

PHB-10A TO PHB-30A HIGH BACK PRESSURE FOAM MAKERS

NDD020

Approvals: UL, ULC

- Fixed Or Portable Models
- Operates Effectively With Back Pressure Up To 40% Of Inlet Pressure
- Flow Range 100 - 300 GPM
- Corrosion Resistant Finish



Description

The PHB Type High Back Pressure foam maker is designed to deliver fully aspirated foam for fire extinguishment through the product, directly onto the fuel surface. Fully aspirated foam provides the most effective performance, resulting in quick, efficient control of an incident. PHB Type High Back Pressure foam makers are classified as Type II discharge devices in accordance with NFPA Standard 11. When used with properly expanded, fluoroprotein type, low expansion foam, these foam makers can provide application of the foam through the product directly onto the fuel surface with a minimum of fuel pick-up and saturation of the foam bubble. Using PHB Type High Back Pressure foam makers with fixed discharge outlets has the added advantage of directing the entire flow to the hazard area, regardless of weather conditions, for the most effective utilization of foam resources.

The PHB Type High Back Pressure foam maker produces foam by introducing air into the foam solution stream. The solution inlet of the foam maker is fitted with a factory installed orifice, designed to control the flow rate and create a reduced pressure area to draw air into the foam solution stream. Air is drawn into the foam solution through an air inlet hole located on the foam maker. To prevent obstruction, the air inlet is protected with an air inlet strainer with a stainless steel screen. A turbulator tube aids in the mixing of the air into the foam

solution to provide the proper foam expansion. The aerated foam is discharged directly into the product at the base of the tank or the product supply pipeline to the tank.

The PHB Type High Back Pressure foam maker is designed for easy, low cost installation on Cone Roof storage tanks. The foam maker can be installed for injection of the foam directly into the base of the product storage tank(s) or for injection into the product pipeline supplying the tank(s). PHB foam makers can be located a greater distance from the hazard than most other types because of its efficient design, which allows it to effectively operate against back pressures of up to 40% of the inlet pressure.

In addition to subsurface injection to cone roof tanks, PHB foam makers are often used for dike protection in the event of a product spill. The PHB foam maker is also suitable for use in marine applications for protection of specific areas and under docks. Applications where existing discharge devices, that do not incorporate foam makers, can also be supplied with expanded foam using PHB Type High Back Pressure foam makers. The foam makers can be supplied from a fixed foam proportioning system or from portable foam proportioning equipment, such as, mobile fire apparatus. The foam makers can be furnished in a portable configuration for applications using mobile fire apparatus. Installation shall be made in accordance with applicable codes and standards. For applications using sub-

surface injection, fluoroprotein type foam concentrates must be used. For all other applications they are compatible with all types of foam concentrate; protein, fluoroprotein, AFFF, and AR-AFFF.

Features

- Foam Expansion Designed for use with sub surface injection
- Compact, rugged construction
- Cast aluminum with Stainless Steel internals
- Maximum inlet pressure-300 PSI (20.7 Bar)
- Minimum inlet pressure-100 PSI (6.9 Bar)
- Maximum allowable back pressure 40% of inlet pressure
- Minimum allowable back pressure 5 PSI (0.3 Bar)
- Available in sizes to handle flows of 100-300 gpm (379-1136 lpm)
- Air Inlet Strainer provided to keep animals, birds, insects and debris from entering the foam maker
- Corrosion Resistant Polyester Finish over hardcoat anodizing

Applications

- Subsurface injection to Cone Roof tanks
- Dike Protection
- Under Dock protection for Marine Systems
- Replacement for Intermediate Back Pressure foam makers
- Foam supply to existing discharge devices which do not incorporate a foam maker

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Specifications

The PHB Type High Back Pressure foam maker shall include the air aspirating foam maker with 2½"-FNPT inlet and 2-1/2" MNPT outlet connection, orifice plate, turbulator tube and air inlet strainer. The body shall incorporate a recovery section to minimize the pressure loss through the proportioner and increase the allowable back pressure of the device. The PHB foam maker shall provide aspirated foam, with an expansion ratio of 2-1 to 4-1, with an imposed back pressure of 5% to 40% of the inlet pressure. The foam maker shall include a stainless steel turbulator tube to aid in the proper mixing of air into the foam solution. Solution flow shall be controlled via an orifice sized to provide flow capacities from 100 GPM (379 lpm) to 300 GPM (1136 lpm) @ 150 PSI (10.4 bar) in 50 GPM increments. The orifice plate shall be of stainless steel construction. Air to expand the foam shall be drawn into the foam solution through a single air inlet located on the foam maker body. To prevent obstruction, the air inlet shall be protected by

