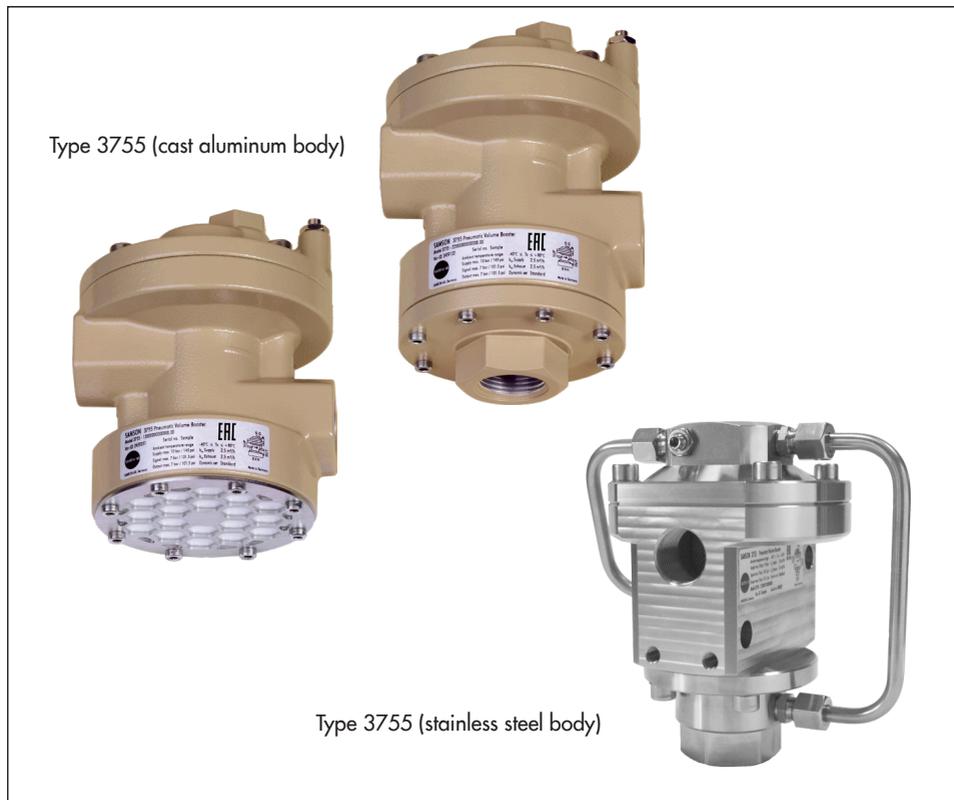


# MOUNTING AND OPERATING INSTRUCTIONS



## EB 8393 EN

### Translation of original instructions



Type 3755 (cast aluminum body)

Type 3755 (stainless steel body)

## Type 3755 Pneumatic Volume Booster

## Note on these mounting and operating instructions

These mounting and operating instructions assist you in mounting and operating the device safely. The instructions are binding for handling SAMSON devices. The images shown in these instructions are for illustration purposes only. The actual product may vary.

- For the safe and proper use of these instructions, read them carefully and keep them for later reference.
- If you have any questions about these instructions, contact SAMSON's After-sales Service ([aftersaleservice@samsongroup.com](mailto:aftersaleservice@samsongroup.com)).



Documents relating to the device, such as the mounting and operating instructions, are available on our website at [www.samsongroup.com](http://www.samsongroup.com) > **Downloads > Documentation.**

## Definition of signal words

### **DANGER**

*Hazardous situations which, if not avoided, will result in death or serious injury*

### **WARNING**

*Hazardous situations which, if not avoided, could result in death or serious injury*

### **NOTICE**

*Property damage message or malfunction*

### **Note**

*Additional information*

### **Tip**

*Recommended action*

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# 1 Safety instructions and measures

## Intended use

The Type 3755 Pneumatic Volume Booster is used together with positioners to increase the positioning speed of pneumatic actuators with an effective area  $\geq 1000 \text{ cm}^2$  or a travel volume  $\geq 6 \text{ l}$ .

The device is designed to operate under exactly defined conditions (e.g. operating pressure, temperature). Therefore, operators must ensure that the volume booster is only used in operating conditions that meet the specifications used for sizing the device at the ordering stage. In case operators intend to use the volume boosters in applications or conditions other than those specified, contact SAMSON.

SAMSON does not assume any liability for damage resulting from the failure to use the device for its intended purpose or for damage caused by external forces or any other external factors.

→ Refer to the technical data for limits and fields of application as well as possible uses.

## Reasonably foreseeable misuse

The Type 3755 Volume Booster is **not** suitable for the following applications:

- Use outside the limits defined during sizing and by the technical data

Furthermore, the following activities do not comply with the intended use:

- Use of non-original spare parts
- Performing maintenance activities not described in these instructions

## Qualifications of operating personnel

The volume booster must be mounted, started up and serviced by fully trained and qualified personnel only; the accepted industry codes and practices are to be observed. According to these mounting and operating instructions, trained personnel refers to individuals who are able to judge the work they are assigned to and recognize possible hazards due to their specialized training, their knowledge and experience as well as their knowledge of the applicable standards.

## Personal protective equipment

SAMSON recommends wearing the following protective equipment depending on the process medium:

- Wear hearing protection when working on the volume booster or near the valve.

→ Check with the plant operator for details on further protective equipment.

