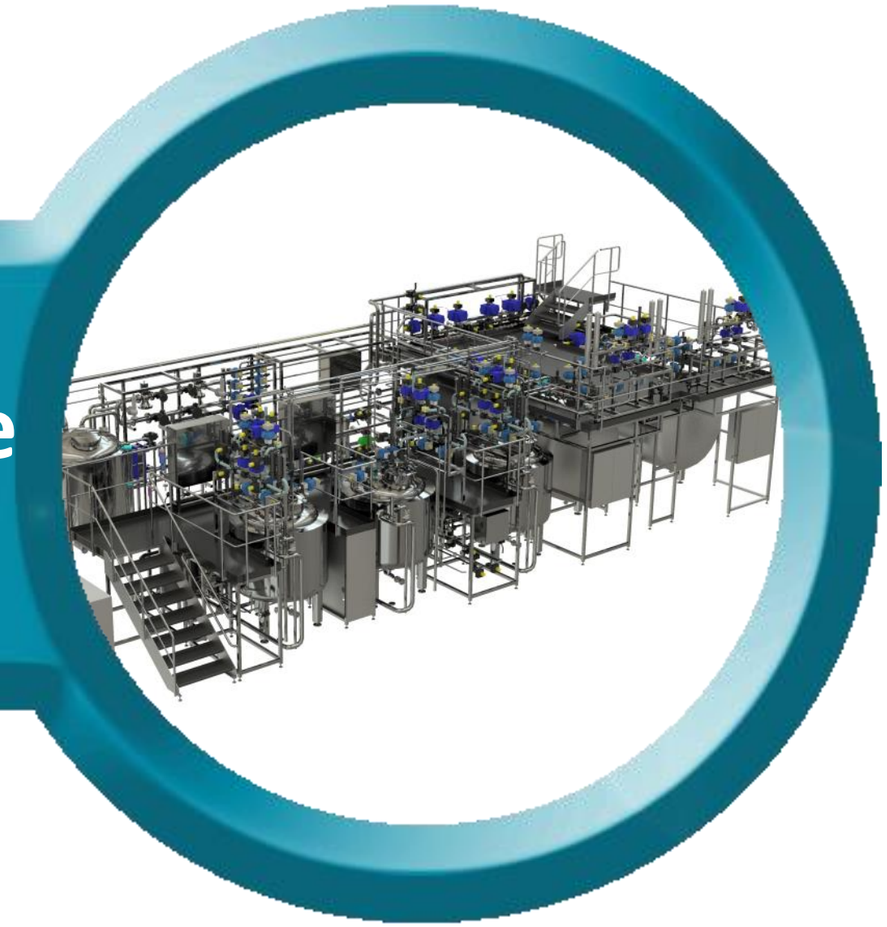
Engineering Excellence Delivered with Integrity

SUNCOMBE

CIP, BIOWASTE & PROCESS SOLUTIONS

Selection Guide for Suncombe Cleaning In Place Systems



Suncombe - the Pioneers of CIP in the 1950's

Suncombe Ltd, Suncombe House, Unit B Woodside Industrial Estate, Dunmow Road, Bishop's Stortford, CM23 5RG, United Kingdom

T +44(0)20-8443-3454 **F** +44(0)20-8443-3969 **E** info@suncombe.com **W** www.suncombe.com

