Technical Overview

ChargePoint Wash In Place Systems

WHY USE WIP (WASH-IN-PLACE) SYSTEMS?

The ChargePoint split butterfly valve offers high quality, assured containment capability. Alongside this, the ChargePoint portfolio boasts a range of wash-in-place facilities for the Active and Passive component parts. These modular wash systems assure contained cleaning of the ChargePoint and with the executive range, offer enhanced cleaning of the process equipment upon which the ChargePoint is attached.

Available in the full range of sizes, 50mm, 100mm, 150mm, 200mm and 250mm, the CIP package complements the ChargePoint products.

Subject to the utilisation of the Active valve, whether this is to be used in a charging or discharging mode of operation, appropriate wash and drain components would be utilised to support either of these functions.

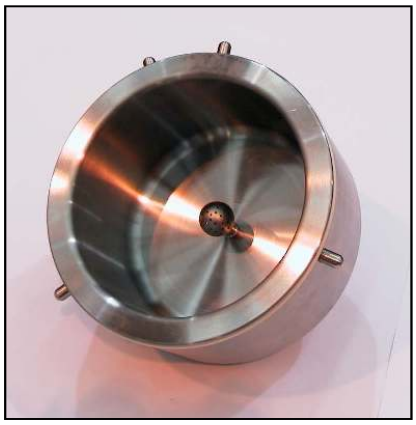
The report below presents the standard range of WIP/CIP and ancillary modules, used in conjunction with the ChargePoint valve.

SOLUTION OVERVIEW

1. WIP PASSIVE

When the Active valve is being used for charging operations and is orientated in the upright position, there is a primary range of wash equipment, offering contained localised cleaning within the Active valve.

This one-piece machined module part incorporates a static, CIP spray head with a 360° coverage. Emulating the Passive body, the Wash Passive connects into the Active valve in exactly the same mode of docking. A perimeter o-ring seal, provides a suitable liquid tight interface between the Wash Passive and Active valve.



The CIP spray head will offer a suitable wash spray over the top of the disc faces and within the upper vicinity of the valve bore. The cleaning fluid will also run down the inner diameter of the valve, but direct cleaning will not reach the underside edges of the open discs.

To provide this higher level of cleaning capability, it is necessary to utilise penetrative type washing modules.

2. WIP DRAIN PASSIVE

With the Drain Passive, it is possible to include within it, a CIP spray head. This offers additional, upwards spraying washing capability and is mostly beneficial when the drain outlet has inefficient cleaning capability from th eCIP source upstream of the ChargePoint.

Essentially, this feature will contribute to the washing of the underside edge of the Active disc, which can only otherwise be achieved with the use of the Dual CIP Lance.

3. DRAIN FUNNEL

When the Active valve is being utilised for discharging operations and is connected to the outlet of a process, the valve will be positioned in an inverted orientation. Where wash-in-place is carried out above the Active valve, within the upstream process, it would be necessary to collect the wash liquids in a contained manner.

This is achieved with the use of the Drain Passive. Similar to the CIP Passive, this is a one-piece machined component, which mimics the Passive body and fitted with an o-ring seal on its perimeter to provide a watertight seal.

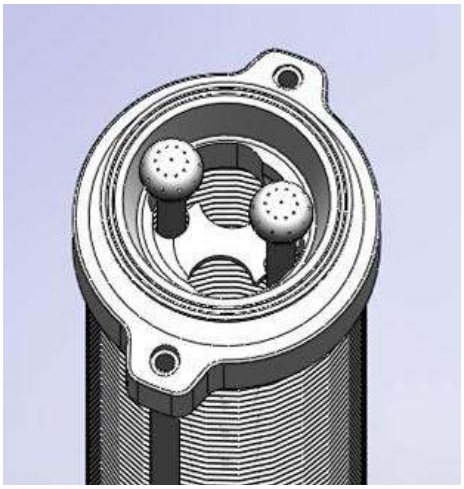
Connected to the Active and with the valve open, the Drain Passive or Drain funnel collects drain liquors to a discharge connection, normally tri-clamp for connection and safe drain to a controlled area.

Materials of construction for the Drain Passive or Funnel can either be 316 stainless steel or POM.

4. WIP LANCE

This highly effective wash-in-place system, offers the ability to manoeuvre dual spray heads, down through the ChargePoint valve, past the open disc faces and through the process connection upon which the Active valve is fitted.

The added benefits of this design are reflected in the capability to wash directly across the faces of both Active and Passive valve discs, unrestricted washing to the underside edges of the discs and the further advantage of being able to locate the spray heads down into the nozzle area beneath the Active valve and in some cases further beyond, entering the downstream process.



