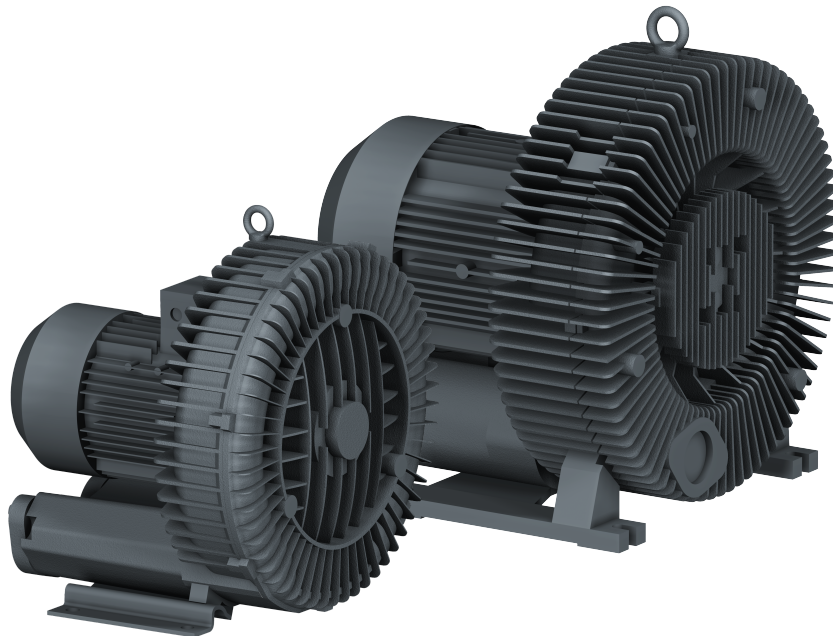


Instruction Manual

SAMOS - IE3 / NP-Version

Side Channel Blower

SB 0140 D0, SB 0200 D0, SB 0310 D0, SB 0430 D0,
SB 0530 D0, SB 0710 D0, SB 1100 D0, SB 1400 D0,
SB 0140 D2, SB 0200 D2, SB 0310 D2, SB 0530 D2, SB 1100 D2



CE EAC

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Germany

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VACUUM APP

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1 Safety

Prior to handling the machine, this instruction manual should be read and understood. If anything needs to be clarified, please contact your Busch representative.

Read this manual carefully before use and keep for future reference.

This instruction manual remains valid as long as the customer does not change anything on the product.

The machine is intended for industrial use. It must be handled only by technically trained personnel.

Always wear appropriate personal protective equipment in accordance with the local regulations.

The machine has been designed and manufactured according to state-of-the-art methods. Nevertheless, residual risks may remain. This instruction manual highlights potential hazards where appropriate. Safety notes and warning messages are tagged with one of the keywords DANGER, WARNING, CAUTION, NOTICE and NOTE as follows:

DANGER

... indicates an imminent dangerous situation that will result in death or serious injuries if not prevented.

WARNING

... indicates a potentially dangerous situation that could result in death or serious injuries.

CAUTION

... indicates a potentially dangerous situation that could result in minor injuries.

NOTICE

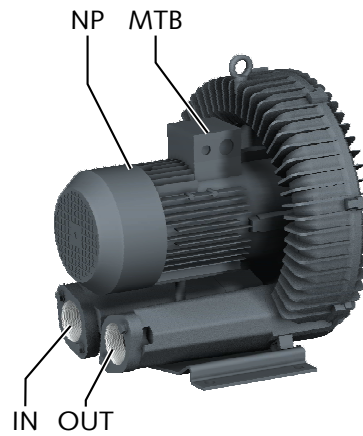
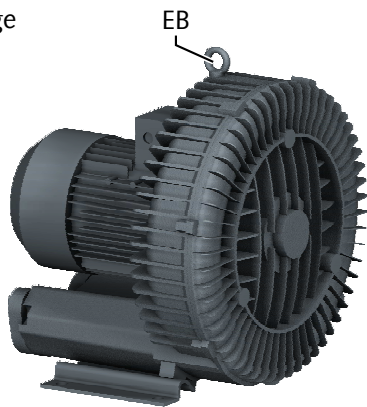
... indicates a potentially dangerous situation that could result in damage to property.

NOTE

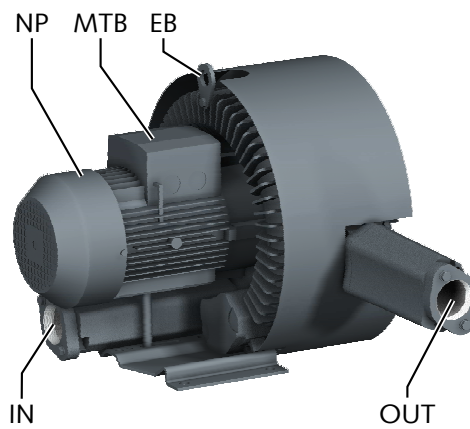
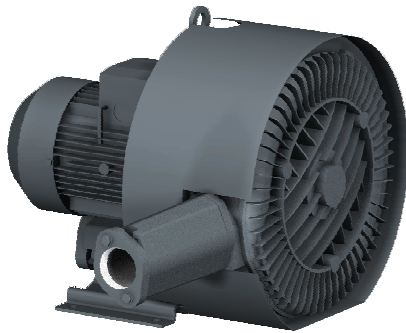
... indicates helpful tips and recommendations, as well as information for efficient and trouble-free operation.

