

## Technical Data

# Brodie Cast Body Strainer (BCBS) With SC Air Eliminator Option In-Line Strainer



### General

Strainers are installed in pipelines upstream of meters, pumps, valves, and other flow stream equipment for protection against intrusion of pipe scale, welding splatter, and other foreign material. The use of a properly sized strainer, together with a basket of suitable mesh, reduces maintenance and chances of system failure due to foreign material in the flowing stream. Brodie BCBS style strainers are available in sizes 3" - 6" for maximum working pressures up to 265 psi (1,827 kPa). When it is known that large amounts of iron oxide are present in a flowing stream, a large strainer should be used. Resins, gums or varnishes, will also cause the strainer basket to clog prematurely. Larger foreign matter such as pebbles, welding beads, etc., should be removed at frequent intervals to prevent abrasive action from damaging the basket screen.

### Strainer Baskets

The strainer basket must be kept clean for effective operation. A buildup of sediment increases pressure drop and decreases flow. If the basket is allowed to become completely clogged, damage will result. It is recommended that pressure gauges be installed both upstream and downstream of the strainer. The differential pressure between these two gauges will give an indication of the condition of the basket.

### Design Features

- Easy access vertical, in-line application
- Easy Maintenance
- Provides maximum protection against intrusion of foreign material

### Materials of Construction

- Housing: Cast Steel ASTM 352 GR LCB
- Cover: Steel ASTM 516 GR 70
- Bolt/Nut Type:

Standard	Low Temperature
Stud A193 B7	Stud A320 L7
Nuts A194 2H	Nuts A194 G7

- Basket: Steel 3/4" expanded metal standard with a variety of 304 stainless steel meshes
- Gasket: Nitrile (NBR)

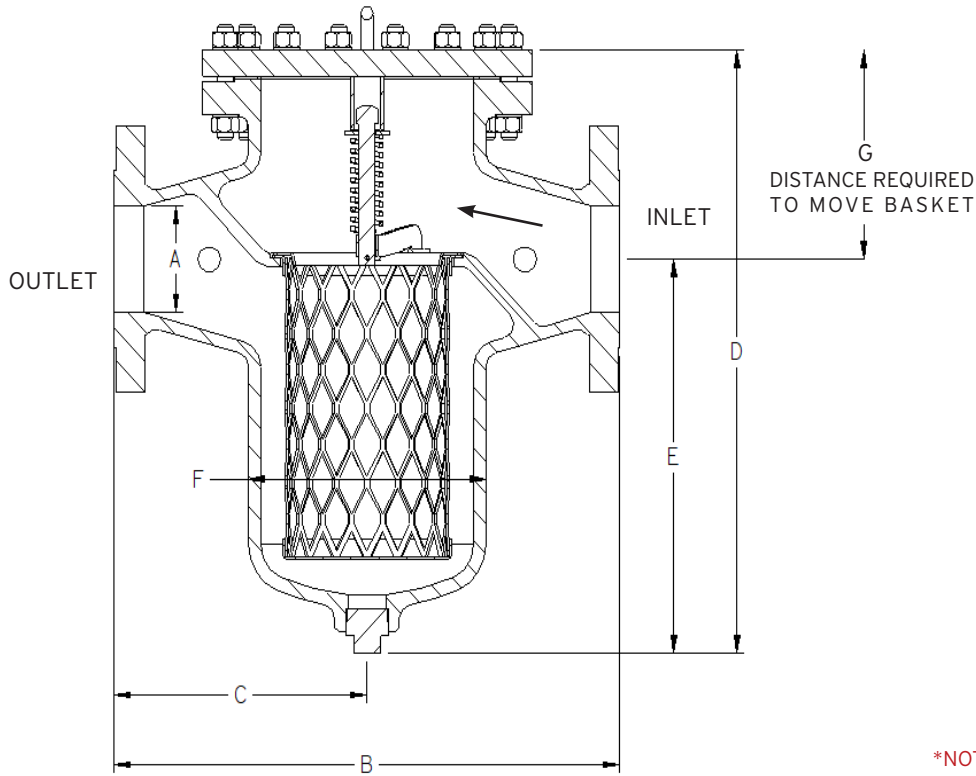
### Specifications

- ANSI 150#
- \*Maximum Working Pressure: 265 PSIG (1827 kPa) at 100°F (38°C) (SEE NOTE BELOW)
- Raised Face Flanges in accordance with B16.5
- Body designed in accordance with ASME BPVC 8.1
- 1/2" Pressure Taps (standard)
- Optional Air Release Head
- NACE MR0175/ISO 15156 Compliant
- Operating Temperature:

