

F92, F93 Series Air Volume Controls for Deep Well, Shallow Well and Submersible Pumps

Application

Water storage tanks in residential water systems rely on an air cushion to provide system pressure. The amount of air in a tank is important. Too little air (common on shallow well systems) results in rapid pump cycling. This shortens the pump life. Too much air (common on deep well systems) results in air entering the distribution system.

The F92 and F93 control the amount of air in residential water storage tanks to achieve optimum system performance. For shallow wells (wells less than 25 feet [7.6 m] deep) the F92 is connected to the air charging section of the pump. On a rise of water level in the tank (loss of air pocket) the control valve in the F92 allows room air to enter into the air charging section of the pump. (See Fig. 4.)

For deep wells (wells more than 25 feet [7.6 m] deep) use the F93. On a water level drop (increase of air volume) the control valve on the F93 allows air to escape from the tank and into the surrounding room. (See Fig. 5.)

The F93H has a minimum pressure release valve to avoid lowering tank pressure below 25 psig (172 kPa). Use where water may be drawn rapidly.

All F92 and F93 Series controls are designed for use *only* as operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add devices (safety, limit controls) or systems (alarm, supervisory systems) that protect against, or warn of, control failure.



Fig. 1 -- F92B Shallow Well Air Volume Control.

Features

- Sturdy Noryl® (high performance thermoplastic) body. Resists mechanical damage and corrosion.
- All internal operating parts are of brass to minimize corrosion.
- Pressure tested plastic float.
- Optional pressure gage tapping.

General Description

These air volume controls have a Noryl body with wrench flats. Teflon® thread sealing tape must be used on the tank connector threads and the gage tapping threads. The pressure tested floats are made of plastic for long life.



Fig. 2 -- F93B Deep Well Air Volume Control.

Specifications

Type Number	Shallow Well	F92A	No Gage Tap
		F92B	1/4" Gage Tap
		F93A	No Gage Tap
	Deep Well	F93B	1/4" Gage Tap
		F93H	1/4" Gage Tap, 25 PSIG (172 kPa) Minimum Pressure Release
Air Flow Restrictor Orifice	F92A, F92B	Limits Air Flow to Pump on Applications Where Excessive Air Flow May Cause Unsatisfactory Pump Operation	
Application	F92A, F92B	Charges Air	
	F93A, F93B, F93H	Bleeds Air	
Body Material	30% Glass Filled Noryl		
Float Material	Plastic with Brass Rod (Standard)		
Maximum Tank Pressure	F92	80 PSIG (552 kPa)	
	F93	100 PSIG (690 kPa)	
Minimum Pressure Release	F93H Only	Will Not Release Air Unless Pressure Exceeds 25 PSIG (172 kPa)	
Minimum Tank Size	9" (229 mm) Diameter		
Shipping Weight	F92A, F92B	Individual Pack 0.25 lb (0.11 kg)	
		Overpack of 30 9.0 lb (4.08 kg)	
	F93A, F93B, F93H	Individual Pack 0.4 lb (0.18 kg)	
		Overpack of 30 13.5 lb (6.12 kg)	
Snifter Line Connection	F92 Only	Flat Flare Fitting for 3/16" Tubing	
Tank Connector Size	1 1/4" Male NPT		

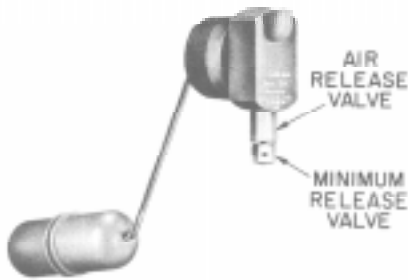


Fig. 3 – F93H Deep Well Air Volume Control with minimum release valve.

Models with 1/4 in. gage tapping can be plugged with a 1/4 in. plug when a gage is not used. Teflon thread sealing tape must be used on the gage and plug threads. Tubing and connector kits are available for the F92 controls when needed.

The F92 with an air flow restrictor orifice is recommended on applications where excessive air flow may reduce water pumping capacity.

Repairs and Replacement

Field repairs must not be made except for the air charging valve of F92 and minimum pressure release valve of F93H. The air release valve on the F93 is not field replaceable. For a replacement air volume control or valve, contact the nearest Johnson Controls wholesaler.

Ordering Information

To order, specify:

1. Complete Product Number.
2. Tubing kit, if required.

Replacement Valves

Part Number	Where Used	Description	Orifice Size
191-809R	F93H	Minimum Pressure Release Valve	—
VLV29A-605R	F92A, F92B	Air Charging Valve	0.016" (0.406 mm)

Tubing and Connector Kits for Use with F92 Controls

Part Number	Length		Description
	Inches	mm	
190-820	30	762	3/16" O.D. Copper Tubing with Two 3/16" Flat Flare Nuts
190-821	36	914	
190-822	48	1219	