air inlet strainer, consisting of a cast aluminum body and a stainless steel screen with a minimum open area of 50% and a minimum hole diameter of 0.075". The air inlet screen shall have total open area of 5:1 in comparison with the air inlet opening. The foam maker body shall be cast aluminum, abrasive blasted and coated with a red fused polyester powder finish.

Units designed for portable applications shall have a female swivel with 2-1/2" NH threads installed directly on the foam maker body. An adapter with 2-1/2" MNH threads shall be provided for the discharge. The swivel and adapter shall be light alloy construction with rocker lugs.

Approvals and Listings

- UL Listed
- Underwriter Laboratories Canada

Technical Data

Material of Construction:

Foam Maker Body...Cast Aluminum
Turbulator TubeStainless Steel
OrificeStainless Steel

Air StrainerCast Aluminum
w/ Stainless Steel
Screen

HardwareStainless Steel

Swivel & Adapter ..Aluminum w/
hard coat anodize

Operating Pressure: .100 PSI (6.9 bar) to
300 PSI (20.7 bar)

Flow Capacity:100 GPM (379 lpm)
to 300 (1136 lpm)
@150 PSI (10.4 bar)

Allowable Back Pressure:
5% to 40% of Inlet Pressure

Finish:

Cast Aluminum Components:

Abrasive Blast to SSPC-SP6.

Chemical wash, rinse, and seal.

Oven baked fusion coated polyester, 3 mils dry film thickness (DFT), red color.

All Other Components ... Natural Finish

Weight:

Fixed 9 lbs. (4.1 Kg.)

Portable10 lbs. (4.5 Kg.)

Options

- Portable

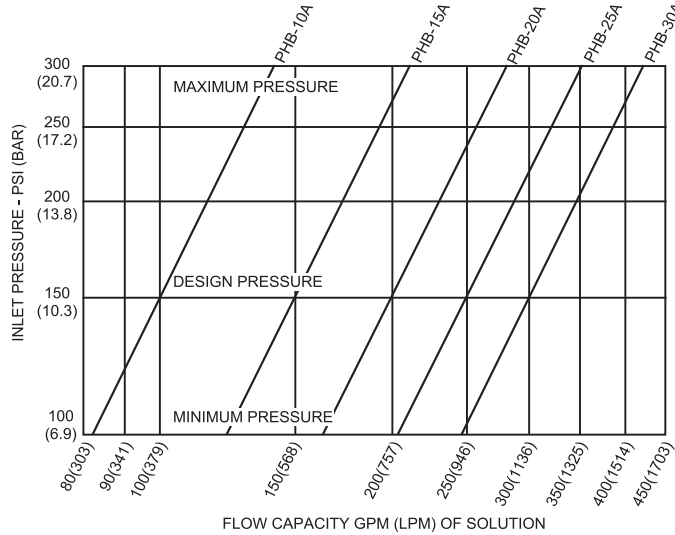
PHB Inlet Pressure PSI (Bar)	Maximum Allowable Back Pressure PSI (Bar)
300 (20.7)	120 (8.2)
250 (17.2)	100 (6.9)
200 (13.8)	80 (5.5)
150 (10.3)	60 (4.1)
100 (6.9)	40 (2.7)

