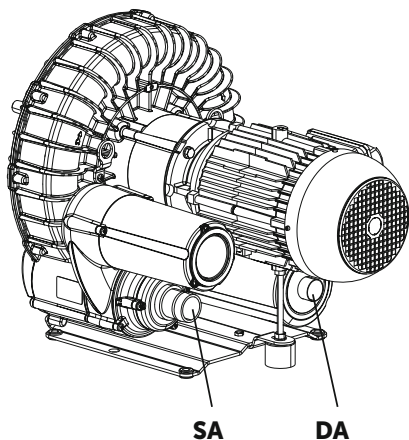


1 Instruction Manual Schmalz Blower SB-L-EX



dusts with pyrophoric properties are never to be conveyed. The operating conditions specified in the technical data must be complied with at all times. The ambient temperature must not exceed 40 °C and must not fall below -10 °C. This also applies to the medium to be conveyed.

Foreseeable misuse

Use is not permitted for:

- Ambient conditions in which explosive atmospheres of gases, vapors or mist occur frequently or occasionally (category 1 or 2).
- Ambient conditions in which explosive dusts occur continuously, frequently or occasionally (category 1 or 2).
- Suction of gases or dusts in which an explosive state is continuously, frequently or occasionally formed.
- Operation outside the operating conditions specified in the technical data.

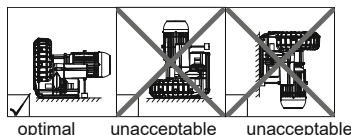
Exceeding the exhaust air temperature of 190 °C must be avoided. If necessary, this must be ensured by monitoring.

Transportation and storage

Store the side-channel compressor in a dry place and protect from water splashes. Lift and transport with suitable transport belts.

Setup

We recommend that you install the compressor in such a way that maintenance work can be carried out easily.



There must be at least 10 cm of free space between the device and adjacent walls, so that the air flow for cooling is not obstructed.

The blower must not be installed in silencer box covers. Protect against dust deposits.

The side-channel compressor may only be mounted horizontally with a base. The base has vibration-reducing elements (item 511) in the mounting holes. When tightening the fastening screws, ensure that the base does not come into direct contact with the ground (gap ≥ 0.5 mm). The contact surface must be level to ensure that the base stands securely. Direct exposure to the sun should be avoided.

Operating conditions

Surface temperatures above 190 °C must be avoided. The device must be operated within the pressure ranges indicated on the type plate and within the permissible ambient temperature range.

The Blower SB-L-EX is also suitable for cyclic operation. It must be ensured that a load time (= lifting the load) of max. 60 seconds is followed by a rest phase (in which the device is operated without load) of at least 30 seconds.

Mounting

Ensure correct dimensioning and clean pipelines. Prevent foreign objects from entering the compressor.

The diameter of the pipes must correspond to the connection threads as a minimum requirement. Use the next largest diameter for pipes longer than 2 m.

Keep connections free of oil, grease, water or other contaminants.

Protective caps should only be removed shortly before mounting for DA and SA devices. Do not connect to the pipe network yet.

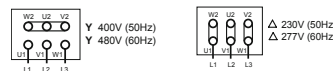
Install the suction filter with the filter cartridge in a horizontal position or facing downward so that no dirt enters the compressor during maintenance work. Suction filters must be provided for the explosion protection area (see instructions for the explosion protection dust filter).

Connecting the motor

Integrate the compressor into the power supply in such a way that all relevant regulations are observed, in particular DIN EN IEC 60079-14 and DIN EN IEC 60079-17.

The motor must only be connected by a qualified electrician in accordance with the circuit diagram (in the terminal box) or using ready-to-use connector models.

Pay attention to the supply voltage and frequency. Check whether the local voltage requires a star or delta connection. The bridges in the terminal box must be implemented in accordance with the information sheet displayed.



Prerequisite: house connection with clockwise rotary field

Provide a motor-protection switch (+ type C circuit-breaker) and adjust to the rated current of the motor (data is shown on the motor type plate).

If there are motor protection switches and/or other electrical components in the hazardous area, these components must also be approved for this purpose.