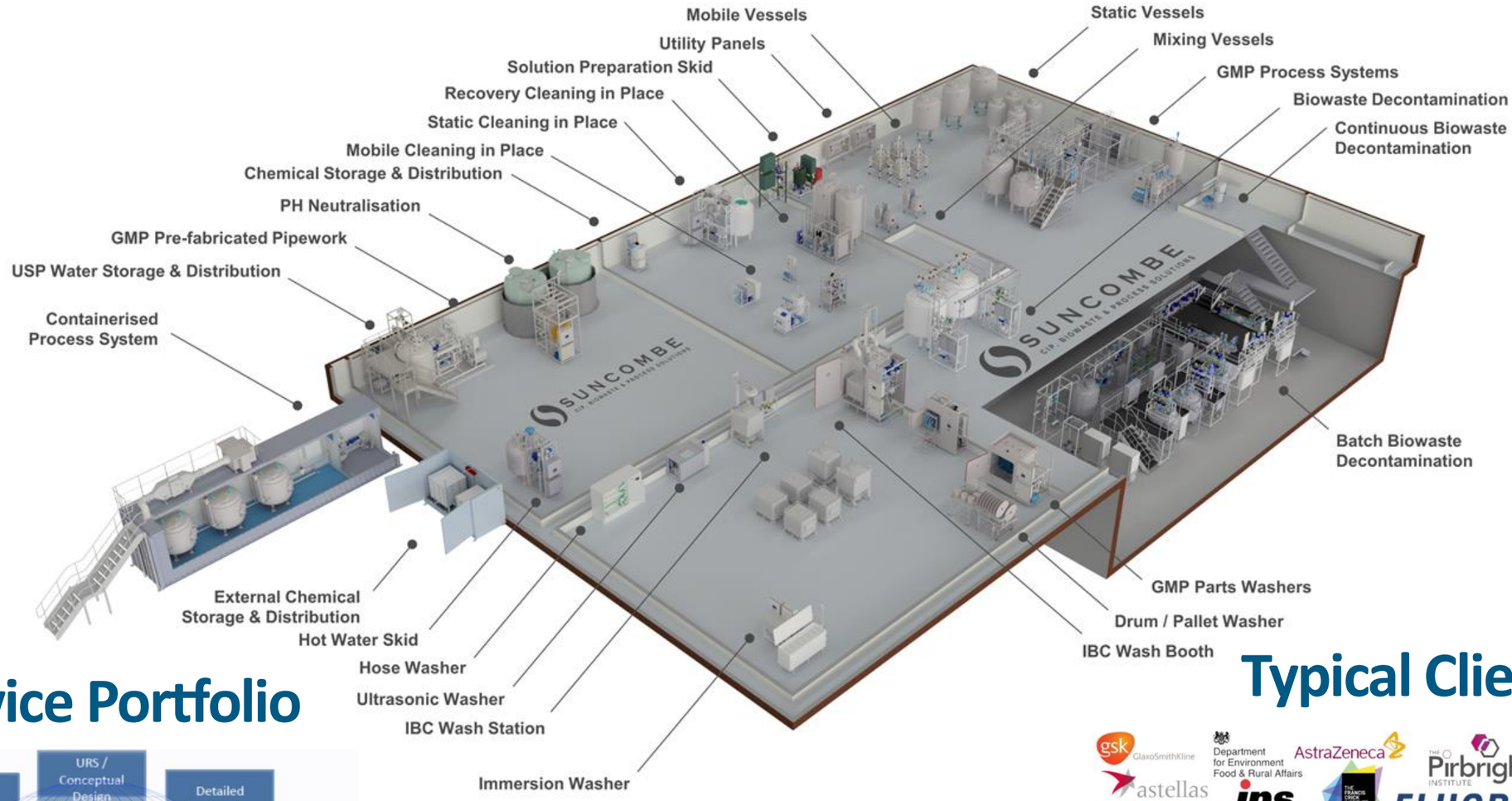
Select your Suncombe CIP System V1.4

Engineering Excellence Delivered with Integrity

SUNCOMBE

CIP, BIOWASTE & PROCESS SOLUTIONS

Product Portfolio



Service Portfolio

Typical Clientele

www.suncombe.com

CLEANING IN PLACE (CIP)

CIP refers to the use of a combination of water, chemicals, heat and kinetic energy for a designated time to clean machinery, vessels, pipework or other contaminated equipment, without dismantling plant and without direct operator involvement.

When correctly applied CIP provides several benefits to the user including validated repeatable, cleaning performance, improved health and safety, reduced costs for labour and utility consumption.

The key to successful CIP is the design of automated systems which are effective at cleaning and repeatable in all possible circumstances. As CIP reliability has improved so has its application in increasingly demanding and highly regulated industries where hygiene and avoidance of contamination is paramount, including pharmaceuticals and bio-waste.

