



INSPECTION & MAINTENANCE

RATIO CONTROLLERS

DESCRIPTION

The Buckeye 2 1/2", 3", 4", 6" and 8" controllers are one component in a Bladder Tank Balanced Pressure Foam Proportioning System. The 3", 4", 6" and 8" controllers are designed to be mounted between two 150 lb. flat face pipe flanges. The 2 1/2" proportioner has a 2 1/2" female NPT threaded inlet with a 2 1/2" male NPT threaded outlet.

For the foam system to function correctly, it is important that the following installation guidelines are followed.

- The controllers are designed to be mounted in the water supply system feed line in either a horizontal or a vertical configuration.
- Establish that the fire protection system design flow rate in gpm is within the flow range of the controller before installation.
- Check the foam concentrate inlet orifice to ensure that the correct size orifice has been installed for the type of foam concentrate that will be used in the system.
- A directional arrow is displayed on the body of the controller. This indicates the direction of the system flow. Ensure that the controller is mounted with the arrow going towards the system discharge devices.
- When the between flange type of controller is correctly mounted, the recovery section of the controller (shaped like a bell) is actually located inside the system pipe. If mounted correctly, the foam solution leaving the recovery section is flowing towards the discharge devices.
- The distance from the bladder tank to the controller is critical. When designing the piping arrangement to/from the bladder tank, it is important to have the foam concentrate pressure arrive at the proportioning controller within 2 psi of what the incoming water pressure is at that controller. The combined total equivalent length of pipe, fittings and valves in both the water supply inlet piping and the foam concentrate discharge piping should not exceed 50 equivalent feet (15.2 meters). As the foam concentrate is pushed out of the bladder into the concentrate piping, there is virtually no measurable friction loss within the bladder tank itself. This leaves approximately 2 psi to overcome any friction loss for the foam concentrate in the interconnecting piping between the bladder tank and the controller.

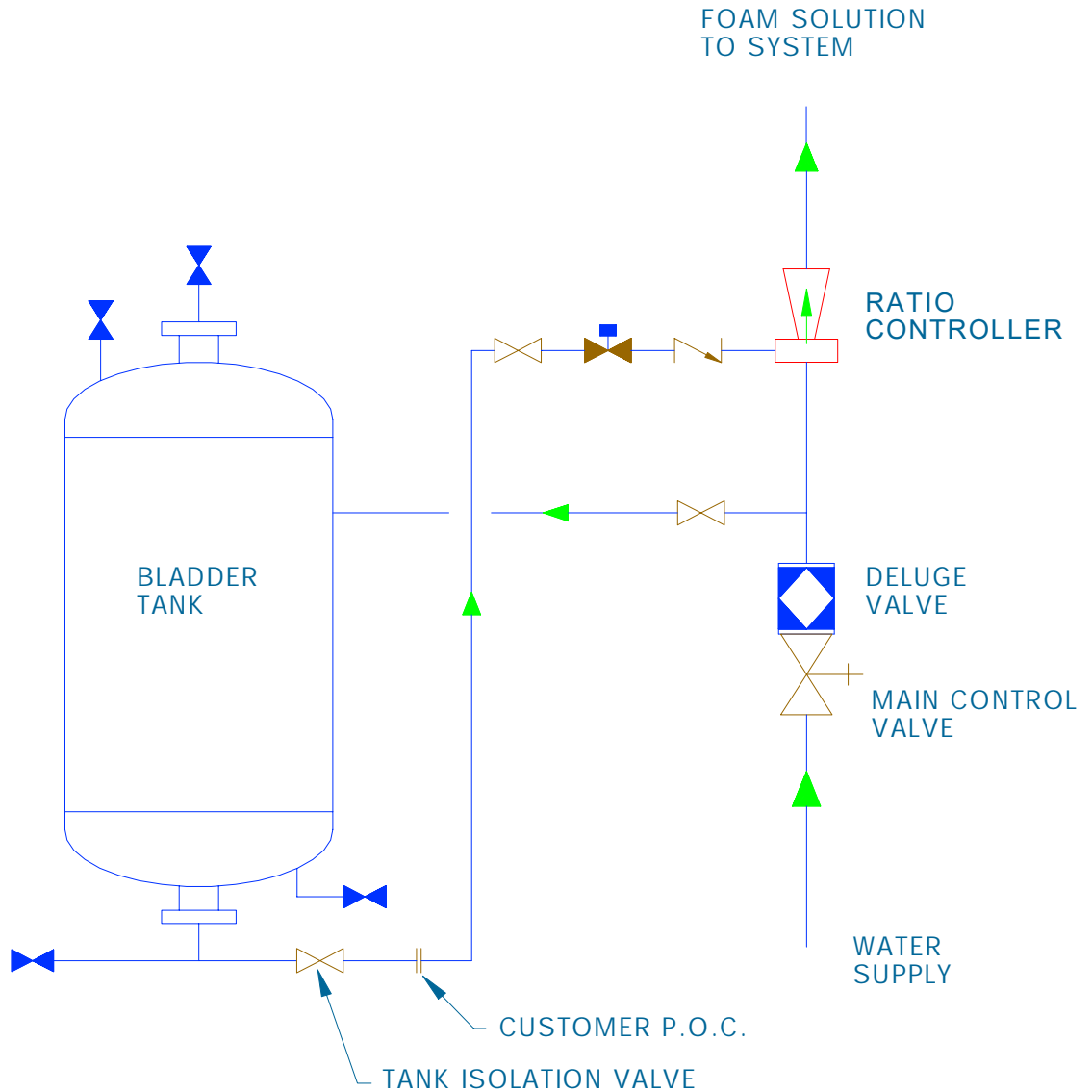
- When installing the water feed pipe to the bladder tank. Ensure that this water supply to the bladder tank is installed upstream from the controller.
- Refer to the controller data sheet regarding the required length of straight pipe upstream and downstream from the controller.
- When installing the between flange controller, be sure that gaskets are used to obtain a good seal between the pipe flange and the flange face on the controller.
- When the controller is mounted at a location below the top flange of the bladder tank or if the tank is under a constant water pressure, it is recommended that an automatic valve (normally closed) be installed on the foam concentrate line. This valve will prevent siphoning of the foam concentrate from the tank and prevent the possibility of any water contamination in the concentrate area of the tank.
- When mounted correctly, between flange type controllers are designed to sit inside the bolt circle used to bolt two pipe flanges together.
- Fig. 1 depicts the necessary valves for a typical vertical style bladder tank piped to one controller.





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BLADDER TANK WITH RATIO CONTROLLER



VERTICAL BLADDER TANK WITH ONE RATIO CONTROLLER