## **Safety instructions and measures**

### **Revisions and other modifications**

Revisions, conversions or other modifications of the product are not authorized by SAMSON. They are performed at the user's own risk and may lead to safety hazards, for example. Furthermore, the product may no longer meet the requirements for its intended use.

### **Safety features**

The safety function of the Type 3755 Pneumatic Volume Booster is the emergency venting on demand.

### **Warning against residual hazards**

To avoid personal injury or property damage, plant operators and operating personnel must prevent hazards that could be caused in the control valve by the process medium, the operating pressure, the signal pressure or by moving parts by taking appropriate precautions. Plant operators and operating personnel must observe all hazard statements, warnings and caution notes in these mounting and operating instructions, especially for installation, start-up and service work.

If inadmissible motions or forces are produced in the pneumatic actuator as a result of the supply pressure, it must be restricted using a suitable supply pressure reducing station.

### **Responsibilities of the operator**

Operators are responsible for proper use and compliance with the safety regulations. Operators are obliged to provide these mounting and operating instructions as well as the referenced documents to the operating personnel and to instruct them in proper operation. Furthermore, operators must ensure that operating personnel or third parties are not exposed to any danger.

### **Responsibilities of operating personnel**

Operating personnel must read and understand these mounting and operating instructions as well as the referenced documents and observe the specified hazard statements, warnings and caution notes. Furthermore, operating personnel must be familiar with the applicable health, safety and accident prevention regulations and comply with them.

### **Referenced documents**

The following documents apply in addition to these mounting and operating instructions:

- The mounting and operating instructions of the components on which the volume booster is mounted (valve, actuator, positioner etc.).

## 1.1 Notes on possible personal injury

### WARNING

#### **Risk of injury due to high pressure inside device.**

The volume booster is pressurized. Improper removal of the installed volume booster or opening of the body can lead to device components bursting and cause serious injury.

- Depressurize the volume booster before removing it or opening the body (disconnect the signal pressure and protect it against unintentional reconnection).

#### **Loud noise. Risk of damage to hearing.**

Without a noise-reducing element screwed into the exhaust port, the volume booster generates a loud noise on venting.

- Wear hearing protection.

## 1.2 Notes on possible property damage

### NOTICE

#### **Risk of damage to the volume booster due to contamination.**

Incorrect handling may allow dirt or other foreign particles to enter the device and lead to malfunctioning or damage.

- No substances must be allowed to enter the device during mounting, transport or storage.

#### **Risk of damage to the volume booster due to incorrect mounting position.**

The incorrect mounting position may allow dirt or other foreign particles to enter the device and lead to malfunctioning or damage.

- Mount the volume booster with the vent opening facing downward or to the side (exception: Type 3755-2 when the exhaust port is screwed to a pipe).
- If the volume booster can become covered in snow, iced up or dirt can collect in the device, it must be mounted with the exhaust side facing downward or protected by a suitable fixture/cover.
- When a screwed-on muffler is used, mount the volume booster with the muffler facing downward.

## 2 Markings on the device

### 2.1 Article code

Pneumatic Volume Booster Type 3755-	x	x	x	0	0	x	x	0	0	x	0	0	0	0
Design														
Low-noise venting over a sintered polyethylene filter disk	1		0			0								
(Flanged-on) threaded exhaust port	2		3/5			0/1								
Pneumatic connections														
Supply air and actuator ISO 228 - G 3/4, signal ISO 228 - G 1/4		1												
Supply air and actuator 3/4-14 NPT, signal 1/4-18 NPT		2												
Exhaust version														
Sintered polyethylene filter disk			0											
(Flanged-on) threaded exhaust port ISO 228 - G 1			3											
(Flanged-on) threaded exhaust port 1-11/2 NPT			5											
Flow coefficients														
Supply $K_{VS} = 2.5 \text{ m}^3/\text{h}$ , exhaust $K_{VS} = 2.5 \text{ m}^3/\text{h}$				0										
Dynamic response														
Standard (normal control)				0										
Body material														
Aluminum						0								
Stainless steel						1								
Device color														
Gray-beige, structured finish, RAL 1019 (aluminum body)							0							
Without (stainless steel body)							1							
Temperature range														
Standard temperature, -40 to +80 °C											0			
Low temperature version, -55 to +60 °C												1		

## 2.2 Nameplate

Example

<b>SAMSON 3755</b>		<b>Pneumatic Volume Booster</b>		7	
Ambient temperature range	1	$k_{vs}$ Supply	2.5 m <sup>3</sup> /h		
Supply max. 10 bar / 145 psi		$k_{vs}$ Exhaust	2.5 m <sup>3</sup> /h		
Signal max. 7 bar / 101.5 psi		Dynamic set	2	6	
Output max. 7 bar / 101.5 psi		Model 3755 -	3		
SAMSON AG, Germany	Var.-ID	4	Serial no.	5	Made in Germany

- 1 Temperature range
- 2 Dynamic response
- 3 Model number
- 4 Configuration ID
- 5 Serial number
- 6 Data Matrix/QR code
- 7 Body material:



Aluminum



Stainless steel

### 3 Design and principle of operation

The Type 3755 Pneumatic Volume Booster is used together with positioners to increase the positioning speed of pneumatic actuators with an effective area  $\geq 1000 \text{ cm}^2$  or a travel volume  $\geq 6 \text{ l}$ .

The pneumatic booster supplies the actuator with an air flow output whose pressure corresponds exactly to the signal pressure, except that it has a much higher volume output.