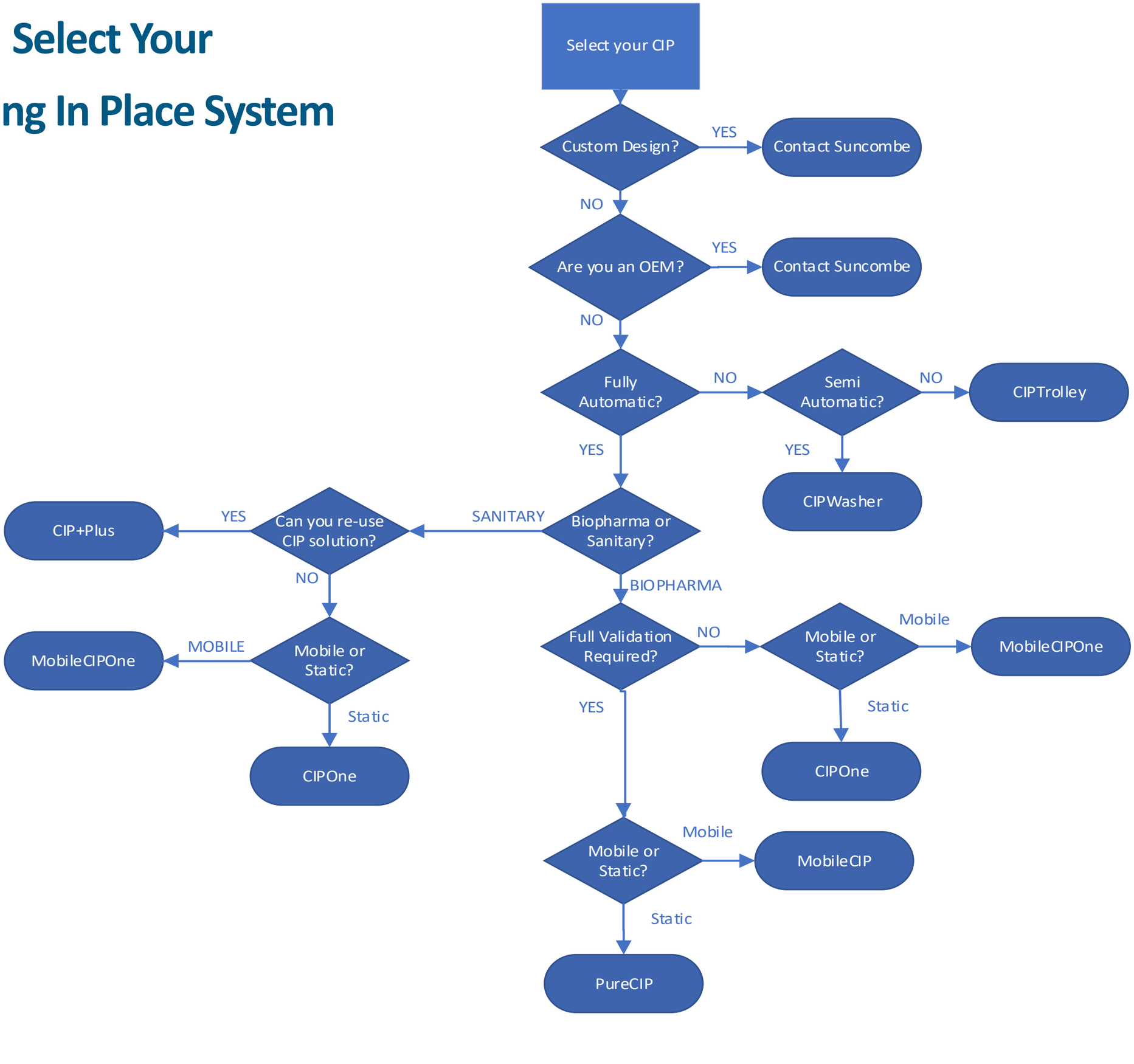
Suncombe pioneered the application of CIP during the 1950's and in 1961 installed its first fully automated system. Since then we have developed a host of new CIP technology and continuously improved our solutions, supplying thousands of systems to customers around the World. Suncombe pioneered the application of CIP during the 1950's and in 1961 installed its first fully automated system. Since then we have developed a host of new CIP technology and continuously improved our solutions, supplying thousands of systems to customers around the World.

CIP systems may be fixed in one location or mobile so as to facilitate several points of use. They may be designed as "total loss" systems, where the washing media is used once only before passing to drain or "recovery" systems, which recycle some of the washing media for part of the cycle.

Suncombe specialise in addressing the most challenging applications which are often avoided by others. We have the knowledge, technology, products and experience to provide the complete CIP solution, including meeting complex project management, regulatory and validation requirements.