Let the motor start up briefly and check the direction of rotation (arrow on the housing). Switch phases if the direction of rotation is incorrect.

Operation of the side-channel compressor with frequency inverters is prohibited.

Avoid more than 10 switching operations per hour.

All metal parts of the device must be grounded at the installation site, especially when using rubber buffers.

Appropriate grounding straps or cables must be connected by a qualified electrician.

Start of operations

Ensure the connection of the pressure line for the DA or the suction line for the SA is durable and secure.

Only use hoses approved for the explosion protection area. Avoid mechanical stresses caused by pipe connections or housing attachments using elastic connections.

Expansion joints and lines must be inspected regularly for damaged areas and replaced if necessary.

If explosive media can be expected to penetrate the compression chamber during the equipment shutdown, devices must be provided by the customer to effectively prevent this.

Inadmissibly high operating temperatures result from dirty suction filters (in this case carry out maintenance) or excessive pressure difference.

Maintenance

Maintenance and servicing of the vacuum pump may only be carried out by specially trained, instructed and authorized personnel. Only original spare parts from the manufacturer may be used. Regular maintenance of the compressor will provide the best results. The intervals depend on the application and the ambient conditions.

Prior to the start of the maintenance work, switch the motor off and prevent an unintentional restart.

Wait for at least 60 minutes before opening the lines or housing to prevent hot surfaces from being exposed.

Clean the fan hood and the surfaces of the compressor and motor regularly to prevent overheating due to dust accumulations.

Replace the roller bearings in the motor at the latest after 4 years or 20,000 operating hours. Maintenance is carried out on the bearings every 2 years. Shaft sealing rings are replaced every 6000 hours and at the same time as the bearing is changed. After changing, the shaft sealing rings must be run in for 1 hour in a test run. No explosive atmosphere may be present during the run-in phase.

If filters are used, the filter cartridges should be cleaned depending on the amount of dust (daily to weekly). Cleaning must not be carried out while the device is hot. Let the device cool down. Blow through the filter from the inside to the outside with compressed air. Wipe or suction the inside of the filter housing. Always replace damaged, blocked, oily and greasy cartridges. The cartridges should be replaced on a monthly or annual basis.

Inlet and outlet lines on the suction and pressure side must be checked for damage and leaks and replaced if necessary.

Servicing

In accordance with the German Ordinance on Industrial Safety and Health (2009/104/EC), if a device in a system on which explosion protection is dependent is repaired and has not been checked by the manufacturer after the repair, it may only be put back into operation after an approved

Scope

These operating instructions apply to the following side-channel compressors:

Schmalz Blower SB-L-EX

with the following technical data:

| Type | Frequency | Vacuum* | Drive power |
|------|-----------|------------------|-------------|
| 1 | 50 Hz | -360 (-475) mbar | 5,5 kW |
| 2 | 60 Hz | -340 (-465) mbar | 5,5 kW |
| 4 | 50 Hz | -360 (-475) mbar | 4,6 kW |

* Values in brackets can only be achieved for a short time in cyclic operation, see conditions of use

Year of manufacture: 2022

Max. surface temperature:

190 °C (50 Hz)

190 °C (60 Hz)

Ambient temperature:

-10 °C < t < 40 °C

Explosion protection labeling:

II 3G/3G Ex h IIB T3 Gc/Gc X

II -/3D Ex h IIB 190°C -/Dc X

Safety regulations



Please observe the safety standard DIN EN 1012-2 for vacuum pumps.

Modifications or changes to the side-channel compressor can only be made with the approval of the factory.



Air compression produces high temperatures >60 °C. Position the compressor so that hot surfaces are out of reach, cordoned off the traffic area or provide warning signs.

Intended use

This side-channel compressor is authorized for use in areas where explosive atmospheres are present only rarely and for a short period of time (category 3).

The motor corresponds to Directive 2014/34/EU.

The side-channel compressor is used to generate a vacuum.

The key data on the type plate applies up to an altitude of 800 m above sea level. For installation outside of this range, the manufacturer must be consulted and the application must be examined on a case-by-case basis.