If the positioner signal to supply air to the actuator increases, the pressure above the diaphragm (1) increases. The differential pressure at the diaphragm causes the supply plug (2) to open, providing supply air up to a maximum of 10 bar to the actuator.

In contrast, the signal to vent the actuator causes the exhaust plug (3) to open. The pressure in the actuator is relieved over the exhaust port.

The bypass restriction screw (4) is used to adjust the response of the pneumatic volume booster to match the closed control loop requirements. The setting of the bypass restriction screw can be locked in position to prevent it from being turned and can additionally be lead-sealed.

See Chapter 5.3.1 on page 23 for more details on how to adjust the bypass.

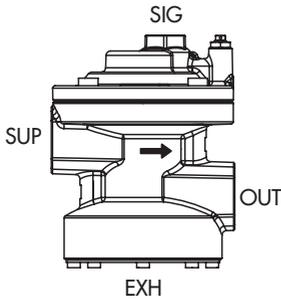
### 3.1 Safety function

The safety function of the Type 3755 Pneumatic Volume Booster is the emergency venting on demand.

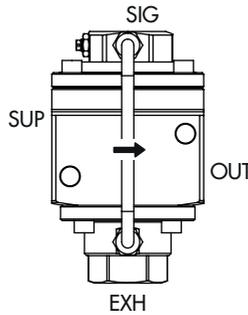
### 3.2 Versions

- **Type 3755-1:**  
Pneumatic volume booster (cast aluminum body) with low-noise sintered polyethylene filter disk (Fig. 2)
- **Type 3755-2:**  
Pneumatic volume booster (aluminum body) with flanged-on threaded exhaust port (Fig. 3)
- **Type 3755-2:**  
Pneumatic volume booster (stainless steel body), threaded exhaust port (Fig. 4)

Connections of aluminum version:



Connections of stainless steel version:



SIG Signal  
 SUP Supply air  
 OUT Output (to actuator)  
 EXH Exhaust air

Sectional drawing of version with aluminum body:

(the same principle applies to the version with stainless steel body):

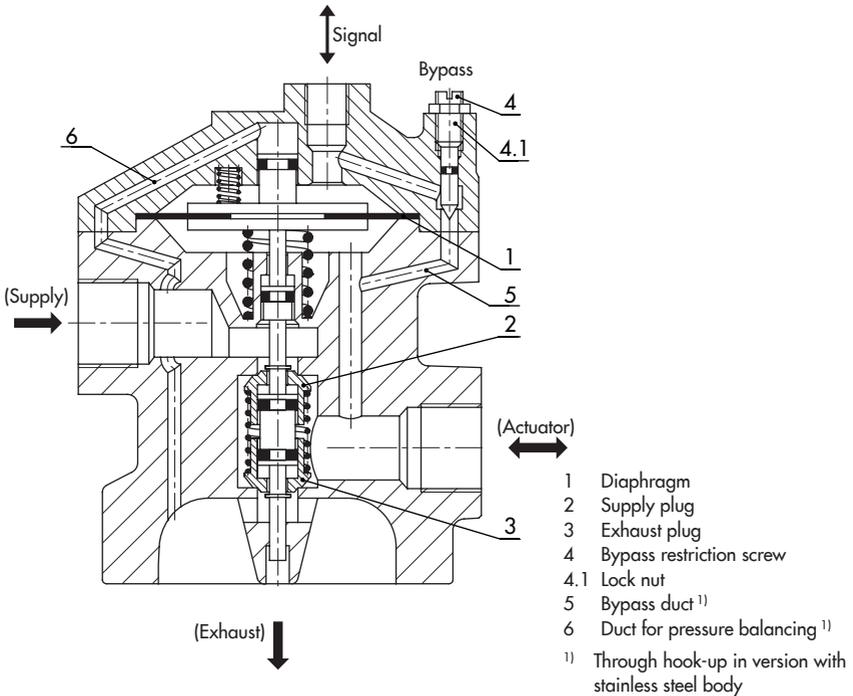


Fig. 1: Pneumatic connections and sectional drawing

### 3.3 Accessories

Screwed-on stainless steel muffler	
Connecting thread	Ordering number
G 1	8504-1009
1 NPT	8504-1010

- When a screwed-on muffler is used, mount the volume booster with the muffler facing downward.
- Mount the muffler properly using suitable tools and sealant to prevent thread galling (seizure).
- If the muffler can become covered in snow, iced up or dirt can collect, it must be protected by a suitable fixture/cover.

The degree of protection IP 54 is achieved when the above mentioned conditions are met.



Fig. 2: Type 3755-1 (cast aluminum body)

Fig. 3: Type 3755-2 (cast aluminum body)

Fig. 4: Type 3755-2 (stainless steel body)

