

## PROCESS FILTRATION

### STEAM MANIFOLDS FOR CULINARY & PROCESS STEAM

System Engineered Solutions

#### PROCESS STEAM MANIFOLD



#### COMPONENTS AND DESIGN

Donaldson Process Steam manifolds provide a ready-to-install steam solution with housings, condensate traps, lockable isolation valves, upstream and downstream pressure gauges, and housing jackets.

Donaldson Culinary Steam manifolds incorporate these same components along with a sanitary check valve and sampling valve. This culinary steam solution has all required piping components listed in the 3A Accepted Practice for Culinary Steam.

A mounting stand with leveling feet is also available as an optional accessory.

#### ALL-IN-ONE STEAM SOLUTION

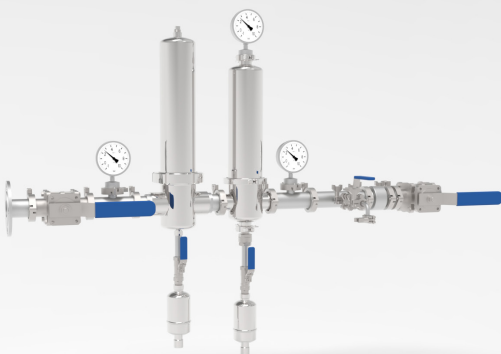
Improved steam quality ensures increased process efficiency and longer service life of downstream filters being sterilized. Culinary steam is free of entrained contaminants and suitable for use in direct contact with food products or product contact surfaces.

#### ASSOCIATED FILTER ELEMENTS

The following elements are recommended with the Donaldson Steam Manifolds in order to meet 3A Culinary Steam Guidelines:

- **Stage 1** - 25 µm Donaldson LifeTec™ P-GSL N Filter acting as an entrainment separator
- **Stage 2** - 5 µm Donaldson LifeTec™ P-GSL N or 1 µm Donaldson P-GS element acting as a particulate filter able to meet 3A retention requirements (5 µm Donaldson P-GS element may be used where 3A retention is not required)

#### CULINARY STEAM MANIFOLD



#### INDUSTRIES

Process steam is used as a source of energy for many process applications like heating and temperature control whereas culinary steam is used specifically for food processing.



- Bottled Water



- Dairy



- Breweries



- Wineries

## QUALITY TESTING

All products have been inspected and meet the following requirements by Quality Assurance:

- Framework according to European Regulation (EC) 1935/2004
- FDA requirements for contact with food in accordance with the Code of Federal Regulations, Title 21
- Minimum internal surface finish of  $Ra < 1.6 \mu\text{m}$  ( $< 64 \mu\text{in}$ )
- Culinary Steam Manifold roughness  $Ra < 0.8 \mu\text{m}$  ( $< 32 \mu\text{in}$ ) downstream of secondary filter to meet 3-A Sanitary Standards

## FEATURES AND BENEFITS

- Minimal site assembly
- Compact design
- Minimal installation downtime
- Ergonomic housing heights
- Low differential pressure drop
- High flow rate capabilities
- Long service life
- Manual pressure indication

PRODUCT SPECIFICATIONS	
Max Operating Temperature	302 °F (150 °C)
Max. Operating Pressure	150 psig (10.3 barg) @ 302 °F (150 °C)
Max. Differential Pressure	Defer to element datasheets
Components	Manometers from ASHCROFT Isolation ball valves Optional support stand
Internal surface finish [Ra]	$Ra < 1.6 \mu\text{m}$ ( $< 64 \mu\text{in}$ ); Culinary $Ra < 0.8 \mu\text{m}$ ( $< 32 \mu\text{in}$ ) After Final Filter
Materials	All product contact surfaces Stainless Steel EN 1.4404 (AISI 316L) or EN 1.4301 (AISI 304) Elastomers are made of EPDM or PTFE
Inlet/Outlet – Process Steam	ANSI 150 RF Flanges, 1/2 IN NPT Condensate Drains
Inlet/Outlet – Culinary Steam	ANSI 150 RF Inlet, Sanitary Tri-Clamp Outlet, 1/2 IN NPT Condensate Drains

Manifold filter housings are designed for the purification of industrial and culinary steam and yield low differential pressure at high flow rates. See estimated manifold capacities below. Detailed sizing curves are also provided on the following pages.