The device is suitable for sucking in mixtures which are not liable to explode. It must be ensured that an explosive atmosphere does not form inside the device for extended periods of time. The device is not suitable for conveying or compressing toxic or flammable media. Matter must never be allowed to accumulate inside the device, as this could result in a possible imbalance. Operate the side-channel compressor in such a way that only normal atmospheric air can be sucked in.

If media containing dust is conveyed, use suction filters and carry out maintenance regularly. Pyrophoric dusts/



monitoring body or a qualified person has carried out an appropriate investigation. Ideally, the device should be sent to the manufacturer.

Special Conditions "X"

1. The side-channel compressors may only be used in accordance with the installation conditions with integration into the equipotential bonding and while guaranteeing the maintenance work according to the instruction manual for the side-channel compressors.
2. The side-channel compressors may only be used if their materials are so resistant to mechanical and/or chemical influences or corrosion under the respective operating conditions that the explosion protection is not removed.
3. The attachments and accessories used on the side-channel compressor must comply with the requirements of Directive 2014/34/EU as regards the equipment group and equipment category and must be suitable for use in potentially explosive atmospheres of the respective explosion group and temperature class.
4. The side-channel compressors must be installed at the place of use in such a way that when the compressor is switched off, the conveyed medium cannot reverse flow or flood in.
5. Ensure that no foreign objects enter the inlet and outlet of the side-channel compressor.
6. Suitable measures must be taken to prevent the screw connections from independently loosening or detaching, for example observing the tightening torques of the screws prescribed by the compressor operating instructions, use of locking elements or adhesive bonding with suitable adhesives.
7. The side-channel compressor may only be opened when it is at a standstill and after a clearance measurement has been carried out, provided there is no explosive atmosphere.
8. To avoid possible electrostatic charges on non-conductive materials and painted outer surfaces of the compressors and on external signs (labels) made of non-conductive plastics, cleaning work must not be carried out with dry cloths. In addition, processes that generate intensive electrostatic charges must not be carried out in the vicinity of the compressor.
9. For the shaft sealing rings, observe the duration and conditions of the run-in phase (test run) specified by the manufacture, during which no explosive atmosphere must be present.
10. The ignition temperature of the dusts must be greater than 1.5 times the specified maximum surface temperature.
11. The smoldering temperature of the dusts must be greater than the specified maximum surface temperature + 75 K. This value corresponds to a maximum dust layer thickness of 5 mm.
12. Regular cleaning work must be carried out, with particular emphasis on removing dust from heated surfaces.

Dismantling and decommissioning

The following steps must be taken during disassembly and decommissioning:

1. Switch off the pump and unlock the drive.
2. Turn off the power supply and secure against unintentional reconnection.
3. Disconnect the drive supply line.
4. Ensure that media lines cannot be switched on again.
5. Disconnect the media lines from the pump.
6. Clean the machine thoroughly and remove operating materials and chemicals
7. Loose parts must be secured to prevent them from tipping over or falling down.
8. Protect the machine from further contamination.

Faults and troubleshooting

In the event of faults, errors and defects, stop the vacuum pump immediately and prevent it from being started up again. Troubleshooting while the machine is running or powered on is strictly prohibited. If a malfunction or fault occurs, the vacuum pump must be switched off and protected against unexpected start-up.

Hazard due to unexpected start-up

The following steps must be observed when preparing for troubleshooting:

1. Switch off the vacuum pump and all installed assemblies.
2. Turn off the power supply and protect against unintentional reconnection, or disconnect the drive from the supply voltage. Only then may work be carried out on the vacuum pump. The safety equipment may only be deactivated and dismantled when the machine is at a standstill.

The machine may only be switched on again after the specialist has eliminated the cause of the error.

The vacuum pump may only be operated if all safety and protective equipment is fully installed and functioning.

Defective safety and protective equipment can lead to hazardous situations! For this reason:

1. Switch off the machine immediately.
2. Prevent the machine from being switched back on.
3. Disconnect the electrical supply and the media line from the machine.