

**BLAZE**

Foam Bladder Tank

Model : BT 5850H / BT 5850V

Description:

The BT 5850H / BT 5850V Bladder Type Foam Proportioning Unit (Bladder Tank) is designed to provide accurate proportioning of foam concentrate with fire water over a wide range of flow conditions. Available in both horizontal and vertical configurations, the unit comprises a foam vessel, foam bladder, water pipework, foam pipework, vent and drain valves, and a concentrate level indicator.

UL Listed units are available in capacities ranging from 100 to 15,000 litres for vertical installations and 200 to 20,000 litres for horizontal installations. The general arrangement for the vertical configuration is shown in BT 5850V-1 and BT 5850V-2, whilst the horizontal configuration is illustrated in BT 5850H-1 and BT 5850H-2. For detailed dimensions of the foam vessel, foam bladder, foam proportioner, interconnecting pipework, valves and concentrate level indicator, please contact the Blazetech technical team.

Note: The foam bladder is UL Listed for use with AFFF 1%, AFFF 3%, and AR-AFFF 3x3% foam concentrates.

The foam proportioner is connected to the bladder tank through interconnecting pipework. Its inlet is connected to the fire water supply, while the outlet is connected to the foam solution distribution pipework, ensuring accurate foam concentrate induction during system operation. For applications requiring enhanced reliability, the units can be supplied in a dual bladder tank configuration to provide a duty and standby arrangement, allowing immediate changeover between tanks. In systems protecting multiple hazard areas from a single centralised foam storage and proportioning system, bladder tanks can also be configured with multiple ratio controllers to meet individual system requirements.



Specifications :

BT 5850H Tank Capacity (Horizontal Mounting)	53 to 5,300 US Gallons (200 to 20,000 Litres)
BT 5850V Tank Capacity (Vertical Mounting)	25 to 3,963 US Gallons (95 to 5,000 Litres)
Rated Pressure	12 Bar (175 psi)* / 16 Bar (232 psi)
Approvals	UL 162 Listed
Design Code	Designed and constructed as per ASME Sec. VIII Div.1
Mounting	Vertical / Horizontal
Flow Range	75 to 36,000 LPM
Material of Construction (Foam Vessel)	Carbon Steel* / Stainless Steel SS304 / SS304L / SS316 / SS316L
Bladder (UL Listed)	Nylon Reinforced Nitrile Rubber (Buna-N Nylon)* / Polyaramide Reinforced Neoprene Hypalon (Neo-Hyp) Rubber
Ratio Controllers	2"-8" (DN 50 - DN 200)
Piping	Pre-Piped
Operation	Manual / Automatic

* - Standard Supply

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Operation :

During operation, water enters the space between the bladder and the inner wall of the tank, applying pressure to the outside of the bladder. This pressure is transferred directly to the foam concentrate contained within the bladder, causing it to become pressurised.

The pressurised foam concentrate then flows to the inlet of the foam proportioner. Within the proportioner, a precisely sized metering orifice ensures accurate proportioning of the foam concentrate into the fire water stream. The pressure differential created across the proportioner draws the correct quantity of foam concentrate into the water flow, producing a consistent foam solution over a wide operating range.

The BT 5850H / BT 5850V Bladder Tank is available in both horizontal and vertical configurations. Horizontal models are UL Certified and are available in capacities ranging from 200 to 15,000 litres. Vertical models operate on the same principle and provide identical performance, while offering a space-saving solution for installations where floor space is limited.

Specification :

The BT 5850H / BT 5850V Bladder Tank is designed and manufactured in accordance with ASME Section VIII, Division 1 and is UL Listed for a maximum working pressure of 12 Bar (175 psi) / 16 Bar (232 psi). Each vessel is hydrostatically tested in accordance with applicable standards to ensure structural integrity and reliable performance. All welded joints and sharp edges are smoothly finished to improve durability and coating adhesion. The internal surface is protected with a coal tar epoxy coating, while the external surface is finished with a fire-red polyurethane coating for enhanced corrosion resistance.

Each vessel is fitted with lifting lugs to facilitate handling and installation. Vertical bladder tanks are supplied with leg supports, while horizontal models are mounted on saddle supports. Anchor holes are provided in the support base, and anchor bolts are supplied as standard.

The foam bladder is manufactured from nylon-reinforced nitrile rubber and is installed inside the pressure vessel. It is tested in accordance with UL 162 for compatibility with AFFF 1%, AFFF 3% and AR-AFFF 3x3% foam concentrates.

The foam proportioner and spool piece are manufactured from carbon steel with stainless steel internal components as standard. A fully stainless-steel construction is available as an optional upgrade for installations requiring enhanced corrosion resistance. Each proportioner is manufactured and verified in accordance with UL requirements, ensuring compliance with all applicable construction, performance, and reliability criteria for approved foam-water proportioning systems.

