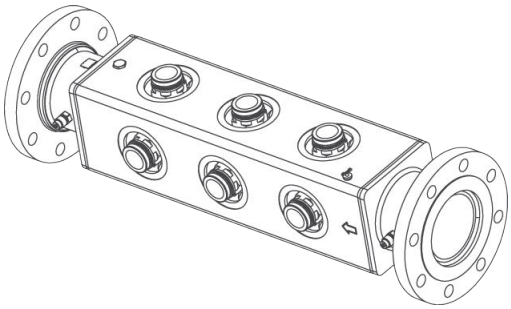
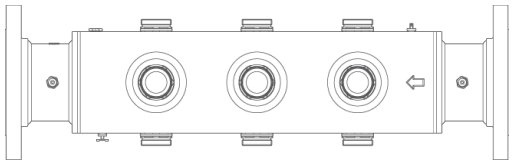
PRODUCT DATA SHEET

12 Filter Smart ST Manifold

Differential Pressure Gauges





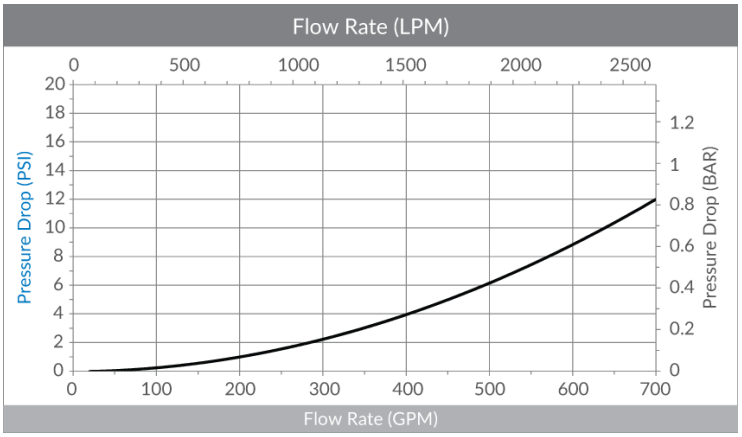
Our innovative Smart Manifolds are designed for industry leading high flow & dirt holding capacity configurations. Lower internal flow resistance for minimal pressure drop and compact size with 4" flanges on both ends for uncomplicated installation in existing pipe infrastructure.

Donaldson's proven spin-on technology also makes our manifolds extremely easy to service without the need of specialised tools and personnel.

Max Flow Rate:	700 gpm / 2650 lpm (Diesel Fuel)
Working Pressure:	150 psi / 10 bar
Mounting:	ASA 150 4" Flanges
Configuration:	Mounts in any direction
Filter Quantity:	Up to 12
Accessories:	Mechanical Pressure Gauges, Blanking Caps
Manufacturer:	Donaldson Company, Inc.
Country of Origin:	South Africa
Gross Weight in Kilograms:	58 KG

1) Mini test points (2)
2) Threaded insert assembly
3) Plug assembly (1)
4) 1/4" NPT bleeder
5) 400mm installation clearance to face for filters

No exposed aluminium reduces impact sparking



SMART FILTRATION SOLUTIONS®

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Understanding Liquid Filter Efficiency

This information is provided as an aid to understanding filter efficiency terminology based on current ISO, ANSI and NFPA test standards.

What Is a Beta Ratio?

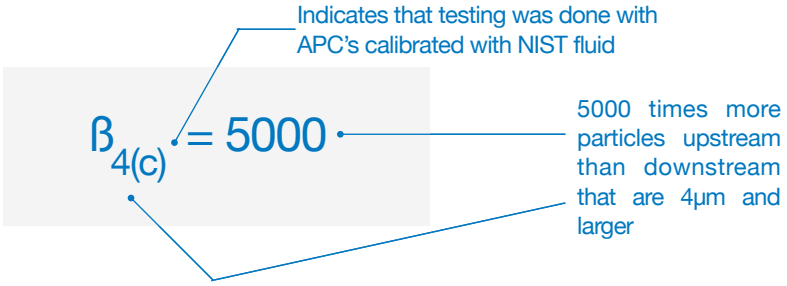
Beta ratio (symbolized by ß) is a formula used to calculate the filtration efficiency of a particular fluid filter using base data obtained from multi-pass testing.

In a multi-pass test, fluid is continuously injected with a uniform amount of contaminant (i.e., ISO medium test dust) then pumped through the filter unit being tested. Filter efficiency is determined by monitoring fluid contamination levels upstream and downstream of the test filter at specific times. An automatic particle counter is used to determine the contamination level. Through this process an upstream to downstream particle count ratio is developed, known as the beta ratio.

The formula used to calculate the beta ratio is:

$$\text{Beta ratio}_{(x)} = \frac{\text{particle count in upstream fluid}}{\text{particle count in downstream fluid}}$$

where$_{(x)}$ is a given particle size



What is Efficiency?

The beta ratio is commonly used to calculate the filtration efficiency of a filter and can be converted into a percentage of efficiency at a given particle size.

The formula used to calculate efficiency is:

$$\text{Efficiency}_{(x)} = \frac{ß - 1}{ß}$$

where$_{(x)}$ is a given particle size

ß$_{4(c)}$ = 5000 is same as 99.98% @ 4µm

ß5000 is 99.98% for particles 4µm and greater

How Big is a Micron?

Compare a micron size to these familiar particles.

Grain of table salt	100µm
Human hair	80µm
Lower limit of visibility	40µm
White blood cell	25µm
Talcum powder	10µm
Red blood cell	8µm
Bacteria	2µm
Silt	<5µm

Beta Ratio (at given particle size)	Efficiency (at the same particle size)
1.01	1.00%
1.1	9.10%
1.5	33.30%
2 (Nominal)	50.00%
5	80.00%
10	90.00%
20	95.00%
75 (Absolute)	98.70%
100	99.00%
200	99.50%
1000	99.90%
2000	99.95%
5000	99.98%

- Without Beta Ratio / Efficiency information, Micron rating alone is meaningless.
- Focus must be on Beta Ratio, rather than just Efficiency %, as we can see above, 98.70% & 99.98% might not sound too big of a difference but in Filtration World, that's a huge difference.

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