

FOAM CHAMBER



IMEN MAHAN ARYA
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TECHNICAL DATA

MODEL	IMF- FC80 And FC100 IMF-FCS65& 80& 100
BODY MATERIAL	Stainless Steel Carbon Steel
INLET CONNECTION	2", 2.1/2", 3", 4"
WORKING PRESSURE	Min 2 Kg/Cm ² Max 10 Kg/Cm ²
FLANGE CONNECTION	ANSI B16.5 Class 150#
VAPOUR SEAL RUPTUR PRESSURE	1.5 Kg/Cm ² Running water/ water foam solution pressure at inlet of Foam Chamber
VAPOUR SEAL	Glass
FINISH	Yellow RAL 3000 polyurethane covered.
APPROVAL	UL , FM , TUV , Knowledge Base, University of TEHRAN
ORDERING, INFORMATION	-Model & Size -Flow & Pressure at inlet of each Foam Chamber -Inlet, outlet flange specification -Type of Deflector -Foam concentrate used



Description

Foam Chamber is used in one of the most common application to protect vertical fixed roof (cone) liquid storage tanks, with or without internal floating roof with the low expansion foam system. The application of foam is on the basis that the risk comprises the total surface area of the fuel. The foam system design guidelines generally used are in accordance with NFPA-11, standard. The ImacoFire`s Foam Chambers are typically used as part of a fixed or a semi-fixed surface application fire protection system on exterior fixed cone roof or on internal floating roof storage tanks.

the foam chamber has a foam deflector mounted on the inside of the tank wall. When the system is activated, the expanded foam mass discharges from the foam chamber and flows against the deflector which diverts the expanded foam back against the inside wall of the tank.

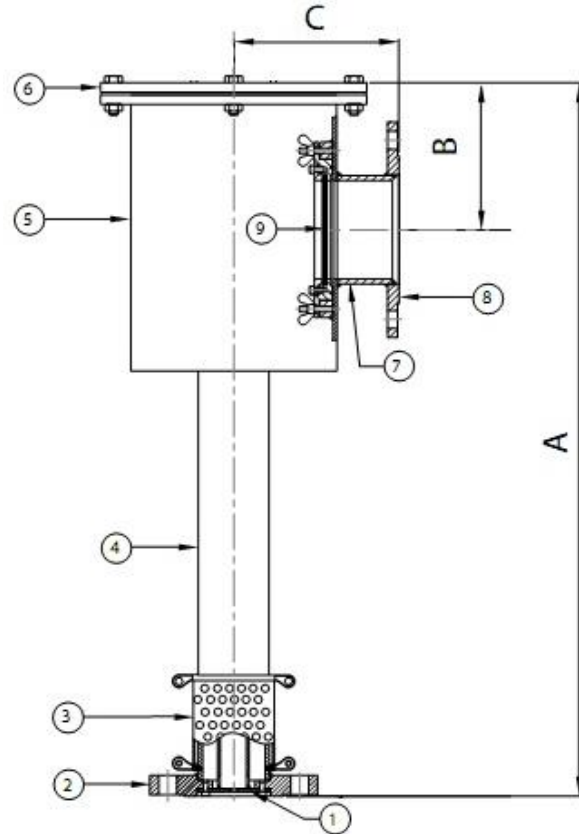
The number of foam chambers required for any fixed or semi-fixed fire protection system is based on the diameter of the storage tank to be protected.



SPECIFICATION

Foam Chamber is an air aspirating foam discharge device, covering wide range of flow from 150 to 2400 liters per minute at 2.8 to 7 kg/sq.cm. inlet pressure. The Foam Chamber contains a vapor seal to prevent the entry of vapor, dust, . . . into the foam chamber and the foam solution pipe. Each foam chamber is supplied with an orifice plate, designed for the required flow and inlet pressure. The foam is produced by introducing air into the foam solution stream. The air is drawn into the foam solution stream through the holes located on the foam chamber covered with stainless steel screen to exclude nesting birds and insects. The aerated foam is directed into the deflector for the gentle application of the expanded foam. The deflectors are available in different models.

