

**Smith Meter® In-Line Strainers** are necessary to provide protection for metering systems against dirt and other foreign material. Strainers are available in straight-thru (2"-8") and angle type (4" and 6").

#### Standard Features

- Removable basket for easy cleaning.
- Meets design requirements of ASME B31.3.
- NACE MR-01-75 compliance for products with hydrogen sulfide concentrations.
- 0.50" NPT differential pressure taps on the nozzles.
- 1.50" NPT Cover vent connection to mount Air Release Kit for static air elimination.
- ASME B16.5 Raised Face Flange standard.
- Horizontal or vertical operation.
- Basket Seal.

#### Optional Features

- Air Release Kits.
- Basket Differential Pressure Gauge Kit with isolation valves to monitor basket cleanliness.
- ΔP Gauge Reed Type Switch Kit, adjustable from 0–30 psi (0–207 kPa) for remote indication.

*Note: For other strainers/options, consult Specification Bulletin No. SS03038.*

#### Operating Specifications

##### Maximum Strainer Working Pressure

| Flange Class | Working Pressure <sup>1</sup><br>psi (kPa) |
|--------------|--|
| 150          | 285 (1,965)                                |
| 300          | 740 (5,102)                                |

##### Basket Burst Pressure

50 psi differential.

##### Temperature Range

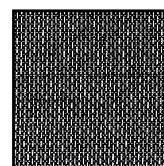
| Seal Material | Range                           |
|---------------|---------------------------------|
| Garlock       | -20°F to 400°F (-29°C to 204°C) |



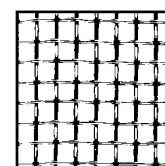
Model S4-1-ST Strainer

|                        | Opening Size<br>Inches (mm) | Percent Open Area Through<br>Inner and Outer Baskets |
|------------------------|-----------------------------|--|
| <b>Permanent Liner</b> |                             |  |
| 40 (Std.)              | 0.015 (0.38)                | 25.9%  |
| 10                     | 0.075 (1.91)                | 40.5%  |
| 20                     | 0.036 (0.91)                | 37.3%  |
| 60                     | 0.0082 (0.21)               | 24.2%  |
| 80                     | 0.007 (0.18)                | 22.6%  |
| <b>No Liner</b>        |                             |  |
| Perforated Plate       | 0.125 (3.17)                | 40.0%  |

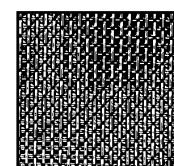
(Screens shown actual size.)



