

BECO INTEGRA DISC stacked disc cartridge housings



EATON

Powering Business Worldwide

Eaton – supplier of complete solutions for depth filtration applications – develops, manufactures, and provides top-quality depth filter media for a wide range of applications in food and beverage industries, chemical, fine and specialty chemical, cosmetics, and pharmaceutical industries as well as in biotechnology. Eaton offers a variety of equipment and system solutions for the application of BECO depth filter media.

The BECO INTEGRA® DISC stacked disc cartridge housings for food and beverage, chemical and pharmaceutical applications are enclosed depth filtration systems that optimally fulfill demanding filtration tasks and guarantee reliable process control.

Depending on the filtration task, BECODISC® stacked disc cartridges are used for coarse, clarification, fine filtration, microbial reduction, and microbial removal.

The individual cells of the BECODISC stacked disc cartridges are constructed using either BECO® or BECOPAD® depth filter sheets.

The combination of BECODISC stacked disc cartridges and BECO INTEGRA DISC enclosed stacked disc cartridge housings offer optimum results, particularly in terms of cleaning and sterilizability.

In addition to handling simplicity, reduced setup times, increased personnel and product protection, the enclosed BECODISC system offers protection against bypass effects.



Concept

Enclosed BECO INTEGRA DISC stacked disc cartridge housings consist of a base with three legs and a detachable housing dome. The base with inlet and outlet socket contains the centering and mounting unit for holding the stacked disc cartridge with a flat adapter or double O-ring adapter. The connection between the flat base and the housing dome is achieved through a quick closure device in V-ring design or through clamp screws.

Product safety

- Highly safe due to the enclosed design, which prevents contamination of the product and the environment (MAC¹-compliant).

CIP/SIP capability

- The enclosed filter housing enables CIP cleaning without BECODISC stacked disc cartridges.
- Sterilization with stacked disc cartridges.
- No dead spaces, easy to clean through task-oriented design.
- Cleaning validation possible on request (IQ/OQ).

High flexibility

- Various BECODISC stacked disc cartridge sizes available (12" and 16").
- Variable number² of stacked disc cartridges per housing.
- Variable filter areas for each stacked disc cartridge.
- Extensive range of stacked disc cartridges to choose from.

Simple handling

- BECODISC stacked disc cartridges are easy to insert, offering safe positioning, and high bypass security.

Components and types

BECO INTEGRA DISC MB

Beverage design

BECO INTEGRA DISC MP

Sanitary design

BECO INTEGRA DISC MA

Industrial design

BECO INTEGRA DISC K

Special design

StepFlow[®]

Filtration systems



¹ Maximum allowable concentration

² Usage of stainless steel intermediate plates:
see technical data sheets of BECODISC stacked disc cartridge

BECO INTEGRA DISC MB Range

Beverage design

The BECO INTEGRA DISC MB stacked disc cartridge housing is an enclosed depth filtration system which can be used from coarse filtration to microbial removal filtration of liquids in the food and beverage industries.

Features

High chemical resistance due to the use of AISI 316L.

Easy handling and good cleanability thanks to ergonomic design.

Quick and simple replacement of the empty stacked disc cartridges.

Low capital costs with relatively large filter areas and simple integration into existing processes.

Variable application options using different BECODISC stacked disc cartridges with flat adapter or double O-ring adapter. Variable column heights allow for adaptable filter area.

Small footprint due to compact design and thus easy integration into existing filtration processes.

Type	Filter area ¹		No. of stacked disc cartridges	Vessel capacity		Article no.
	ft ²	(m ²)		gal	(l)	
12"/1F	20.45	(1.9)	1 x 12"	8.45	(32)	MB120850
12"/2F	40.90	(3.8)	2 x 12"	14.00	(53)	MB220850
12"/3F	61.35	(5.7)	3 x 12"	19.55	(74)	MB320850
12"/4F	81.81	(7.6)	4 x 12"	25.36	(96)	MB420850
16"/1F	39.83	(3.7)	1 x 16"	16.64	(63)	MB140850
16"/2F	79.65	(7.4)	2 x 16"	27.74	(105)	MB240850
16"/3F	119.48	(11.1)	3 x 16"	38.83	(147)	MB340850
16"/4F	159.31	(14.8)	4 x 16"	50.46	(191)	MB440850



¹ If stacked disc cartridges with 16 cells are used

BECO INTEGRA DISC MP Range

Sanitary design

The BECO INTEGRA DISC MP stacked disc cartridge housing is an enclosed depth filtration system which can be used for the filtration of various liquids in the biotechnology and pharmaceutical industries.

In addition to the general benefits of stacked disc cartridge filtration, this product line features the following design characteristics according to cGMP and FDA guidelines.

Features

Full discharge (draining) is possible due to the design of the stacked disc cartridge housing.