2 Product Description

Single-stage



Double-stage



IN Suction connection
 OUT Discharge connection
 EB Eye bolt

MTB Motor terminal box
 NP Nameplate

NOTE

Technical term.

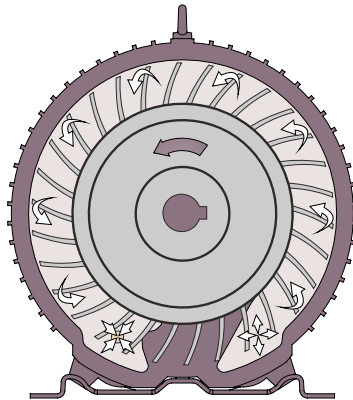
In this instruction manual, we consider that the term 'machine' refers to the 'side channel blower'.

NOTE

Illustrations

In this instruction manual the illustrations may differ from the machine appearance.

2.1 Operating Principle



The machine works on the impulse principle, i.e. kinetic energy is transferred from the impeller to the conveyed medium and then is converted into pressure.

The change in pressure is made without the use of any lubrication whatsoever.

! NOTICE

Lubricating a dry running machine (compression chamber).

Risk of damage to the machine!

- Do not lubricate the compression chamber of the machine with oil or grease.

2.2 Application

The machine is intended for the suction and/or compression of air and other dry, non-aggressive, non-toxic, non-flammable and non-explosive gases.

Conveying of other media leads to an increased thermal and/or mechanical load on the machine and is permissible only after a consultation with Busch.

The machine is intended for the placement in a non-potentially explosive environment.

The machine is not capable of maintaining ultimate pressure.

- The minimum allowed ultimate pressure is to be read from the nameplate of the machine.
- By means of process control and/or vacuum relief valves it must be made sure that the minimum allowed ultimate pressure will not be underrun.

Permitted environmental conditions, see Technical Data [► 21].

2.3 Start Controls

The machine comes without start controls. The control of the machine is to be provided in the course of installation.

2.4 Optional Accessories

2.4.1 Vacuum Regulating Valve

The vacuum regulating valve controls inlet pressure when the machine is used on vacuum duties.

2.4.2 Pressure Regulating Valve

The pressure regulating valve controls pressure when the machine is used on overpressure duties.

2.4.3 Inlet Filter

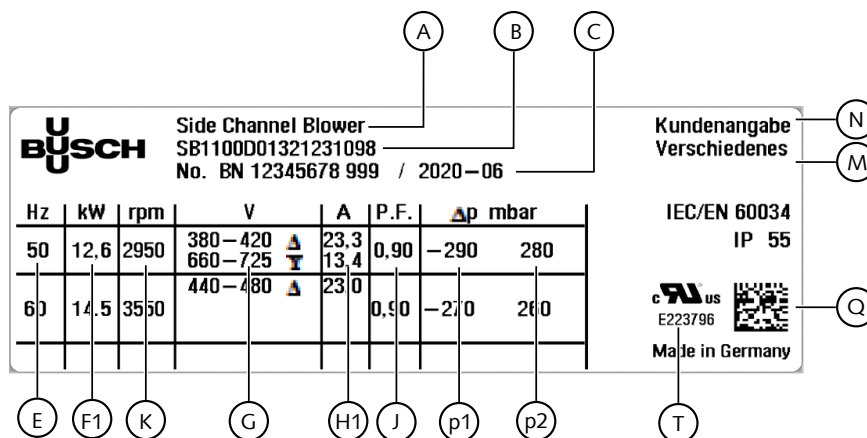
The inlet filter protects the machine against dust and other solids in the process gas. The inlet filter is available with a cartridge.

2.4.4 Silencer

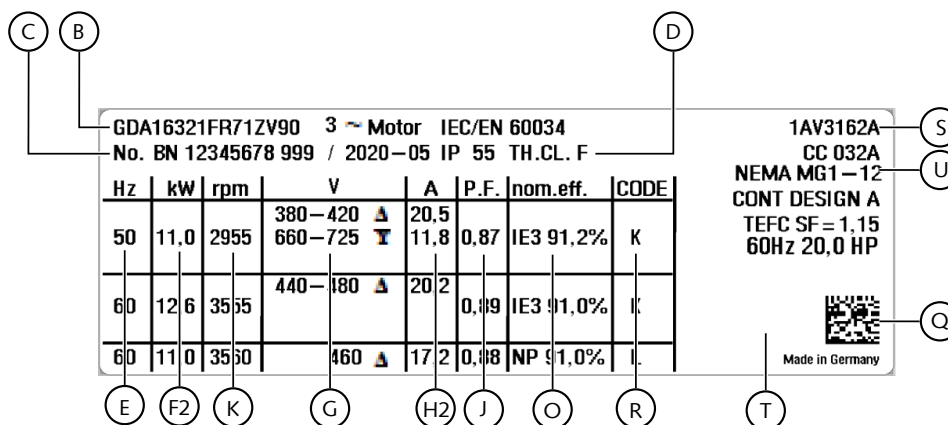
A silencer at the discharge connection (OUT) can be provided to reduce the exhaust gas noise.