### 3.4 Spare parts/conversion kits

Aluminum version	
<b>Spare parts for bypass restriction screw</b>	<b>Ordering number</b>
Stainless steel lock nut M8x1	8350-0469
<b>Spare parts for Type 3755-1 (sintered polyethylene filter disk)</b>	<b>Ordering number</b>
Sintered polyethylene filter disk	0550-0825
Stainless steel retaining plate	0500-1401
Stainless steel M5x16 fastening screw	8333-2501
<b>Spare parts for Type 3755-2 (flanged-on threaded port)</b>	<b>Ordering number</b>
Flanged-on threaded exhaust port G 1	0410-6315
Flanged-on threaded port 1 NPT	0410-6488
O-ring 74x3 NBR 70 Shore A	8421-0513
Stainless steel M5x25 fastening screw	8333-2503
<b>Conversion kits including mounting parts (see Chapter 5.4)</b>	<b>Ordering number</b>
Conversion to Type 3755-1 with sintered polyethylene filter disk	1400-9991
Conversion to Type 3755-2 with flanged-on port G 1	1400-9988
Conversion to Type 3755-2 with flanged-on threaded exhaust port 1 NPT	1400-9989
Stainless steel version	
<b>Spare parts for bypass restriction screw</b>	<b>Ordering number</b>
Stainless steel lock nut M8x1	8350-0469
<b>Spare parts for body piping</b>	<b>Ordering number</b>
Stainless steel shaped tube $\varnothing 8 \times 1$ , bypass	0401-2537
Stainless steel shaped tube $\varnothing 8 \times 1$ , pressure balancing	0401-2538
Stainless steel screw fitting G $\frac{1}{4}$ $\varnothing 8$	8582-0321
Stainless steel screw fitting G $\frac{1}{8}$ $\varnothing 8$	8582-0380

### 3.5 Technical data

Pneumatic volume booster	Type 3755-1	Type 3755-2	Type 3755-2
	Aluminum body		Stainless steel body
Flow coefficients			
K <sub>V5</sub> Supply	2.5 m <sup>3</sup> /h		
K <sub>V5</sub> Exhaust	2.5 m <sup>3</sup> /h		
K <sub>V5</sub> Bypass	0.3 m <sup>3</sup> /h		
Closed loop control			
Pressure ratio: Signal to output	1 : 1		
Response pressure	Standard temperature range: 80 mbar Low temperature range: 100 mbar		
Pressure			
Supply	Max. 10 bar · Max 145 psi		
Actuator	Max. 7 bar · Max 101.5 psi		
Signal	Max. 7 bar · Max 101.5 psi		
Air quality acc. to ISO 8573-1	Maximum particle size and density: Class 4, Oil content: Class 3, Pressure dew point: Class 3 or at least 10 K below the lowest ambient temperature to be expected		
Connecting thread			
Supply (SUP)	G ¾ (optionally ¾ NPT)		
Actuator/output (OUT)	G ¾ (optionally ¾ NPT)		
Signal (SIG)	G ¼ (optionally ¼ NPT)		
Exhaust port (EXH)	–	G 1 (optionally 1 NPT)	
Safety integrity level			
Use in safety-instrumented systems acc. to IEC 61508/IEC 61511 <sup>1)</sup>	<p><b>Suitable for use in safety-instrumented systems up to SIL 2:</b> applies to a single device</p> <p><b>Suitable for use in safety-instrumented systems up to SIL 3:</b> applies to redundant configuration of valves according to IEC 61508</p> <p>➔ See Manufacturer's Declaration HE 1193 (available on request)</p>		

<sup>1)</sup> Only suitable for the standard temperature range and with the aluminum body

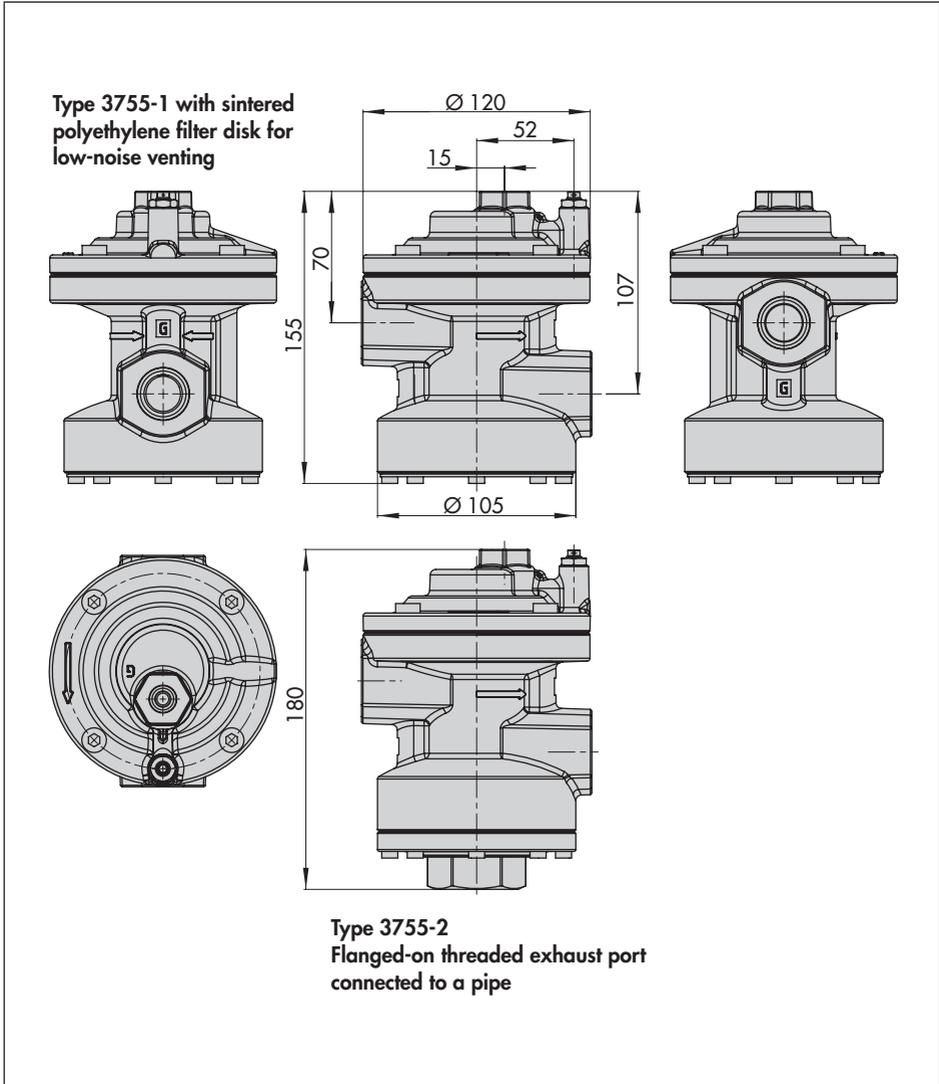
Pneumatic volume booster	Type 3755-1	Type 3755-2	Type 3755-2
	Aluminum body		Stainless steel body
Degree of protection			
Degree of protection provided by enclosure according to EN 60529	IP44 <sup>2)</sup>	IP66 <sup>3)</sup>	
Other operating parameters			
Permissible ambient temperature	Standard temperature range: -40 to +80 °C Low temperature range: -55 to +60 °C		
Service life	≥1 x 10 <sup>7</sup> full travel cycles		
Weight	2.1 kg	2.4 kg	5.2 kg
Materials			
Body	Cast aluminum, powder coating (RAL 1019)  EN AC-43000KF according to DIN EN 1706	EN AC-43000KF according to DIN 1706 and EN AW-5083-H112 according to DIN EN 755-3	1.4404 and 1.4571
Exhaust side	Muffler with sintered polyethylene filter disk and stainless steel retaining plate	Flanged-on threaded port made of aluminum, powder coated (RAL 1019)	Threaded port made of stainless steel
Diaphragm	Standard temperature range: VMQ Low temperature range: PVMQ		
Seat-plug seal	VMQ		
Other seals	NBR		
Other external parts	1.4404		

