

Superchanger Clean-In-Place Systems

Superchanger Clean-In-Place systems are capable of dramatically simplifying a customer's Superchanger preventive maintenance and upkeep procedures. They negate the necessity of having to physically open a Superchanger unit to clean its individual plates.

Plate heat transfer surfaces, when exposed to certain solutions, can become fouled with scale or adhered process fluid. Sufficient amounts of accumulated fouling insulate the surfaces and reduce heat transfer efficiency. Clean-In-Place systems provide a method for removing accumulated matter from a closed Superchanger's plate surfaces, via the circulation of chemical cleaning solutions.

The supplier of the process chemicals should recommend the exact cleaning solution to use. Due to the small Superchanger retained volume, often, very little cleaning solution is required. Because the unit remains closed, solutions that might prove harmful to plant personnel can be safely utilized.

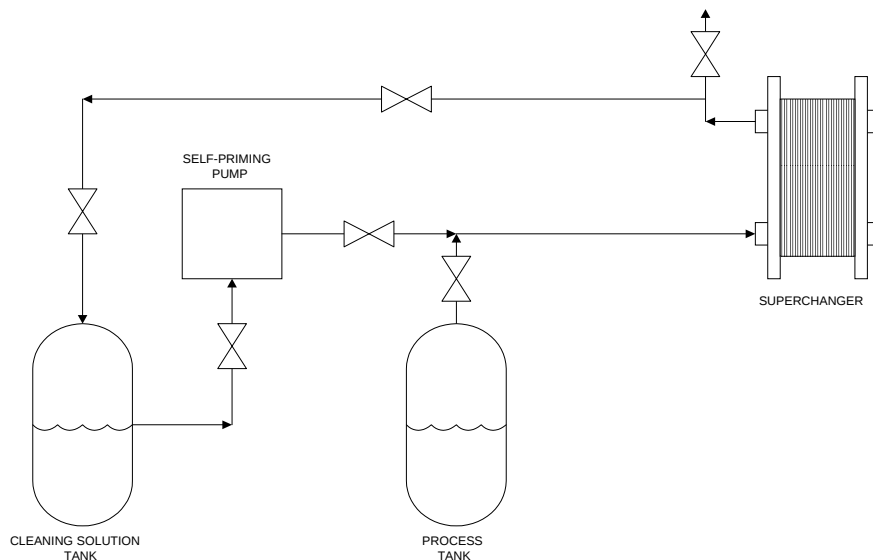
Bear in mind that the proposed cleaning solution should be compatible with the process fluid and the unit's plate and gasket material. It is important, once a cleaning solution is recommended, that it be used exclusively. No substitute cleaners should be used.

The supplier should also be able to recommend methods to test the efficacy of the cleaning process.

The general procedure when putting a Clean-In-Place system into operation is as follows:

- ▲ The Superchanger unit is turned off and drained of any fluids. While single-pass units are self-draining, multi-pass units may require special drain holes.
- ▲ The pre-selected cleaning solution is circulated through the unit in a bottom-to-top flow to totally flood the unit and prevent channeling.
- ▲ When it is determined that the solution is no longer reacting with the substances inside the unit, the cleaning is deemed complete.
- ▲ The unit can now be drained again and, if necessary, rinsed with water, and then returned to service.

The following diagram shows the basic piping and valve scheme for a stationary Clean-In-Place system.



Portable Clean-In-Place systems are also available. They utilize quick disconnects and flexible hoses in order to enable rapid cleaning of units dispersed over a variety of locations.

In order to comply with pollution control regulations now in effect, all chemicals must be stored and used on locations inaccessible to sanitary and surface drains.

Test chemicals must be stored in this manner until they have been neutralized.

Acids, which are generally used in Clean-In-Place systems, may be neutralized to a pH of 7.5 or 8.0 by the slow addition of slack lime or soda ash.

The exact procedure for this neutralization may be obtained from the chemical supplier.