40 Mesh



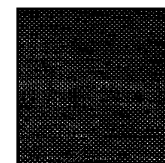
10 Mesh



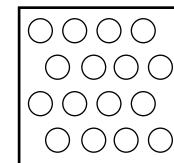
20 Mesh



60 Mesh



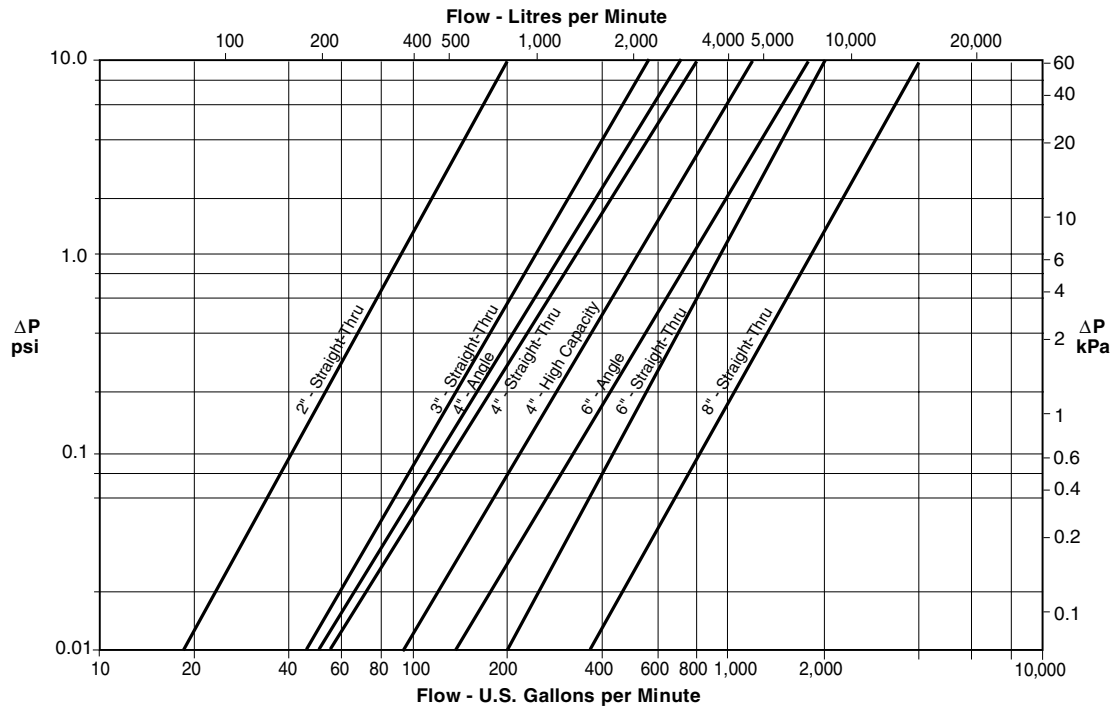
80 Mesh



Perforated Plate

<sup>1</sup> Maximum working pressures are for temperatures of -20°F to 100°F (-28°C to 38°C). Operating temperatures above 100°F (38°C) affect allowable working pressures. Consult factory for allowable working pressures at required operating temperature.

## Pressure Drop with 40 Mesh Liner



To approximate pressure drop for strainers with other than 40 mesh baskets, multiply chart reading by the appropriate factor.

| Mesh             | Factor |
|------------------|--------|
| Perforated Plate | .65    |
| 10               | .75    |
| 20               | .85    |
| 60               | 1.11   |
| 80               | 1.25   |

## Materials of Construction

|                                |                     |
|--------------------------------|---------------------|
| <b>Housing:</b>                | Carbon Steel        |
| <b>Flanges:</b>                | Carbon Steel        |
| <b>Basket/Liner:</b>           | 304 Stainless Steel |
| <b>Cover and Basket Seals:</b> | Non-Asbestos Gasket |

## Body Style

| Standard      |               | High Capacity |                           |
|---------------|---------------|---------------|---------------------------|
| Strainer Size | Body Diameter | Strainer Size | Body Diameter             |
| 2"            | 4"            | 4"            | 10" (150 ANSI Class Only) |
| 3"            | 6"            |               |                           |
| 4"            | 6"            |               |                           |
| 6"            | 10"           |               |                           |
| 8"            | 12"           |               |                           |

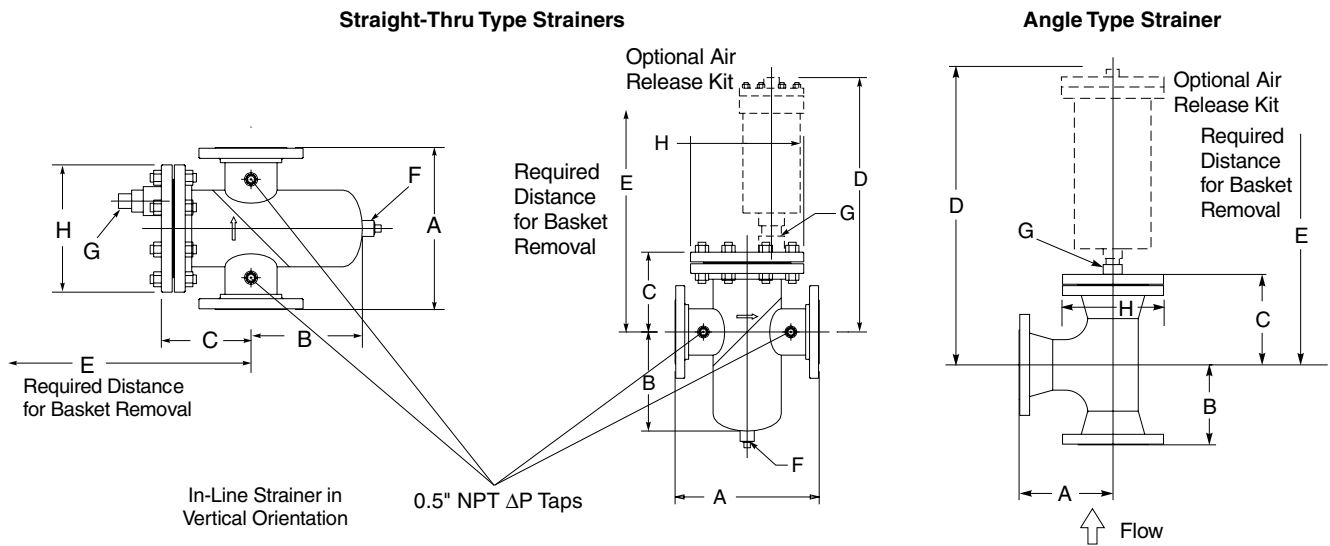
## Maximum Working Pressure of Air Release Kits

