

SOLBERG® S-ZF BETWEEN FLANGE INDUCTORS

FEATURES

- Fixed between-flange installation
- High back pressure
- High suction height
- Can be customized to handle various flow rates
- Compatible with alcohol resistant foam concentrates

DESCRIPTION

The SOLBERG S-ZF Inductor is used to mix foam concentrate with water when the foam concentrate is supplied from a tank at atmospheric pressure. The S-ZF inductor can be installed in deluge systems where sprinklers are used, such as aircraft hangars and storage facilities. The inductor(s) are connected to the water line.

APPLICATION

The S-ZF inductor can be installed in all fixed flow systems, especially in areas where deluge nozzles are used such as storage facilities and aircraft hangars.

OPERATION/INSTALLATION

The S-ZF is installed inside the pipe work between two flanges. The S-ZF works using the venturi principle (i.e., foam concentrate is sucked into the inductor without using a foam pump). Both low and high viscosity foam concentrates can be used in conjunction with the S-ZF. Depending on the requested flow, pressure, foam concentrate type and proportioning ratio, the inductor will be equipped with the exact orifice at the entry of the foam pipe.



Induction performance and suction height can be adjusted up to a physical limit of approximately 26.0' (8.0 m). To ensure correct proportioning over the designed flow range of the inductor, the minimum water inlet pressure shall be 58 psi (4 bar) during operation of the system.

Note: review inductor dimension tables for information on the minimum recommended length of straight pipe required upstream and downstream from the controller.

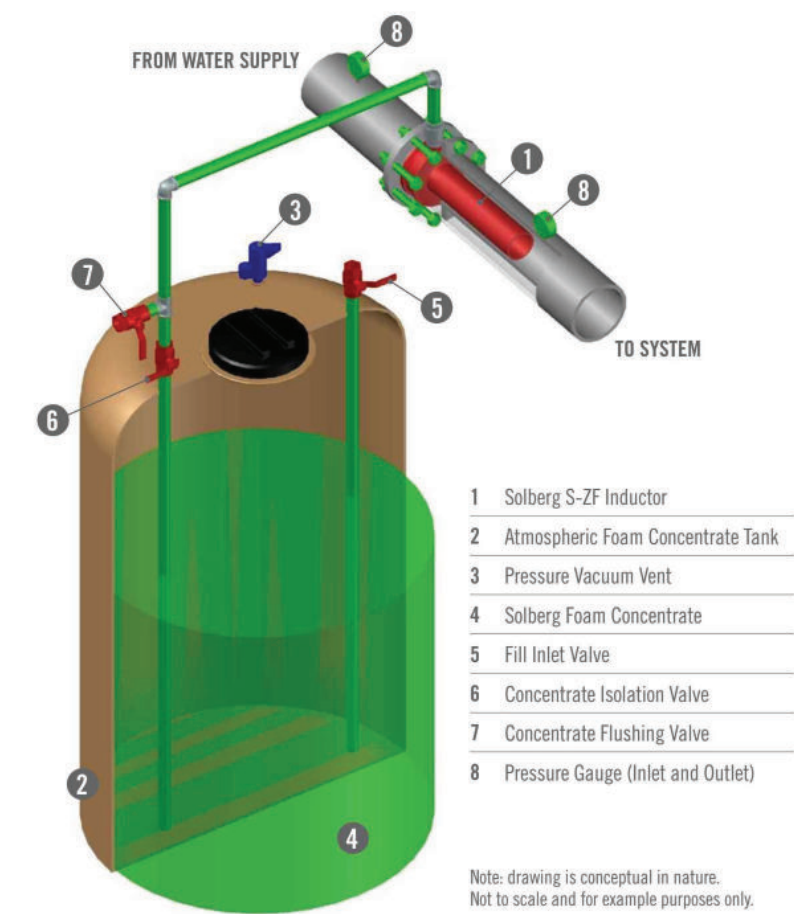
OPTIONAL

SOLBERG S-ZF inductor can be customized to handle a variety of flow rates as well as high viscous alcohol resistant concentrates.