<sup>2)</sup> Exhaust side facing downward or to the side

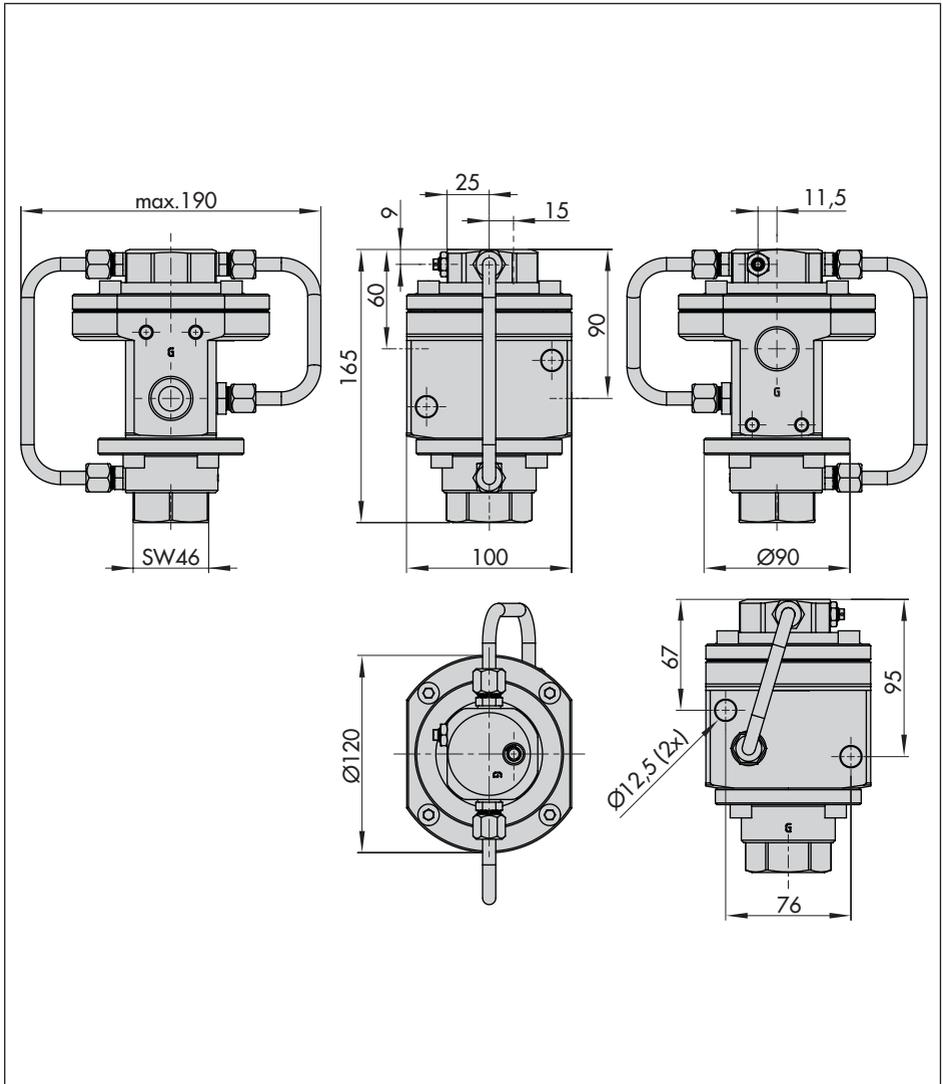
<sup>3)</sup> The following applies for Type 3755-2: body IP66; the IP rating depends on how the venting is implemented (pipe, muffler etc.).