| Kit     | Working Pressure <sup>2</sup><br>psi (kPa) | Seals              | Materials of Construction   |
|---------|--|--------------------|---|
| RB-Type | 285 psi @ 100°F<br>(1,965 kPa @ 38°C)      | Buna-N, Viton, LSB | Housing: Carbon Steel; Float: Stainless Steel;<br>Internal Parts: Aluminum, Carbon Steel, Stainless Steel |
| UB-Type | 740 psi @ 100°F<br>(5,102 kPa @ 38°C)      | Chemraz            | Housing: Carbon Steel; Float: Stainless Steel;<br>Internal Parts: Carbon Steel, Stainless Steel           |

<sup>2</sup> Maximum working pressures are for temperatures of -20°F to 100°F (-28°C to 38°C).

# Dimensions and Weights

Inches (mm) and Pounds/kg



| Model                               | Inlet-Outlet Flange Size & Class | Dimensions |            |            |            |             |               |              |            | Weight |       |
|-------------------------------------|----------------------------------|------------|------------|------------|------------|-------------|---------------|--------------|------------|--------|-------|
|                                     |                                  | A          | B          | C          | D          | E           | Drain F (NPT) | Vent G (NPT) | H          | Lb     | Kg    |
| <b>Straight-Thru Type Strainers</b> |                                  |            |            |            |            |             |               |              |            |        |       |
| S2-1-ST                             | 2" 150 RF                        | 10.0 (254) | 8.9 (226)  | 6.0 (152)  | 23.0 (584) | 20.9 (531)  | 0.75          | 1.50         | 9.0 (229)  | 60     | 27.2  |
| S2-3-ST                             | 2" 300 RF                        | 13.6 (345) | 8.9 (226)  | 6.0 (152)  | 23.0 (584) | 20.9 (531)  | 0.75          | 1.50         | 10.0 (254) | 85     | 38.6  |
| S3-1-ST                             | 3" 150 RF                        | 13.5 (343) | 11.6 (295) | 7.5 (190)  | 24.5 (622) | 26.6 (676)  | 0.75          | 1.50         | 11.0 (279) | 85     | 38.6  |
| S3-3-ST                             | 3" 300 RF                        | 20.9 (531) | 11.0 (279) | 7.6 (194)  | 24.6 (625) | 26.2 (665)  | 0.75          | 1.50         | 12.5 (318) | 120    | 54.4  |
| S4-1-ST                             | 4" 150 RF                        | 14.0 (356) | 10.6 (269) | 7.3 (184)  | 24.3 (617) | 25.2 (640)  | 0.75          | 1.50         | 11.0 (279) | 100    | 45.4  |
| S4-3-ST                             | 4" 300 RF                        | 18.4 (467) | 11.3 (287) | 7.6 (194)  | 24.6 (625) | 26.5 (673)  | 0.75          | 1.50         | 12.5 (318) | 140    | 63.5  |
| S4-1-HC                             | 4" 150 RF                        | 22.6 (574) | 15.9 (406) | 11.0 (279) | 28.0 (711) | 37.9 (963)  | 1.25          | 1.50         | 16.0 (406) | 250    | 113.4 |
| S6-1-ST                             | 6" 150 RF                        | 23.4 (594) | 15.9 (406) | 11.0 (279) | 28.0 (711) | 37.9 (963)  | 1.25          | 1.50         | 16.0 (406) | 275    | 124.7 |
| S6-3-ST                             | 6" 300 RF                        | 29.6 (752) | 16.8 (427) | 16.0 (406) | 33.0 (838) | 48.8 (1240) | 1.25          | 1.50         | 17.5 (444) | 470    | 213.2 |
| S8-1-ST                             | 8" 150 RF                        | 27.1 (688) | 23.3 (592) | 14.0 (356) | 31.0 (787) | 51.3 (1303) | 1.25          | 1.50         | 19.0 (483) | 430    | 195.0 |
| S8-3-ST                             | 8" 300 RF                        | 32.8 (833) | 21.5 (546) | 15.3 (389) | 32.3 (821) | 52.1 (1323) | 1.25          | 1.50         | 20.5 (521) | 700    | 317.5 |
| <b>Angle Type Strainers</b>         |                                  |            |            |            |            |             |               |              |            |        |       |
| A4-1-ST                             | 4" 150 RF                        | 7.1 (180)  | 7.1 (180)  | 8.1 (206)  | 24.1 (612) | 18.4 (467)  | N/A           | 1.50         | 9.0 (229)  | 79     | 36    |
| A6-1-ST                             | 6" 150 RF                        | 9.1 (231)  | 9.1 (231)  | 10.1 (257) | 26.1 (663) | 23.7 (602)  | N/A           | 1.50         | 11.0 (279) | 140    | 64    |