Every unit is flow tested to verify accurate flow performance and foam proportioning across its specified operating range.

The interconnecting pipework, comprising separate water and foam lines, connects the bladder tank to the foam proportioner. The water pipework is manufactured from carbon steel, while the foam pipework is constructed from stainless steel. The complete pipework assembly is manufactured and inspected in accordance with UL requirements, including material, construction, and performance verification necessary to ensure reliable operation within the system's approved range. All external surfaces are coated with fire-red polyurethane paint. For seawater applications, both the water and foam pipework are available in stainless steel construction to provide superior corrosion resistance.

Applications :

The BT 5850H / BT 5850V Bladder Type Foam Proportioning Unit is a versatile and dependable system designed to provide accurate, automatic foam proportioning with minimal pressure loss across a wide range of flow conditions. The unit can be supplied with either a single proportioner or multiple proportioners to accommodate varying system flow requirements. It is also available in a dual-tank (main and standby) configuration, enabling immediate changeover to ensure uninterrupted fire protection during maintenance or emergency operation.

The bladder type foam proportioning unit is ideally suited for protecting a wide range of high-risk fire hazards, including:

- Flammable liquid storage tanks in refineries and petrochemical facilities
- Chemical processing plants
- Aircraft hangars
- Loading and unloading terminals
- Oil jetties and marine terminals
- Offshore platforms
- Warehouses and storage facilities
- Foam spray nozzle systems
- Foam sprinkler systems

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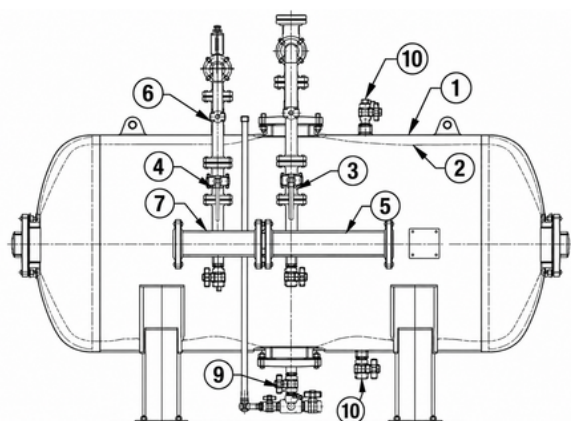


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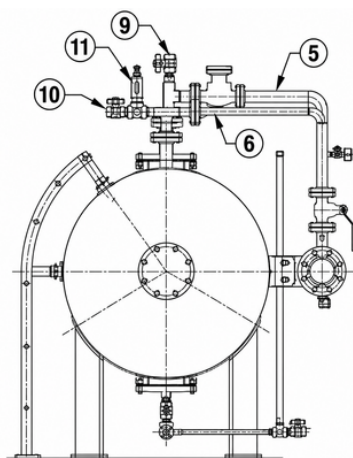


Foam Bladder Tank

Model : BT 5850H / BT 5850V

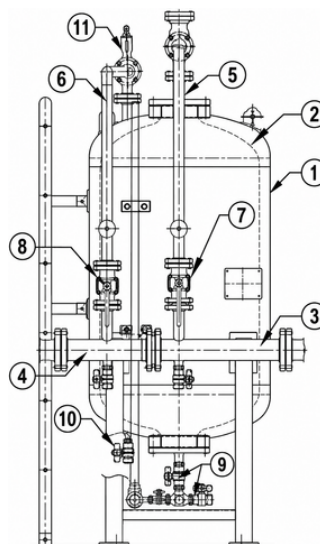


Front View

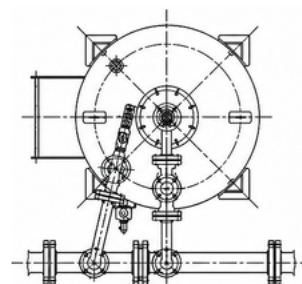


Side View

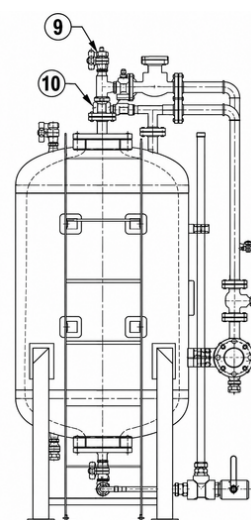
Fig. BT 5850H



Front View



Top View



Side View

Fig. BT 5850V

Material Specifications :

