

Deaeration technology



Deaerators

Enhancing product quality and storage stability with more cost-efficient production and improved process control

The presence of undesired air and gases in liquid food products frequently leads to deterioration in product quality in physical, chemical and sensory terms.

All product processing, which for example includes pumping and various mixing processes, will automatically disperse or/and incorporate air into the mixture. In addition, some raw materials contain gases, most of which are not desirable.

The main objectives for air elimination, deaeration and deodorizing of food products are: improved product quality, increased shelf life and storage stability, reduction of overall production costs, and improved process control

APV has produced air eliminators, deaerators and deodorizing equipment for the liquid food industry for more than 45 years, and installed over a thousand plants world-wide.

Deaerator - VFJ/VFN



Specifications

Field of application	Milk, juices, desserts, pulp, purée, fruit fillings and preserves, baby food, dairy products, ketchup, sauces	
Description	The deaerators VFJ and VFN include a number of adaptations, including an improved aroma recovery system, designed to meet the demands of both new and existing customers. This modern, optimised processing technique with integrated aroma recovery provides improved retention of colours and volatile flavour components	
Standard size/ Capacity	250 - 3,999 l/h 4,000 - 9,999 l/h 10,000 - 22,000 l/h 22,001 - 39,999 l/h 40,000 - 55,999 l/h	(65 - 1,059 U.S. g/h) (1,060 - 2,639 U.S. g/h) (2,640 - 5,809 U.S. g/h) (5,810 - 10,569 U.S. g/h) (10,570 - 14,800 U.S. g/h)
Temperature area	From 40 up to 80°C (104 - 176°F)	
Pressure	-1 barg/0.5 barg (0 - 22 PSI)	

Advantages

- New, superior aroma-recovery system
- Automatic parasol regulating valve
- Improved hygiene
- Reduced commissioning costs
- Operator-friendly
- Preassembled and factory-tested

VFN E-VAP concentrator

Increasing total solids level in liquid food products



Specifications	
Field of application	Milk, desserts, dairy products
Description	The VFN E-VAP is designed to increase total solids by a few per cent by re-circulating the product across the VFN E-VAP unit several times. The VFN E-VAP Concentrator is a stand-alone unit with PLC, enabling the operator to load a recipe with a target set point for the total solids level
Standard size/ Capacity	Size A: Max 180 kg vapour/h (400 lb vapour/h) Size B: Max 410 kg vapour/h (900 lb vapour/h) Size C: Max 730 kg vapour/h (1,600 lb vapour/h) Size D: Max 1,650 kg vapour/h (3,640 lb vapour/h) Size E: Max 2,930 kg vapour/h (6,490 lb vapour/h) Size F: Max 4,592 kg vapour/h (10,120 lb vapour/h) Size G: Max 6,620 kg vapour/h (15,600 lb vapour/h)
Temperature area	From 40 up to 80°C (104 - 176°F)
Pressure	-1 barg/0.5 barg (0 22 PSI)

Advantages

- Fresh taste and odour
- Increased viscosity in milk applications
- Smooth and creamy texture in fermented products
- Increased serum stability
- Operator-friendly
- Preassembled and factory-tested

Cold water deaeration - Derox

Improve your beer and juice quality with the Derox deaerator



Specifications	
Field of application	Beverage and brewery industry
Description	Deaeration can be performed by two different systems - cold (Derox) or hot (Derox+) deaeration. Derox cold deaeration achieves low oxygen levels with low capital outlay and running costs
Capacity	30 - 1,500 hl/h (8,000 - 40,000 U.S. g/h)

Advantages

- Constantly low oxygen content of 50 ppb at 12°C (54°F)(below 30 ppb at >20°C (68°F), measured as a standard deviation)
- Continuous monitoring for required specification
- Low running costs
- Easy integration with existing lines
- Space-saving design (high capacity/m²)
- Variable capacity and high turn down
- Independent of water inlet temperature (optional)
- Variable deaeration levels
- No rings and plates inside vacuum tanks
- Fully CIP-cleanable