**Note:** Dimensions – Inches to the nearest tenth (millimeters to the nearest whole mm), each independently dimensioned from respective engineering drawings. Add 47.0 Lb (21.3 Kg) if Air Release Kit is used.

# Modeling

Example: **S2** — **1** — **ST** — **N** — **40** — **00** — **0**

## Type/Flange Size

### Straight-Thru Type

**S2** - 2" **S6** - 6"

**S3** - 3" **S8** - 8"

**S4** - 4"

### Angle Type

**A4** - 4"

**A6** - 6"

### ANSI Flange Class/Max. Working Pressure @ 100° F (38° C)

**1** - Class 150 RF / 285 psi

**3** - Class 300 RF / 740 psi

**A** - PN 10

**B** - PN 16

### Body Style

**ST** - Standard

**HC** - High Capacity (4" only)

### Special Requirements

**N** - None

**C** - CRN

**F** - FIC 3

**P** - PWHT (Post Weld Heat Treat)

**1** - CRN + FIC 3

**2** - FIC3 and Penetrant Testing

## Differential Pressure Gauge/Switch

**0** - Pressure Taps Only (Standard)

**G** - Differential Pressure Gauge

**S** - Differential Pressure Gauge and Switch

## Vent / Air Release

**00** - Plugged NPT Vent Port (Standard)

**R1** - RB Head w/ Buna-N Seals (300 psig)

**R2** - RB Head w/ Viton Seals (300 psig)

**U1** - UB Head w/ Viton Seals (720 psig)

**U2** - UB Head w/ Chemraz Seals (720 psig)

**U3** - UB Head w/ Viton Seals (300 psig)

**U4** - UB Head w/ Chemraz Seals (300 psig)

## Basket

**40** - Basket with 40 Mesh Liner\* (Standard)

**10** - Basket with 10 Mesh Liner\*

**20** - Basket with 20 Mesh Liner\*

**60** - Basket with 60 Mesh Liner\*

**80** - Basket with 80 Mesh Liner\*

**PP** - 304 SS Perforated Plate - No Liner

**S** - Special

\* Permanent 304 SS Liner

Revisions included in SS03039 Issue/Rev. 0.7 (1/11):

Page 1: Teflon elastomer removed; temp. range updated.

Page 4: Modeling updated - FIC3 and Penetrant Testing added.

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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