**MAXIMUM
ALLOWABLE BACK PRESSURE**

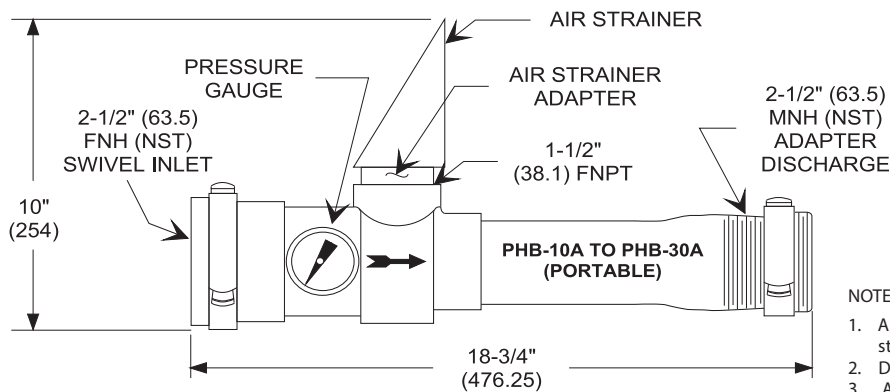
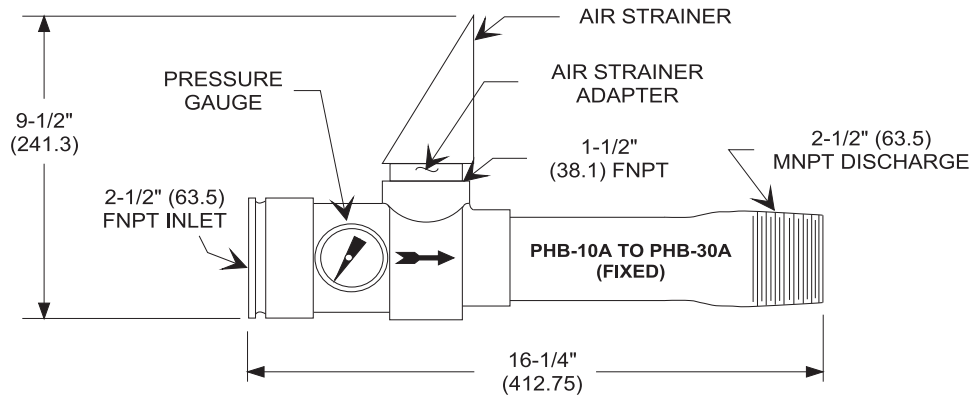


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INLET PRESSURE VS. FLOW CAPACITY



**PHB-10A THRU PHB-30A HIGH BACK PRESSURE FOAM MAKER
FIXED AND PORTABLE MODELS**

- NOTES:
1. All units are cast aluminum with stainless steel orifice.
 2. Dimensions are in inches (mm).
 3. All dimensions are plus or minus 1/8" (3.18).
 4. Use teflon tape on threads. Do not overtighten.

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FOAM MAKER MODEL NO.	DESIGN CAPACITY @150 PSI (10.3 BAR)		WEIGHT	
	GPM	LPM	LBS.	KGS.
PHB-10A (FIXED)	100	379	9	4.1
PHB-10A (PORTABLE)	100	379	10	4.5
PHB-15A (FIXED)	150	568	9	4.1
PHB-15A (PORTABLE)	150	568	10	1.5
PHB-20A (FIXED)	200	757	9	4.1
PHB-20A (PORTABLE)	200	757	10	4.5
PHB-25A (FIXED)	250	946	9	4.1
PHB-25A (PORTABLE)	250	946	10	4.5
PHB-30A (FIXED)	300	1136	9	4.1
PHB-30A (PORTABLE)	300	1136	10	4.5

ORDERING INFORMATION

FIXED INSTALLATION

Part Number:	Description:
1254-8110-4	PHB-10A Foam Maker, Aluminum w/ fused polyester finish, 2-1/2" NPT
1254-8120-4	PHB-15A Foam Maker, Aluminum w/ fused polyester finish, 2-1/2" NPT
1254-8130-4	PHB-20A Foam Maker, Aluminum w/ fused polyester finish, 2-1/2" NPT
1254-8140-4	PHB-25A Foam Maker, Aluminum w/ fused polyester finish, 2-1/2" NPT
1254-8150-4	PHB-30A Foam Maker, Aluminum w/ fused polyester finish, 2-1/2" NPT

ORDERING INFORMATION

PORTABLE APPLICATIONS

Part Number:	Description:
1254-8110-5	PHB-10A Foam Maker, Aluminum w/ fused polyester finish, 2-1/2" NH
1254-8120-5	PHB-15A Foam Maker, Aluminum w/ fused polyester finish, 2-1/2" NH
1254-8130-5	PHB-20A Foam Maker, Aluminum w/ fused polyester finish, 2-1/2" NH
1254-8140-5	PHB-25A Foam Maker, Aluminum w/ fused polyester finish, 2-1/2" NH
1254-8150-5	PHB-30A Foam Maker, Aluminum w/ fused polyester finish, 2-1/2" NH