2.5 Product identification

Machine nameplate



Motor nameplate



A Series	p Differential pressure
B Type	p1 Values with a negative sign apply to vacuuming and vacuum operations
C Serial number, month and year of manufacture	p2 Values with a positive sign apply to pressure and compressor operations
D Machine type, protection class, thermal class	M Manufacturer's recommendations (optional)
E Frequency	N Customer information (optional)
F1 Maximum output during continuous operation	O Nominal efficiency
F2 Measured power output according to IEC 60034-1	Q Serial number / year of manufacture as data matrix code
G Voltage	R Ratio of breakaway starting current to apparent power
H1 Maximum current during continuous operation (setting for overcurrent protection)	S DoE registration with family type number and manufacturer's label
H2 Rated current according to IEC 60034-1	T UL / CSA recognition mark + file number
J Power factor	U NEMA rating
K Rated rpm	

3 Transport

WARNING

Suspended load.

Risk of severe injury!

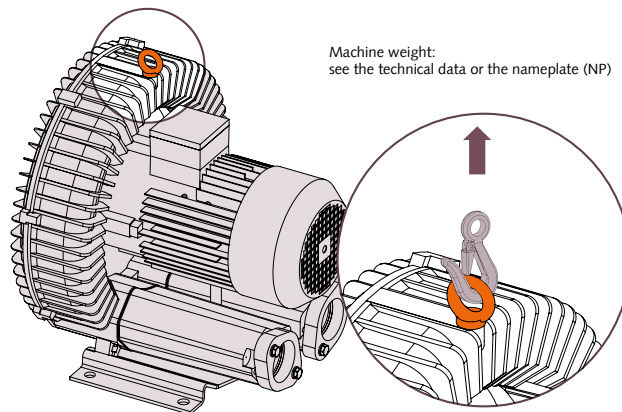
- Do not walk, stand or work under suspended loads.

NOTICE

The machines are attached with spring elements for transport.

The transport spring elements attached to the machine must not be used for the installation as they may have been damaged during transport.

- Dispose the transport spring elements.
- In case the package contains additional spring elements, see Permitted Mounting Position [► 10]
- Make sure that the eyebolt(s) (EB) is/are in faultless condition, fully screwed in and tightened by hand.



- Check the machine for transport damage.

If the machine is secured to a base plate:

- Remove the machine from the base plate.

4 Storage

- Seal all apertures with adhesive tape or reuse provided caps.

If the machine is to be stored for more than 3 months:

- Wrap the machine in a corrosion inhibiting film.
- Store the machine indoors, dry, dust free and if possible in original packaging preferably at temperatures between -20 ... 40 °C.
- Low vibration ($V_{\text{eff}} < 1.5\text{mm/s}$)

If the storage time exceeds 4 years:

- Replace and relubricate the bearings with specific grease type: ESSO Unirex N3
- Clean and relubricate the bearing intermediate place
- Replace and relubricate the shaft seals
- Measure the insulation resistance of the motor at 500V DC voltage between the conductors of the main circuit and protective conductive system.
 - Value 1 M : no measures necessary.
 - Value <1 M : Dry winding.