INDUCTORS WITHOUT BALANCING VALVE

To obtain a 34% pressure drop over the inductor and get the inductors proper function, the system after the inductor shall have a K-factor which is 27% higher than the K-factor of the inductor when using a 3% foam concentrate and 30.5 % higher when using a 6% foam concentrate. If the K-factor, on the system after the inductor, is less than 1.22 x the K-factor of the inductor, the suction ceases completely.

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ORIFICE CALCULATION

$$\frac{(Q_v + Q_s) \sqrt{H}}{Q_v \sqrt{0.66 H}} = A$$

Qs = 1 %, 3% or 6%

Qv = Water flow

Qs = Foam Concentrate flow

H = Water pressure before the inductor

A = Orifice diameter

ORDER REQUIREMENTS

Each inductor is factory calibrated to match the specific system requirements. To ensure that the correct performance is achieved, the following parameters must be defined at time of order placement:

- Inlet pressure
- Total system flow
- Foam type & viscosity
- Mixing percentage
- Suction height
- Horizontal suction pipe length

ORDERING INFORMATION

S-ZF BETWEEN FLANGE INDUCTORS		APPROXIMATE SHIPPING WEIGHT	
PART NO.	DESCRIPTION	lb	kg
30220	S-ZF Between Flange Inductor, 1.5" (DN40)	7	3
30221	S-ZF Between Flange Inductor, 2.0" (DN50)	9	4
30222	S-ZF Between Flange Inductor, 2.5" (DN65)	9	4
30223	S-ZF Between Flange Inductor, 3.0" (DN80)	14	6
30224	S-ZF Between Flange Inductor, 4.0" (DN100)	16	7
30225	S-ZF Between Flange Inductor, 6.0" (DN150)	47	21
30226	S-ZF Between Flange Inductor, 8.0" (DN200)	89	40
30227	S-ZF Between Flange Inductor, 8.0"-S (DN201)	102	46

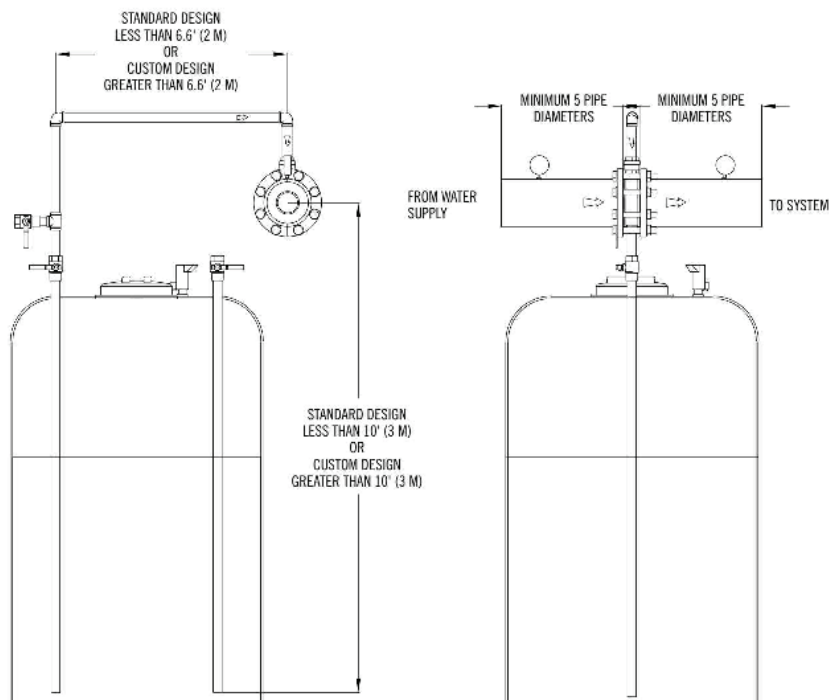
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INDUCTOR SPECIFICATIONS

