Venture Industries Group

OPERATION AND ASSEMBLY MANUAL
RELIEF VALVES
FOR SC SIDE CHANNEL BLOWERS

INTRODUCTION

This manual covers relief valve listed on frontpage. It is source of information necessary for safe and proper use. Read this manual carefully before any use of the device, comply with it requirements and keep it in place with easy access for users and service. In case of any doubts about use of the fan, please contact with manufacturer.

After receiving the device – check

- Whether the device is in compliance with order?
- Whether the data on the nameplate are the same as desired?
- Whether fan was not damaged during transport (e.g. there are no dents/cracks)?

In case of any irregularities, contact with your dealer or Venture Industries Sp. z o.o. service.

1. GENERAL INFORMATION

1.1 Information about device

- Relief valve is intended to use as a protection of side channel blower in case of excessive pressure or negative pressure in the system. Depending on the application it can give air to the atmosphere when pressure is too high or draw it from the atmosphere to the system when pressure is too low.
- All activities connected with assembly and maintenance need to be run by qualified and authorized personnel.
- The valve is designed to assembly in systems of transport clean air. Operating in dusty, sticky or aggressive medium can lead to incorrect functions of valve, or even to damage the device elements.
- The device must be protected from the weather (e.g. snow, rain, excessive sun radiation).
- Description of construction of the valve has been included in Appendix C.

1.2 General risk and guidelines

During entire valve life cycle pay particular attention to the risk and guidelines presented below:

1.2.1 sharp edges

- During manufacturing the fan sharp edges was grinded. However the fan may have edges touching which may cause injury. We recommend the use of relevant protective gloves.

1.2.2 noise

- Action of the valve is connected with high noise and is depend on shape of whole system. After valve installation sound pressure need to be checked and if necessary additional noise protection measures have to be done.

1.2.3 materials

- In case of fire or transport of improper medium – fan parts can generate fumes hazardous to health.

1.2.4 temperature (hot surfaces)

- The housing takes the temperature of transported medium. During work (e.g. as a result of compression process) the temperature of medium, housing and device components increase. The appropriate steps need to be made to prevent from fire and burns caused of high temperatures.

1.2.5 use

- Improper installation and or operating can lead to damage of the device and occurrence of dangerous situation. The unit can be installed, maintained, dismantled and used only by qualified and authorized personnel, in accordance to safety rules and current regulations in the country of use (including proper electrical authorization). Personnel need to be familiar with reactions caused by the fan.

2. TRANSPORT AND STORAGE

2.1. transport and storage guidelines

- The valve need to be transported and stored in original packaging, without excessive shocks. The device must be protected from weather conditions, transported and stored in dry, well ventilated, and free from substances harmful to the device areas. The fan cannot by transported and stored in areas with fertilizers, chlorinated lime, acids and other aggressive chemicals.
- Protect the valve against damage (including crush).

3. ASSEMBLY AND INSTALLATION

3.1. General information

- Before installation remove temporary items that protect fan during transport and storage (e.g. box, foil, inlet and outlet caps – do not remove any guards) – Starting the fan with those items could lead to damage of the system.
- Make sure that the fan is not damaged.
- Ensure that there are no foreign bodies inside the installation after assembly, what can result with damage of the installation.

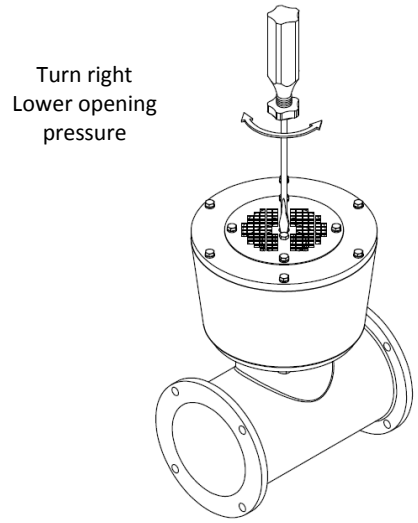
3.2 Assembly information

- The valve is mounted on a tee pipe with flanges for easy assembly. All mounting holes need to be used.
- To provide proper tightness o flanges, dedicated seals or sealant paste need to be used. The materials of sealing should meet the requirements of the application environment.

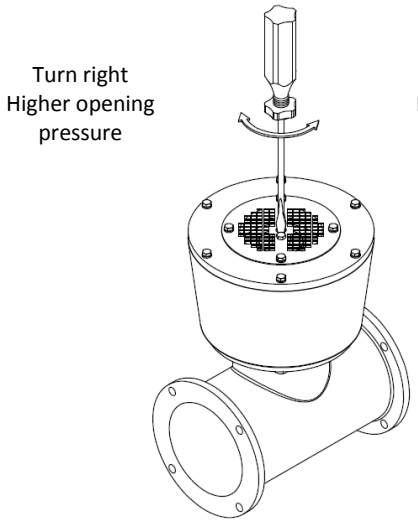
3.3 Regulation

- The relief valves are intended to operate both vacuum and pressure and are adjustable. Valve calibration instructions are presented in the figure 1. For regulation of the valve the flat head screwdriver will be necessary.