5 Installation

5.1 Installation Conditions

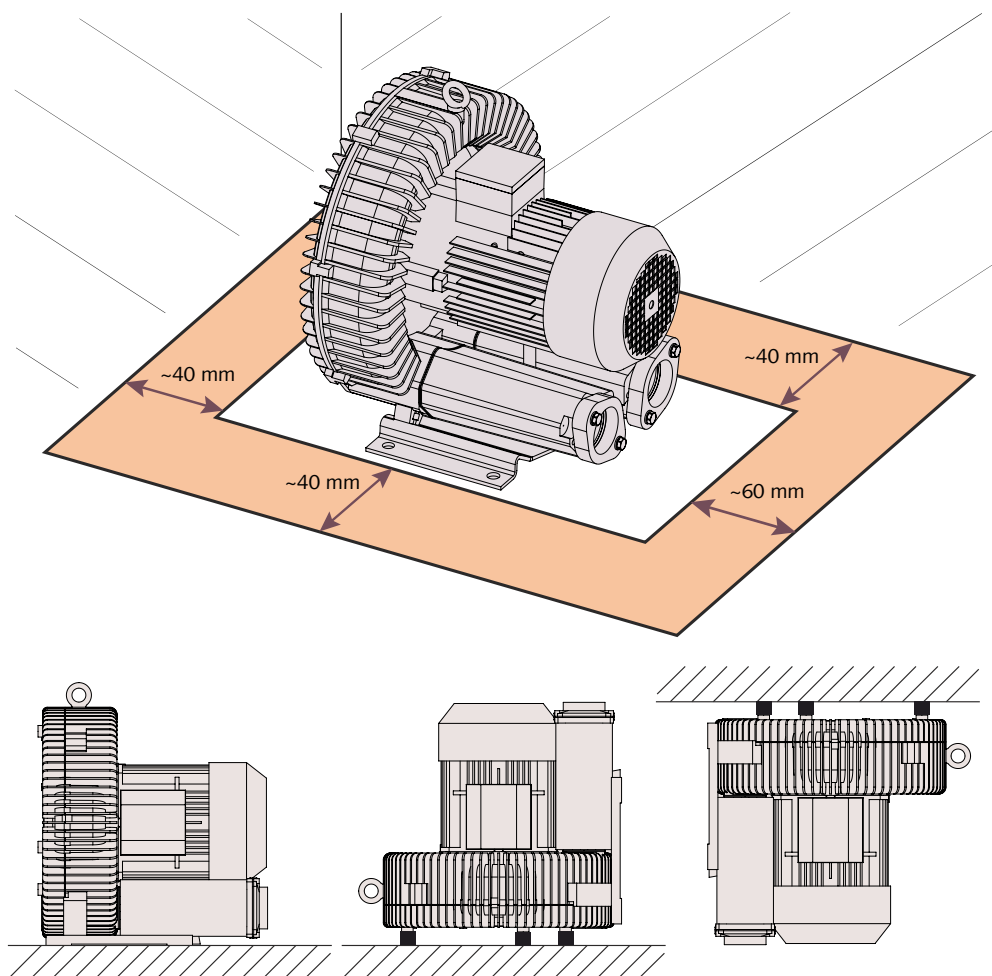
! NOTICE

Use of the machine outside of the permitted installation conditions.

Risk of premature failure!

Loss of efficiency!

- Take care that the installation conditions are fully complied with.



- Make sure that the environment of the machine is not potentially explosive.
- Make sure that the ambient conditions comply with the Technical Data [► 21].
- Make sure that the environmental conditions comply with the protection class of the motor and the electrical instruments.
- Make sure that the installation space or location is vented such that sufficient cooling of the machine is provided.
- For conveying media other than air, leaks from the machine must be taken into account (e.g. forced ventilation, gas monitoring).
- Make sure that cooling air inlets and outlets are not covered or obstructed and that the cooling air flow is not affected adversely in any other way.
- Make sure that the machine is placed or mounted horizontally, on an even surface (± 0.5 mm)

- Make sure that the machine is placed or mounted horizontally/vertically, with a maximum deviation of 1° in any direction.
- Make sure that all provided covers, guards, hoods, etc. are mounted.
- Make sure that there is no risk of condensation forming in the interior of the machine, take protection measures (e.g. heating, moisture separator).

If the machine is installed at an altitude greater than 1000 meters above sea level:

- Contact your Busch representative, the motor should be derated or the ambient temperature limited.

If the machine is installed outdoor:

- Provide a protective cover against the weathering effects.

5.2 Permitted Mounting Position

Type	Rated motor power at 50 Hz acc. to standards	without spring elements	with spring elements	
				
SB with drive controller		✗	✓	✓
SB 0140 D0	0.75 kW	✗	✓	✓
SB 0140 D0	1.1 kW	✓	✓	✓
SB 0140 D2	1.5 kW 2.2 kW			
SB 0200 D0	0.75 kW	✓	✓	✓
	1.1 kW			
	1.5 kW			
SB 0200 D0	2.2 kW	✗	✓	✓
SB 0200 D2	3.0 kW 4.0 kW			
SB 0310 D0; SB 0430 D0	1.5 kW	✓	✓	✓
	2.2 kW			
	4.0 kW			
	3.0 kW			
SB 0310 D2	2.2 kW	✗	✓	✓
	3.0 kW			
	4.5 kW			
	5.5 kW			
	7.5 kW			
SB 0530 D0; SB 0710 D0	4.0 kW	✓	✓	✓
	5.5 kW			
	7.5 kW			
SB 0530 D2	7.5 kW	✗	✓	✓
	11 kW			
SB 0530 D2	15 kW	✗	✓	✓
SB 1100 D0; SB 1400 D0	7.5 kW	✓	✓	✓
SB 1100 D2	22 kW			
SB 1100 D0; SB 1400 D0	11 kW	✗	✓	✓
	15 kW			
	18.5 kW			
SB 1100 D2	15 kW	✗	✓	✓
SB 1100 D2	18.5 kW			

Attention: Vertical mounting on the blower cover.

Conveying moisture and condensate along with other media reduces the service life of the bearing.

5.3 Connecting Lines / Pipes



WARNING

Rotating Parts.

Risk of severe injury!

- Do not operate the machine without suction / discharge connection installed.
-
- Remove all protective covers before installation.
 - Discharge silencers are enclosed separately for double-stage machines and have to be installed after removing the transport protection (M6: 7.5 – 9.0 Nm; M8: 18 – 22 Nm).
 - Make sure that the connection lines have sufficient distances to highly inflammable materials.
 - Make sure that the connection lines cause no stress on the machine's connection; if necessary use flexible joints.
 - Make sure that the line size of the connection lines over the entire length is at least as large as the connections of the machine.

In case of very long connection lines it is advisable to use larger line sizes in order to avoid a loss of efficiency. Seek advice from your Busch representative.

5.3.1 Suction Connection



NOTICE

Ingress of foreign objects or liquids.

Risk of damage to the machine!

If the inlet gas contains dust or other foreign solid particles:

- Install a suitable filter (5 micron or less) upstream from the machine.

Connection size(s):

- G1 1/2 for SB 0140 D0/D2
- G2 for SB 0200 D0/D2; SB 0310 D0/D2; SB 0430 D0
- G2 1/2 for SB 0530 D0/D2; SB 0710 D0
- G4 for SB 1100 D0/D2; SB 1400 D0

Depending on the specific order, other connection dimensions may apply.

