

Depth Filtration

BECO® Helix

Depth Filter Cartridges

BECO Helix depth filter cartridges are characterized by their exceptionally long service-life compared to other pleated depth filter cartridges. Their unique helix-wrapped pleated polypropylene fleece layers maximize the filter surface area, providing a high flow rate with low pressure differences.

The gradation of the thin fleece layers from coarse to fine offers twice the depth filter effect and a significantly higher particle-holding capacity than standard pleated depth filter cartridges. Additionally, the funnel effect of the graduated fleece layers allows for excellent backwashing of the BECO Helix depth filter cartridges.

BECO Helix depth filter cartridges are designed for the pre-filtration and fine filtration of beverages, liquid foods, cosmetic products, fine chemicals, and process water.

Features and Benefits

- Large and effective filter surface area, created by the unique helix wrapping of the pleated filter material, provides high mechanical and thermal stability, excellent backwash capability (up to 29.0 psid at 176°F or 200 kPa, 2.0 bar at 80°C) and most importantly, long service life and economical filtration results
- Filter material graded from coarse to fine with a depth filter effect of 2 mm maximizes the particle-holding capacity
- Type HX006 (retention rate 0.6 µm) offers excellent protection and significantly increases the service-life of downstream membrane filter cartridges, provided that regeneration and sterilization are performed according to Eaton's instructions
- The 100% polypropylene design offers high chemical resistance, making it suitable for fine chemical applications and cleaning with chemicals

Configuration

BECO Helix depth filter cartridges are made from high-quality, thin and graded polypropylene fleece layers. The pleated filter material is wrapped in a helical shape and therefore offers high mechanical and thermal stability.



Materials

Filter material:	Polypropylene
Cage and core	Polypropylene
End cap/adaptor:	Polypropylene, adapter with reinforcing ring
O-rings:	Silicone (standard)

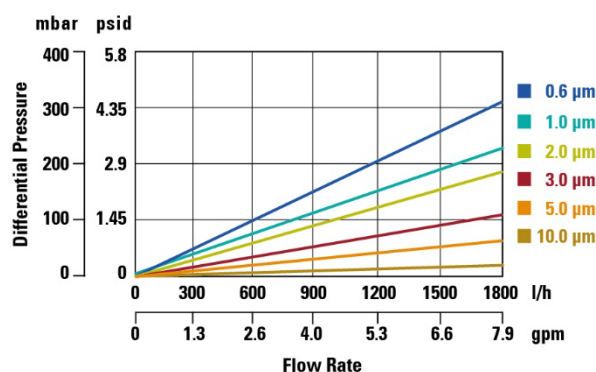
The plastic components meet the requirements of Directive 10/2011/EC and amendments. All materials used meet the FDA (Food and Drug Administration) requirements according to 21 CFR § 177.1520.

Technical Data

Nominal length for Code F only	
1 = 10"	(254 mm)
2 = 20"	(508 mm)
3 = 30"	(762 mm)
4 = 40"	(1016 mm)
Diameter:	
	2.75 in (70 mm)
Filter area:	
	7.5 ft ² (0.7 m ²)/10"
Max. operating temperature:	
	176°F (80°C)
Maximum differential pressure in flow direction:	
	72.5 psid (500 kPa, 5.0 bar) at 68°F (20°C) 29.0 psid (200 kPa, 2.0 bar) at 176°F (80°C) 7.25 psid (50 kPa, 0.5 bar) at 250°F (121°C)
Maximum differential pressure against flow direction:	
	43.5 psid (300 kPa, 3.0 bar) at 68°F (20°C) 29.0 psid (200 kPa, 2.0 bar) at 176°F (80°C)
Hot water sanitization:	
	Max. 194°F (90°C), 30 minutes
Steam sterilization:	
	Max. 250°F (121°C), 30 minutes
Chemical sterilization:	
	Can be sterilized with conventional chemical cleaners

Flow Rate

10" (250 mm) element with water at 68°F (20°C)
(standard values)



Filter Cartridge Types/Retention Ratings: β-Ratio ≥ 5000 or Efficiency ≥ 99.98%

Type	Retention rating
HX006	0.6 µm
HX010	1.0 µm
HX020	2.0 µm
HX030	3.0 µm
HX050	5.0 µm
HX100	10.0 µm

Adapter Codes

Code 0	Code 2
Single open end (SOE) 2-222 O-ring without spear	Single open end (SOE) 2-222 O-ring Triple bayonet adapter with spear



Code 7	Code F
Single open end (SOE) 2-226 O-ring Double bayonet adapter with spear	Double open end (DOE) with two flat gaskets



Ordering Information

BECO Helix depth filter cartridges with food-grade protective foil in carton.

Type	Retention rating	Adapter	Nominal length	Gasket	Packaging size
HX	006 = 0.6 µm	0 = Code 0 (SOE)*	1 = 10" (250 mm)*	S = Silicone	= 1 piece
	010 = 1.0 µm	2 = Code 2 (SOE)*	2 = 20" (500 mm)	E = EPDM*	20 = 20 pieces**
	020 = 2.0 µm	7 = Code 7 (SOE)	3 = 30" (750 mm)	V = Fluoroelastomer*	
	030 = 3.0 µm	F = Code F (DOE)*	4 = 40" (1000 mm)	F = FEP-coated*	
	050 = 5.0 µm				
	100 = 10.0 µm				

* On request

** Big boxes available for 30" and 40" elements only (reduction of cardboard boxes and working time)

Code F available with EPDM gaskets only.

Example

HX	006	7	1	S
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BECO Helix depth filter cartridges; retention rating 0.6 µm; code 7, 10" (250 mm); silicone gasket, 1 piece

Filter Preparation and Regeneration

Before the first filtration, pre-rinse BECO Helix depth filter cartridges with pre-filtered water in the direction of filtration.

After each use, BECO Helix depth filter cartridges must be rinsed in the direction of filtration with filtered (approx. 1 µm) and softened water under counter pressure.

Note: Detailed information on regeneration can be found in user note 1 A 4.3.1.1. and 1 A 4.7.

However, high-proof, alcoholic solutions and products that do not allow for pre-rinsing with water should first be circulated for approx. 10 minutes before filtration can start and be carried out until blockage occurs.

Sterilization

Steam sterilization

BECO Helix depth filter cartridges can be steamed or autoclaved at 250°F (121°C) max.

Duration: 30 minutes after steam emerges from all openings of the filtration system

Hot water sterilization or chemical cleaning via CIP (Clean In Place) with conventional cleaners is also possible.

Safety

When used as directed and handled correctly, there are no known unfavorable effects associated with this product. BECO Helix depth filter cartridges do not require the provision of safety-relevant information.

Storage, handling and transport does not present any environmental and health risks.

Disposal

BECO Helix depth filter cartridges should be treated as industrial waste.

Any local and other official regulations in relation to the filtered product must be followed.

Storage

Store BECO Helix depth filter cartridges in their original packaging and in a dry, odor-free and UV ray protected place.

Use BECO Helix depth filter cartridges within 60 months after production date.

Certified Quality

During the production process, BECO Helix depth filter cartridges are regularly monitored to ensure consistently excellent quality control.

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