

# BECO INTEGRA DISC

## Stacked Disc Cartridge Housing



**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's Begerow Product Line 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 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, microbe reduction, and microbe removal.



## Benefits

### Concept

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 (MAK-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 number 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 P**

Sanitary design

#### **BECO INTEGRA DISC I**

Industrial design

#### **BECO INTEGRA DISC K**

Special design

#### **StepFlow®**

Filtration systems





# BECO INTEGRA DISC P

## Sanitary Design

The BECO INTEGRA DISC P stacked disc cartridge housing is an enclosed depth filtration system for clarification, fine filtration, microbe reduction, and microbe removal from 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. <sup>1</sup>	Article no. <sup>2</sup>
	ft <sup>2</sup>	(m <sup>2</sup> )		gal	(l)		
12"/1S5/6 P	6.4	(0.59)	1 x 12"	3.4	(13)	MPS1K210	MPF1K210
12"/1S9/6 P	11.8	(1.10)	1 x 12"	5.5	(21)	MPS1M210	MPF1M210
12"/1S/6 P	20.5	(1.90)	1 x 12"	7.1	(27)	MPS1G210	MPF1G210
12"/2S/6 P	40.9	(3.80)	2 x 12"	14.5	(55)	MPS2G215	MPF2G215
12"/3S/6 P	61.4	(5.70)	3 x 12"	20.0	(76)	MPS3G215	MPF3G215
12"/4S/6 P	81.8	(7.60)	4 x 12"	25.8	(98)	MPS4G215	MPF4G215
16"/1S/6 P	39.8	(3.70)	1 x 16"	17.1	(65)	MPS1G620	MPF1G620
16"/2S/6 P	79.7	(7.40)	2 x 16"	27.7	(105)	MPS2G620	MPF2G620
16"/3S/6 P	119.5	(11.10)	3 x 16"	38.3	(145)	MPS3G620	MPF3G620
16"/4S/6 P	159.3	(14.80)	4 x 16"	50.7	(192)	MPS4G620	MPF4G620



Stacked disc cartridge support with double O-ring adapter and fixed support stacked disc cartridges 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/ASME approved quick closure device.



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

<sup>1</sup> with double O-ring adapter

<sup>2</sup> with flat adapter



## Industrial Design

The BECO INTEGRA DISC I 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 97/23EC (fluid group 1) approval including EC conformity certificate, and ASME-CODE.



Robust DGRL and ASME-CODE approved container closures:

- Quick closure device
- Clamp screw



Type	Filter area		No. of stacked disc cartridges	Vessel capacity		Article no.
	ft <sup>2</sup>	(m <sup>2</sup> )		gal	(l)	
12"/1F/10 I	20.5	(1.90)	1 x 12"	6.6	(25)	MI121050
12"/2F/10 I	40.9	(3.80)	2 x 12"	13.2	(50)	MI221050
12"/3F/10 I	61.3	(5.70)	3 x 12"	19.8	(75)	MI321050
12"/4F/10 I	81.8	(7.60)	4 x 12"	26.4	(100)	MI421050
16"/1F/10 I	39.8	(3.70)	1 x 16"	21.1	(80)	M0141050
16"/2F/10 I	79.7	(7.40)	2 x 16"	31.7	(120)	M0241050
16"/3F/10 I	119.5	(11.10)	3 x 16"	43.3	(164)	M0341050
16"/4F/10 I	159.3	(14.80)	4 x 16"	52.8	(200)	M0341050

## Special Design

To accommodate a wide range of application options, we offer a number of special housing types and customized designs for BECODISC stacked disc cartridges.

## 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's Begerow Product Line 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** module sealing and tightening system integrated into the lid for easy module replacement.

- **Stacked disc cartridge housings with raised edges** and with quick closure device ensure optimum handling during stacked disc cartridge changes, particularly for critical filtration tasks.

- **For applications with group 2 fluids** (e.g., water, beverages etc.) Eaton's Begerow Product Line 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.