Type	Filter area		No. of stacked disc cartridges	Vessel capacity		Article no. ²	Article no. ³
	ft ²	(m ²)		gal	(l)		
12"/1F(S)5../6P	6.4	(0.59)	1 x 12"	3.43	(13)	MPF1K210	MPS1K210
12"/1F(S)9../6P	11.8	(1.10)	1 x 12"	5.55	(21)	MPF1M210	MPS1M210
12"/1F(S)../6P	20.5	(1.90) ¹	1 x 12"	7.13	(27)	MPF1G210	MPS1G210
12"/2F(S)../6P	40.9	(3.80) ¹	2 x 12"	14.53	(55)	MPF2G215	MPS2G215
12"/3F(S)../6P	61.4	(5.70) ¹	3 x 12"	20.08	(76)	MPF3G215	MPS3G215
12"/4F(S)../6P	81.8	(7.60) ¹	4 x 12"	25.89	(98)	MPF4G215	MPS4G215
16"/1F(S)../6P	39.8	(3.70) ¹	1 x 16"	17.96	(68)	MPF1G620	MPS1G620
16"/2F(S)../6P	79.7	(7.40) ¹	2 x 16"	28.79	(109)	MPF2G620	MPS2G620
16"/3F(S)../6P	119.5	(11.10) ¹	3 x 16"	39.89	(151)	MPF3G620	MPS3G620
16"/4F(S)../6P	159.3	(14.80) ¹	4 x 16"	50.99	(193)	MPF4G620	MPS4G620

¹ If stacked disc cartridges with 16 cells are used

² With flat adapter

³ With double O-ring adapter



Stacked disc cartridge support with a flat adapter suitable for pharmaceutical applications.



O-ring sealing without dead space in the upper part of the housing ensure reproducible and thorough cleaning.



Base with slightly raised edge: During stacked disc cartridge changes, all residual product is safely discharged in the filter base.



Simple handling through DGRL approved quick closure device in V-ring design.



Venting unit with diaphragm pressure gauge, diaphragm valve, and aseptic sight glass suitable for pharmaceutical applications.

Industrial design

The BECO INTEGRA DISC MA stacked disc cartridge housing is designed for a wide range of filtration tasks for applications in the chemical industry and related sectors. In addition to the general benefits of stacked disc cartridge filtration as an enclosed depth filtration system, this system offers the following specific features.

Features

Stacked disc cartridge housing parts in contact with the product are made from stainless steel (AISI 316L) with high resistance to corrosion.

Precompressed stacked disc cartridges with flat adapter and reliable centering and fixed support ensure safe filtration and offer simple handling.

Safe stacked disc cartridge housing range for operating pressures of 87 to 145 psi (600 kPa/6 bar to 1,000 kPa/10 bar) maximum for liquids and gases with DGRL 2014/68/EU (fluid group 1) approval including EC conformity certificate, and ASME-CODE.



Special industrial design

Robust DGRL and ASME-CODE approved container closures:

- Quick closure device in V-ring design
- Clamp screw



Type	Filter area ¹		No. of stacked disc cartridges	Vessel capacity		Article no.
	ft ²	(m ²)		gal	(l)	
12"/1F	20.5	(1.9)	1 x 12"	8.45	(32)	MA121050
12"/2F	40.9	(3.8)	2 x 12"	14.00	(53)	MA221050
12"/3F	61.3	(5.7)	3 x 12"	19.55	(74)	MA321050
12"/4F	79.7	(7.4)	4 x 12"	25.36	(96)	MA421050
16"/1F	39.8	(3.7)	1 x 16"	16.64	(63)	MA141050
16"/2F	79.7	(7.4)	2 x 16"	27.74	(105)	MA241050
16"/3F	119.5	(11.1)	3 x 16"	38.83	(147)	MA341050
16"/4F	159.3	(14.8)	4 x 16"	50.46	(191)	MA441050

¹ If stacked disc cartridges with 16 cells are used

Special design

To accommodate a wide range of application options for BECODISC stacked disc cartridges, there are customized and special designs available.

Features

- Our **multi-column stacked disc cartridge housings** offers space for large filter areas:
 - Small foot-print required
 - Low cost of investment
 - Easy to handle
- For the strictest corrosion resistance requirements, Eaton offers **stacked disc cartridge housings with special materials** such as Hastelloy, titanium, 1.4539, respectively coatings, and linings (Halar®, ECTFE, PFA, etc.).
- **Stacked disc cartridge housing with hinged lid** stacked disc cartridge sealing and tightening system integrated into the lid for easy stacked disc cartridge replacement.
- **Stacked disc cartridge housings with raised edges** and with quick closure device in V-ring design ensure optimum handling during stacked disc cartridge replacements, particularly for critical filtration tasks.
- **For applications with group 2 fluids** (e.g., water, beverages etc.) Eaton also offers an economical housing range for 12" and 16" BECODISC stacked disc cartridges.
- **Mobile stacked disc cartridge housings on wheels** for more flexibility in terms of changing sites of operation.



StepFlow filtration systems

Eaton's filtration business offers a wide range of components and devices, including complex filtration systems.

Our engineering specialists custom design filtration solutions.

Our service includes support with preparing the requirements profile, full design specification with a flow chart, implementation, and full documentation (including IQ/OQ if required). We also offer commissioning with training of customer staff and accompanying service over the complete lifetime of the filtration system.



System design

- Preparation of requirements specification
- Operating sequence charts according to DIN 40719 (R+I flow charts, PID's)
- Hardware design using EPLAN CAD system
- Flow chart
- Automation/process visualization
- Process data acquisition
- Installation
- Commissioning
- After-sale service



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