5.3.2 Discharge Connection

Connection size(s):

- G1 1/2 for SB 0140 D0/D2
- G2 for SB 0200 D0/D2; SB 0310 D0/D2; SB 0430 D0
- G2 1/2 for SB 0530 D0/D2; SB 0710 D0
- G4 for SB 1100 D0/D2; SB 1400 D0

Depending on the specific order, other connection dimensions may apply.

- Make sure that the discharged gas will flow without obstruction. Do not shut off or throttle the discharge line.

5.4 Electrical Connection

DANGER

Live wires.

Risk of electrical shock.

- Electrical installation work must only be executed by qualified personnel.
-
- Make sure that the power supply for the motor is compatible with the data on the nameplate of the motor.
 - The electrical installation must comply with applicable national and international standards.
 - Provide a lockable disconnect switch on the power line so that the machine is completely secured during maintenance tasks.
 - Provide an overload protection according to EN 60204-1 for the motor.
 - Busch recommends installing a D-curve circuit breaker.
 - Make sure that the motor of the machine will not be affected by electric or electromagnetic disturbance from the mains; if necessary seek advice from Busch.
 - Connect the protective earth conductor.
 - Electrically connect the motor.

NOTICE

Incorrect connection.

Risk of damage to the motor!

- The wiring diagrams given below are typical. Check the inside of the terminal box for motor connection instructions/diagrams.
-

5.4.1 Wiring Diagram Three-Phase Motor

! NOTICE

Incorrect direction of rotation.

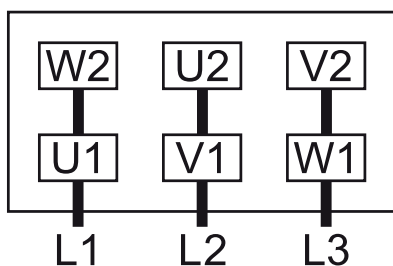
Risk of damage to the machine!

- Operation in the wrong direction of rotation can destroy the machine in a short time! Prior to start-up, ensure that the machine is operated in the right direction.
- Determine the intended direction of rotation with the arrow (stuck on or cast).
- Jog the motor briefly.

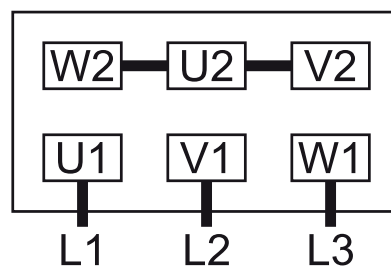
If the rotation of the motor must be changed:

- Switch any two of the motor phase wires.

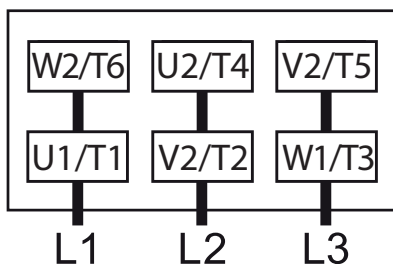
Delta connection (low voltage):



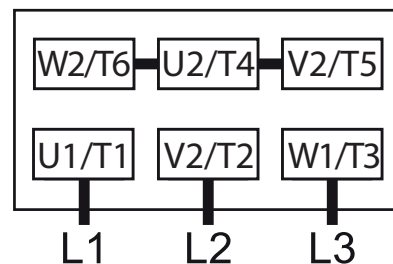
Star connection (high voltage):