SR.NO	DESCRIPTION	MATERIAL
1	Foam Vessel	Carbon Steel, Stainless Steel 304/L. Stainless Steel 316/L
2	Foam Bladder	Nylon Reinforced Nitrile Rubber (Buna-N)
3	Foam Proportioner	Carbon Steel With Stainless Steel internals / Stainless Steel
4	Spool Piece	Carbon Steel / Stainless Steel
5	Foam Piping	Stainless Steel
6	Water Piping	Carbon Steel / Stainless Steel
7	Foam Supply Valve	Stainless Steel
8	Water Charging Valve	Stainless Steel
9	Bladder Vent / Bladder Drain	Stainless Steel
10	Bladder Vent / Bladder Drain	Stainless Steel
11	Vessel Vent / Vessel Drain	Copper Alloy / Stainless Steel
12	Ladder - Optional*	Carbon Steel

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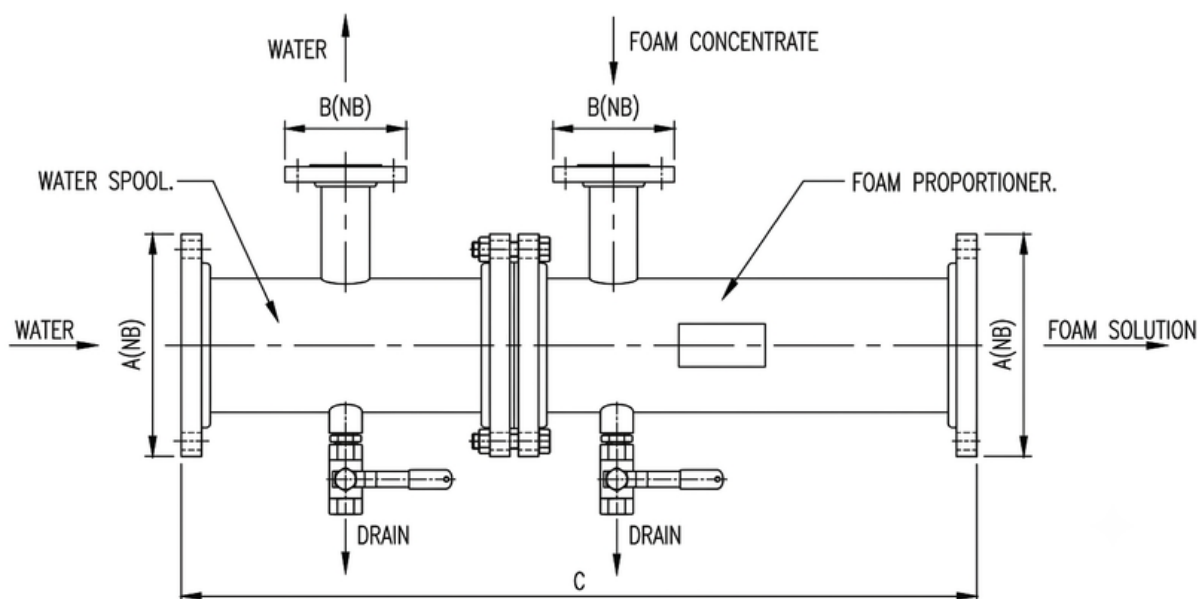
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**BLAZE**

Foam Bladder Tank

Model : BT 5850H / BT 5850V

Foam Bladder Tank - Foam Proportioner / Ratio Controller

**Fig. BT 5851**

Specifications :

Model	BT 5851
Approval	UL Listed
Maximum Working Pressure	12 Bar (175 psi) / 16 Bar (232 psi)
Foam Proportioning Ratio	1% for AFFF 1% & 3% for AFFF 3% & AR-AFFF 3x3%
Hydrostatic Test Pressure	18 Bar (262 psi) / 24 Bar (348 psi)
Flange Drilling	As Per ANSI B16.5, 150#, RF
Finish	Internal – Coal Tar Epoxy
	External – Painted Polyurethane Fire-Red To Shade No. RAL 3000

Material Specifications :

Item	Description	Material
1	Body	Carbon Steel / Stainless Steel 304/L, 316/L
2	Water Nozzle	Stainless Steel 304/L, 316/L
3	Foam Nozzle	Stainless Steel 304/L, 316/L
4	Drain Valve	Stainless Steel

Performance & Dimensional Data:

Order Code	Nominal Flow Range in LPM*	Prop. Ratio in %	A (NB) (mm)	B (NB) (mm)	C (mm)
BT-5851-050	75 - 1000	1%, 3%	50	25	1000
BT-5851-080	200 - 3200	1%, 3%	80	40	1000
BT-5851-100	400 - 6200	1%, 3%	100	40	1000
BT-5851-150	1000 - 11500	1%, 3%	150	50	1000
BT-5851-200	3000 - 36300	1%, 3%	200	65	1000

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