

Filter Technology

Process Filters



Process Filters

The process gas filtration and powder recovery constitutes an essential part of Simatek's filter program throughout the past 25 years. Over the years the filter technology has continuously been developed and adapted further, in order to achieve an optimum integration of Simatek's pulse-jet cleaned bag filters in process plants leaving out any undesirable influence on the very production process.

First of all emission requirements are to be met, and for process filters also the question about product quality and powder contamination is essential.



The process filters are available in different categories, ranging from industrial filters over sanitary to supersanitary filters with integrated wet cleaning (CIP - Cleaning In Place).

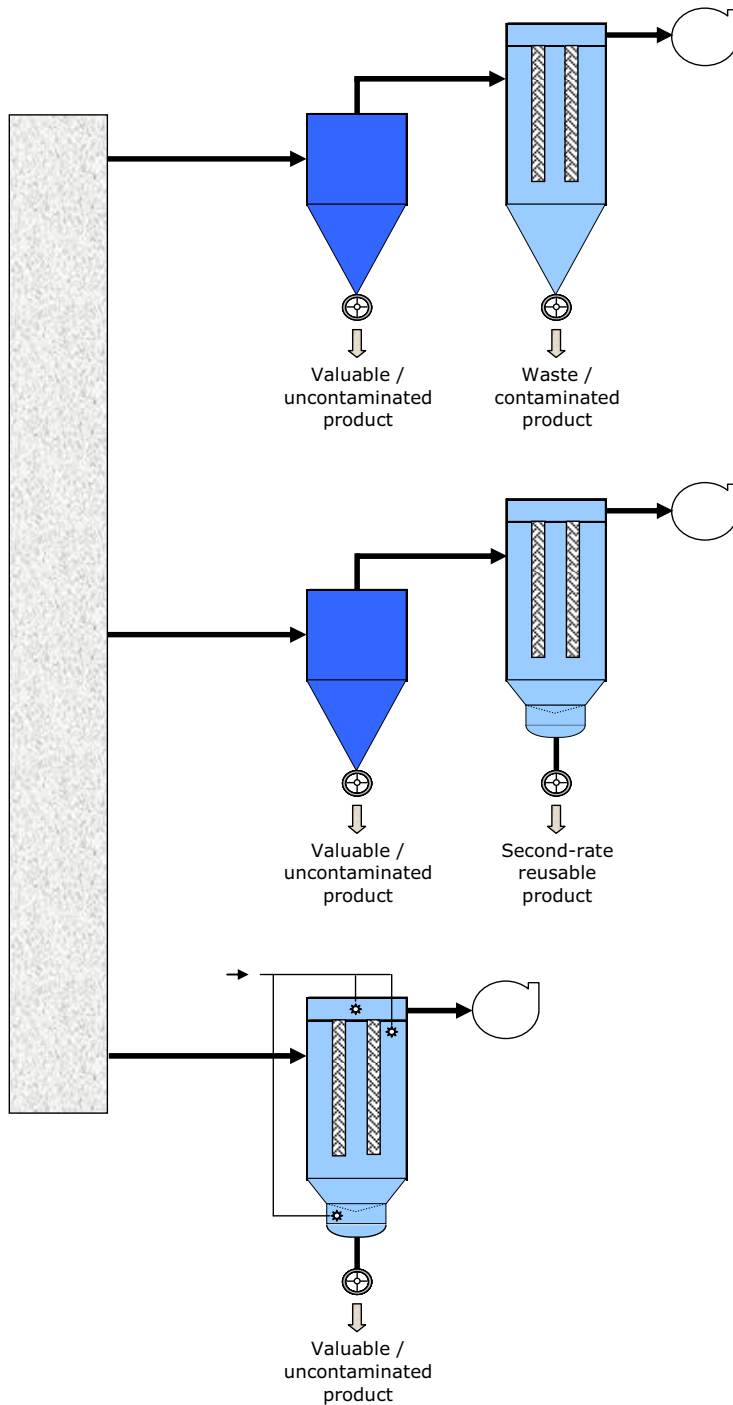
Highlights of Simatek Process Filters:

- Improved powder quality
- 100% powder utilisation
- Compact design and small footprint
- Low energy consumption
- Low pressure drop
- Top-hygienic system
- Easy maintenance
- Short payback period
- Optimum process conditions
- High capacity

Standard Process Filters

Categories

The Process Filters are divided into three categories;



Police Filter

In industrial execution for collection of waste/contaminated product after a pre-separator.

Sanitary Filter

In sanitary execution for collection of reusable product after a pre-separator.

Option

- 3-A Design

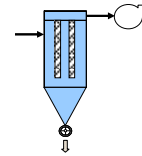
Total Separator

In sanitary execution with CIP (Cleaning in Place) for collection of valuable/uncontaminated product.

Option

- 3-A Design

Industrial Execution



Simatek process filters are based on the unique cylindrical and explosion-proof pulse-jet bag filters type SimPulse 3C cleaning the filter bags individually one by one, and the SimPact 4T filters cleaning the filter bags in rows.



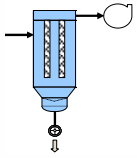
For small and medium-sized capacity requirements the SimPact 4T filters are typically recommended, whereas the SimPulse 3C filters are perfect for capacities up to 200,000 m³/h.

Whether SimPact 4T or SimPulse 3C - the Simatek Process Filters have a common target; to be considered an integrated part of the process equipment and, as the last stage in the process, to collect the separated powder.