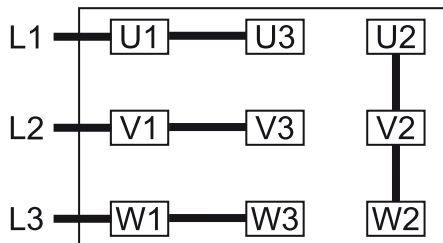
Delta connection (low voltage): NP



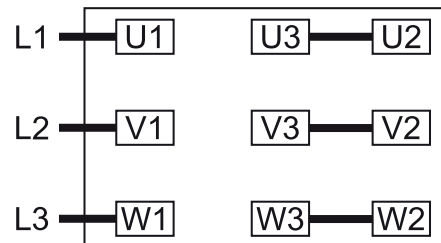
Star connection (high voltage): NP



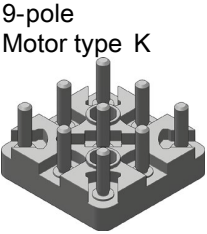
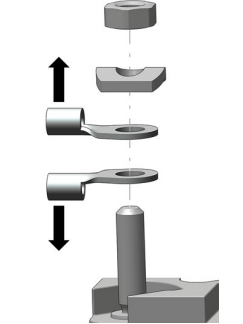
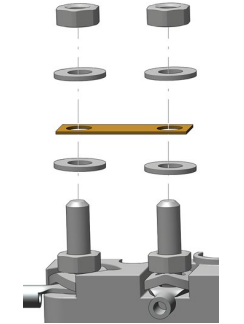
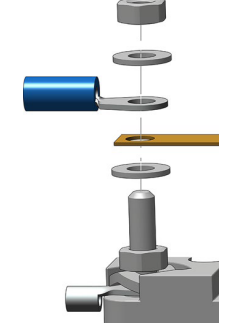
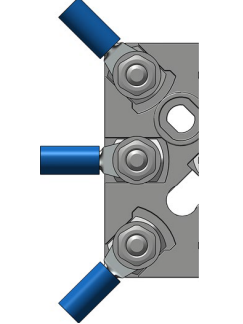
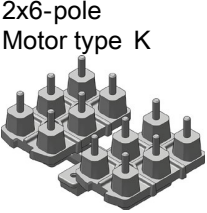
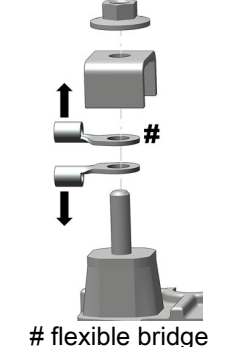
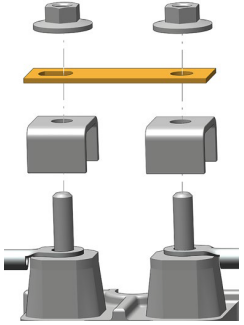
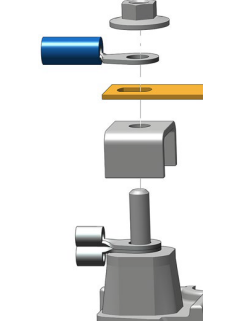
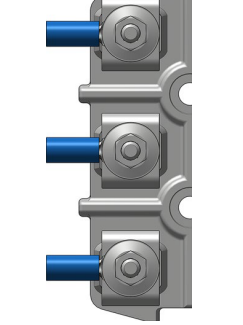
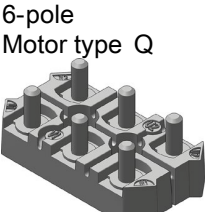
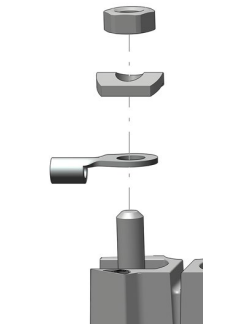
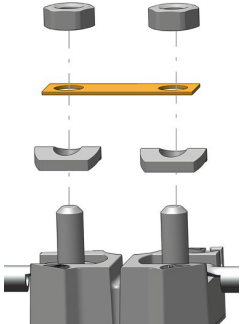
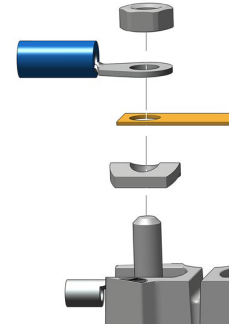
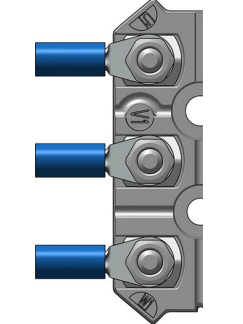
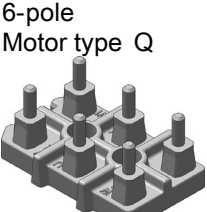
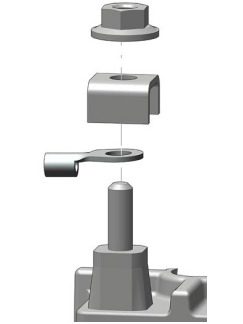
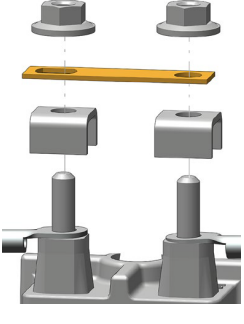
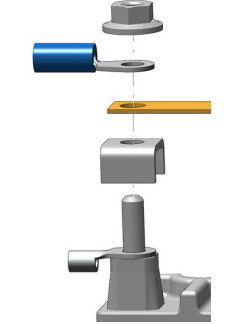
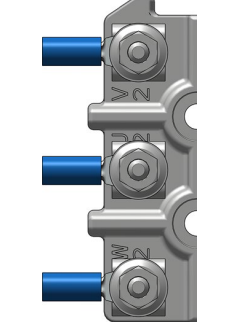
Double star connection, multi-voltage motor with 9 pins (low voltage):



Star connection, multi-voltage motor with 9 pins (high voltage):



5.4.2 Terminal board design

Terminal board design	Internal motor wiring		Customer connection / mains connection / plug	
	Motor connection cables	Connecting rail	Mains connection	Cable routing*
<p>9-pole Motor type K</p> 				
<p>2x6-pole Motor type K</p> 	 <p># flexible bridge</p>			
<p>6-pole Motor type Q</p> 				
<p>6-pole Motor type Q</p> 	 <p># flexible bridge</p>			

* Install cable lugs parallel to the terminal board cases/domes!

6 Commissioning

NOTICE

Lubricating a dry running machine (compression chamber).

Risk of damage to the machine!

- Do not lubricate the compression chamber of the machine with oil or grease.

CAUTION

During operation the surface of the machine may reach temperatures of more than 70°C.

Risk of burns!

- Avoid contact with the machine during and directly after operation.



CAUTION

Noise of running machine.

Risk of damage to hearing!

If persons are present in the vicinity of a non noise insulated machine over extended periods:

- Make sure that ear protection is being used.
- Make sure that the installation conditions (see Installation Conditions [► 9]) are met.
- Switch on the machine.
- Make sure that the maximum permissible number of starts does not exceed 6 starts per hour. Those starts should be spread within the hour.
- Make sure the working/pause periods are equal with multiple starts per hour.
- Make sure that the operating conditions comply with the Technical Data [► 21].