Part Number	30220	30221	30222	30223	30224	30225	30226	30227
Size	1.5"	2.0"	2.5"	3.0"	4.0"	6.0"	8.0"	8.0"-S
Max Flow Rate gpm (lpm)	127 (480)	265 (1000)	423 (1600)	529 (2000)	872 (3300)	1744 (6600)	2616 (9900)	4359 (16500)
Min Flow rate gpm (lpm)	22 (80)	32 (120)	64 (240)	96 (360)	146 (550)	291 (1100)	436 (1650)	436 (1650)
Max Inlet pressure psi (bar)	233 (16)	233 (16)	233 (16)	233 (16)	233 (16)	233 (16)	233 (16)	233 (16)
Min Inlet pressure psi (bar)	59 (4)	59 (4)	59 (4)	59 (4)	59 (4)	59 (4)	59 (4)	59 (4)
Pressure drop	35%	35%	35%	35%	35%	35%	35%	35%
K Factor gpm (lpm)	2.9-8.4 (40-120)	4.2-17.4 (60-180)	8.4-27.8 (120-400)	12.5-34.7 (180-500)	19.1-57.2 (275-1000)	37.9-114.3 (550-2000)	56.8-171.4 (825-3000)	56.8-285.6 (1375-5000)
Proportioning rate	1, 3 or 6%	1, 3 or 6%	1, 3 or 6%	1, 3 or 6%	1, 3 or 6%	1, 3 or 6%	1, 3 or 6%	1, 3 or 6%
Suction height (max)	10' (3 m)	10' (3 m)	10' (3 m)	10' (3 m)	10' (3 m)	10' (3 m)	10' (3 m)	10' (3 m)
Flange type PN16*	1.5" (DN40)	2" (DN50)	2.5" (DN65)	3" (DN80)	4" (DN100)	6" (DN150)	8" (DN200)	8" (DN201)
Pipe length up & down stream	5x0	5x0	5x0	5x0	5x0	5x0	5x0	5x0
Weight lbs (kg)	7 (3)	9 (4)	9 (4)	14 (6)	16 (7)	47 (21)	89 (40)	102 (46)
Material	Bronze	Bronze	Bronze	Bronze	Bronze	Bronze	Bronze	Bronze

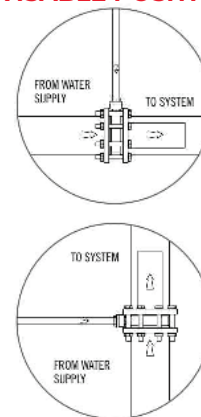
* 4.0" to 8.0" size flange fits ANSI #150 but 1.5", 2.0", 2.5" and 3.0" needs machining to fit

TYPICAL DESIGN LAYOUT



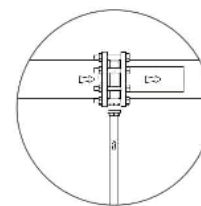
Note: drawing is conceptual in nature. Not to scale and for example purposes only.

ADVISABLE POSITIONS



NON-ADVISED POSITION

(Dirt can collect on the check valve in this position)

