

Ultraporex™ SB

Particle Filter Element

Regenerable filter element for the removal of oil, water, and dust particles.

Donaldson® Ultraporex™ SB filter elements

contain the highly porous sinter bronze filter media. It ensures the retention of coarse solid and liquid particles. The available pore sizes of 5, 25 and 50 µm cover a wide range of applications.

By utilizing various filtration mechanisms such as direct impaction, sieving, and diffusion, liquid aerosols and solid particles will be retained in the filter down to the 5 µm particles size. The high-grade sintered bronze media ensures not only a high-load capacity of contaminants, but it has the ability to be regenerated many times.



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Applications

The Donaldson Ultraporex SB filter element is ideal in the following industries and applications:

- Chemical
- Petrochemical
- Pharmaceutical
- Plastic
- Food
- Beverage
- General machine fabrication
- Instrumentation and control air

Features

Filter surface 5.5 in² (0205) up to 480 in² (3050)

Void volume – porosity grade larger than 60%

Temperature range – constant temperature from -4°F up to +248°F

Regenerative – repeatable regeneration possible, combined with exact retention rates

Removal of all contaminants down to either 5, 25 or 50 µm

Benefits

Suitable for a wide range of applications and flow ranges

High dirt holding capacity; lower differential pressure

Broad application range

Economical, longer service lifetime

Guaranteed retention grade

Ultraporex™ SB

Specifications

Retention Rate	100% in gases; defined rate of particles larger than the pore size
Maximum Differential Pressure:	29 psi at 68°F regardless of system pressure
Initial Differential Pressure at Nominal Flow	0.29 psi (25 µm pore size)

Materials

Filter Media	Pure sintered bronze material no. 2.1052
Bonding	Polyurethane
End Caps	Aluminum
Two O-Rings	Perbunan®*: silicone free and free of compound (standard)

Pressure Drop Calculations

Element Size	Correction Factor Filter Surface C _F
0205	0.08
0305	0.10
0310	0.12
0410	0.17
0420	0.19
0520	0.25
0525	0.32
0725	0.47
0730	0.68
1030	1.00
1530	1.55
2030	2.10
3030	3.20
3050	5.65

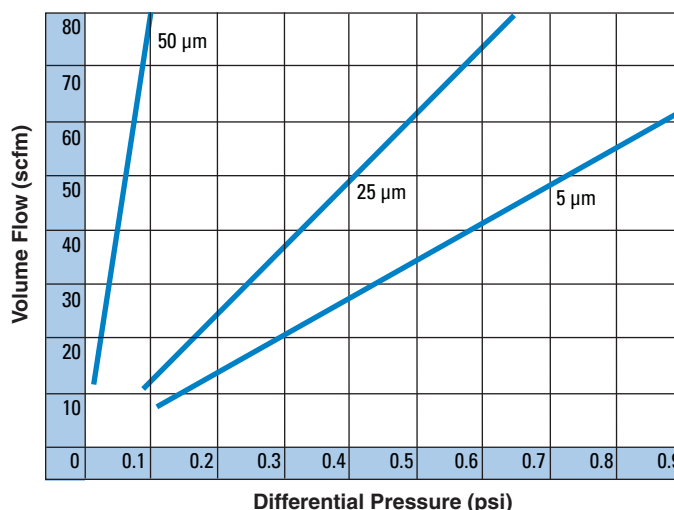
The performance curve is based on 1030 element, or one ten inch equivalent (TIE), and the correction factor for filter surface C_f for a 1030 = 1.00.

Example 1: Low Flow Single Element

Given:

- Flow rate = 12 scfm
- Pressure = 80 psig
- Using AG0002 (1 - 0205 SB Element) (25 µm)
 1. Convert flow given from standard cubic feet per minute to actual cubic feet per minute
 - $12 \text{ scfm} \times (14.7 \text{ psia} / 94.7 \text{ psia}) = 1.86 \text{ acfm}$ (through the housing and element)
 2. Divide by the correction factor
 - $1.86 / 0.08 = 23.25 \text{ acfm}$ (through each TIE)
 3. Pressure drop through this element = 0.2 psid

Performance of SB element — compressed air
These curves define the flow of a 1030 filter element at standard conditions (14.7 psia; 68°F. R.H.= 70%)



Example 2: High Flow Multiple Element

Given:

- Flow rate = 15,500 scfm
- Pressure = 150 psig
- Using SH2200 (27 - 3030 SB Element) (5 µm)
 1. Convert flow given from standard cubic feet per minute to actual cubic feet per minute
 - $15,500 \text{ scfm} \times (14.7 \text{ psia} / 164.7 \text{ psia}) = 1,383 \text{ acfm}$ (through the housing)
 2. Divide by number of elements
 - $1,383 / 27 = 51.2 \text{ acfm}$ (through each element)
 3. Divide by correction factor
 - $51.2 / 3.20 = 16 \text{ acfm}$ (through each TIE)
 4. Pressure drop through these elements = 0.24 psid

* Perbunan® is a registered trademark of LANXESS Deutschland GmbH.



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