MANIFOLD CAPACITIES				
LINE SIZE	PROCESS STEAM		CULINARY STEAM	
	Flow (lb/h)	Flow (kg/h)	Flow (lb/h)	Flow (kg/h)
3/4 IN	225	100	160	70
1 1/2 IN	600	275	600	275
2 IN	1000	450	800	360
3 IN	2000	900	2000	900
4 IN	5850	2650	5850	2650
6 IN	9250	4170	–	–

\*Capacities approximated using 50 psig system pressure

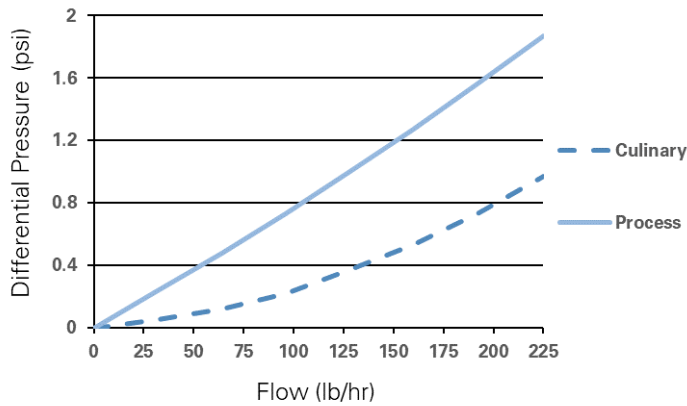
## FLOW CHARACTERISTICS

Estimated flow characteristics using Donaldson housings and typical filter element configuration with 50 psig saturated steam.

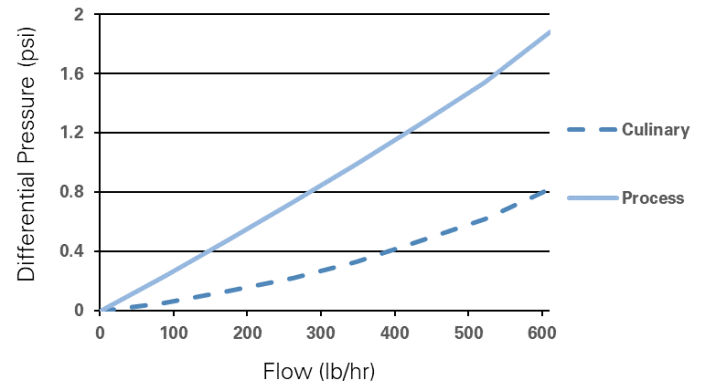
TYPICAL ELEMENT CONFIGURATION			
MANIFOLD	STAGE 1	STAGE 2	MEETS 3A REQUIREMENTS*
Process Steam	25 µm P-GSL N	5 µm P-GS	NO
Culinary Steam	25 µm P-GSL N	5 µm P-GSL N	YES

\* 3A Culinary Steam guidelines require greater than 95% retention of particles 2 µm and larger (3A Sanitary Standard 609-03)