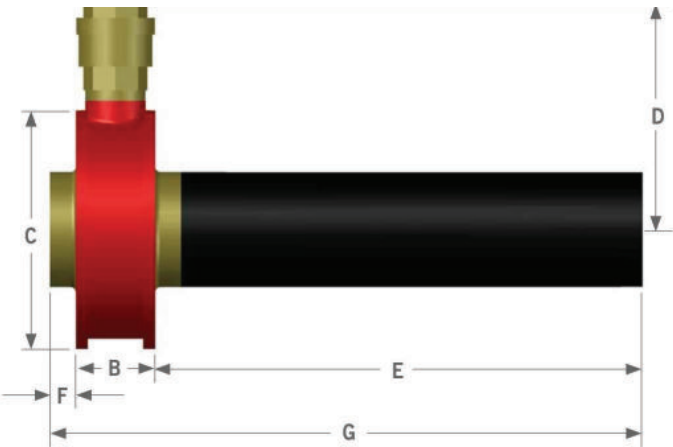


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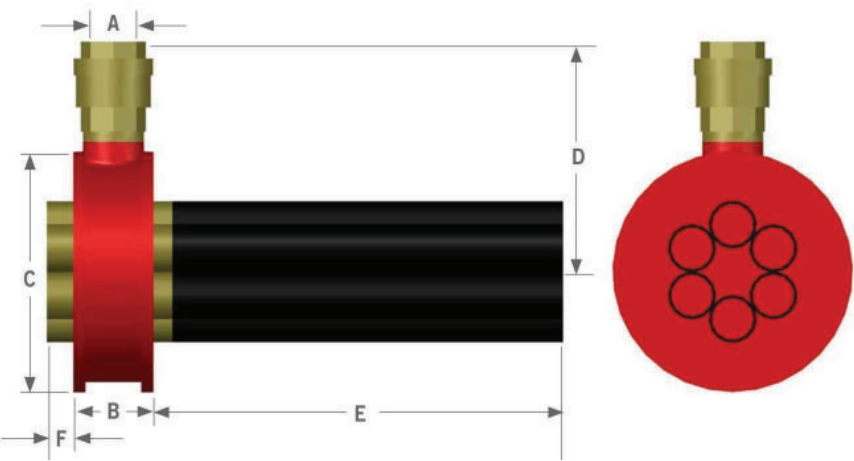
DIMENSIONAL INFORMATION

APPROXIMATE DIMENSIONS Inches (Millimeters)								
Part Number	30220	30221	30222	30223	30224	30225	30226	30226
Foam inlet (A)	3/4"	3/4"	1"	1"	1½"	2"	2½"	2½"
Between Flange Proportions (B)	1.5 (38)	1.5 (38)	1.8 (45)	2.1 (52)	2.3 (58)	2.8 (70)	3.4 (85)	3.4 (85)
Body size (C)	3.6 (91)	4.2 (106)	5 (126)	5.7 (143)	6.3 (160)	8.5 (215)	10.7 (270)	10.7 (270)
Height (D)	4.5 (112)	4.8 (120)	5.4 (137)	5.9 (148)	7.4 (187)	9.1 (230)	13.4 (340)	13.4 (340)
Length (E)	8.8 (223)	8.8 (223)	14.2 (360)	14.2 (360)	13.6 (343)	13.2 (335)	13 (330)	13 (330)
Length (F)	0.5 (12)	0.5 (12)	0.6 (15)	0.4 (9)	0.8 (20)	1 (25)	0.8 (20)	0.8 (20)
Total Length (G)	10.8 (273)	10.8 (273)	16.6 (420)	16.6 (421)	16.6 (421)	17 (430)	17.2 (435)	17.2 (435)