Hot water deaeration - Derox+

Improve your beer and juice quality with the Derox deaerator



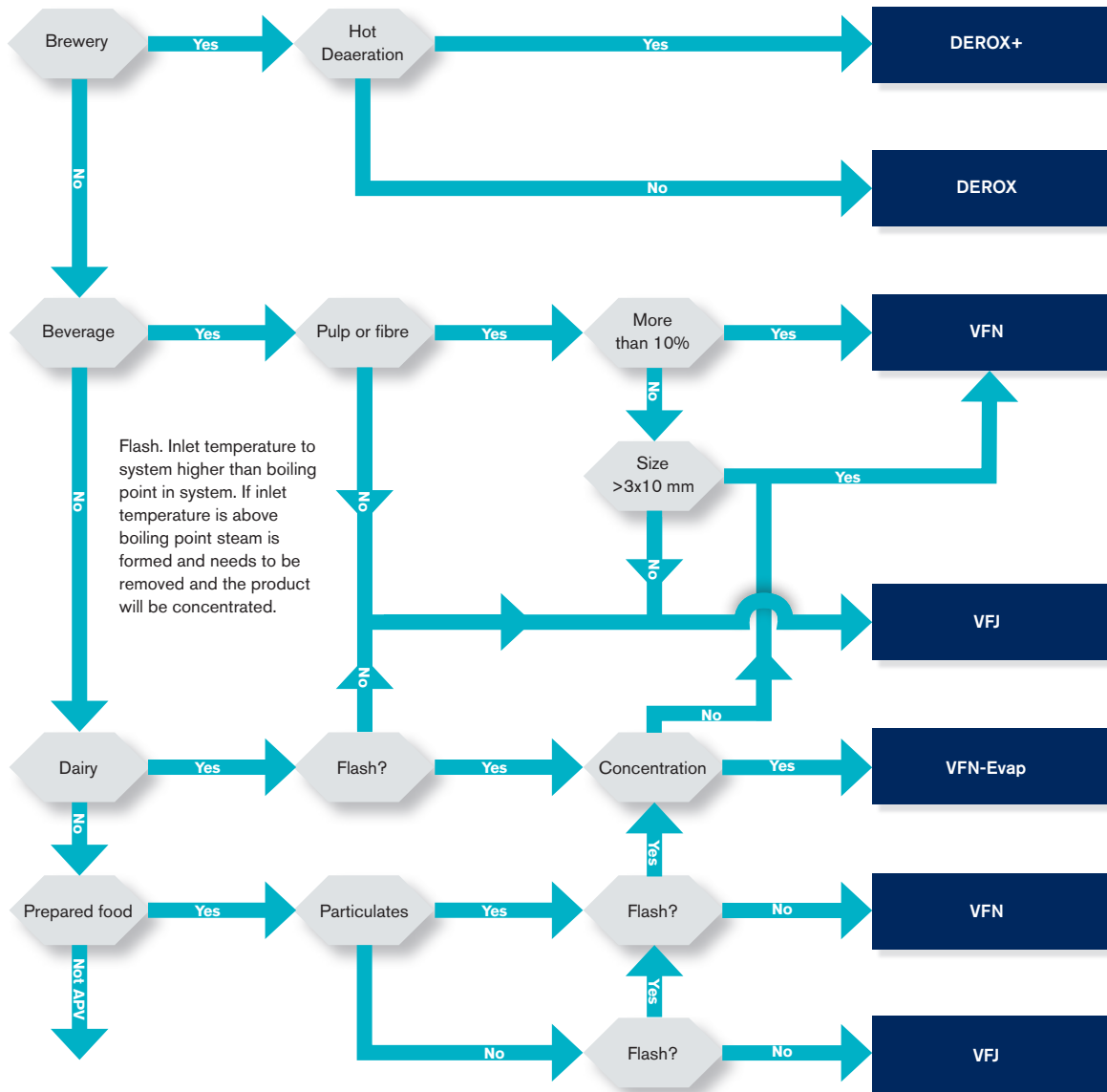
Specifications

Field of application	Beverage and brewery industry
Description	Deaeration can be performed by two different systems - hot (Derox+) or cold (Derox) deaeration. The Derox+ hot deaeration system heats the water to a high temperature, which reduces the risk of infection and helps remove contaminants
Capacity	50 - 400 hl/h (1,300 - 10,600 U.S. g/h)

Advantages

- Constantly very low oxygen content (below 20 ppb, measured as a standard deviation)
- Continuous monitoring for required specification
- Continuous removal of undesirable gases
- Low running costs
- Easy integration with existing lines
- Space-saving design (high capacity/m²)
- High turn down ratio (down to 25% of nominal capacity)
- Independent of water inlet temperature
- No rings and plates inside vacuum tanks
- Deaerated water is pasteurised
- Fully CIP-cleanable

Selection guide



Research and development – APV Innovation Centre



> The APV Innovation Centre cooperates closely with APV companies and customers around the world in order to provide a constant stream of innovative, world-class solutions that add decisive competitive value to the businesses of our customers.

Located in Central Jutland, the heart of Danish dairy farming country, the Centre is the focal point of APV's dairy process development activities. The APV Innovation Centre extends its reach far beyond this, however, offering a raft of services for the food industry in the broadest possible sense.

These include after sales service, laboratory analyses, technical information and training of APV employees and APV customers.

The APV Innovation Centre leverages the extensive industry experience and expertise of a permanent staff of food technologists, process engineers and production engineers together with knowledge gained over many years throughout the worldwide APV Group to contribute actively to all types of development, testing and application of APV equipment, systems and processing lines. All facilities and services are designed

to provide added value by minimising waste and energy requirements, or by converting commodity ingredients into new, competitive products.

Important keywords for the Centre are innovation, optimum plant dimensioning, high-quality products, and up-to-date knowledge of market requirements. The trials are custom-tailored and can be performed in the Innovation Centre or on customer site. All work on behalf of individual customers is subject to the strictest confidentiality and the highest standards of customer service.



Your local contact:



APV, An SPX Brand
Pasteursvej
DK-8600 Silkeborg
Denmark
Phone: +45 70 278 278 Fax: +45 70 278 330

For more information about our worldwide locations, approvals, certifications, and local representatives, please visit www.apv.com.

SPX Corporation reserves the right to incorporate our latest design and material changes without notice or obligation. Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing.

Issued: 01/2009 6950-01-01-2009-GB

Copyright © 2009 SPX Corporation