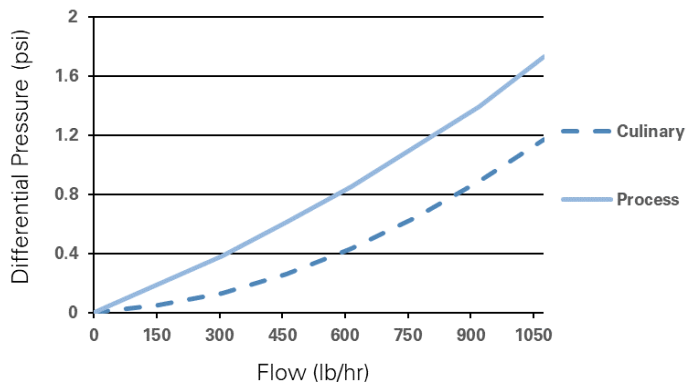
### 3/4 IN FLOW CHARACTERISTICS



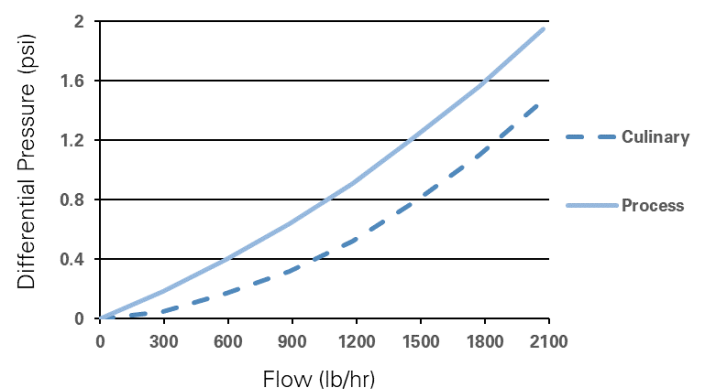
### 1 1/2 IN FLOW CHARACTERISTICS



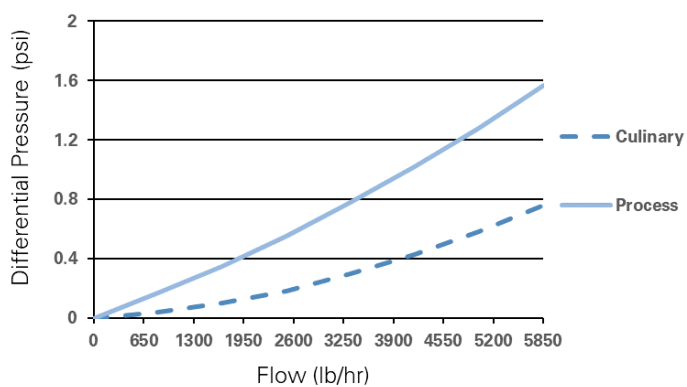
### 2 IN FLOW CHARACTERISTICS



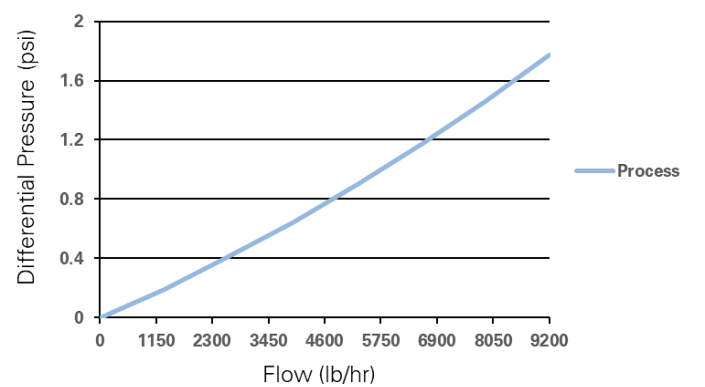
### 3 IN FLOW CHARACTERISTICS



### 4 IN FLOW CHARACTERISTICS

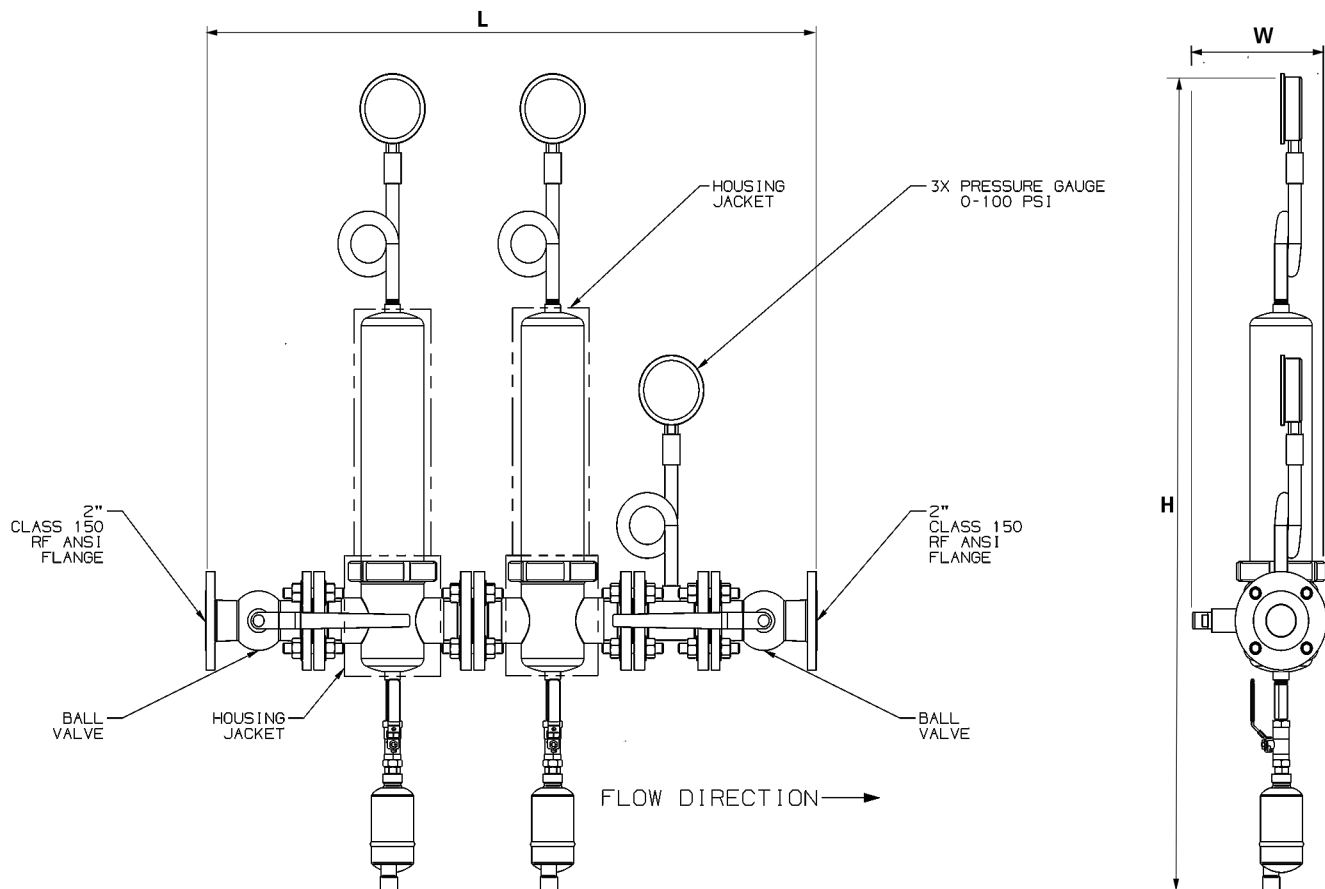


### 6 IN FLOW CHARACTERISTICS



## WEIGHTS AND DIMENSIONS

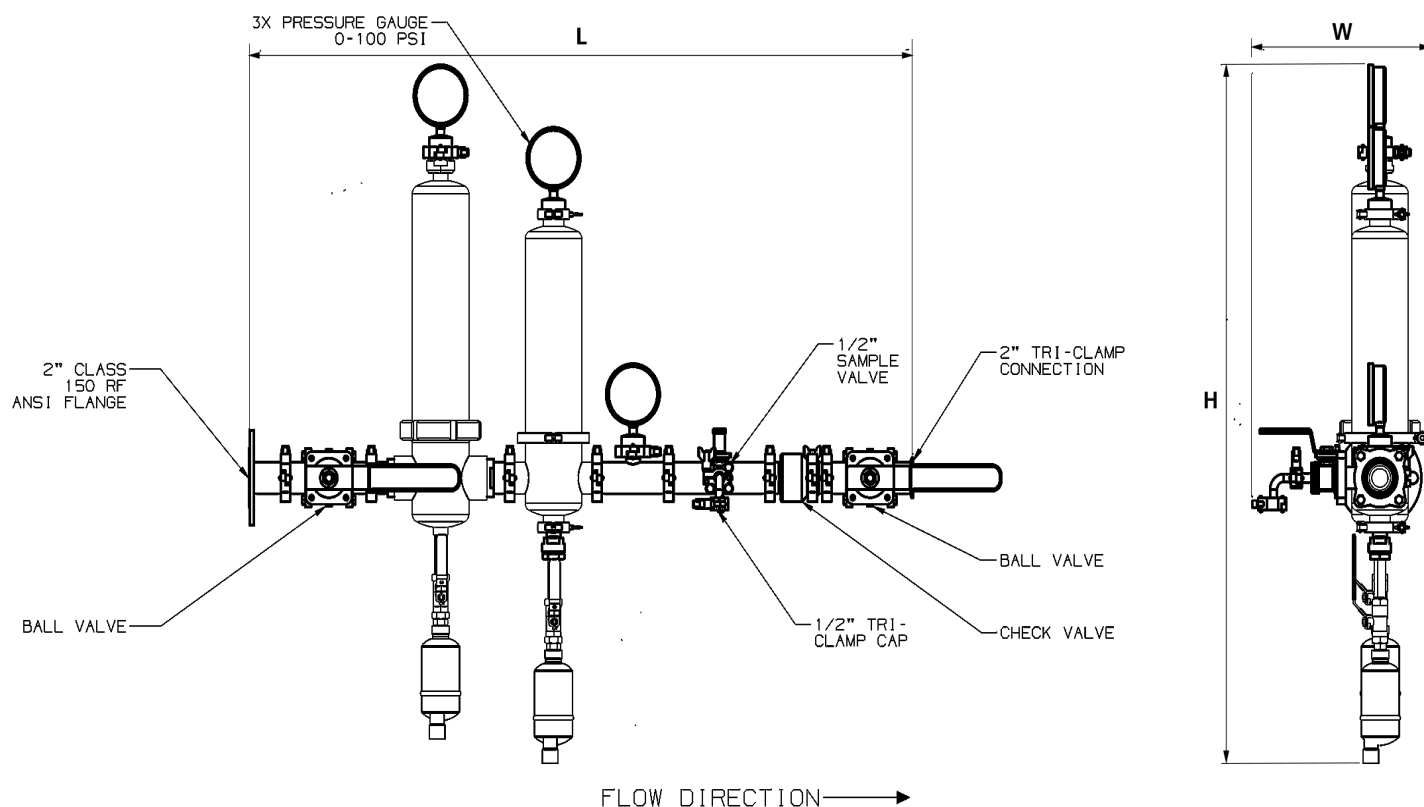
PROCESS STEAM MANIFOLD WEIGHTS AND DIMENSIONS									
