series, these machines have a highly flexible set-up and orientation which can accommodate containers with a variety of sizes and shapes, and incorporate a range of capabilities with an output speed of up to 15,000 containers per hour.

The AFR series High Clean Filling

These machines are designed for an extremely high hygienic standard and are able to provide products with a long shelf-life.

The output speed of the inline filling lines are capable of up to 3,600 containers per hour.

Custom Processing Line Engineering and Manufacturing

Beth-El Machinery produces turnkey projects in the engineering and manufacturing of custom processing lines, pasteurisation, deaeration, product recovery systems, and homogenisation systems.

Applications include fermentation, carbonation, control systems, and batch and continuous mixing and blending systems for various fields in the food, chemical, and pharmaceutical industries.

Beth-El Machinery's process units, systems, solutions, and complete processing plants are a direct result of engineering expertise within core disciplines. Our goal is to apply these varied technologies in the most efficient and reliable ways to produce the highest quality process systems and plants available. Beth-El Machinery designs and manufactures the systems that, in turn, do the work for you.



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Core Expertise:

Liquid processing	Packaging machines
Mass & heat transfer	Sterilisation units
Controls & automation	Ozone water units