Fig.1.



Pressure valve



Vacuum valve

- Valve activation pressure is set by changing spring tension. If the springe force is greater the pressure/ negative pressure of opening the valve is higher.
- The valve should be set on the complete system. Valve setting should be based on the rated motor current (increase of the current is the result of too high pressure / negative pressure in the system).
- During regulation continuous motor current measurement need to be carried with a clamp ammeter. There is recommended setting the valve action on value of 95-100% of rated motor current.
- The relief valve can be used for maintaining constant pressure in the system. In this case a pressure gauge in the installation is required. During this type of control, the rated current of the blower motor should not be exceed.

Attention: Valve adjustment is associated with working on open electric boxes. It is required that the regulations must be carried by appropriately qualified personnel with the necessary permission.	

4. MAINTENANCE, REVIEW

4.1 Maintenance guidelines

- During maintenance and review follow the guidelines contained in point 1.2.
- To ensure proper operation, the valve should be regularly inspected and maintained.
- It is important to keep the valve clean because any pollutions inside in the device, lead to leaks. For cleaning the device use slightly damp delicate material. It is prohibited to use detergents and chemically aggressive substances, which can damage seals.
- In case of small leaks it is recommended to open the valve by restricting the flow behind the valve for pressure valves, or before for vacuum valves For larger leaks or any effects during venting the valve, it should be disassembled, cleaned and if necessary replace the seals. After assembling the device must be adjust according point 3.3.
- Detailed information about components and it tightening torque is available on request.

4.2 Examples of device faulty working

Symptoms	Possible reason
Exceeding the motor rated current.	Incorrect valve calibration. Reduce valve opening pressure / negative pressure setting.
System parameters too low due to valve opening too early	Incorrect valve calibration. Increase the valve opening pressure / negative pressure setting.
Leaks	Pollution or damage of seals. Pressure / negative pressure should be increased by flow restriction to open and ventilate the valve. It helps to remove water and small pollution from the device. If it doesn't work, the valve must be disassembly and cleaned and if it is necessary replaced the seals.

Fan review made by Venture Industries Sp. z o.o. service is recommended.

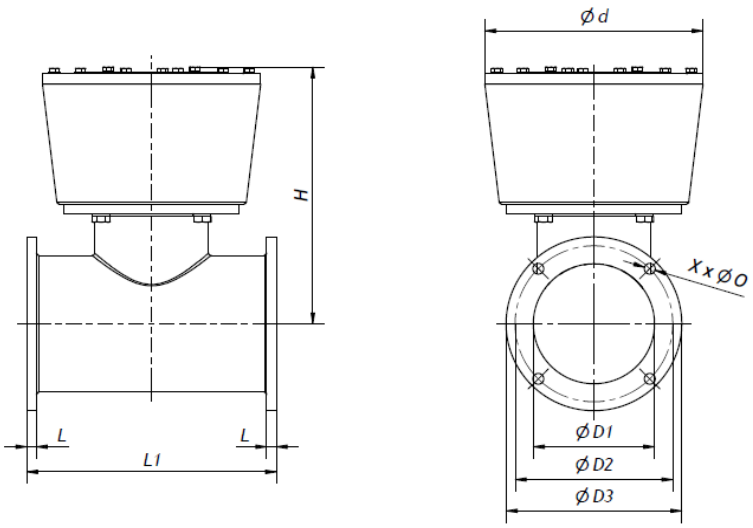
5. REPAIR, WARRANTY

Use only original spare parts and original accessories. Fan repairs need to be made by Venture Industries Sp. z o.o. service or outside, after manufacturer permission. Warrantee conditions are described in guarantee card.

6. DISMANTLING AND RECYCLING

Disconnect unit from its power supply, and dismount according to the guidelines from section 1 of this instruction. Therefore, please deposit all left-over material and packaging in their corresponding recycling containers and hand in the replaced machines to the nearest handler of this type of waste product.

Appendix - A (dimensions)



Model	Ød	ØD1	ØD2	ØD3	H	L	L1	X	ØO
SC10 SC20	125	46	68	80	150	8	180	4	6
SC30 PSC30 DSC30	125	57	85	100	150	8	180	4	7
SC40 PSC40 DSC40	180	70	110	130	210	8	206	4	9
SC46 SC50	180	96	130	145	210	8	206	4	9

Appendix - B (Factory settings)

Valve set pressure (vacuum): ..... mbar

Valve set pressure (pressure): ..... mbar

Blower type: .....