LINE SIZE	PART NUMBER	WEIGHT		LENGTH		WIDTH		HEIGHT	
		lb	kg	in	cm	in	cm	in	cm
3/4 IN	AG1350401	65	30	38	97	6	15	38	97
1 1/2 IN	AG1350501	130	60	45	114	8	20	42	107
2 IN	AG1350601	165	75	49	124	9	23	50	127
3 IN	AG1350701	320	145	66	168	11	28	67	170
4 IN	AG1350801	650	295	63	160	17	43	74	188
6 IN	AG1350901	1075	490	73	185	18	46	80	203



## WEIGHTS AND DIMENSIONS CONTINUED

CULINARY STEAM MANIFOLD WEIGHTS AND DIMENSIONS

LINE SIZE	PART NUMBER	WEIGHT		LENGTH		WIDTH		HEIGHT	
		lb	kg	in	cm	in	cm	in	cm
3/4 IN	AG1325601	65	30	43	109	12	30	33	84
1 1/2 IN	AG1325701	120	55	52	132	12	30	35	89
2 IN	AG1326801	155	70	53	135	13	33	40	102
3 IN	AG1326901	385	175	69	175	13	33	61	155
4 IN	AG1327001	705	320	87	221	17	43	69	175



[donaldson.com/process](https://donaldson.com/process)

Donaldson Company, Inc.  
Minneapolis, MN

Contact us



**Important Notice:** Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, specifications, availability and data are subject to change without notice, and may vary by region or country.

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