### 3.6 Dimensions in mm

#### 3.6.1 Aluminum version



### 3.6.2 Stainless steel version



## 4 Measures for preparation

After receiving the shipment, proceed as follows:

1. Check the scope of delivery. Compare the shipment received with the delivery note.
2. Check the shipment for transportation damage. Report any transportation damage.

### 4.1 Unpacking

---

#### **i** Note

*Do not remove the packaging if the volume booster is to be transported to another location or kept in storage.*

---

Before mounting the volume booster, proceed as follows:

1. Remove the packaging from the volume booster.
  2. Dispose of the packaging in accordance with the valid regulations.
- 

#### **!** NOTICE

***Risk of damage to the volume booster due to foreign particles entering it.***

*Do not remove the protective film until immediately before mounting.*

---

## 4.2 Transporting and lifting

### 4.2.1 Transporting

- Protect the volume booster against external influences (e.g. impact).
- Protect the volume booster against moisture and dirt.
- Observe transport temperature depending on the permissible ambient temperature (see technical data in Chapter 3.5).

### 4.2.2 Lifting

Due to the low service weight, lifting equipment is not required to lift the volume booster.

## 4.3 Storage

---

**NOTICE**

***Risk of damage to the volume booster due to improper storage.***

*Observe the storage instructions. Contact SAMSON, if need be.*

---

### **Storage instructions**

- Protect the volume booster against external influences (e.g. impact, shocks, vibration).
- Do not damage the corrosion protection (coating).
- Protect the volume booster against moisture and dirt. In damp spaces, prevent condensation. If necessary, use a drying agent or heating.
- Pack the volume booster in airtight packaging.

## 5 Mounting and start-up

- Mount the volume booster with the compressed air flowing from the supply port to the actuator port as indicated by the arrow on the body.
- The volume booster is mounted between the positioner and actuator.

To meet the requirements of safety instrumented systems (SIS), a solenoid valve can also be connected between the pneumatic volume booster and the pneumatic actuator (Fig. 6).

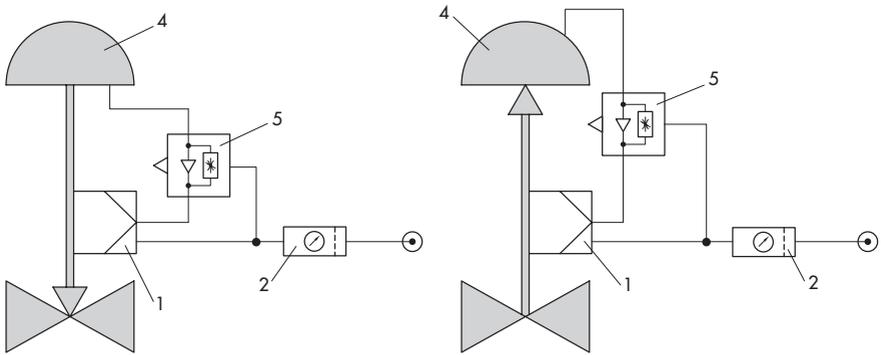
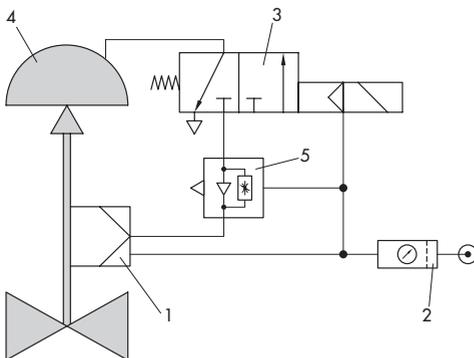


Fig. 5: Standard connection of the pneumatic volume booster for both fail-safe positions



- 1 Positioner
- 2 Supply pressure regulator
- 3 Solenoid valve
- 4 Pneumatic actuator
- 5 Volume booster

Fig. 6: Installation of the pneumatic volume booster with an additional solenoid valve

**NOTICE****Malfunction due to dirt blocking the volume booster!**

No substances must be allowed to enter the device during mounting, transport or storage.

## 5.1 Mounting orientation

### Type 3755-1:

- **The mounting position with the exhaust side facing upward is not permissible!**
- Mount the volume booster with the exhaust air side facing downward or to the side.
- If the volume booster can become covered in snow, iced up or dirt can collect in the device, it must be mounted with the exhaust side facing downward or protected by a suitable fixture/cover.

### Type 3755-2:

The permissible mounting position depends on which exhaust connection is used.

- Any mounting position of the volume booster can be used when the exhaust port is attached to a pipe.
- When a screwed-on muffler is used, read Chapter 3.3 on page 12.

## 5.2 Pneumatic connections

The air connections for *signal*, *supply*, *actuator* and the *flanged-on threaded exhaust port of Type 3755-2* are designed with G or NPT threads (see article code on page 8).

- The tapped holes with G threads correspond with the form X of DIN 3852-2 in the normal version.
- The tapped holes with NPT threads are designed according to ANSI/ASME B1.20.1 for mounting using a wrench.

### Additional points that apply concerning the connections:

- Before mounting, all pipes must be free of dirt and foreign matter.
- Mount the screw fittings properly using suitable tools and sealant to prevent thread galling (seizure).
- The use of Teflon tape as a sealant for the fittings is not permitted.
- All screw fittings must be securely tightened.