Standard	Low Temperature
[-20 °F to 300 °F]	[-50 °F to 300 °F]
[-29 °C to 149 °C]	[-45 °C to 149 °C]

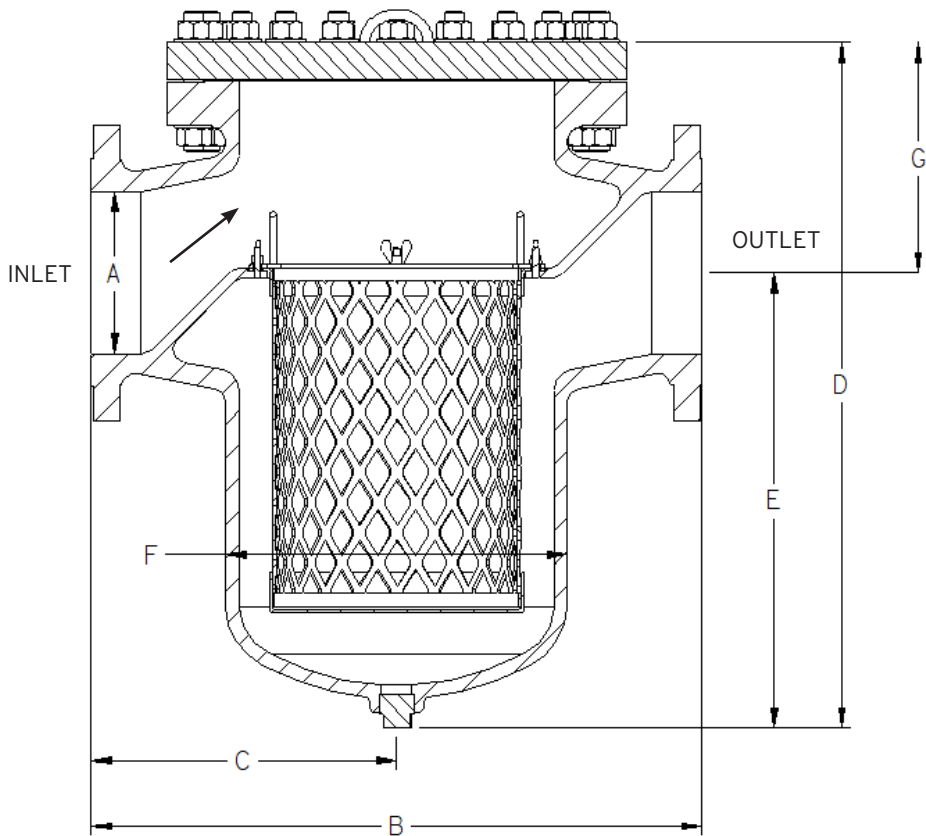
\*NOTE: MAWP must be derated after 100 °F (38 °C) Per ASME 16.5 Table 2-1.3. Consult Factory for more information

### 150# Strainer Dimensions for 3" & 4" Cast Body Strainer



\*NOTE: For Dimensional Drawings, Consult Factory

### 150# Strainer Dimensions for 6" Cast Body Strainer



## 150# Strainer Dimensions

Size	Strainer Dimensions													
	A		B		C		D		E		F		G	
BCBS	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
3"	3.00	76.20	15.72	399.29	7.86	199.64	16.95	430.78	11.09	281.69	7.38	187.45	30	762
4"	4.00	101.60	15.12	383.92	7.56	191.97	17.12	434.72	11.20	284.48	7.38	187.40	30	762
6"	6.00	152.40	22.75	577.85	11.38	288.93	22.56	573.02	16.97	430.91	12.75	323.85	30	762

Size	Weight		Dimensions	
	Pounds	Kilogram	Cubic Ft	Cubic m
3"	90	41	2.75	0.078
4"	101	46	2.75	0.078
6"	290	131	7.38	0.209

