



TECHNICAL DATA

FOAM CHAMBERS MODEL FC

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

Visit the Viking website for the latest edition of this technical data page: www.vikinggroupinc.com

1. DESCRIPTION

The Chemguard Model FC 90, 170, 330 & 550 Foam Chambers consist of a foam expansion chamber and an integral foam maker. The foam chamber is installed on a flammable liquid storage tank just below the roof joint. The foam solution is piped to the chamber from outside the hazard area. Upon entering the chamber, the foam solution is expanded and then discharged against a deflector inside the storage tank. The deflector directs the foam against the inside wall of the storage tank. This reduces the submergence of the foam and agitation of the fuel surface. (NFPA Type II Application)

Features

- (4) models available to cover all flow requirements
- Hinged hatch with locking bolts for inspection and maintenance
- PTFE vapor seal is provided. The glass is scored on one side and designed to break at a minimum 10 psi but not greater than 25 psi.
- Option of carbon steel or 304 stainless steel construction
- All foam chamber inlets and outlets are flat or raised faced and drilled to ANSI 150 lb. standard. Flange gaskets are provided.
- Choice of two styles of deflector is available (split or solid)
- Finished with corrosion resistant epoxy paint
- A stainless steel inlet orifice is supplied. Chemguard sizes the orifice based on the foam solution flow requirements and the foam solution inlet pressure available at the base of the foam chamber.



2. LISTINGS AND APPROVALS

UL Listed

3. TECHNICAL DATA

Specifications:

See Table 1

Material Standards:

Chamber - ASTM A36 Carbon Steel

Screen - 304 stainless steel

Inlet Orifice - Stainless Steel

Ordering Information:

Table 1: Foam Chamber Specifications

Model	Flow (GPM)	Part No.	Weight
CGFC-90	49-151	F20640	60 lbs.
CGFC-170	94-279	F20644	100 lbs.
CGFC-330	183-610	F20648	145 lbs.
CGFC-550	350-980	F20652	270 lbs.

When placing a Foam Chamber Order, you must provide the Starting Pressure and desired Flow Rate. A properly sized orifice will be made to order and installed in the Foam Chamber.

4. INSTALLATION

Foam chambers are compatible with all types of foam concentrate; protein, fluoroprotein, AFFF, and AR-AFFF. They are generally installed on the side wall of vertical storage tanks above the maximum product level. Piping coupled to the unit can be linked to a fixed foam proportioning system, or terminated a safe distance from the tank, where foam solution can be delivered via mobile fire apparatus or portable foam proportioning equipment.

Determining Orifice Size

After determining the required foam flow rate and available pressure, the orifice must be sized using the following formula:

$$d = \left(\frac{Q}{29.836 k P^{1/2}} \right)^{1/2}$$

Where:
d = orifice Ø (in.)
Q = Solution Flow Rate (GPM)
P = Pressure at orifice inlet (PSI)
k = Orifice Coefficient = 0.61



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Table 2: Accessories

Model	K-factor Range	Flow:	Part No.	Description	Weight
CGFC-90	7.8 to 15.1	26-187 GPM	F20642	Solid Deflector	5 lbs.
			F20641	Split Deflector	5 lbs.
			F20642	Mounting Pad	15 lbs.
			F20656	Spare Vapor Seal Assembly	0.5 lbs.
CGFC-170	14.9 to 27.9	82-309 GPM	F20646	Solid Deflector	10 lbs.
			F20645	Split Deflector	10 lbs.
			F20647	Mounting Pad	20 lbs.
			F20657	Spare Vapor Seal Assembly	0.5 lbs.
CGFC-330	28.9 to 61.0	130-737 GPM	F20650	Solid Deflector	20 lbs.
			F20649	Split Deflector	20 lbs.
			F20651	Mounting Pad	35 lbs.
			F20658	Spare Vapor Seal Assembly	0.5 lbs.
CGFC-550	55.3 to 98.0	329-1120 GPM	F20654	Solid Deflector	30 lbs.
			F20653	Split Deflector	30 lbs.
			F20655	Mounting Pad	50 lbs.
			F20659	Spare Vapor Seal Assembly	0.5 lbs.

5. OPERATION

The Model FC Foam Chambers produce foam by introducing air into the foam solution stream. Foam solution can be delivered to the foam chamber in a variety of ways as previously noted. Air is drawn into the foam maker through a series of annular holes located around the integral foam maker. To prevent obstruction, the air inlet holes are protected by a stainless steel screen selected with a perforation size designed to exclude most known nesting birds and insects. The open area of the screen is designed to be not less than the total area of the foam maker air inlet holes.