### 5.2.1 Supply air

The quality of the supply air must meet the requirements of ISO 8573-1 concerning particle size, oil content and pressure dew point (see Technical data).

- Select supply pressure greater than the maximum expected signal pressure (max. 10 bar).

### 5.2.2 Exhaust port of Type 3755-2

---

#### **⚠ WARNING**

**Loud noise. Risk of damage to hearing.**

*Without a noise-reducing element screwed into the exhaust port, the volume booster generates a loud noise on venting.*

*Wear hearing protection.*

---

The exhaust port of Type 3755-2 can be attached to a pipe for further use of the exhaust air, such as purging of the actuator spring chamber or discharged through the pipe.

- Make sure sufficiently sized cross-sections are chosen on sizing the piping and screw fittings.

### 5.3 Start-up

---

#### **⚠ WARNING**

**Loud noise and high pressure.**

**Risk of damage to hearing.**

*Wear hearing protection.*

*Check that all components are mounted properly before every start-up.*

---

---

#### **i Note**

*The Type 3755 Volume Booster is suitable for actuators with an effective area  $\geq 1000 \text{ cm}^2$  or a travel volume  $\geq 6 \text{ l}$ .*

---

On starting up the volume booster, keep the following sequence:

1. Check the attachment or attach the volume booster properly between the positioner and actuator.
2. Apply the supply pressure. If possible, slowly increase the pressure.
3. Adjust the bypass restriction according to Chapter 5.3.1.
4. Adapt the control loop as described in Chapter 5.3.2.

### 5.3.1 Adjusting the bypass restriction

For a stable loop performance, the bypass restriction must be adjusted to meet the control loop requirements:

1. Undo the lock nut (Fig. 1, 4.1) and use a 4 mm Allen key to turn the bypass restriction screw (4) clockwise into the restriction seat as far as it will go. Make sure that the lock nut does not get tightened.
2. From this adjusted position, turn the bypass restriction screw counterclockwise by three full turns.
3. Hold the bypass restriction screw stationary and tighten the lock nut with a tightening torque of 3 Nm at the maximum. Remove the tool used for adjustment.
4. Adjust the control parameters of the positioner as specified in the corresponding mounting and operating instructions and, initialize the positioner.
5. After adjusting the bypass restriction screw, lead-seal the setting.

### 5.3.2 Tuning to the control loop requirements

The bypass setting can be changed, if required. To do this, change the position of the bypass restriction screw gradually by half turns and correct the control parameters of the positioner accordingly or re-initialize it.

#### Turning the bypass restriction screw into the restriction seat

→ reduces the bypass cross-section, causing the volume booster to respond more dynamically.

#### Consequences of a too small bypass cross-section:

- Loop may start to hunt.

#### Turning the bypass restriction screw out of the restriction seat

→ increases the bypass cross-section, causing the booster dynamic response to become weaker.

#### Consequences of a too large bypass cross-section:

- Slow control response
- Stroke times (supply and exhaust) slowed down considerably

### 5.4 Conversion

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#### **⚠ WARNING**

**Loud noise and high pressure.**

**Risk of damage to hearing.**

*Wear hearing protection.*

*Before opening the volume booster, put it out of operation!*

---

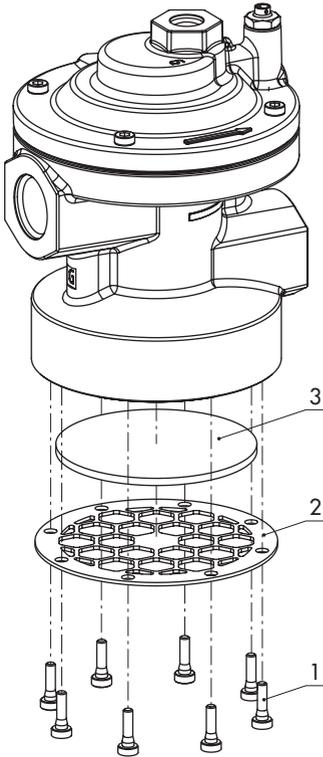
2. Insert a new sintered polyethylene filter disk (3) with the open-pored rough side facing towards the device.
3. Fasten the retaining plate (2) for the sintered polyethylene filter disk (3) onto the body, tightening the eight new M5x16 screws (1) in a crisscross pattern with 4.2 Nm tightening torque at the maximum.

#### 5.4.1 Converting Type 3755-1 to Type 3755-2

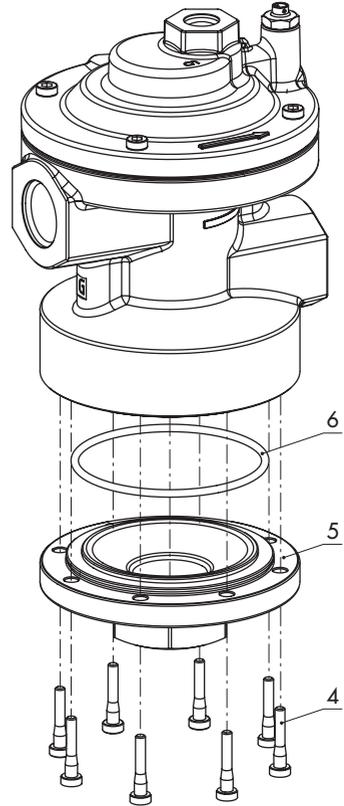
1. Unscrew the eight M5x16 screws (1) and remove the retaining plate (2) from the body.
2. Remove sintered polyethylene filter disk (3).
3. Insert the supplied O-ring (6) into the groove.
4. Fasten flanged-on threaded exhaust port (5) onto the body, tightening the new eight M5x25 screws (4) in a crisscross pattern with 4.2 Nm tightening torque at the maximum.