SINGLE BARREL



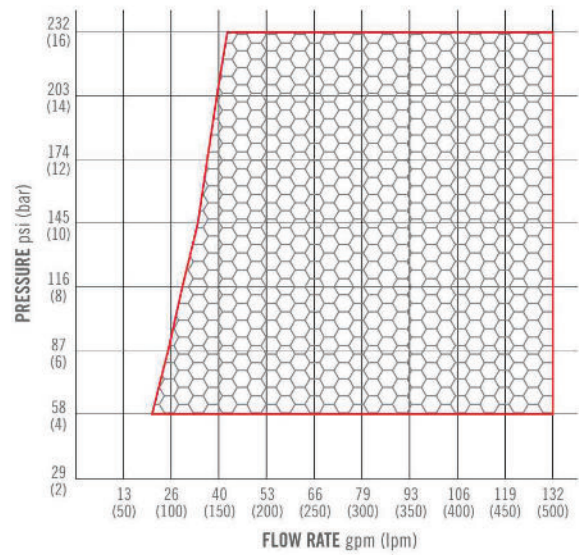
MULTIPLE BARREL



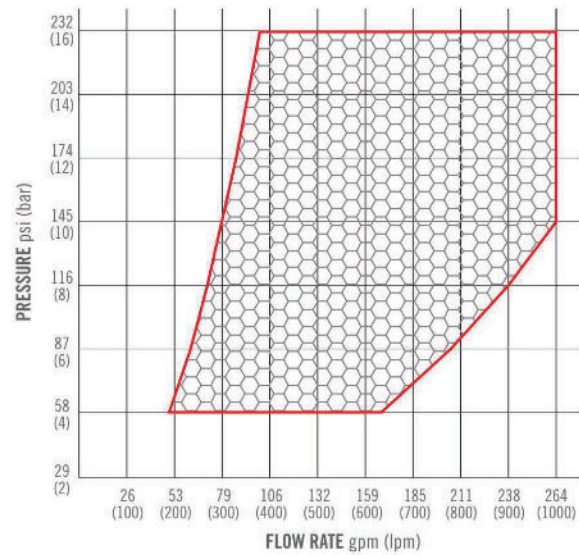
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PRESSURE LOSS CURVES

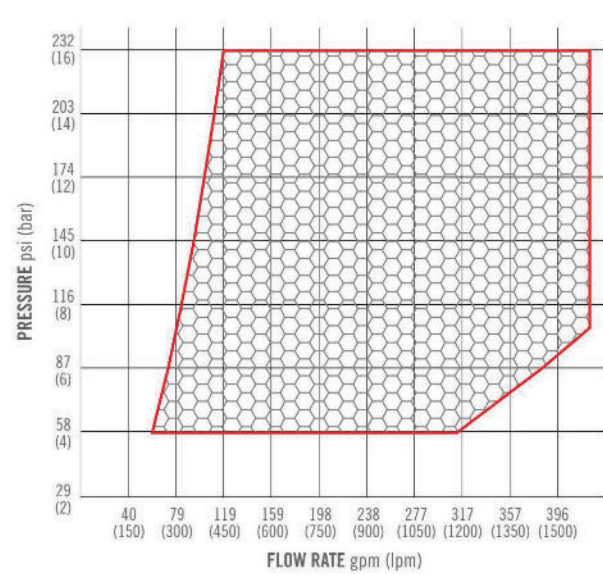
S-ZF 1.5"



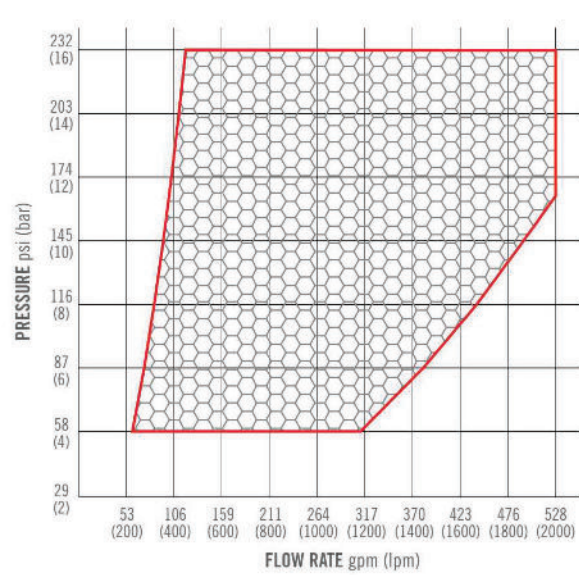
S-ZF 2.0"



S-ZF 2.5"



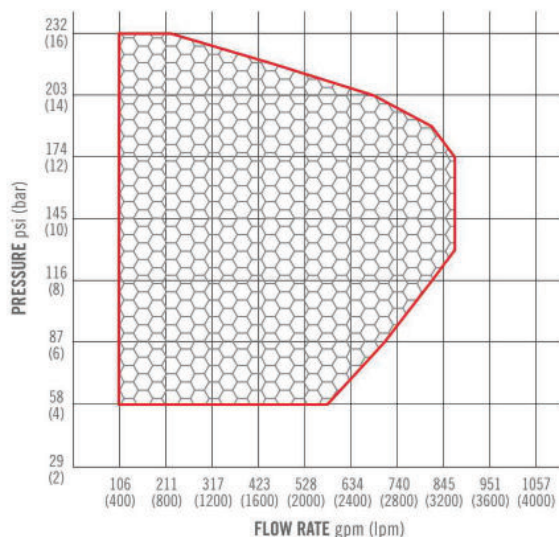
S-ZF 3.0"