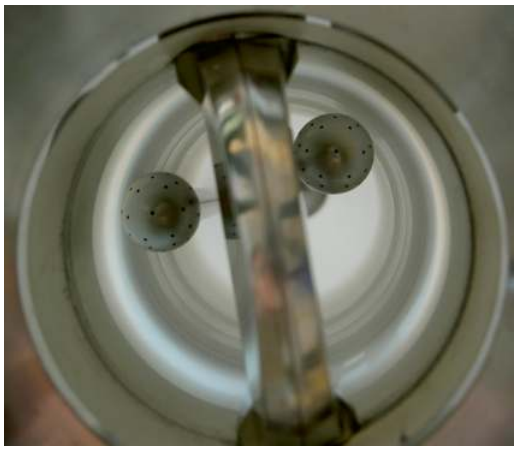
The assembly is enclosed within a flexible PTFE bellows which in turn is connected to a Passive half, which allows this to be docked to the mating Active, giving a fully contained operation before, during and after the CIP sequence. The Passive would typically be a lightweight plastic (POM) body version, fitted with an EPDM seat and stainless steel disc. An o-ring seal is provided around the perimeter of the Passive o secure a leak tight operation.

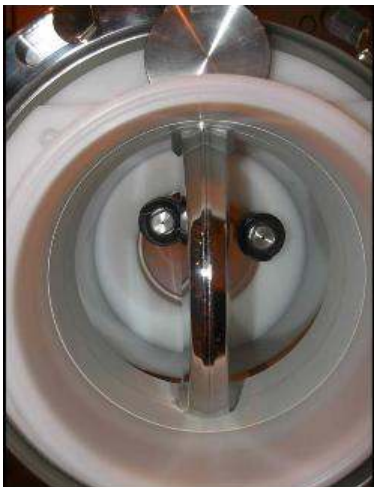
The 100mm and 150mm ChargePoint size versions are provided with either static or rotary spray heads and the 50mm is available with a lase cut slot lance end.

Penetration lengths of the spray heads, beyond the Active valve interface connection, range from 300mm through to the extra long 700mm.

All systems are manually operated and require only the CIP source to be connected to the single point inlet. Connection types can be the standard tri-clamp version, o quick connect varieties, such as Hanssen, Swagelok or Camlock are also available.

Lance spray heads for the 100mm and 150mm ChargePoint versions, can either be static spray balls or rotary spray head types.





4. BOTTLE FLUSHING STATION

Applying containment to the cleaning operation of small IBC's and containers can be achieved by several means.

Locating the IBC within a contained environment and/or having suitable PPE, will enable he operative to remove the Passive and apply the cleaning solution to the contaminated surfaces. An alternative approach, offering a higher level of containment, is achieved with the Bottle Flushing Station.

A suitably sized Active is fitted to a rotating arm, supported on a fixed stand. The Active outlet would have a tri-clamp connected to a clean bottle pre-charged with a small volume of cleaning solution. The contaminated container with the Passive fitted, is then docked and locked into the Active in the normal manner. With the Active valve open, the arrangement is gently rotated through 180°, passing the cleaning solution into the contaminated container.

This is repeated several times, to ensure that a surfaces are sufficiently wetted.
The container fitted with the Passive, can then be removed after closing the Active and the Passive can then be removed and the cleaning solution can now be safely disposed.

This process is intended to wet down contaminated surfaces so that when the Passive is decoupled, there should be no risk of airborne contamination. With this option, it would be necessary to carry out further on both container and Passive.

4. BOTTLE WASH STATION

This is an enhanced, fully contained version of a bottle washing facility. Available in 100mm and 150mm ChargePoint sizes, the Active is fixed in place on the stand. The contaminated bottle fitted with the Passive, connected to the Active and the valve is opened.

The general design of the Dual CIP Lance Module, as described in Module 2, is adopted within this arrangement. A pneumatically powered linear actuator is employed to manoeuvre the dual lance up into the container. This lance assembly is designed with a CIP source and drain connection.

A small stainless steel control box housing the necessary ar handling controls and push button, is fitted to the stand.

The Wash Station can be designed to be mobile or static and offers a high level washing/decontamination capability with a minimal level of service requirements and footprint dimensions.

ABOUT CHARGEPOINT TECHNOLOGY

ChargePoint Technology are market leaders in the supply of containment valves and integrated material handling equipment for the Pharmaceutical, Chemical, Food and other process based industries.

Our most important goals are to create lasting partnerships by providing high quality and reliable products, coupled with outstanding customer service.

As a pioneer of split valve technology our consultative approach will provide the right technological solution, as well as delivering the lowest cost of ownership benefits by maximising yield, reliability, productivity and flexibility.

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