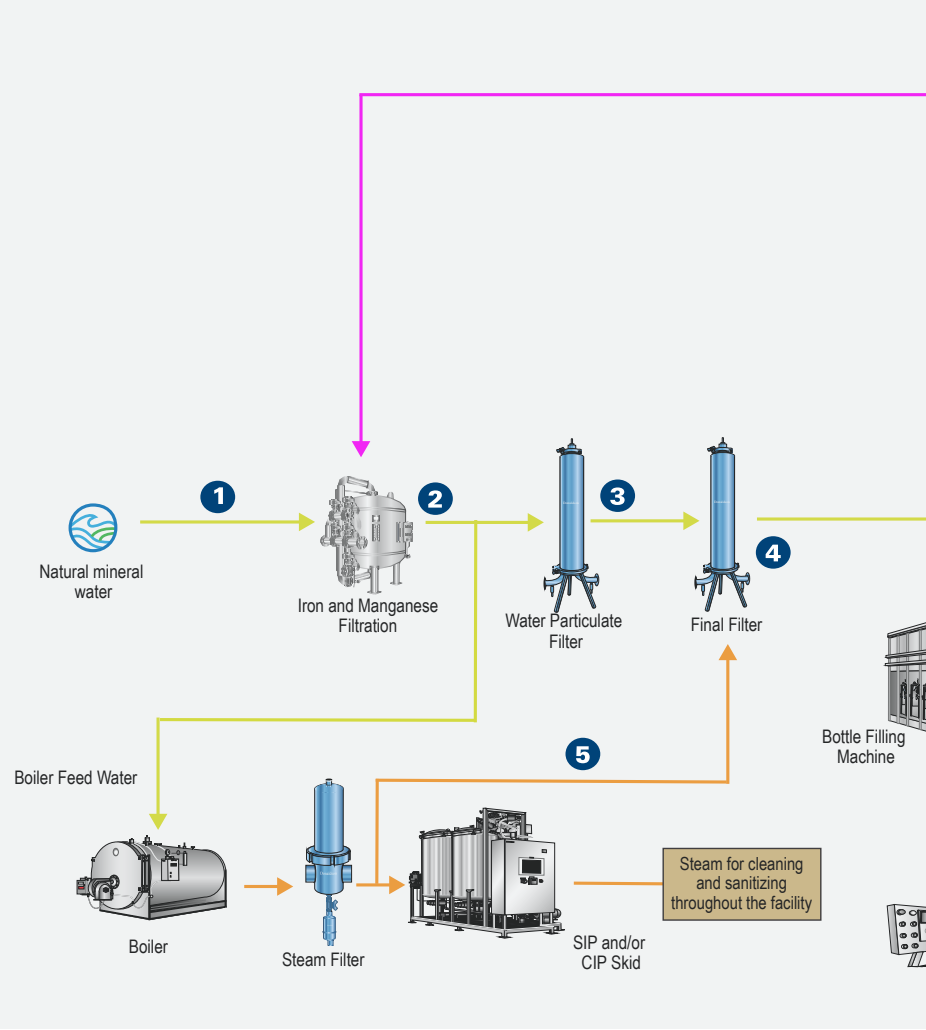
Donaldson
FILTRATION SOLUTIONS

BOTTLED WATER FILTRATION APPLICATIONS

A SUCESSFUL PARTNERSHIP
for the bottled water industry

1 Water Polishing
Mineral water companies traditionally take a careful and economical approach to water resources. The treatment of water from their own springs and the associated methods are designed in accordance with the water's origin, its analysis values, and its intended further use.

2 Removal of Iron and Manganese
Since iron and manganese compounds form reddish brown to black oxyhydrates of low solubility in the presence of oxygen, they are removed from the water before it is used. Most treatment systems for the large-scale removal of dissolved iron and manganese compounds consist of an aeration device that supplies the system with clean and purified air, together with a filter stage. The most commonly used filter medium is quartz sand, which acts as a coarse pre-filter for the downstream filtration systems.