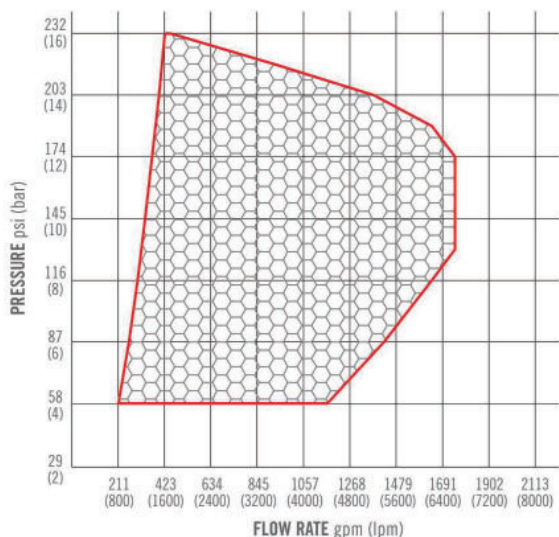
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PRESSURE LOSS CURVES

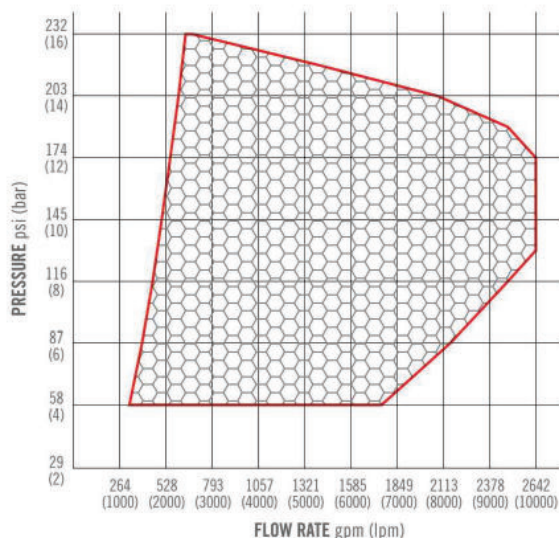
S-ZF 4.0"



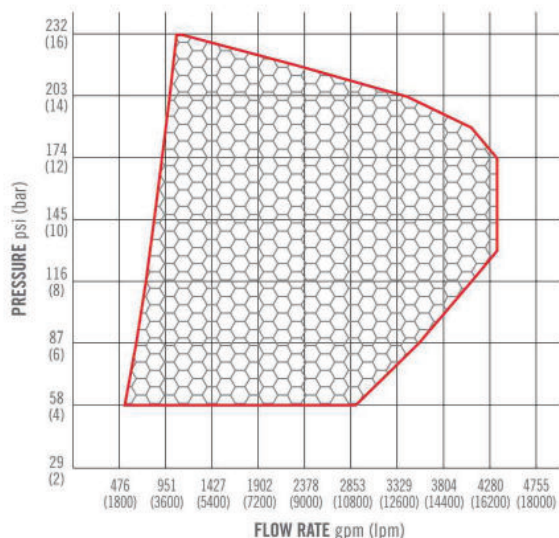
S-ZF 6.0"



S-ZF 8.0"



S-ZF 8.0" S



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FOR MORE INFORMATION

Contact any of our worldwide Perimeter Solutions Fire Safety offices or visit:

www.Perimeter-Solutions.com

UNITED STATES

10667 Jersey Blvd.
Rancho Cucamonga, CA 91730

Tel: +1 800 682 3626

Tel: +1 909 983 0772

salesfoamusa@perimeter-solutions.com

EMEA

Polígono de Baiña, Parcela 23
33682 Mieres (Asturias)

Spain

Tel: +34 985 24 29 45

salesfoamemea@perimeter-solutions.com

ASIA PACIFIC

3 Charles Street
St Marys NSW 2760 – Australia

Tel: +61 2 9673 5300

salesfoamapac@perimeter-solutions.com

perimeter-solutions.com

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