Size	Drain Plug	
	in.	mm
3"	1	25.4
4"	1	25.4
6"	1	25.4

## Strainer Screen Data

Size	Available Screens				Pipe Line		Ratio		
	BCBS	Mesh of Screen*	Screen Area Sq. In.	Percent Open Area**	Open Area Sq.	Size	Area Sq. In.	Total Area to Pipe Area	Open Area to Pipe Area
3"		20	113	46.2	52.2	3"	7.393	15.3:1	7.1:1
		40		38.4	43.4				5.9:1
		60		30.5	34.5				4.7:1
4"		20	113	46.2	52.2	4"	12.73	8.9:1	4.1:1
		40		38.4	43.4				3.4:1
		60		30.5	34.5				2.7:1
6"		20	314	46.2	145.1	6"	28.89	10.9:1	5.0:1
		40		38.4	120.6				4.2:1
		60		30.5	95.8				3.3:1

### NOTES:

\*Screen mesh as shown in chart above is standard. Other meshes are available.

\*\*Percent open area for some special screens is as follows:

10 Mesh - 46.2%

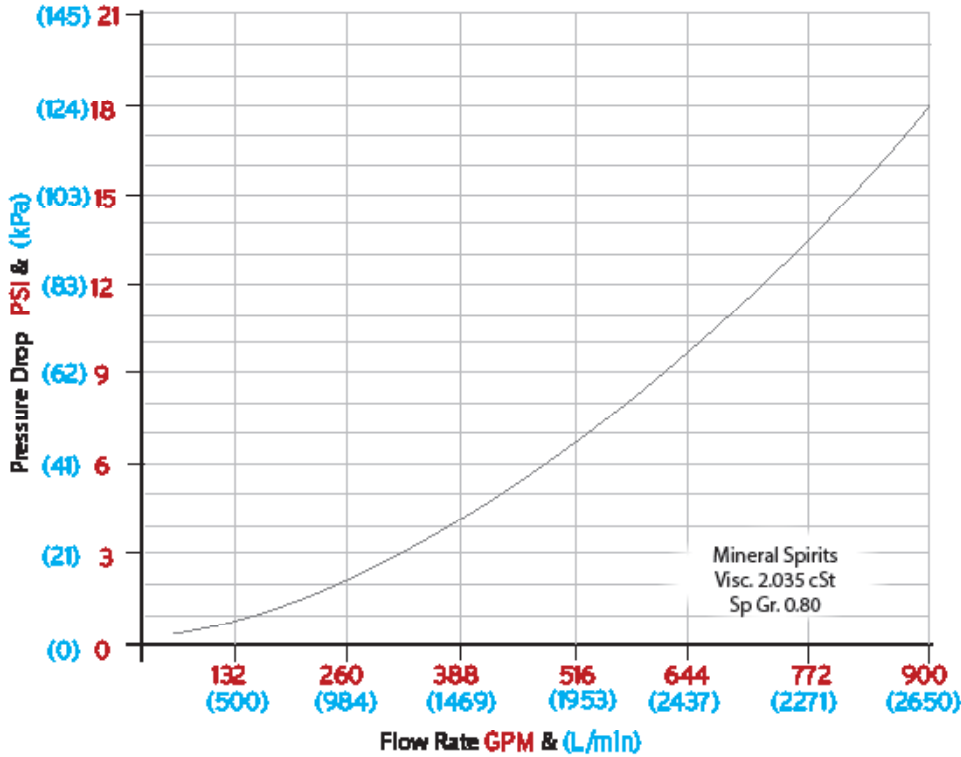
100 Mesh - 30.3%

Percent open area depends on wire size and may vary slightly.