SimPact 4T as well as SimPulse 3C filters are to a large extent customizable to the actual application; in due consideration of operating parameters, such as

- product type
- temperature
- humidity
- emission requirements
- explosion venting





Sanitary Execution

Within the food and pharma industries the process equipment is subject to a high hygienic level. Valuable powder is typically separated in a process filter, under the obligation that the product quality is not affected by the filter operation.

The sanitary filters are manufactured in stainless steel, meeting strict requirements for surface finish and filter design.



The Simatek fluid bottom ensures an easy discharge, even in case of a bridging powder type

The job is often to handle hygroscopic and sticky products, requiring special attention to temperature control and powder discharge.



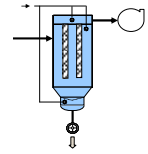
SimPact 4T

For small capacities, typically up to 50,000 m³/h, the SimPact 4T filter cleaning the bags in rows is recommended.

SimPact 4T is available in different sanitary executions, one of which is manufactured to meet the requirements of the American 3-A Sanitary Standards.

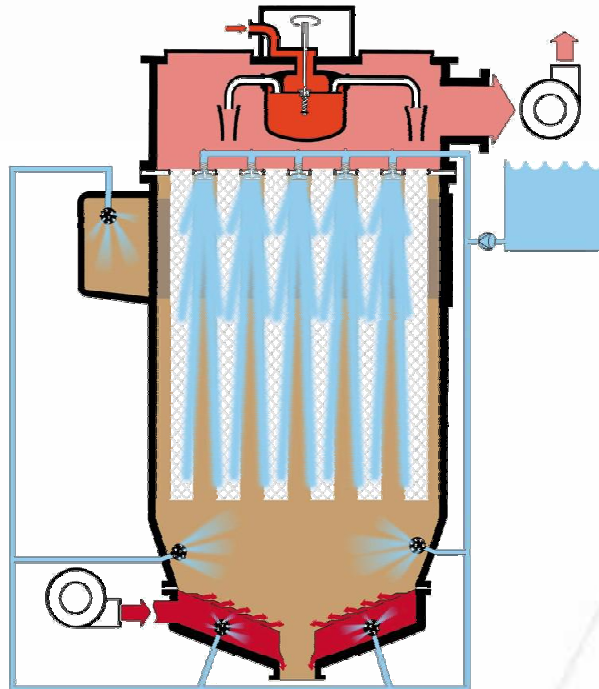
Sanitary Execution

CIP Options



A number of today's process plants are equipped with integrated wet-cleaning systems (Cleaning in Place) to prevent bacterial growth as well as product contamination.

The CIP facility is an option for the SimPact 4T as well as the SimPulse 3C filters -



Principle sketch

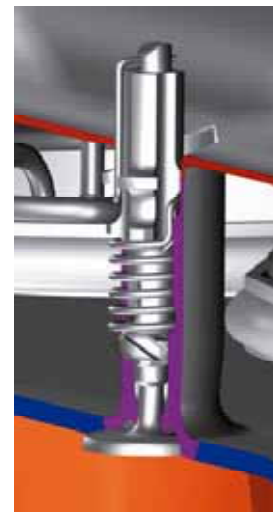
- and is available in a number of variants, all of which include outside CIP of the filter bags. Further options include inside CIP of the filter bags and CIP of the clean-air section.

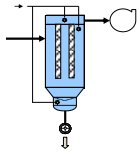
CIP Nozzles

A number of CIP nozzles installed in the tube sheet between the filter chamber and the clean-air section ensure an efficient wet-cleaning of the product-side of the filter.

The angle of dispersion and rotation of liquid is controlled by a pulsating flow of liquid (CIP liquid).

During operation, purge air keeps the nozzles clean.





Sanitary Execution

CIP Options

Options in Addition to CIP of the Bag Outside:

- CIP of Clean-Air Sections
- CIP of Bag Inside

SimPact 4T Spray Balls



SimPact 4T with spray balls for wet cleaning of the clean-air chamber

SimPulse 3C Rotating Nozzles



SimPulse 3C indexing nozzle system for wet cleaning of the bag inside as well as the clean-air chamber

SimPulse 3C CIP of Product-Side Parts



SimPulse 3C tube sheet with integrated CIP nozzles for cleaning of the bag outside and the product-side of the filter chamber

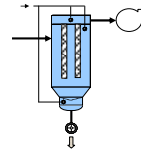
SimPulse 3C CIP of Fluid Bottom



Fluid bottom with integrated spray ball for cleaning of the clean-air section

3-A Sanitary Design

CIP-able Execution



The SimPulse 3CX-CIP filters have been certified by the 3-A Sanitary Standards, Incorporated to comply fully with the 3-A Sanitary Standards for Bag Collectors Number 40-03.

The 3CX-CIP filter series comprises a complete range of filters in different sizes, each of which equipped with fully automatic CIP of the filter chamber and the clean-air chamber as well as the filter bags.

So far, the SimPulse 3CX-CIP is the only filter design in the world holding this certification providing assurance of hygienic equipment design.

The certification has been assigned in compliance with the new Third Party Verification model which was adopted only a few years ago. For further reference, please visit www.3-a.org (*Third Party Verification for the 3-A Symbol and 3-A Process Certification, Certified Conformance Evaluators*).



Simatek Process Filters are Applied in a Wide Range of Industries, including

Food & Dairy

Pharmaceuticals

Fine Chemicals

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