

Installation, Regulation and Maintenance Instructions

Volume Boosters

Series 04, 06, 08, 12, 16

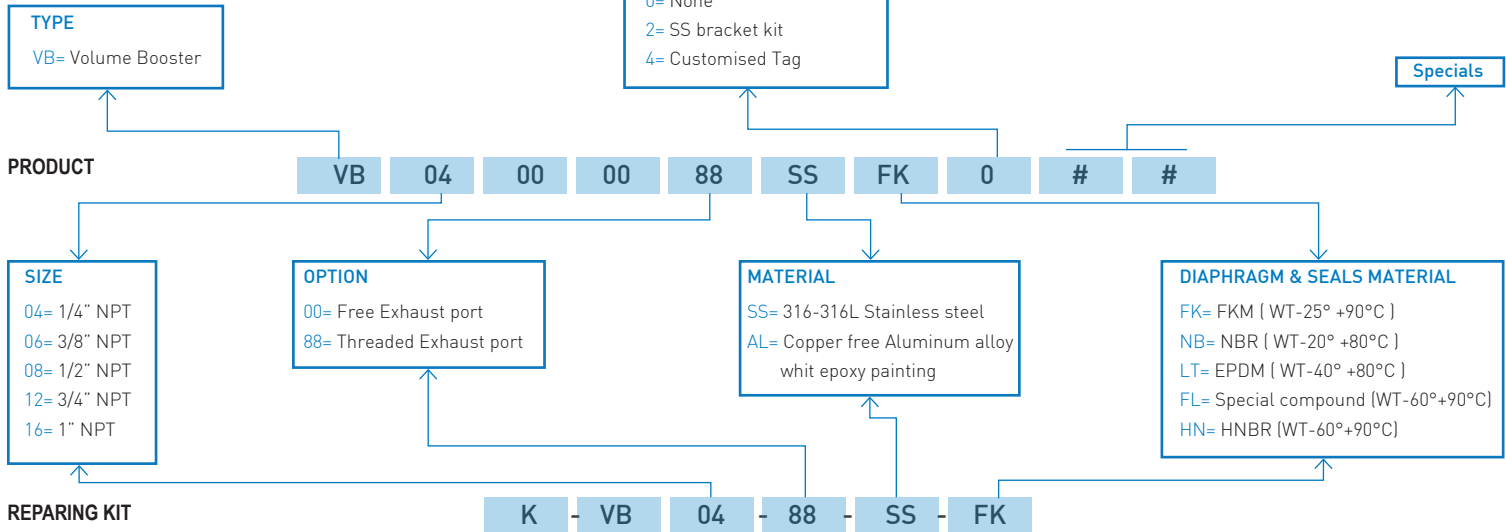
1/4", 3/8", 1/2, 3/4, 1"NPT



LABEL



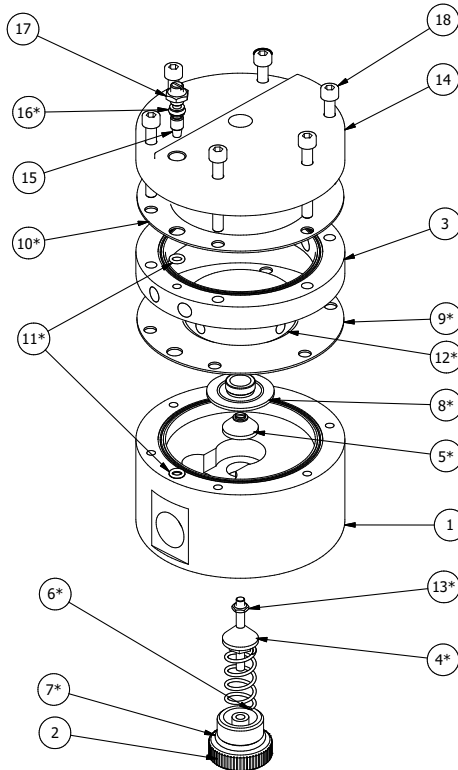
HOW TO ORDER



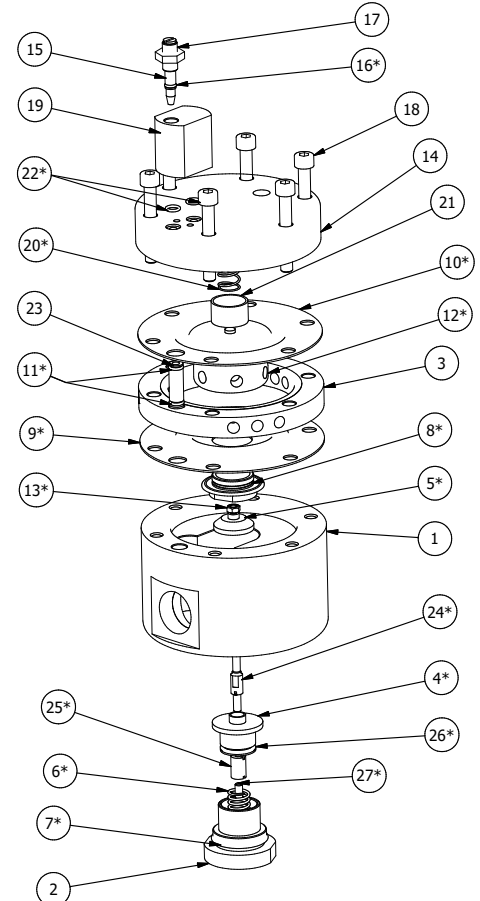
PART LIST

Pos.	Q.ty	Description
1	1	BODY
2	1	PLUG
3	1	VENT RING
4	1	VALVE BODY
5	1	SHUTTER
6	1	VALVE SPRING
7	1	O'RING
8	1	DIAPHRAGM SEAT
9	1	LOWER DIAPHRAGM
10	1	UPPER DIAPHRAGM
11	2	O'RING
12	1	SPACER
13	1	NUT
14	1	COVER
15	1	BYPASS VALVE
16	1	O'RING
17	1	NUT
18	6	SCREW
19	1	BYPASS SEAT
20	1	UPPER SPRING
21	1	UPPER SPRING CUP
22	1	O'RING
23	2	BYPASS CROSSING
24	1	VALVE BODY
25	1	NUT
26	1	O'RING
27	1	STOP SCREW

SERIES 04 , 06, 08 - 1/4"NPT, 3/8"NPT, 1/2"NPT



SERIES 12, 16 - 3/4"NPT, 1"NPT



REPAIR KIT
Contains part with *

1. ABOUT THIS DOCUMENTATION

This instruction and operating manual contains important information the user should observe to storage, mount and maintain Sitecna EP08, EP12 and EP16 safely, for personal safety as well as prevention against damage to property.

2. RANGE AND RESPONSABILITIES OF PERSONNEL

Qualified personnel should be trained, instructed and authorized in operating and maintaining products and systems according to the safety regulations for electrical circuits, high pressures and hazardous atmosphere. They should be trained or instructed in maintenance and use of proper safety equipment according to the safety instructions. They should have good experience to identify risks and avoid potential hazards when working with these products and systems.

3. GENERAL SAFETY INSTRUCTIONS

To ensure safe operation of this product, the user must read all safety instructions described in this manual and observe safety information without any exception.

Throughout this manual there are a number of HAZARD WARNINGS that must be read and adhered to in order to prevent possible personal injury and/or damage to equipment. Three signal work "DANGER", "WARNING" and "CAUTION" are used to indicate the severity of a hazard, and are preceded by the safety alert symbol.

Danger Denotes the most serious hazard and is used when serious injury or death WILL result from misuse or failure to follow specific instructions.

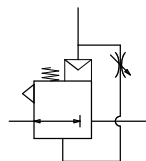