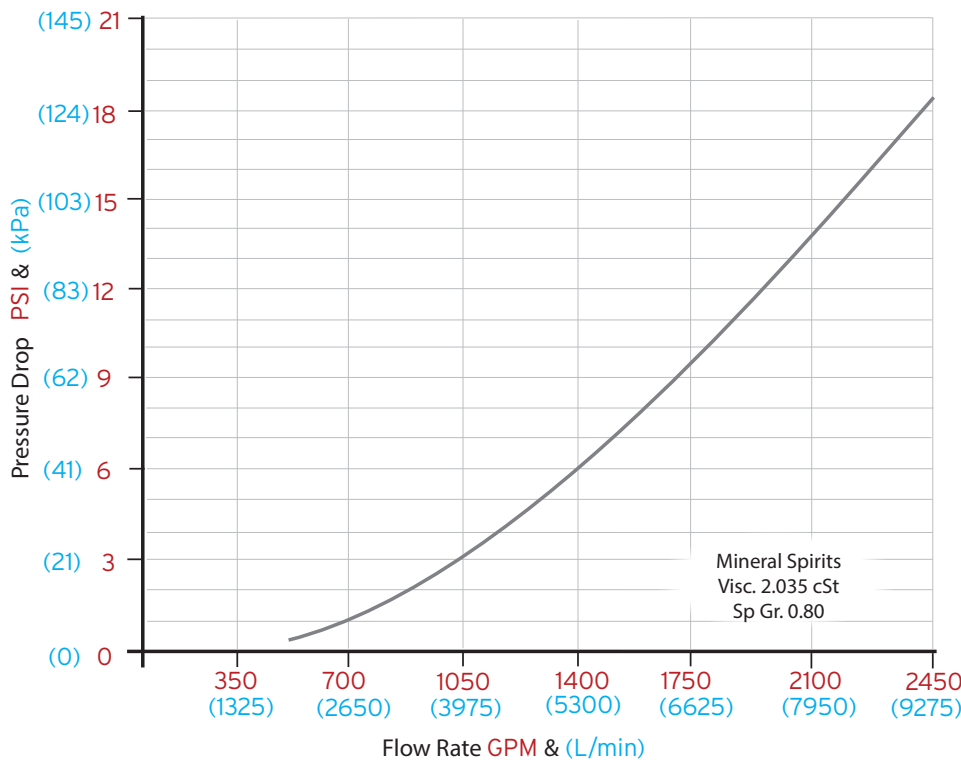
Screen material for all strainers is 304 stainless steel.

## Pressure Drop

3" and 4" Strainer (40 Mesh, 0% clogged)



6" Strainer (40 Mesh, 0% clogged)



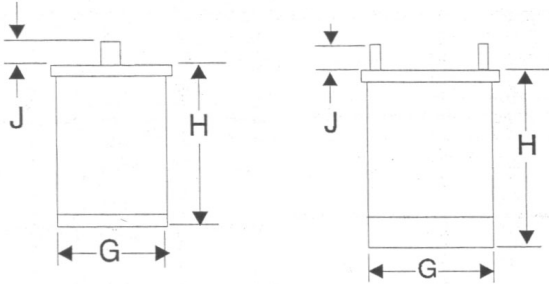
To convert pressure drop value to the actual process fluid, use the following equation:

$$\Delta PA = (cPA)^{0.25} * (SGA)^{0.75} * \Delta Pm$$

$\Delta PA$  = Pressure Drop on Actual Fluid in PSI  
 $cPA$  = Viscosity of Actual Fluid in cP  
 $SGA$  = Density of Actual Fluid in SG  
 $\Delta Pm$  = Pressure Drop on Mineral Spirits  
 Specific Gravity = 0.80  
 Visc. = 2.035 cSt Mineral Spirits

## Strainer Baskets

To be efficient, strainer baskets must be kept clean. A buildup of sediment increases pressure drop and decreases flow. If a basket is allowed to become completely clogged, damage will result. A regular procedure should be set up for cleaning strainer baskets-the frequency depending on amount and character of foreign material in the stream. It is advisable to keep a spare basket (or inner screen) on hand.



### Recommended Screen Mesh For Various Liquids:

Product	Strainer Mesh
Gasoline and Similar Liquids	60 or 80
Jet-A, Kerosene, JP4, JP5, JP8	60
Diesel Oil, #2 Fuel Oil, etc	40 or 60
Heating Oils: No. 5 or No 6, etc.	20

Size	Basket Dimensions					
	G		H		J	
	in.	mm	in.	mm	in.	mm
3" BCBS	5 1/4	133.4	8 3/4	222.3	3 7/8	98.42
4" BCBS	5 1/4	133.4	8 3/4	222.3	3 7/8	98.42
6" BCBS	9 1/2	241.3	13	330.2	2	50.8

### NOTE:

Do not operate this instrument in excess of the specifications listed. Failure to heed this warning could result in serious injury and/or damage to the equipment.