All CIP systems are made to Suncombe's exacting sanitary manufacturing standards.

Select Your Cleaning In Place System



Cleaning In Place System Range

RANGE	Comments	Ideal for	Sectors	Validation	Documentation	Automation	Typical Image
PureCIP™	The Biotech, Pharma and Critical Application cGMP Validatable Total Loss Cleaning In Place System	Validatable Fully automatic Cleaning of small to large equipment to cGMP standards	Biotech, Pharma and Critical Application	Advanced	Suitable for Validation	Fully Automatic, recipe driven options for interfacing, remote control, 21CFR11 compliance etc.	
MobileCIP™	The Mobile Biotech, Pharma and Critical Application cGMP Validatable Total Loss Cleaning In Place System	Validatable Fully automatic Cleaning of small to large equipment to cGMP standards in a Mobile system	Biotech, Pharma and Critical Application	Advanced	Suitable for Validation	Fully Automatic, recipe driven options for interfacing, remote control, 21CFR11 compliance etc.	
CIPOne™	The General Purpose Robust Sanitary Total Loss Cleaning In Place System for all sectors	Fully automatic Cleaning of small to large equipment with many options.	All	Basic	Comprehensive optionally Suitable for Validation	Fully Automatic, recipe driven	
MobileCIPOne™	The Mobile General Purpose Robust Sanitary Total Loss Cleaning In Place System for all sectors	Fully automatic Cleaning of small to large equipment with many options.	All	Basic	Comprehensive optionally Suitable for Validation	Fully Automatic, recipe driven	
CIP+Plus™	The Heavy Duty General Purpose Sanitary Total Recovery Cleaning In Place System for all sectors	Fully automatic Cleaning of small to large equipment with water and chemical recovery and reuse.	All	Basic	Comprehensive	Fully Automatic, recipe driven	
CIPTrolley™	The Low Volume Manually Operated Total Loss Washing Place System for all sectors	Low volume manual cleaning of small equipment	All	Basic	Comprehensive	Manual	
CIPWasher™	The Low Volume, single tank, semi-automatic Washing and Cleaning In Place System for all sectors	Semi-automatic cleaning of small equipment	All	Basic	Comprehensive	Semi-Automatic	
Custom CIP	Systems can be produced to client specifications using our proven robust design and construction techniques are leveraged to provide a guaranteed solution to custom problems	Any requirement	All	Custom	Custom	Custom	
OEM CIP	Specially designed system can be supplied to original equipment manufacturers for integration into their equipment. Standard OEM ranges of standard systems can be developed.	Any requirement	All	Custom	Custom	Custom	

All ranges are suitable for WIP (Wash In Place)
Addition of SIP (Sterilise In Place) and ATEX Certification is an option on the PureCIP and MobileCIP
Addition of Chemical SIP (Sanitise In Place or Disinfect) is an option on all ranges

What is CIP, SIP, WIP and COP?

What is CIP ?

CIP or in its full form, Cleaning In Place, is defined as a method of cleaning equipment with minimal dismantling and with minimal operator involvement.

Some of the benefits of CIP

- Validateable Procedures
- Reproducible, Repeatable and Controllable Results
- Reduction of Cleaning Time
- Automatic cycles ensure every item is cleaned every time
- Increased productivity through reduction of down time
- Chemical Handling Reduction
- Simple Operation
- Cost Savings including chemicals, water and effluent, labour time etc.
- Improved Health and Safety
- Batch Traceability and Records
- Stronger Chemicals and higher temperatures can be used over manual cleaning
- CIP allows more complex processing systems to be employed, as there is no need to dismantle
- Environmental Issues including saving of energy, chemicals, water used and effluent generated.

How does CIP work?

CIP relies on the principal of applying a suitable detergent or solvent at a suitable flow, pressure, temperature and concentration for the correct length of time. The science is based on applying the required amount of energy to the equipment to ensure that it is cleaned. The energy is primarily provided by the solution temperature (thermal energy), the use of detergent or solvent (chemical energy) and the application of suitable pipeline velocities or pressures (kinetic energy).

The Result of CIP

In-place cleaning results in the equipment being chemically clean. This is defined as "the removal of all residues of soil and all CIP agents so that contact with the cleaned surface does not result in physical contamination". If the equipment being cleaned needs to be micro-biologically clean then an additional process can be carried out. This process is called SIP.