As soon as the machine is operated under normal operating conditions:

- Measure the motor current and record it as reference for future maintenance and troubleshooting work.

7 Maintenance



WARNING

Machines contaminated with hazardous material.

Risk of poisoning!

Risk of infection!

If the machine is contaminated with hazardous material:

- Wear appropriate personal protective equipment.

CAUTION

Hot surface.

Risk of burns!

- Prior to any action requiring touching the machine, let the machine cool down first.

- Shut down the machine and lock against inadvertent start up.
- Vent the connected lines to atmospheric pressure.

If necessary:

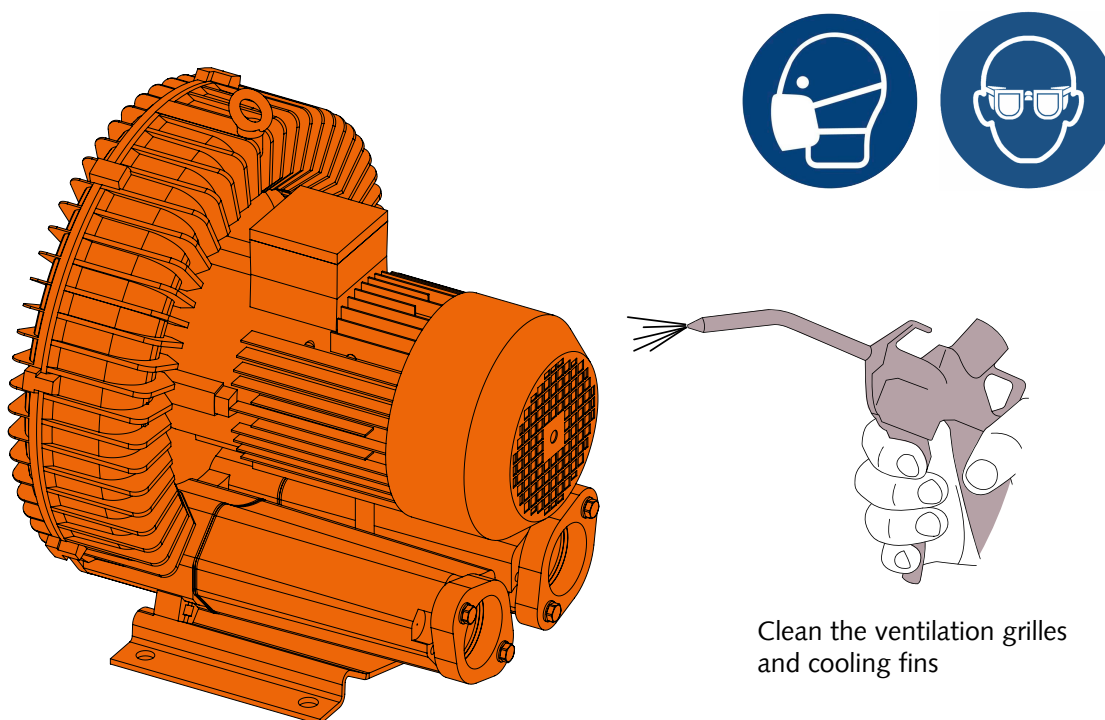
- Disconnect all connections.

7.1 Maintenance Schedule

The maintenance intervals depend very much on the individual operating conditions. The intervals given below are desired to be considered as starting values which should be shortened or extended as appropriate. Particularly harsh applications or heavy duty operation, such as high dust loads in the environment or in the process gas, other contamination or ingress of process material, can make it necessary to shorten the maintenance intervals significantly.

Interval	Maintenance work
Monthly	<ul style="list-style-type: none"> • Clean the machine from dust and dirt. In case of an inlet filter being installed: <ul style="list-style-type: none"> • Check the inlet filter cartridge, replace if necessary.
Every 6 months	<ul style="list-style-type: none"> • Clean the machine from dust and dirt. • Make sure that the electronic components and the cooling fan are free from dust.
Yearly	<ul style="list-style-type: none"> • Carry out a visual inspection and clean the machine from dust and dirt. • Check the electrical connections and the monitoring devices. • Clean the inlet and outlet silencer.
Every 20000 hours, at the latest after 5 years	<ul style="list-style-type: none"> • Have a major overhaul on the machine (contact Busch).

7.2 Cleaning from Dust and Dirt



8 Overhaul



WARNING

Machines contaminated with hazardous material.

Risk of poisoning!

Risk of infection!

If the machine is contaminated with hazardous material:

- Wear appropriate personal protective equipment.

NOTICE

Improper assembly.

Risk of premature failure!

Loss of efficiency!

- It is highly recommended that any dismantling of the machine that goes beyond anything that is described in this manual should be done through Busch.

In case of the machine having conveyed gas that was contaminated with foreign materials which are dangerous to health:

- Decontaminate the machine as much as possible and state the contamination status in a 'Declaration of Contamination'.

Busch will only accept machines that come with a completely filled in and legally binding signed 'Declaration of Contamination' (form downloadable from www.buschvacuum.com).

