

VBS300 / VBS310 – Volume Booster Series



The VBS300 Volume Booster Series is designed to operate pneumatic valve actuators via a valve positioner. It is recommended for large actuators to reduce positioning time. Volume boosters with Cv 5 and pneumatic connection 1", for remote mounting. **VBS300** in Aluminium, **VBS310** in Stainless Steel 316. The bypass valve is used to adjust dynamic response to provide stable operation over a wide range of actuator sizes.

FEATURES

- Booster for control applications
- Available in Aluminium or Stainless Steel housing
- Adjustable Bypass Valve
- Compatible with the Full Range of Foxboro valve positioners SRP981, SRI986, SRI983, SRI990, SRD991, SRD960 and IP converters IP24, IP26
- Exhaust with internal thread 3/4-14 NPT for connection of an Exhaust Silencer or to be connected to a tube system for exhaust collection

1. WARNINGS

These products are intended for use in industrial compressed-air systems only. Do not use these products where pressures and temperatures can exceed those listed under Specification in PSS.

Only qualified personnel should install or service a volume booster. Volume Boosters should be installed, operated, and maintained in accordance with international and applicable codes and regulations, and our instructions. If the booster vents fluid or a leak develops in the system, it indicates that service is required. Failure to take the booster out of service immediately may create a hazardous condition. Personal injury, equipment damage, or leakage due to escaping fluid or bursting of pressure-containing parts may result if this booster is over pressured or is installed where service conditions could exceed the limits given in the Specifications section, or where conditions exceed any rating of the adjacent piping or piping connections. To avoid such injury or damage, provide pressure-relieving or pressure-limiting devices (as required by the appropriate code, regulation, or standard) to prevent service conditions from exceeding limits. Additionally, physical damage to the booster could result in personal injury and property damage due to escaping fluid. To avoid such injury and damage, install the booster in a safe location.

2. INSTALLATION

2.1 Pre-Installation Requirements

2.1.1 The VBS300 and VBS310 require a source of clean, oil-free dry instrument grade air filtered to 40 microns.

2.1.2 Air should be free of all contaminants and hazardous gases, flammable or toxic.

2.1.3 Clean all pipelines of dirt and scale prior to installation.

NOTE: Failures attributable to instrument air supply contamination are not covered by the warranty.

CAUTION: This instrument vents to atmosphere. The use of supply gas other than air can create a hazardous environment.

2.1.4 Apply a minimum amount of pipe compound to the male threads of the fitting only. Do not use thread sealant tape on pipe fittings as it tends to contaminate the valve causing the booster to malfunction.

Installation

2.2.1 Install the booster so that direction of flow is from Inlet to Outlet as labeled "IN" and "OUT" marked on the body. Inlet and outlet porting is 1" NPT. The signal port is 1/4" NPT. Tighten all connections securely.

2.2.2 Booster can be mounted in any position and is typically nipple-mounted between the pneumatic supply source and the actuator. See illustration for a typical installation.

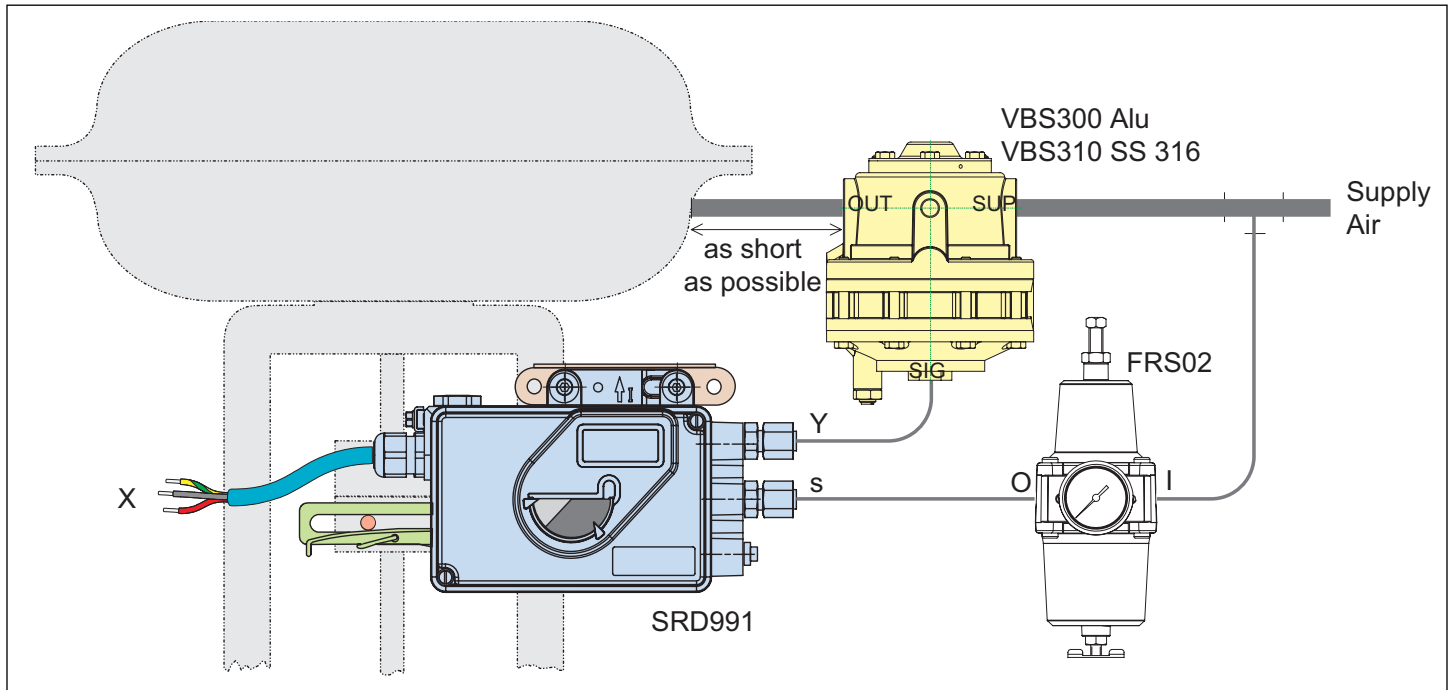
2.2.3 Ensure that piping to and from the booster is of proper size to meet the capacity demands of the booster and that the downstream actuator has properly sized input connections so as not to limit flow.