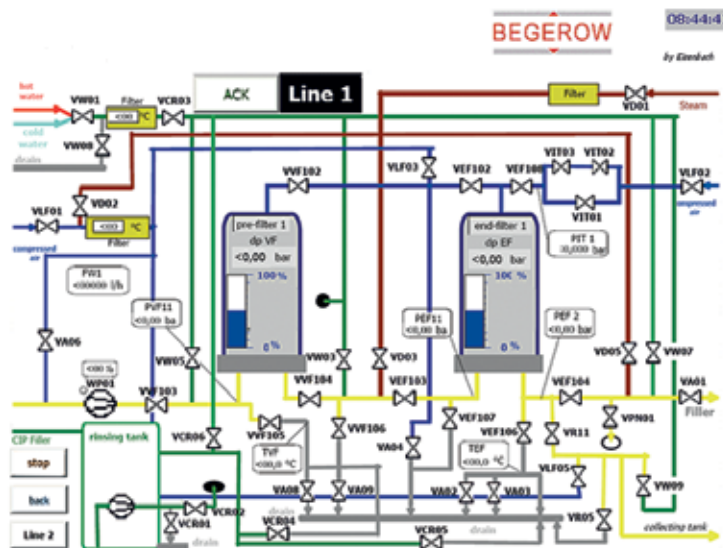




## Filtration Systems

### 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
- 3D design using AutoCAD Inventor
- Automation/process visualization
- Process data acquisition
- Installation
- Commissioning
- After-sale service



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 in 2D or 3D, 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.





### Performance

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. Depth filtration in an enclosed system additionally offers maximum product safety.

### Stacked Disc Cartridges

The individual cartridge cells of BECODISC stacked disc cartridges are constructed of BECO depth filter sheets produced mainly from pure natural finely fibrillated cellulose fibers from deciduous and coniferous trees, high-quality and pure diatomaceous earth, and cationic load carriers.

In Eaton's innovative BECOPAD® depth filter sheet's range, high-purity celluloses form a unique structure, which even for superfine filtration does not require mineral components.



From the following product ranges the optimum depth filter medium for the specific filtration tasks can be selected.

		<b>BECODISC stacked disc cartridges</b>	<b>Utilized BECO depth filter sheets</b>
<i>In compliance with pharmaceutical processes</i>	Stacked disc cartridges with low endotoxin content for pharmaceutical applications	BECODISC BP range	BECO PR range
	Mineral-free, high purity stacked disc cartridges for pharmaceutical applications	BECODISC P range	BECOPAD P range
	Stacked disc cartridges with support sheets for precoat filtration in the pharmaceutical industry	BECODISC B00P	BECO PR ENDURA® BECO PR ENDURA S
	Stacked disc cartridges containing activated carbon	BECODISC B30C	BECO ACF 07
	Stacked disc cartridges for standard applications	BECODISC BS range	BECO standard range
	Mineral-free, high purity stacked disc cartridges for industrial applications	BECODISC range	BECOPAD range
	Stacked disc cartridges for filtration of highly viscous liquids	BECODISC BT range	BECO CPS range
	Stacked disc cartridges for standard viscous liquids		BECO CP1
	Stacked disc cartridges with reduced Calcium and Magnesium content	BECODISC BA range	BECO SELECT™ A range
Stacked disc cartridges with support sheets for precoat filtration	BECODISC B00E	BECO ENDURA	



**North America - HQ**

44 Apple Street,  
Tinton Falls, NJ 07724  
Toll Free: 800 656-3344  
(North America only)  
Voice: +1 732 212-4700

**Europe/Africa/Middle East**

Auf der Heide 2  
53947 Nettersheim, Germany  
Voice: +49 2486 809-0

**Internormen** Product Line  
Friedensstraße 41  
68804 Altlusheim, Germany  
Voice: +49 6205 2094-0

**Begerow** Product Line  
An den Nahewiesen 24  
55450 Langenlonsheim, Germany  
Voice: +49 6704 204-0

**Brazil**

Av. Julia Gaioli, 474 - Bonsucesso  
07251-500 - Guarulhos  
Brazil  
Voice: +55 11 2465 8822

**China**

No. 7 Lane 280 Linhong Road,  
Changning District,  
Shanghai 200335, China  
Voice: +86 21 5200 0422

**Singapore**

4 Loyang Lane #04-01/02  
Singapore 508914  
Voice: +65 6825 1668

*For more information, please e-mail us at [filtration@eaton.com](mailto:filtration@eaton.com)*

*Visit us online at [eaton.com/filtration](http://eaton.com/filtration) for a complete list of Eaton's filtration products*

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