Warning Used when serious injury or death MAY result from misuse or failure to follow specific instructions.

Caution Used when injury or product/equipment damage may result from misuse or failure to follow specific instructions.

Caution It is the responsibility and duty of all personnel involved in the installation, operation and maintenance of the equipment on which this device is used, to fully understand the procedures by which hazards can be avoided.

The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

4. PNEUMATIC DIAGRAM



5. TECHNICAL FEATURES

Medium: compressed air or inert gases, filtered, lubricated and not lubricated

Port thread: 1/4" - 3/8" - 1/2" - 3/4" - 1"NPT

Signal connection: 1/4"NPT

Max supply pressure: 10 bar

Max signal/output: 10 bar

Output pilot ratio: 1:1

Flow rate CV: 1/4 - input 2.20; exhaust 2.40

1/2 - input 2.80; exhaust 2.80

3/4 - input 5.60; exhaust 6.50

1 - input 8.00; exhaust 8.00

Materials: Body SS316L or aluminium alloy

Internal part stainless steel

MATERIAL		TEMPERATURE		
DIAPHRAGM	SEALS	TRANSPORT	STORAGE	OPERATING
NBR	NBR	-20°C...+80°C	-20°C...+80°C	-20°C...+80°C
FKM	FKM	-25°C...+90°C	-25°C...+90°C	-25°C...+90°C
EPDM	EPDM	-40°C...+80°C	-40°C...+80°C	-40°C...+80°C
FVMQ	FVMQ	-60°C...+90°C	-60°C...+90°C	-60°C...+90°C
HNBR	HNBR	-60°C...+90°C	-60°C...+90°C	-60°C...+90°C

6. TRANSPORTATION & STORAGE

The preferred storage location is a clean, dry and protected warehouse. If the components have to be stored outside, precautions should be taken to keep valves clean and dry. For storage temperatures, refer to the table in paragraph "TECHNICAL FEATURES".

To avoid contamination of impurities during the storage period, don't remove thread protection caps; remove them just before the installation phase.

7. INSTALLATION

Warning Before installing the valve, set and block the machine or equipment in a secure position; close the air shutoff valve and exhaust air from air lines and disconnect all electrical power.

- Caution** It is recommendable to check its conditions before the application
- A pressure reducer is necessary when air pressure is higher than max operating pressure.
- Install the pneumatic connections according to the pneumatic diagram enclosed.
- Caution** Gradually increase air supply to the max operating pressure.