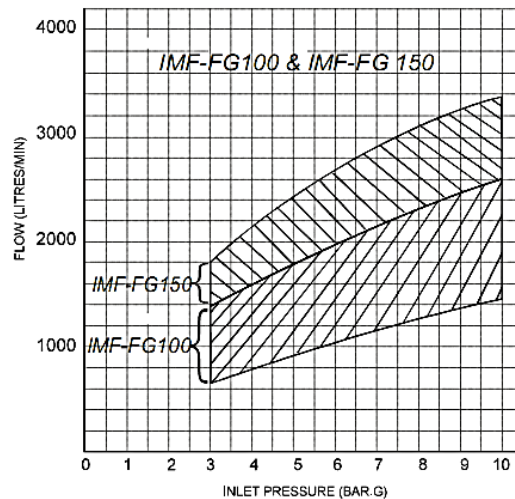
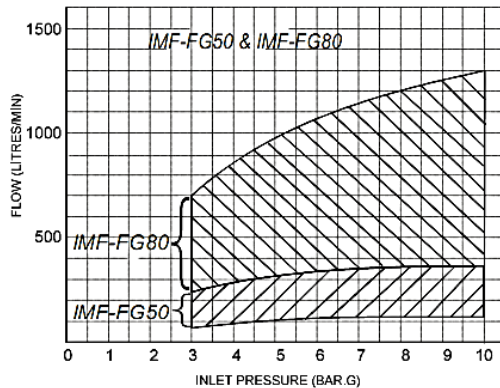
ELEM. No.	Description
1	ORIFICE
2	INLET FLANGE
3	FILTER MOUNT
4	FOAM CREAMING CHAMBER
5	FOAM CHAMBER
6	INSPECTION COVER
7	DOWNLOAD TUBE
8	OUTPUT FLANGE
9	STEAM SEALING ASSEMBLY



DIMENSION	IMF-FG50	IMF-FG80	IMF-FG100	IMF-FG150
A (mm)	917	1067	1318	1667
B (mm)	117	167	168	217
C (mm)	106	106	106	181
INLET CONNECTION	2"RF Flange ANSI Class150	3"RF Flange ANSI Class150	4"RF Flange ANSI Class150	6"RF Flange ANSI Class150
OUTLET CONNECTION	4"RF Flange ANSI Class150	6"RF Flange ANSI Class150	8"RF Flange ANSI Class150	10"RF Flange ANSI Class150



PERFORMANCE GRAPHS



INSTALLATION

The Foam Chamber is normally mounted vertically on the cone roof storage tank wall shell just below the roof joint or approximately between 8" to 12" down from the roof joint to the center point of the foam chamber outlet.

1. When the Foam Chamber is mounted correctly, the internal glass seal of the chamber will be just slightly higher in elevation than the roof joint on the storage tank.

2. If the storage tank is of new construction and the foam deflector can be installed from inside the tank, a solid deflector is normally used. This style deflector can either be bolted or welded to the inside wall of the storage tank so that the deflector covers the foam discharge port from the foam chamber. If bolted, the studs / bolts holding the solid deflector in place can be used for the mounting of the foam chamber onto the outside wall of the tank.

3. PLEASE ensure that after the installation of the foam chamber(s) and before placing in service, that the glass seal inside of the foam chamber is in place. This seal will prevent any vapors from escaping from inside the storage tank down through the foam chamber piping. In the event of an accidental overflow, the glass seal will prevent product from escaping down the foam chamber piping.

4. When there are two or more foam chambers mounted on a storage tank, they are to be equally spaced around the tank periphery and each foam chamber outlet should be sized to deliver foam solution at approximately the same application rate.

5. Each individual foam chamber is to have its own individually valved lateral riser feed pipe that terminates at a safe distance from the tank and outside of any dike area.

6. PLEASE refer to NFPA 11 Latest Edition, Standard for Low Expansion Foam and Combined Agent Systems, for information on pipe work design.

7. At the inlet to the foam chamber, an orifice is sized to be able to pass the necessary required flow rate in gpm at the residual foam solution pressure that is available at the chamber inlet. A minimum of 40 psi to a maximum of 125 psi must be available at the inlet flange into the foam chamber for this discharge device to work correctly.