CAUTION: Keep exhaust port free of any obstructions. Excessive exhaust restriction can damage the booster. High flow capacity exhaust silencers and full size exhaust piping must be used to limit back pressure during the exhaust cycle in operation.

2.2.4 Tapped Exhaust : To reduce exhaust noise, we recommend to mount a silencer on the tapped exhaust. Such silencer should be compliant with the exhaust air flow, to prevent reducing the performance of the booster.

2.2.5 Tapped Exhaust : In case the venting gas needs to be exhausted far away from the volume booster, use a large pipe connected to the tapped exhaust. The sizing of the pipe and its length should be compatible with the exhaust air flow, to prevent reducing the performance of the booster.

Illustration – Typical installation, single acting



For double acting, two boosters are needed (one for each output of positioner)

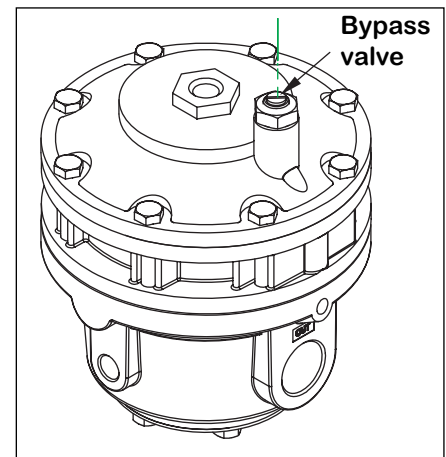
3. OPERATION

3.1 Prior to applying supply pressure to the booster, open the bypass valve approximately one turn by turning counter clockwise. After applying supply pressure, note response of actuator to open and close commands from the positioner. If excessive overshoot or hunting is seen, open bypass valve until stable operation is obtained. If valve becomes too slow to react to signal change from the positioner, close needle valve until more responsive.

Turning the bypass valve clockwise (closing) speeds response but can lead to instability.

Turning the bypass valve counter clockwise (opening) aids stability but will slow down the actuator's response.

Proper setting provides stable operation and acceptable response time.



3.2 During commissioning and operation be extremely careful as the valve may move very quickly!

3.3 Do not stay close to the booster during commissioning and operation if the booster is not equipped with a silencer or a collector of the exhausted air! Noise created by exhausting air can be superior as the allowed regulation and fast exhausting air could also injure personnel.

4. MAINTENANCE AND REPAIRS

NOTE: Under normal circumstances, no maintenance should be required.

4.1 Repairs

4.1.1 In the event of unit failure, the VBS300 and VBS310 can be returned to the factory through point of purchase for warranty repair if the warranty period has not expired.

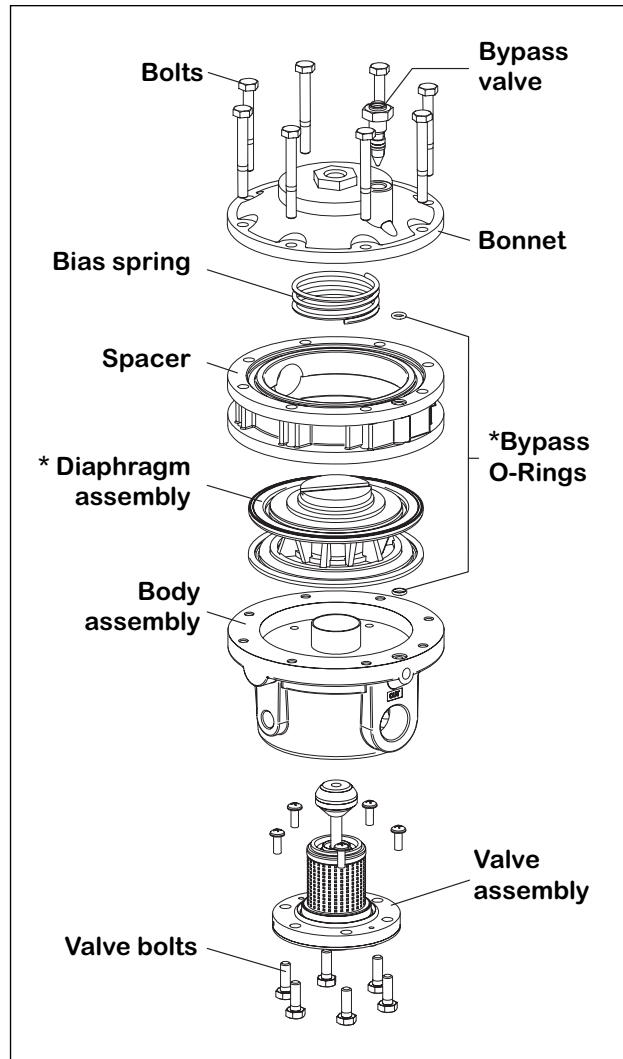
4.1.2 All units returned for repair must be authorized prior to receipt at the factory. Contact your local representative at the point of purchase.

4.1.3 Repair kits for the VBS300 and VBS310 are available.

Repair Kit VBS300: P/N on request

Repair Kit VBS310: P/N on request

Repair Kit includes: * Items



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