#### 5.4.2 Converting Type 3755-2 to Type 3755-1

1. Unscrew the eight M5x25 screws (4) and remove the flange with threaded port and O-ring (6) from the body.



**Fig. 7:** Type 3755-1: low-noise venting over a sintered polyethylene filter disk



**Fig. 8:** Type 3755-2: flanged-on threaded exhaust port

- 1 M5x16 screw
- 2 Retaining plate
- 3 Sintered polyethylene filter disk
- 4 M5x25 screw
- 5 Screwed flange
- 6 O-ring

## 6 Servicing

### **i Note**

The volume booster was checked by SAMSON before it left the factory.

- The product warranty becomes void if service or repair work not described in these instructions is performed without prior agreement by SAMSON's After-sales Service.
- Only use original spare parts by SAMSON, which comply with the original specifications.

The Type 3755 Pneumatic Volume Booster is maintenance-free. It might be necessary to replace the sintered polyethylene filter disk (see spare parts list in Chapter 3.4 on page 13) if the flow rate decreases.

### 6.1 Replacing the sintered polyethylene filter disk

#### **⚠ WARNING**

**Loud noise and high pressure.**

**Risk of damage to hearing.**

*Wear hearing protection.*

*Before opening the volume booster, put it out of operation!*

→ See Fig. 7

1. Unscrew the eight M5x16 screws (1) and remove the retaining plate (2) from the body.

2. Remove sintered polyethylene filter disk (3).
3. Insert a new sintered polyethylene filter disk with the open-pored rough side facing towards the device.
4. Refasten the retaining plate (2) on the body, tightening the eight M5x16 screws (1) in a crisscross pattern with 4.2 Nm tightening torque at the maximum.

### 6.2 Preparation for return shipment

Defective volume boosters can be returned to SAMSON for repair.

Proceed as follows to return devices to SAMSON:

1. Put the control valve out of operation. See associated valve documentation.
2. Remove the volume booster from the pipeline (see Chapter 8).
3. Proceed as described on our website at [www.samsongroup.com](http://www.samsongroup.com) > Service > After-sales Service > Returning goods.

## 7 Malfunctions

Malfunction	Possible reasons	Recommended action
Leakage between pneumatic volume booster and air connections occurs.	Screw fittings are not securely tightened.	Check whether pipe screw fitting leaks and is screwed on properly.
Flow rate decreases.	Contamination or wear of the sintered polyethylene filter disk.	Check supply filter and sintered polyethylene filter disk to make sure they are not clogged and clean them. Possibly the sintered polyethylene filter disk must be replaced (see Chapter 6.1).
Loop hunts.	The bypass cross-section may be too small.	Re-adjust as described in Chapter 5.3.2.
Volume booster does not respond.	The bypass cross-section may be too large.	Re-adjust as described in Chapter 5.3.2.

### **i** Note

*If other malfunctions occur in the volume booster, contact SAMSON's After-sales Service.*

### 7.1 Emergency action

Upon failure of the air supply, the positioner vents the actuator over the volume booster, causing the valve to move to the fail-safe position determined by the actuator.

Plant operators are responsible for emergency action to be taken in the plant.

### Tip

*Emergency action in the event of valve failure is described in the associated valve documentation.*

### 8 Decommissioning and removal

#### **⚠ WARNING**

##### **Risk of bursting in pressure equipment.**

Control valves, mounting parts and pipelines are pressure equipment. Improper opening can lead to bursting of the valve.

- Before starting any work on the control valve, depressurize all plant sections affected as well as the valve.
- Observe the valve's safety instructions.

#### **⚠ WARNING**

##### **Loud noise.**

##### **Risk of damage to hearing.**

Wear hearing protection.

### 8.1 Decommissioning

To decommission the volume booster for maintenance work or disassembly, proceed as follows:

1. Disconnect the supply pressure of the pneumatic actuator.
2. Disconnect the supply air.
3. If necessary, allow valve components to cool down or warm up to the ambient temperature.

### 8.2 Removing the pneumatic volume booster

1. Put the volume booster out of operation (see section 8.1).
2. Detach the pipe fittings.
3. Remove the volume booster from the pipeline.

### 8.3 Disposal



We are registered with the German national register for waste electric equipment (stiftung ear) as a producer of electrical and electronic equipment, WEEE reg. no.: DE 62194439

- Observe local, national and international refuse regulations.
- Do not dispose of components, lubricants and hazardous substances together with your other household waste.

#### **💡 Tip**

On request, SAMSON can appoint a service provider to dismantle and recycle the product.

## 9 After-sales service

Contact SAMSON's After-sales Service for support concerning service or repair work or when malfunctions or defects arise.

### **E-mail address**

You can reach our after-sales service at [aftersalesservice@samsongroup.com](mailto:aftersalesservice@samsongroup.com).

### **Addresses of SAMSON AG and its subsidiaries**

The addresses of SAMSON AG, its subsidiaries, representatives and service facilities worldwide can be found on our website ([www.samsongroup.com](http://www.samsongroup.com)) or in all SAMSON product catalogs.

### **Required specifications**

Please submit the following details:

- Order number and position number in the order
- Type, serial number, device version





**EB 8393 EN**



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