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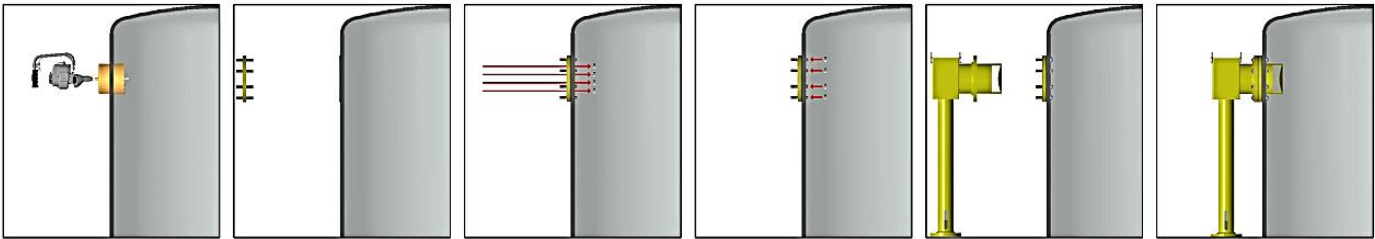
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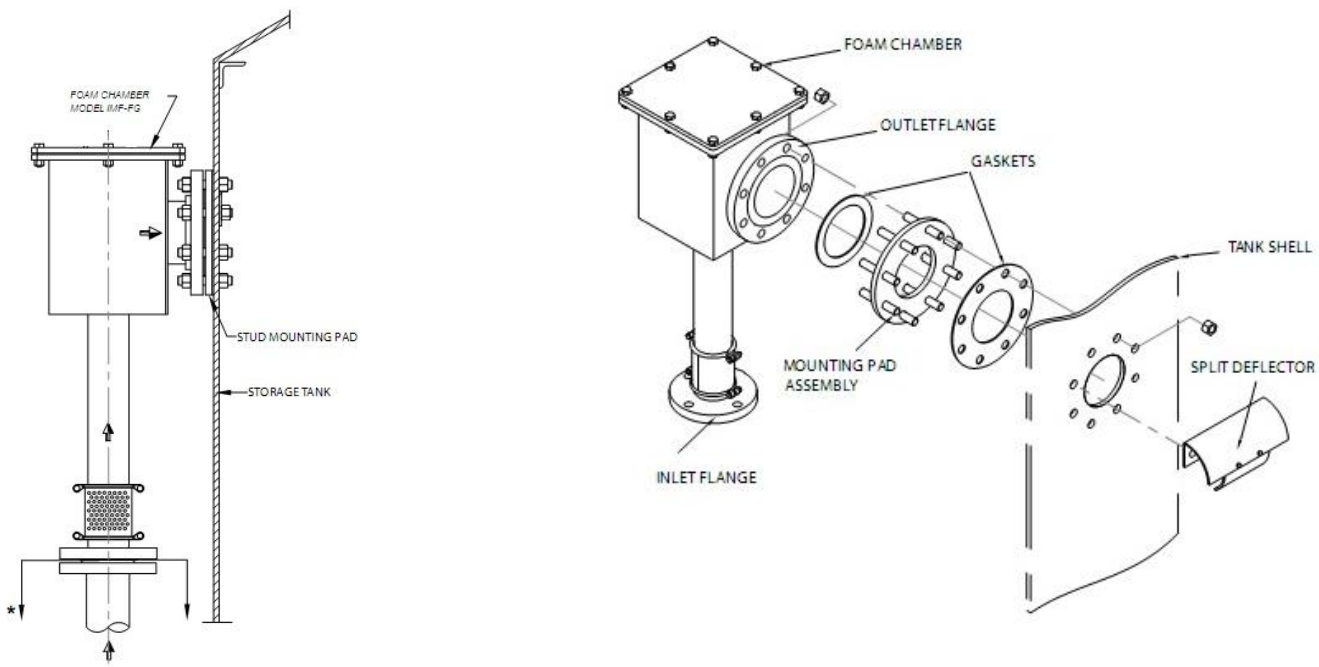
8. REMEMBER in accordance with NFPA 11, supplementary fire protection must also be supplied. This is in addition to any fixed system that is installed on the storage tank(s). The supplementary protection can either be portable monitors, towers or hand hose line devices. When hand line application devices are used, they must have a minimum foam solution flow

Rate of 50 Gpm. The number of hand lines required is dependent on the diameter of the storage tank being protected.



Base	Bolts	Size of Bolts	Minimum Length of Bolts
2-½" 150# ANSI Flange	4	5/8"-11 UNC	2-½"
3" 150# ANSI Flange	4	5/8"-11 UNC	2-½"
4" 150# ANSI Flange	8	5/8"-11 UNC	2-½"

INSTALLATION OF TYPICAL FOAM CHAMBER WITH DEFLECTOR



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Important:

Before installing and operating this equipment, read & study this manual thoroughly. Proper installation is essential to safe operation. In addition, the following points should be adhered to in order to ensure the safety of equipment and personnel:

1. All personnel who may be expected to use this equipment must be thoroughly trained in its safe and proper use.
2. Before flowing water from this device, check that all personnel (fire service and civilian) are out of the stream path. Also, check to make sure stream direction will not cause avoidable property damage.
3. Become thoroughly familiar with the hydraulic characteristics of this equipment, and the pumping system used to supply it. To produce effective fire streams, operating personnel must be properly trained.
4. Open water valve supplying this equipment slowly, so that the piping fills slowly, thus preventing possible water hammer occurrence.
5. After each use, and on a scheduled basis, inspect equipment per instructions in Maintenance & Inspection on this document.