PALL Food and Beverage

CFS NEO Systems

For Cold Filtration of Beer

Pall's CFS NEO is a membrane filter system for the final filtration of beer directly upstream the filling line. The CFS NEO eliminates the requirement for thermal treatment by utilizing membrane cartridges and therefore, maintains the original taste and freshness of the beer with a high microbial safety. The CFS NEO design incorporates learnings from successful installation of more than 250 CFS classic system installations worldwide, providing optimal taste at maximum microbial safety.

CFS NEO System

Description

The CFS NEO is a fully automated standalone membrane filter system. The filter cartridges are installed within individual cluster housings, each holding seven cartridges. The housings are arranged in parallel on a modular skid and controlled by individual outlet valves. In addition to the cluster housing module, the system includes modules for clean-in-place (CIP) manifold connection valves manifold with all the inlet and the controls including the integrity test device. Installation is directly upstream of the filling line without the requirement for a buffer tank. Operation is independent from other brewery systems with interfaces to the filler and BBT controls.

Cluster Technology

With cluster technology, the number of cartridges used for filtration are split into small groups of 7 filter cartridges (the cluster), which operate together during beer filtration but are fully isolated during cleaning, regeneration and testing.

Figure 1: Multi-round housing versus cluster arrangement

Features and Benefits of the Cluster Arrangement

- Each cluster of filters can be individually integrity tested for easier identification of a "failures"
- Higher test sensitivity for less risk of errors
- Clusters can be isolated from main beer flow to allow uninterrupted production in the unlikely event of integrity failure
- Cleaning and flushing is more consistent and thorough by treating clusters independently
- Water usage is far lower than operation without clusters (can you give approx. number or %?)
- Cartridge change out is quick and simple (*e.g.* one cluster versus seven cartridges, 14 clusters versus 98 cartridges)
- Controlled flushing and cleaning leads to optimum filter life and less exposure to rinsing and cleaning forthe lowest possible filtration costs

Applications

The CFS NEO is designed for the "sterile" filtration of beer upstream of the filling machine (keg/can/bottle/container).

System ae available to accommodate throughputs between 50 and 600 hl/h. The design is available for batch (CFS NEO) and continuous operation (CFS NEO Conti). The membrane filter module can also be expanded with a pre-filtration unit (CFS NEO Plus) for superior pre-clarification to extend the membrane cartridge lifetime.

Technical Data

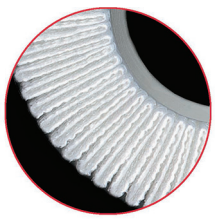
	CFS NEO
Flow rate range (hl/h; bls/h)	50 – 600
Flux/housing (hl/h; lbs/h)	15 – 30
Max pressure (bar/psi)	6.0 / 87
Max temperature (°C/F)	85 / 185
Integrity test	Forward flow / pressure hold
Number housings/unit	4 – 20
Housing volume net (l/gal)	8.3 / 2.2
Housing weight net (kg/lbs)	43 / 94
Number Cartridges/housing	7
Cartridge adapter	Code 28
Specific system volume (l/m²)	2.6 – 2.8
CE Mark	Yes
Connection to line	Double seat valve

Pasteurizer Replacement Filter Cartridges

For use in combination with the new CFS NEO system, Pall has specifically developed the Pasteurizer Replacement (PARE) family of filter cartridges, consisting of pre-filters and hydrophilic membrane filters for beer application.

The sterile filter cartridges are suitable for exposure to repeated hot water sanitization and *in situ* steam sterilization cycles for longer service life. They are also qualified to remove beer specific microorganisms. Optimized support and drainage materials provide increased mechanical strength during operation, repeated hot water, chemical and steam sanitization and thus, high throughput and lower OPEX for the brewer.

For more details, see Product Data Sheet FBDSPAREEN.



Membrane Cleaning

The special cleaning and regeneration process ensures high membrane performance combined with long membrane service life:

- Cold and warm water flush at max 64 °C / 149 °F
- Chemical clean a concentration of to 1% caustic at 64°, alternative conditioned caustic cleaner
- Regeneration with Ultimase FMC at 45-50 °C / 113-122 °F and pH 4.5
- Sanitization at 82-85 °C / 180-185 °F for 30 min
- Integrity test after each cleaning/regeneration
- Pressurize with CO_2

Quality

CFS NEO, combined with PARE cartridges, gives maximum microbial safety, controlled and documented with integrity testing. The system and process is designed with the hygienic standards for cold filtration of beer without the negative thermal impact on the product. The Beer character is maintained throughout production. Fully automated operation results in negligible oxygen pickup, providing freshness from start to end.

Materials and Regulations

CFS NEO Filter systems are manufactured according to ISO 9001:2015 certified Quality Management System and CE marked. Materials in use fulfil Food Contact Compliance and FDA regulations. Declaration of compliance to specific National Legislation and/or Regional Regulatory Requirements for food contact use are available on the Pall website.

For specific enquiries, please contact Pall for more detailed information and application specific data.

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Pall Corporation has offices and plants throughout the world. For Pall representatives in your area, please go to www.pall.com/contact

Please contact Pall Corporation to verify that the product conforms to your national legislation and/or regional regulatory requirements for water and food contact use.

Because of technological developments related to the products, systems, and/or services described herein, the data and procedures are subject to change without notice. Please consult your Pall representative or visit www.pall.com to verify that this information remains valid.

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