Clean in place (CIP)

Modern consumer tastes and corporate retail demands for new flavours, fashions and fads has created a demand for ever-greater quantity of product lines. This demand runs somewhat contrary to the operation of traditional dedicated process lines where there is one piperun for one product. If a company wanted to produce more lines they needed to build more production lines, recommission an existing line or suffer downtime cleaning and turning around a line in operation.

Cleaning Fluids

Examples of cleaning fluids used in pharmaceutical, cosmetic and food process lines

- Caustic soda
- Phosphoric solutions
- Nitric solutions
- Sodium Hypochlorite
- Peracetic acid

Food and beverage production demand rigorous hygiene standards

CIP Process

Modern production facilities, particularly in food, beverage, pharmaceutical and cosmetic production have moved from a dedicated production line for each product to an innovative multi-product line which could be processing several different food stuffs, liquids or slurries every day.

Process points

This has placed a lean, flexible manufacturing process as the engine of a successful operation. The manufacturing process needs to be consistent and reliable to accomodate perishirable ingredients, storage, short lead times for retail clients and of course a safe and hygenic production line.

There are problems that every production manager will invariably face - How best to manage the transition of one product to another when using the same line for batch production? Hazards include cross-contamination resulting in spoiled product, shorter shelf-life, production downtime and risks to employees during the cleaning process.

Modern 'Clean-in-place' CIP technology is tasked with removing all remnants of product A to begin process of product B e.g. solids, residue and microscopic elements such as yeast spores, bacteria and preventing E-coli. Removal of product A is through mechanical and chemical measures i.e. the use of pressure, temperature, acids and alkali solutions.

The CIP process is typically completed in under 30 minutes depending on the product. The process must be completed with a minimum of costly cleaning solution, repeatable, possible to control and monitor, automated and safe.

The CIP process places great demands on the pumping solution. A pump must be able to handle highly corrosive chemicals at up to 75°c, be able to work at high pressures, be connected to an automated process, require little or no maintenance, be economical to run, have a small footprint within the factory and prevent ingress of contaminants to the process.

The solution

Verdermag centrifugal pumps are synchronous magnet-driven seal-less pumps and have been used extensively in CIP lines in the brewing, food, cosmetic and pharmaceutical industries.

Verdermag metallic and non-metallic pumps are ideally suited to each stage of the CIP process as they are 100% leak-free, even with aggressive chemicals at 75°c at pressures required for CIP. Verdermag pumps are hermetically closed rather than using a perishable mechanical seal so aggressive chemicals do not affect the operating life of the pump and contaminants can not enter the production line.

A Global pump is a heavy-duty pumping solution that requires little or no maintenance and may be specified with a range of materials depending on the chemical that is being pumped. The Verdermag Global pump range features compact units, which are economical to operate and can acheive the pressures necessary for CIP processes.

A Verdermag Global pump is the solution for your process needs.

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