8. MOUNTING

Any position, but vertically is better

Caution For Energize-to-trip operation:

All the requirements of IEC 61511-1 par. 11.2.11 shall be met. For this reason, as a pressure switch or pressure transmitter mounted downstream the EP or upstream the EP (signal line) would be ineffective, the corresponding tubing connections' length shall be reduced at a minimum.

9. ADJUSTING

- The operating requirement of the volume booster is adjustments of the by-pass to stabilize the actuator.
- Turn the bypass adjusting screw counter clockwise for four turns
- With the actuator in operation, slowly turn the by-pass screw until the booster operates in response to large changes in the input signal, yet allows small changes to move the actuator without booster activation.
- If the ON/OFF actuator is to be used, the bypass should be closed.

10. MAINTENANCE

Warning Before performing any work, read this manual and study all figures. Assure yourself that you understand and can do what is required in each step. Failure to follow these instructions may affect quick release valve operation and may result in exposure to personal injury.

Before uninstalling the valve, set and block the machine or equipment in a secure position; close the air shutoff valve and exhaust air from air lines; disconnect all electrical power.

A. Ordinary maintenance

Caution VBs must be checked periodically to ensure correct functioning (recommended: once a year*).

Disassemble the product following the exploded view on page 1. Be careful not to damage the diaphragm if it is stuck to the body. Complete the following operations

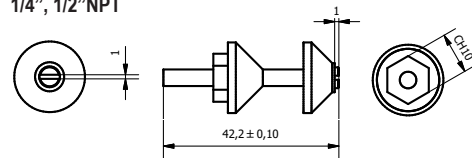
- Clean from impurities and dust;
 - Visually check the integrity. Check that there are no defects or breakages on the diaphragm, on the o-rings, on the vulcanization of the valve body. Replace the components if any defects are detected. It is advisable to replace the elastomeric components every 3 years.
 - Check that the nuts are tightened manually or with suitable tools and if they are not, tighten them
- Reassemble following the exploded view on page 1.**
- Make sure there are no impurities inside
 - Repeat the "TEST" phase to check that it is working correctly and that there are no leaks.

* Depending on the use and wear of the components, more frequent checks and maintenance and/or product replacement may be necessary.

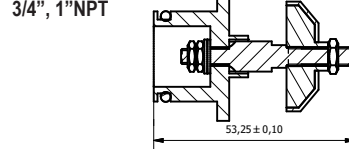
** Lubricate O-ring and seals with alight coat of good quality (e.g. Polyub Gly[®]151 Kluber, Molykote 33[®]Med. Dupont[™])

Warning NB - the product must be re-calibrated after replacing the components: replacing the diaphragm and/or valve body, as well as just disassembling/assembling can modify the response of the VB. The main valve has a calibratable length that must be recorded and locked with the locknut. This length, which depends on the distance between the shutters, in fact influences the ratio between pilot pressure and outlet pressure at the VB. Increasing the distance between the two shutters determines an increase in the outlet pressure. Shortening the distance between the shutters determines a lowering of the outlet pressure. The factory-calibrated distance for the VB is 42.2 ± 0.1mm for the 1/4" and 1/2"NPT VBs and 53.25 ± 0.1mm for the 3/4", 1"NPT VBs.

1/4", 1/2"NPT



3/4", 1"NPT



B. Troubleshooting

Issue	Possible Cause	Fixes
when the signal is off, the valve does not close	leakage / high bleed	Check valve seat. Ensure that the diaphragm is not punctured or contact SITECNA technical support for more information
leakage / high bleed	bonnet or retainer screws relieve valve Supply valve supply seat diaphragm assemblies	Tighten the bonnet or retainer screws If contaminated clean the source. If damaged, install or contact SITECNA technical support for more information

C. Repair Kit

See page 1

11. DISPOSAL

All the series of products are realized with materials that are not dangerous for health. All components must be disposed depending on type of materials and follow local norms. All the main parts of products are realized in stainless steel or copper free aluminium alloy (classified as metals).

12. MARKING ACCORDING TO 2014/34/UEAtex

II 2G Ex h IIC T6/T5 Gb X

II 2D Ex h IIIC T85°C/T100°C Db X

For using these equipment in potentially explosive atmospheres, it is recommended - for the installation and the maintenance operation - to use tools and instruments that can produce only a single spark (for instance: screwdrivers, spanners). Avoid use of tools that can produce sparks like disk saw or grinder. Action must be taken to put to earth the units through a suitable connection, checking that all the metal components (fittings and pipe line) have to be equitably potential. Equipment have to be installed in the corresponding zone according to the marking.

NOTE: special conditions for safe use (X conditions)

Before performing any work, read this manual and assure yourself you understand. X at the end of ATEX substitutes Tamb depending on used seals based on the following correspondence: NBR=-20°C+80°C, FKM=-25°C+90°C, EPDM=-40°C+80°C, FVMQ & HNBR=-60°C+90°C