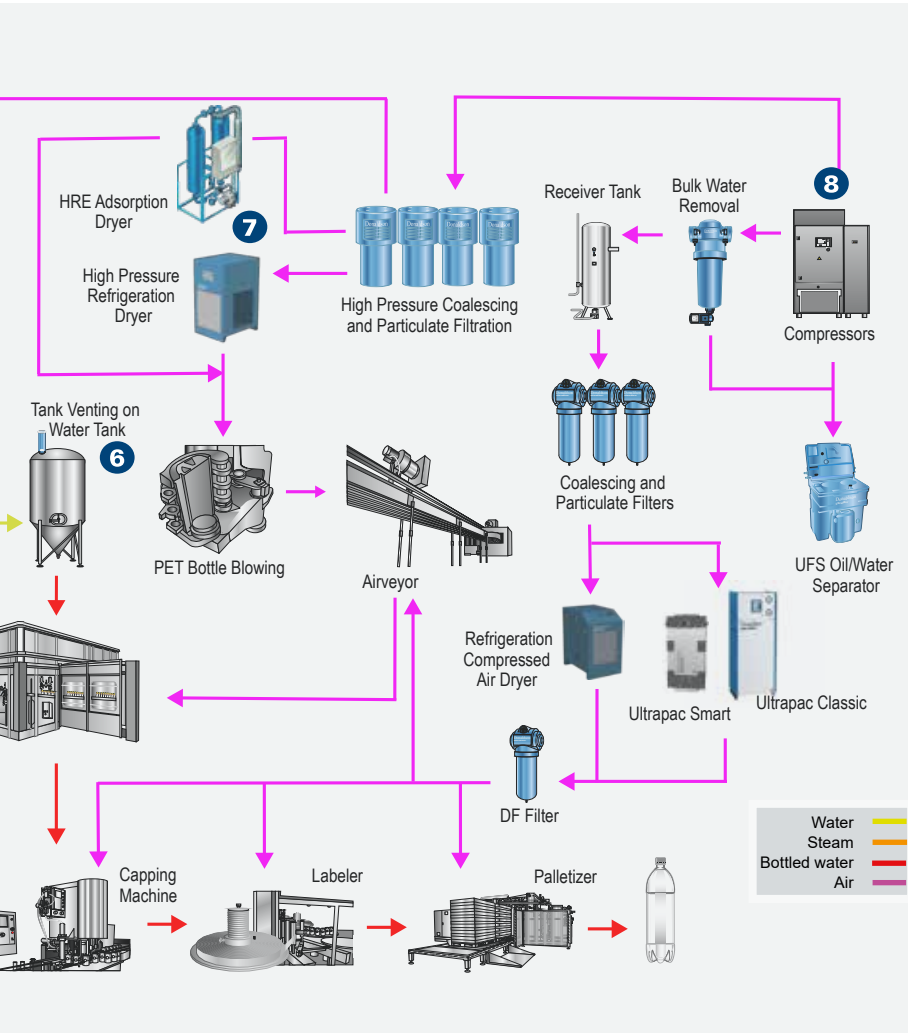


3 Pre-filtration
Natural mineral water comes from underground water resources. In some European countries, it is the only food that has to be officially recognised. No chemical processes are permitted during its manufacture and processing. Only filtration, decanting, or aeration are allowed, provided that these processes do not change the composition of the natural mineral water and the essential components that give it its characteristics. Spring water does not require official certification, but does require purification through filtration. The first step in preparing spring and mineral water for bottling is pre-filtration using LifeTec™ PP 100 N filters in PF-EG housings to prepare the water for further filtration stages.

4 Final Filtration
The complete LifeTec™ filter range provides application-oriented filtration solutions. Thanks to their high particle retention rate and flow characteristics, the LifeTec™ PES WN filter elements in PF-EG housings have proven themselves even at the sub-micron level and help retain the original properties of the mineral or spring water.

5 Steam Sterilization of the Final Filter

The energy-efficient provision of process steam for a wide range of disinfection tasks, including the sterilization of air and gas filter elements, requires filtration technology that helps to protect the system components at the plants. Combinations of P-GSL N elements in 25 microns and 5 microns in P-EGS housings have proven effective for the filtration of process steam. The filters for liquids and gases are regenerated and replaced according to the manufacturer's specifications and the individual experience of the mineral water companies. Donaldson provides tests for the filters as a service.



6 Tank Venting

Prior to bottling, natural mineral water is stored in buffer tanks, from where it is fed into the bottling process. The pressure must be equalized during filling and output. To prevent contamination from pollutants and microorganisms in the atmospheric air, Donaldson recommends the use of a LifeTec™ (P)-SRF V sterile filter or the LifeTec™ PT N hydrophobic PTFE membrane filter in P-BE housings.

7 Compressed Air for Bottle Blowing

Many mineral water companies offer spring and mineral water in glass and PET bottles. When producing PET bottles, the filtration tasks mainly relate to the compressed air that is used to shape the PET blanks into bottles under high pressure. The compressed air must be free from particles, humidity, oil vapor, and bacteria. Donaldson recommends the use of HD high-pressure housings with UltraPleat™ MF and SMF elements and MF elements in conjunction with a high-pressure refrigeration compressed dryer or high-pressure adsorption dryer, along with AK activated carbon filters and LifeTec™ (P)-SRF C filters.

8 Compressed Air Purification

Purified and dry compressed air is important for plant operation. According to the relevant regulations, the compressed air must be continuously available in consistent quality in compliance with the purity classes set out in ISO 8573-1:2010. The treatment of compressed air from the inlet air filter of the compressors through to final filtration using adsorption dryers and coalescing and particulate filters in accordance with ISO 12500-1 and ISO 12500-3 is one of Donaldson's core competencies. The DF-C cyclone separator and the energy-saving filters in the DF series with UltraPleat™ technology and activated carbon filters, along with adsorption dryers, provide reliable removal of humidity, oil, and particles. The UFS-SP oil/water separation system purifies the condensate for environmentally friendly disposal.

SUPERIOR FILTRATION. SOPHISTICATED SERVICES.

Your partner for a wide variety of service solutions

To enhance and complement our field services, we provide highly sophisticated in-house laboratory services to validate oil aerosols, oil mist, particle size or concentrations.

- Integrity Test Membranes (Membra Check)
- Integrity Test Depth Filtration (Filter Test Center)
- Differential Pressure Measuring
- Particle Spectrum Analysis for Liquids
- Test Filtration for Compressor Condensate

Membra Check

Filter Test Center (FTC)

CE FDA

Donaldson LifeTec™ LIQUID AIR STEAM

Donaldson LifeTec™

Filters for Liquids, Sterile Air and Steam

Donaldson FILTRATION SOLUTIONS

Total Filtration Management

Donaldson offers a wide variety of solutions to reduce your energy costs, improve your productivity, guarantee production quality and help protect the environment.

Total Filtration Service

A comprehensive range of services keeps your production at peak performance and at the lowest total cost of ownership.

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