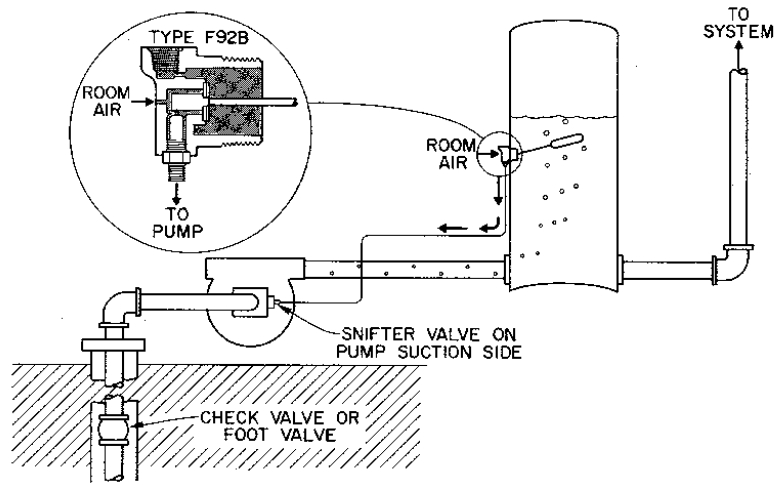


Fig. 4 — The F92 controlling air volume in a shallow well system.

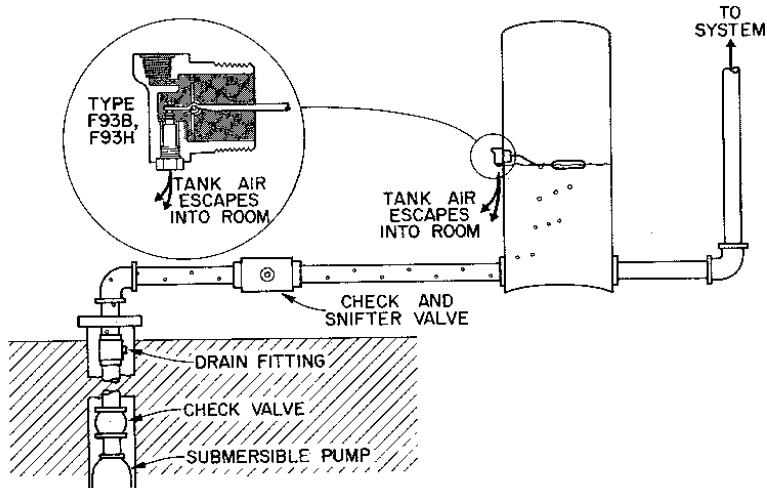
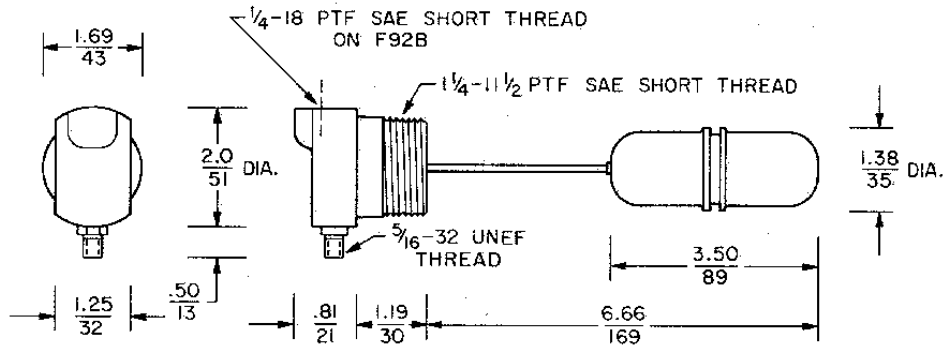
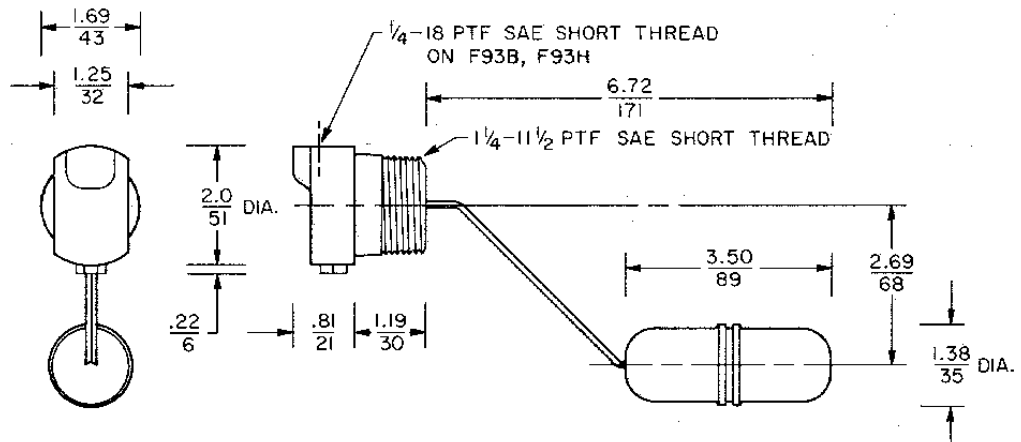


Fig. 5 — The F93 controlling air volume in a deep well system.



F92 Dimensions $\frac{\text{In}}{\text{mm}}$



F93 Dimensions $\frac{\text{In}}{\text{mm}}$

Performance specifications appearing herein are nominal and are subject to accepted manufacturing tolerances and application variables.

Notes



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Printed in U.S.A.