What is SIP ?

SIP or in its full form, Sterilising In Place is the generic term for sanitizing, disinfecting or sterilizing equipment normally after a CIP clean. SIP results in the removal of any remaining microbiological contamination.

Chemical SIP

Sanitation or Disinfection is normally applied after the full CIP has been carried out. It is achieved by the introduction of a sanitiser or disinfectant chemical into the final rinse waters of the CIP.

Thermal SIP

Thermal sterilisation is achieved by the application of steam or hot water at a suitable temperature for a suitable time. Thermal Sterilisation has the advantage of affecting areas such as sample points, which may not be treated by chemical means.

What is WIP ?

There is no legislative distinction between Clean In Place (CIP) and Wash In Place (WIP), however the general industry view on the terminology is that CIP means a totally automatic cleaning sequence with no manual involvement, whereas as WIP includes some manual intervention. In practical terms CIP requires high levels of validation, against WIP which re-quires less stringent validation.

Philosophies and Running Costs

Any of the typical philosophies can be used for WIP and the running costs are similar to CIP. The capital costs, project costs and validation costs are less with WIP.

What is COP ?

COP or in its full form, Cleaning Out of Place, is defined as a method of cleaning equipment items by removing them from their operational area and taking them to the cleaning station for cleaning. Suncombe engineers have developed COP over the last 60 years. We supply cleaning out of place (COP) systems for all duties, including static and mobile versions. Innovative technologies ensure that they are user friendly, efficient, robust and simple to prove and validate. Every COP system is guaranteed to fulfill your requirements and include design, manufacture, automation, programming, installation and commissioning. Standard and custom designed systems are available.

Cleaning In Place Philosophies

Cleaning In Place Philosophies

There are a number of different philosophies that can be used for the Cleaning In Place function, and their selection depends on the specific requirement for cleaning. Various criteria need to be considered including: the validatable industry standard, the level of soilage, the product being cleaned, the required performance, the design of the equipment being cleaned, the capital cost of the equipment etc. Suncombe engineers can take into account all of these and many additional factors to offer the type of CIP system that is best suited for you. The typical CIP philosophies are detailed below:

Total Loss

The Total Loss philosophy is that all of the fluids applied to clean the equipment are used only once, not recirculated and sent directly to drain. This philosophy ensures that there is no possibility of product cross contamination. Often used in the Pharmaceutical and Biotech sectors, this philosophy is also sometimes adopted for low volume CIPs, infrequent usage and where CIP return facilities are not possible or not economical.

Single Use Recirculation

The Single Use Recirculation philosophy is that all of the fluids applied to clean the equipment are used for the duration of a single clean only and then discarded. During the clean they can be recirculated.

Extensively used in the Pharmaceutical and Biotech sectors and the more critical cleaning tasks in many other sectors, this philosophy combines most of the advantages of the Total Loss, but typically uses recirculation of the main wash before discarding. The addition of the recirculation minimises water usage, chemical usage, energy usage and effluent generation.