6. INSPECTIONS, TESTS AND MAINTENANCE

NOTICE

The owner is responsible for maintaining the fire protection system and devices in proper operating condition. For minimum maintenance and inspection requirements, refer to recognized standards such as those produced by NFPA, LPC, and VdS which describe care and maintenance of sprinkler systems. In addition, the "Authority Having Jurisdiction" may have additional maintenance, testing and inspection requirements which must be followed.

▲ WARNING

Any system maintenance that involves placing a control valve or detection system out of service may eliminate the fire protection capabilities of that system. Prior to proceeding, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected areas.

7. AVAILABILITY

Viking Foam Products are available through a network of domestic and international distributors. See the Viking web site for closest distributor or contact The Viking Corporation.

8. GUARANTEE

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.



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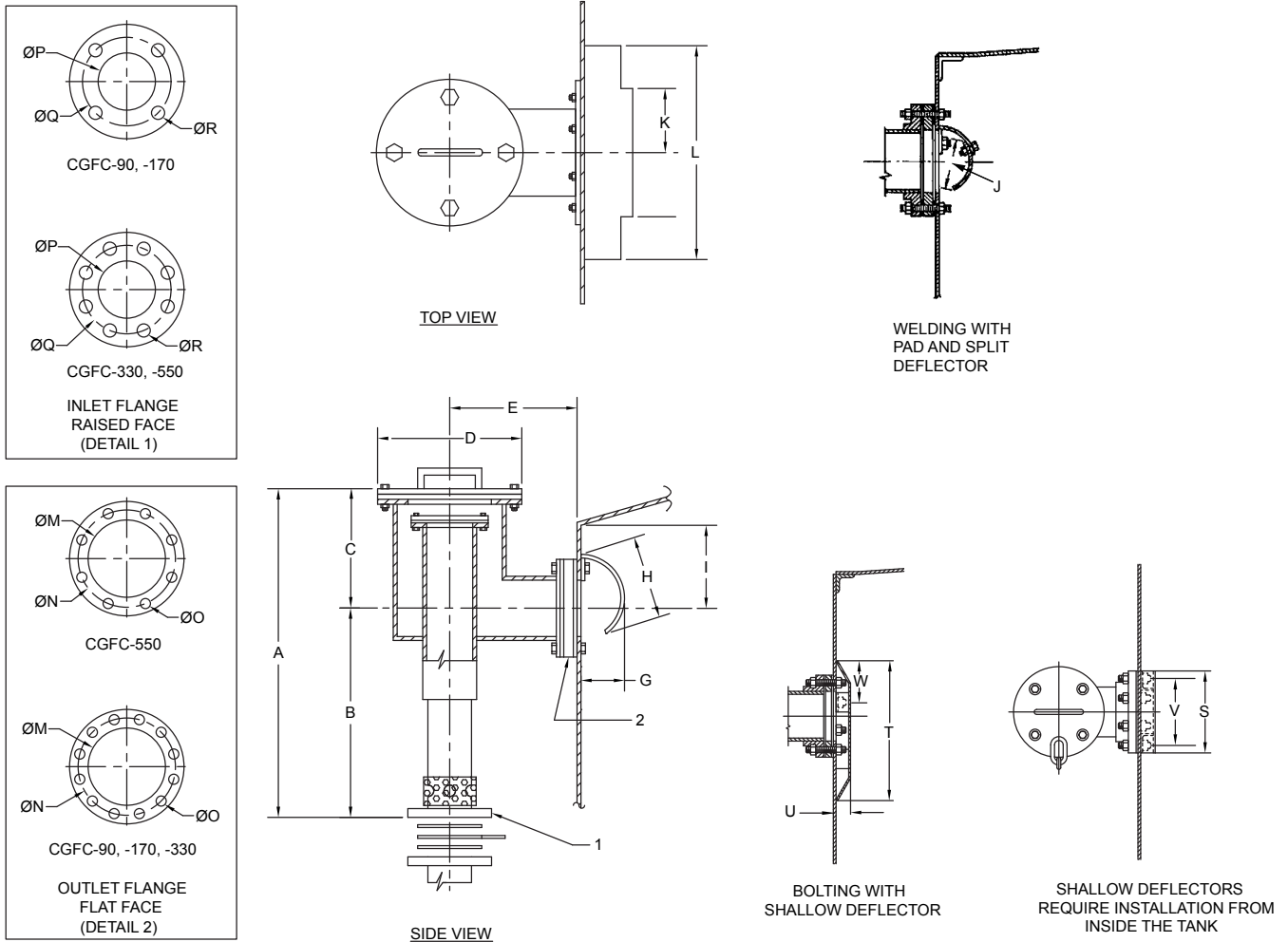