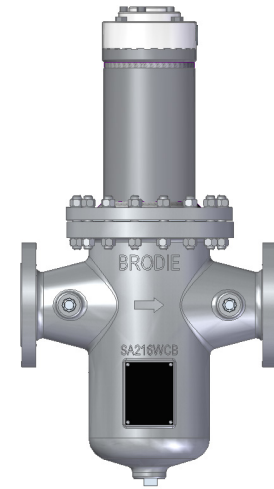
### Brodie International

P.O. Box 450 (30459-0450)  
 19267 Highway 301 North  
 Statesboro, GA 30461  
 USA

Phone: +1 (912) 489-0200  
 Fax: +1 (912) 489-0294

## SC Air Eliminator Option

AVAILABLE FOR BSBS SIZES 3"-6"



### General

The SC Air Eliminator can be mounted to the cover of BCBS strainers to allow for venting of unwanted gasses and vapors. The air eliminator is designed to work in every condition the BCBS is designed for. The body is made of a stainless steel construction to reach a minimum working temperature of -50 F

### Design Features

- Low maintenance
- NPT connection for venting
- Removes entrapped air from process fluid

### Materials of Construction

- Housings: Stainless Steel ASTM 479 GR 304
- Mounting Hex Bolt:

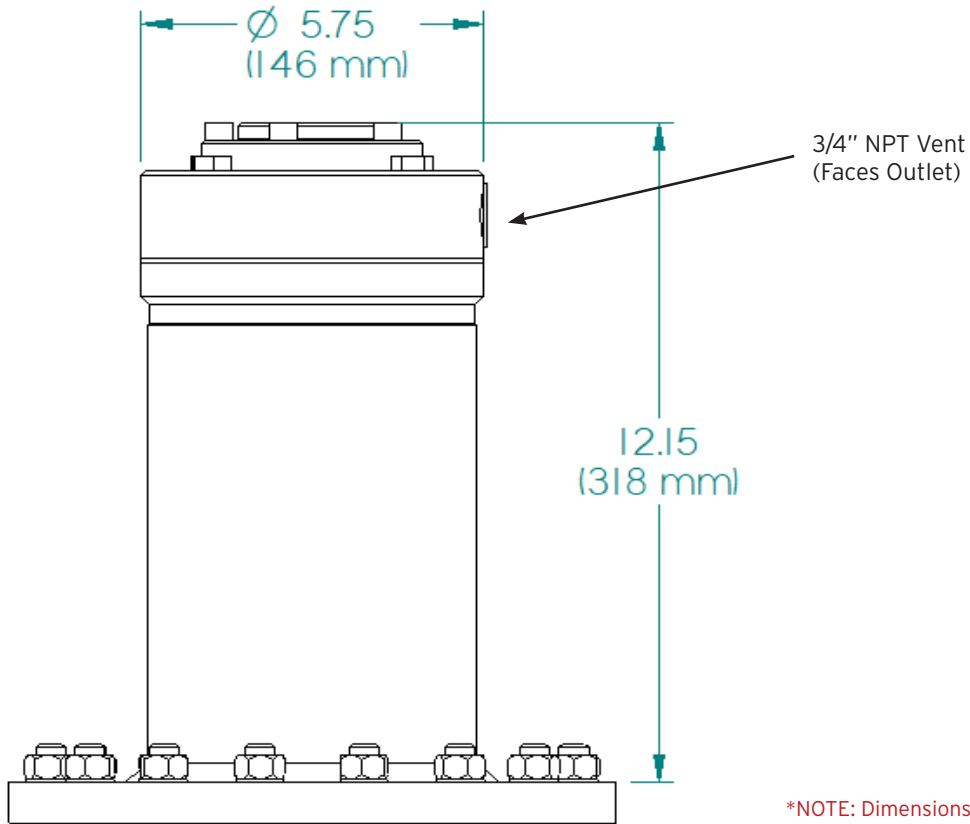
Standard Temperature	Low Temperature
A449 GR5	A320 G8

- ECO (Epichlorohydrin) or FFKM (Perfluoroelastomer) gaskets and o-rings

### Specifications

- Maximum Working Pressure dependant on float size.  
Regular float: 265 PSIG (1827 kPa) at 100°F (38°C)  
Heavy duty float: 698 PSIG (4812 kPa) at 100°F (38°C)
- Body designed in accordance with ASME BPVC 8.1
- 3/4" Vent Size
- NACE MR0175/ISO 15156 Compliant

150# Strainer Dimensions for 3" & 4" Cast Body Strainer



\*NOTE: Dimensions are the same for all strainer sizes. For Dimensional Drawings, Consult Factory

## SC Air Eliminator Data

Air Release Rate of SC Air Eliminators