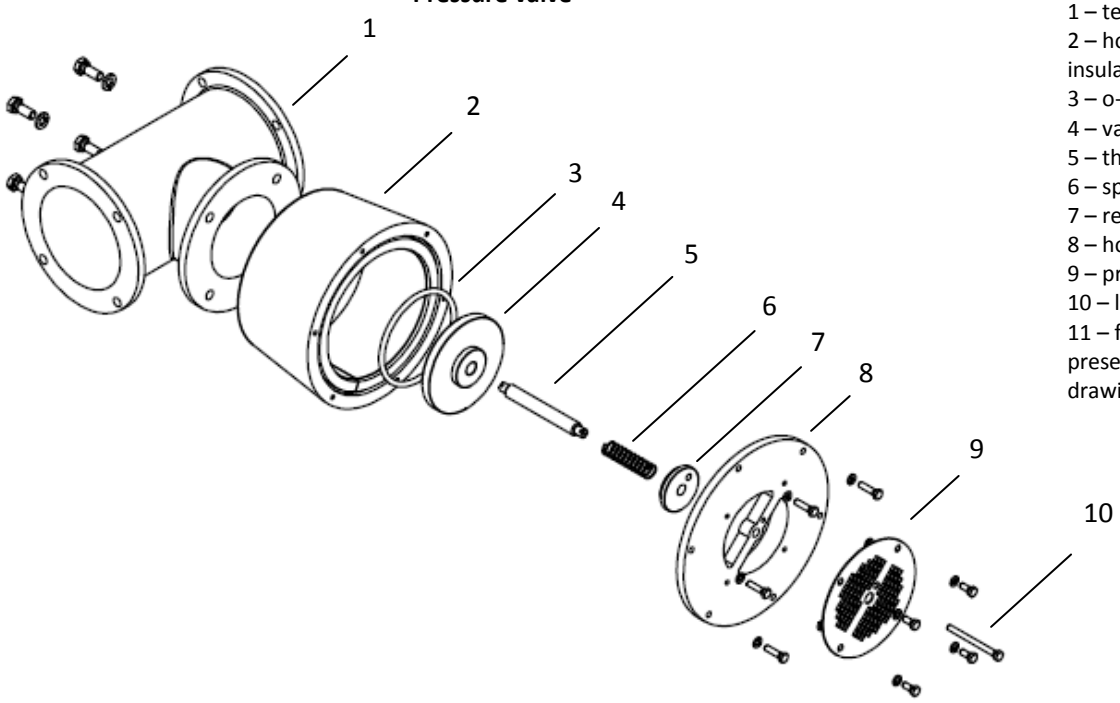
Rated current I_n = ... A

Valve set current I = ... A

Appendix - C (Schematic diagram of the valve)

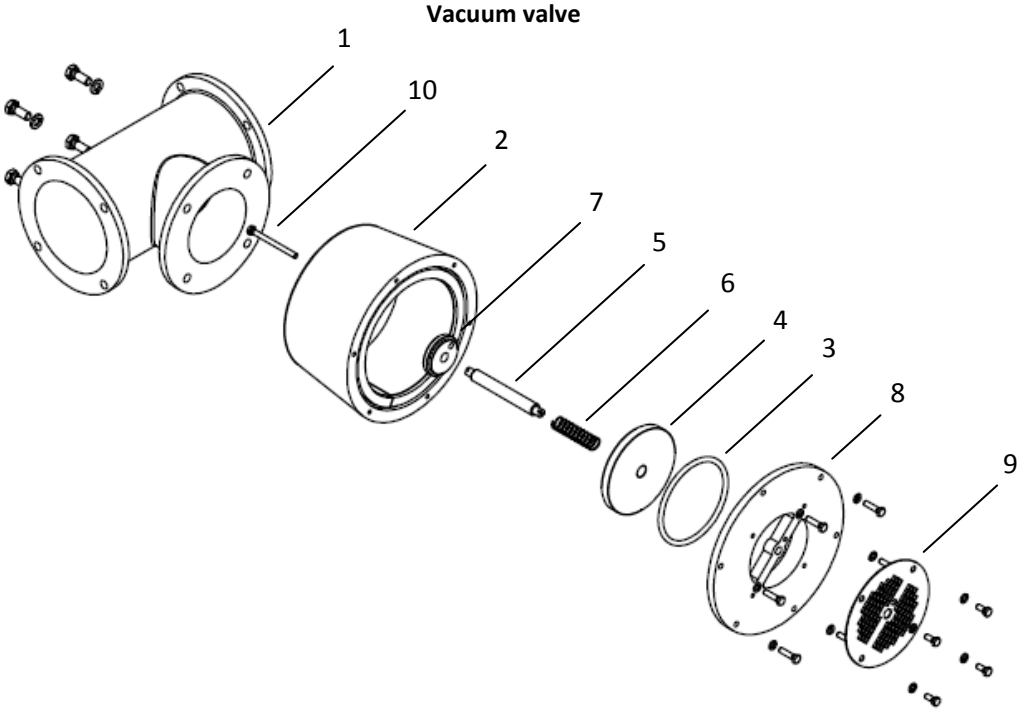
General description (simplified)

Pressure valve



1 – tee pipe
2 – housing with sound insulation
3 – o-ring seal
4 – valve
5 – threaded pin
6 – spring
7 – regulating nut
8 – housing cover
9 – protective mash
10 – locking screw
11 – fasteners (not presented on drawing)

Vacuum valve



Construction elements (1, 2, 8) are made of painted cast aluminium. Protective mesh (9) is made of galvanized steel. Valve working parts (4, 5, 6, 7) are made of steel. Fasteners (10, 11) are made of galvanized steel, and seals (3) are made of NBR.

Full list of components and materials used in fan can be provided on reasonable request.