Figure 1 - Dimensions



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Table 3 : Dimensions

	CGFC-90 in. (mm)	CGFC-170 in. (mm)	CGFC-330 in. (mm)	CGFC-550 in. (mm)
A	26-1/16 (662)	31-7/8 (810)	35-3/8 (899)	42 (1067)
B	15-5/16 (389)	19-5/8 (498)	20-5/8 (524)	24-3/4 (629)
C	8-1/2 (216)	10 (254)	11-1/8 (283)	12-3/8 (314)
D	8-5/8 (219)	10-3/4 (273)	12-3/4 (324)	16 (406)
E	7 (178)	9 (229)	10 (254)	12 (305)
Fi	2-1/2 (64)	3 (76)	4 (102)	6 (152)
Fo	4 (102)	6 (152)	8 (203)	10 (254)
G	3-1/4 (83)	4-1/16 (103)	5 (127)	6-7/8 (175)
H	5-5/16 (135)	7-3/8 (187)	9-1/8 (231)	9-3/4 (248)
I	8 (203)	9-1/2 (241)	11 (279)	12 (305)
J	4-5/8 (117)	6-1/8 (156)	7-3/4 (197)	8-1/4 (209)
K	8 (203)	12 (305)	16 (406)	20 (508)
L	12 (305)	18 (457)	24 (610)	30 (762)
M	4-1/2 (114)	6-5/8 (168)	8-5/8 (219)	10-3/4 (273)
N	7-1/2 (191)	9-1/2 (241)	11-3/4 (298)	14-1/4 (362)
O	3/4 (19)	7/8 (22)	7/8 (22)	1 (25)
P	2-7/8 (73)	3-1/2 (89)	4-1/2 (114)	6-5/8 (168)
Q	5-1/2 (139)	6 (152)	7-1/2 (191)	9-1/2 (241)
R	3/4 (19)	3/4 (19)	3/4 (19)	7/8 (22)
S	8-1/2 (216)	12 (305)	16 (406)	20 (508)
T	14-1/2 (368)	16 (406)	24-1/2 (622)	23-1/4 (590)
U	1-1/2 (38)	1-1/2 (38)	1-1/2 (38)	3-5/16 (84)
V	6-15/16 (176)	8-25/32 (223)	10-27/32 (275)	13-3/4 (349)
W	4-5/16 (110)	4-11/16 (119)	5-3/4 (146)	7-5/32 (182)

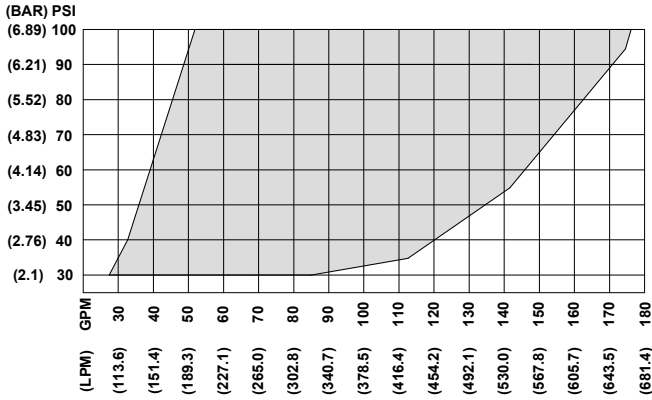


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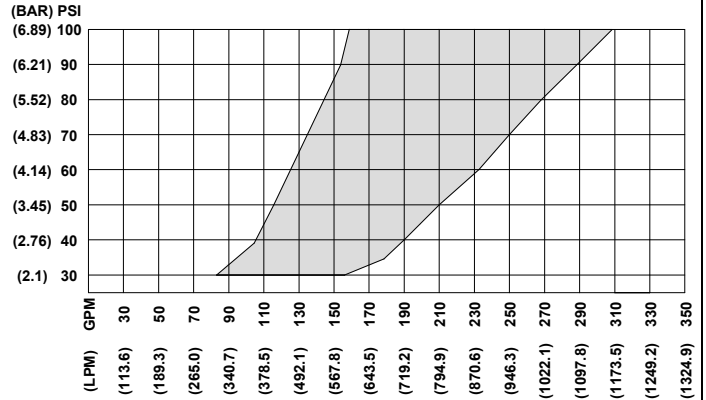
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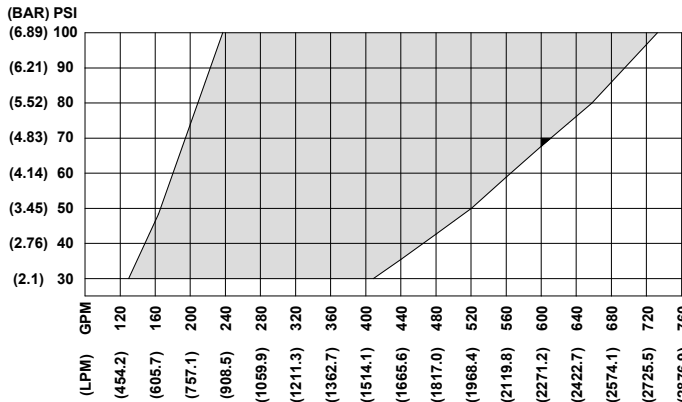
FLOW RANGE CHARTS FOR CHEM GUARD FOAM CHAMBERS



