

P-SLF Box

Sterile Air Box for Process Environments

In the processing of perishable or sensitive product, the demands for hygiene are usually very high. Ambient air is polluted and can ruin even the cleanest production process if it comes into contact with the end product without being purified. Bacteria, oil mist, water and dust in ambient air are the main reasons for spoilage of products. Sterile air creates aseptic conditions in pressurized and open storage or mixing tanks and in filling machines. A continuous exchange of the air cushion and a slight overpressure in this critical area reduces the risk of contamination with unfiltered ambient air.

For production processes where bacteria and particle-free air is required, Donaldson® Process Filtration developed the P-SLF Sterile Air Box. With eight box sizes from 18 to 529 cfm, sterile air can be produced in the most cost efficient way. The P-SLF Box is available in mobile and stationary versions and can be sanitized with saturated steam. The Donaldson P-SLF Box is used in applications within the food and beverage, chemical, pharmaceutical, cosmetic and other industries.

The filtration system is a compact unit consisting of a pre-filter and sterile filter with a low pressure blower. With a very low overpressure the sterile air is transported into the storage tank. This constant air exchange prevents contamination by bacteria and particles found in ambient air.

How It Works

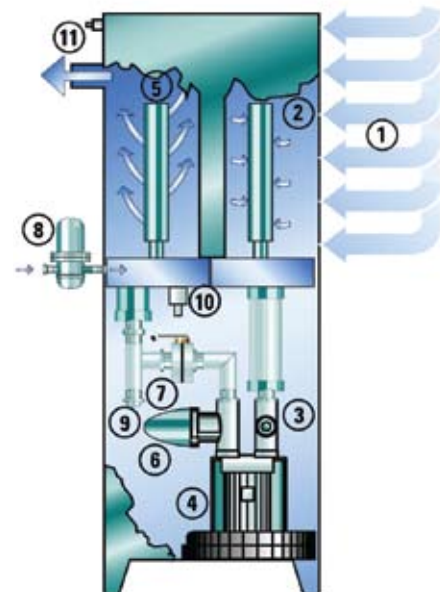
The blower draws ambient air ① into the filtration chamber ②. The air is cleaned with a prefilter on the upstream side of the blower. The retained particles will cause an increase in differential pressure over time. To protect the blower ④, a vacuum relief valve ③ is installed. The blower ④ compresses the air to about 1.5 psi. The compressed air is fed into the sterile chamber ⑤ where a sterile filter retains bacteria and other contaminants. To protect the blower, a pressure relief valve will open if the sterile filter is blocked. At the outlet ⑪ the sterile air is fed to the tank or other point of use.

During sterilization of the upper chamber and filter elements, the disc valve ⑦ needs to be closed to prevent steam from entering the blower. To maintain good steam quality, a steam filter ⑧ is standard on the P-SLF Box. After sterilization the condensate can be drained out the discharge valve ⑨ ⑩.

See also sterilization instructions.



P-SLF Sterile Air Box for Process production environments



Specifications

Type P-SLF	Flow Rate (cfm)		Dimensions (inches)			Filter Elements	
	Differential Pressure = 1.5 psid	Differential Pressure = 3 psid	Height	Width	Depth	Size	Type
0288-0	42	18**	64	29	19	2x20/30 2x20/30 1x05/20	FF BE P-GS
0432-0	84	36	64	29	19	3x20/30 3x20/30 1x05/20	FF BE P-GS
0576-0	126	74	72	29	19	3x30/30 3x30/30 1x05/25	FF BE P-GS
0768-0	160	128	80	39	23	4x20/30 4x20/30 1x05/25	FF BE P-GS
1152-0	240	160	80	39	27	6x30/30 6x30/30 1x05/25	FF BE P-GS
1536-0	260	220	80	47	27	8x30/30 8x30/30 1x07/30	FF BE P-GS
2304-0	400	300	90	47	27	12x30/30 12x30/30 1x07/30	FF BE P-GS
3072-0	600	500	97	47	27	16x30/30 16x30/30 1x10/30	FF BE P-GS

** Maximum 2.5 psi total blower difference.

- P-SLF Sterile Sir Systems are integrated units, complete with prefilter FF G2", sterile filter BE G2" and a steam filter P-GS combined with a blower for low pressure applications. The P-SLF processes ambient air to sterile air.
- The sterile air system is also available in a 60 psig version. In this case the sterile filter can be sterilized with saturated steam up to 60 psig.
- Standard Power Supply: 110 V/60 Hz; (P-SLF 0228-0 – 1152-0)
440 V/60 Hz; (P-SLF 1536-0 – 3072-0)
- Other electrical connections available.



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