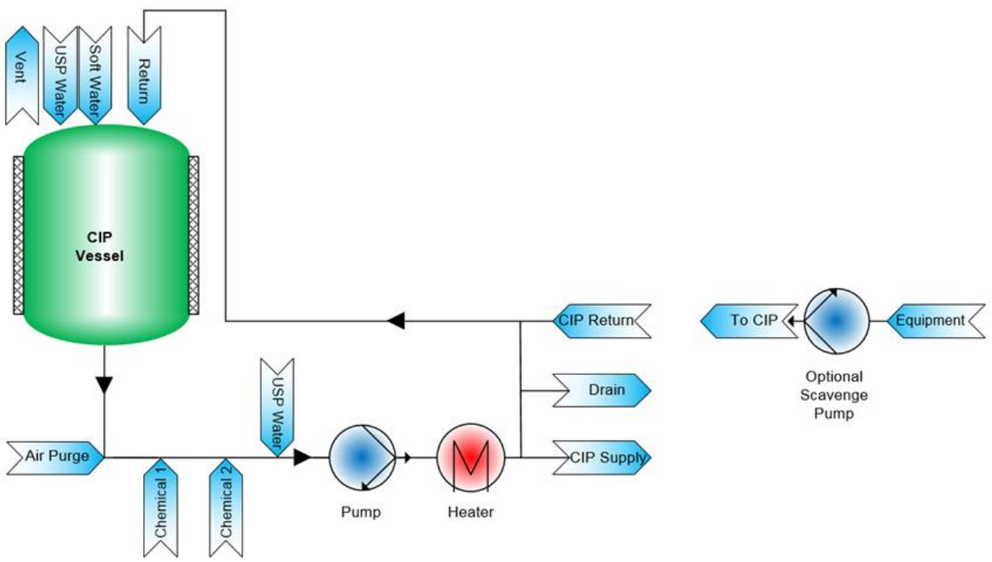


Diagram of Typical Single Use Recirculation System

Total Recovery

This is the typical system used for cleans of equipment holding similar products or less critical cleans. It is extensively used in the Dairy, Food and Beverage sectors, for example, and for the less critical cleaning tasks in other sectors. The total recovery philosophy is that the pre-rinse removes the vast majority of product soilage. This is sent to waste. The main rinse delivers the main wash to the equipment and then recirculates it through the CIP system to re-apply the same fluid. Once the main wash is finished, it is reclaimed into a tank for re-use as the main wash on the next clean. The final rinse is then used to remove all traces of detergent from the equipment. This rinse is made up of clean water and small residues of detergent. This rinse is reclaimed to another tank for re-use as the next pre-rinse. In this manner all of the CIP liquid is used twice with the main wash being used many times. This type of CIP has the lowest running costs

Partial Recovery

This type of system is used normally in similar applications to the total recovery or in semi-critical applications where water usage is un-desirable. Examples of its usage are when the soilage is too heavy or the client does not wish to allow re-use of the main wash again (it therefore only reclaims the final rinse) and if budget limitations exclude a total loss system (in this case the main wash (the expensive fluid) is reclaimed for re-use). These systems are used in any industries as they fall between the two types detailed above. The partial recovery philosophy can be set up in a number of ways. In all cases the pre-rinse is sent to waste. The main rinse delivers the main wash to the equipment and then recirculates it through the CIP system to re-apply the same fluid. Once the main wash is finished, it is either reclaimed into a tank for re-use as the main wash on the next clean or it is dumped. The final rinse is then used to remove all traces of detergent from the equipment. This rinse is made up of clean water and small residues of detergent. This rinse is either dumped (if the main wash has been reclaimed) or reclaimed to another tank for re-use (if the main wash has been dumped). In this manner some of the CIP liquid is used twice.

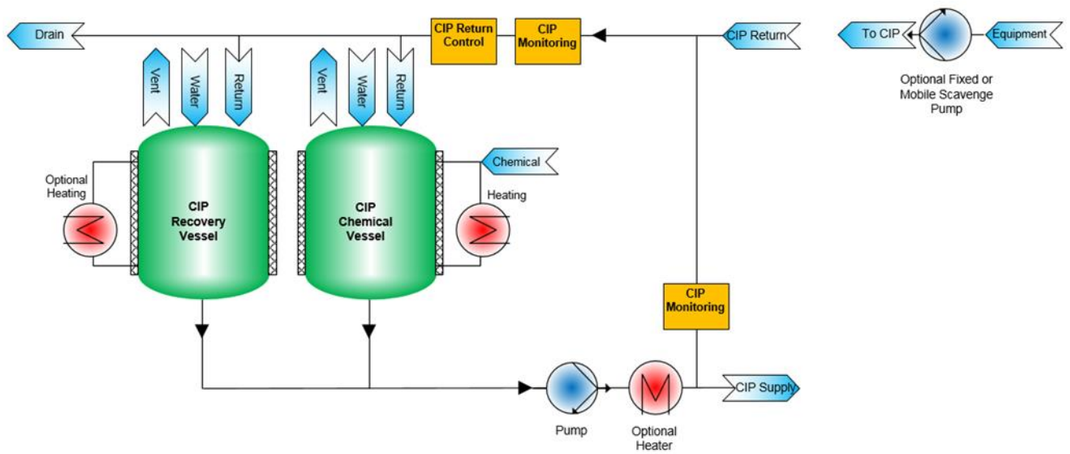


Diagram of Typical Recovery System