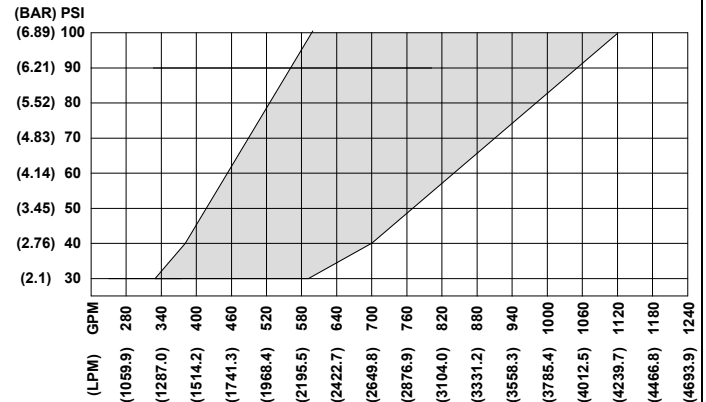
FLOW @ 30 PSI (2.1 BAR) = 26-83 GPM (98-314 LPM)
 FLOW @ 100 PSI (6.9 BAR) = 49-187 GPM (185-708 LPM)
FC2.50 FOAM CHAMBER



FLOW @ 30 PSI (2.1 BAR) = 82-156 GPM (310-591 LPM)
 FLOW @ 100 PSI (6.9 BAR) = 158-309 GPM (598-1170 LPM)
FC3.00 FOAM CHAMBER



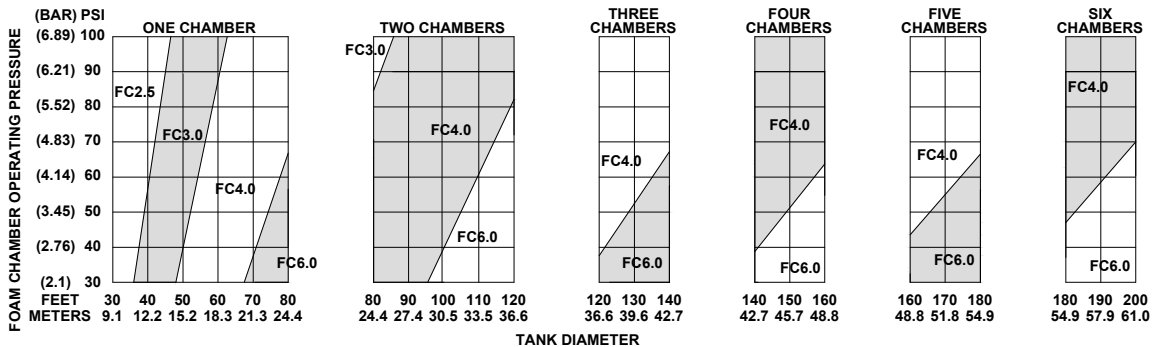
FLOW @ 30 PSI (2.1 BAR) = 130-402 GPM (492-1522 LPM)
 FLOW @ 100 PSI (6.9 BAR) = 233-737 GPM (882-2790 LPM)
FC4.00 FOAM CHAMBER



FLOW @ 30 PSI (2.1 BAR) = 329-601 GPM (1245-2275 LPM)
 FLOW @ 100 PSI (6.9 BAR) = 600-1120 GPM (2271-4240 LPM)
FC6.00 FOAM CHAMBER

NOTE:

1. Solution flow can be specified for any flow/pressure combination within the shaded area.
2. Flows noted at 30 and 100 psi (2.1 & 6.9 bar) are flow achieved through the smallest & largest orifice available for each device.



NOTE:

Selection of foam chamber is based upon foam solution pressure at inlet to foam chamber. If this pressure is marginal, always use the next largest foam chamber size.

Figure 2 - Flow Range Charts