9 Decommissioning

- Shut down the machine and lock against inadvertent start up.
- Vent the connected lines to atmospheric pressure.
- Disconnect all connections.

If the machine is going to be stored:

- See Storage [▶ 8].

9.1 Dismantling and Disposal

- Separate special waste from the machine.
- Dispose of special waste in compliance with applicable regulations.
- Dispose of the machine as scrap metal.

10 Spare Parts

NOTICE

Use of non-Busch genuine spare parts.

Risk of premature failure!

Loss of efficiency!

- The exclusive use of Busch genuine spare parts and consumables is recommended for the correct functioning of the machine and to validate the warranty.

Commercially available standard parts are to be purchased on the open market.

If other parts are required:

- Contact your Busch representative for the detailed spare parts list.

11 Troubleshooting

 **DANGER**

Live wires.

Risk of electrical shock.

- Electrical installation work must only be executed by qualified personnel.

 **CAUTION**

Hot surface.

Risk of burns!

- Prior to any action requiring touching the machine, let the machine cool down first.

Problem	Possible Cause	Remedy
The machine does not start.	At least two power supply leads are interrupted	<ul style="list-style-type: none"> • Check the fuses, terminals and power supply cables
	The motor is not supplied with the correct voltage.	<ul style="list-style-type: none"> • Check the power supply.
	The motor is defective.	<ul style="list-style-type: none"> • Repair the machine (contact Busch).
The machine does not start; humming noise.	One power supply lead is interrupted	<ul style="list-style-type: none"> • Check the fuses, terminals and power supply cables
	Impeller defective	<ul style="list-style-type: none"> • Replace impeller
	Impeller is jammed	<ul style="list-style-type: none"> • Open the cover, remove foreign body and clean. • Check the impeller gap.
	Bearing on motor side machine side is defective	<ul style="list-style-type: none"> • Replace defective bearing.
Motor protective switch trips when starting the machine. Power consumption is too high.	Winding short-circuit	<ul style="list-style-type: none"> • Check the winding.
	Motor overloaded. Throttling does not match specification on rating plate	<ul style="list-style-type: none"> • Reduce throttling. • Clean filters, mufflers and connecting pipes.
	Compressor is jammed.	<ul style="list-style-type: none"> • See The machine does not start; humming noises [▶ 19].
The machine runs very noisily.	The machine runs in the wrong direction	<ul style="list-style-type: none"> • Check the direction of rotation.
	Bearings lacking grease	<ul style="list-style-type: none"> • Relubricate or replace if necessary.
	Defective bearings.	<ul style="list-style-type: none"> • Repair the machine (contact Busch).
The machine runs with abnormal flow noises.	The flow speed is too high	<ul style="list-style-type: none"> • Use larger sized pipes.
	The silencers are soiled.	<ul style="list-style-type: none"> • Check silencer inserts, clean or replace if necessary.

The machine does not reach the usual pressure on the suction connection.	Suction or discharge lines too long or section diameter too small.	<ul style="list-style-type: none"> • Use larger diameter or shorter lines. • Seek advice from your local Busch representative.
	The machine runs in the wrong direction.	<ul style="list-style-type: none"> • Check the direction of rotation, see Wiring Diagram Three-Phase Motor
	Different density of conveyed medium	<ul style="list-style-type: none"> • Take conversion of pressure value into account. Contact Busch if necessary.
	Change in blade profile due soiling.	<ul style="list-style-type: none"> • Check the impeller, clean or replace if necessary.
	In case an inlet screen is installed: The inlet screen is partially clogged.	<ul style="list-style-type: none"> • Clean the inlet screen.
	In case a vacuum relief valve is installed: The vacuum relief valve is misadjusted or defective.	<ul style="list-style-type: none"> • Replace the vacuum relief valve.
	In case an inlet filter valve is installed: The inlet filter cartridge is partially clogged.	<ul style="list-style-type: none"> • Replace the inlet filter cartridge.
	Leak in the system.	<ul style="list-style-type: none"> • Repair leak.
	Internal parts are worn or damaged.	<ul style="list-style-type: none"> • Repair the machine (contact Busch).
The machine runs too hot.	Insufficient cooling.	<ul style="list-style-type: none"> • Remove dust and dirt from the machine.
	Ambient temperature too high.	<ul style="list-style-type: none"> • Observe the permitted ambient temperature.
Compressor leaky.	Seals on silencer defective.	<ul style="list-style-type: none"> • Check silencer seals and replace if necessary
	Seals in motor area defective.	<ul style="list-style-type: none"> • Check motor seals and replace if necessary

For the solution of problems not mentioned in the troubleshooting chart contact your Busch representative.

12 Technical Data

		SB 0140 D0	SB 0200 D0	
Nominal pumping speed volume flow (50Hz / 60Hz)	m ³ /h	140 / 175	210 / 250	
Max. differential pressure vacuum version (50Hz / 60Hz)	hPa (mbar) abs.	-180 / -170	-170 / -150	-230 / -210
Max. differential pressure pressure version (50Hz / 60Hz)	hPa (mbar) abs.	+170 / +160	+170 / +140	+210 / +200
Nominal motor rating (50Hz / 60Hz)	kW	0.75 / 0.86	1.1 / 1.27	1.5 / 1.75
Service Factor		1.15		
Nominal motor speed (50Hz / 60Hz)	min ⁻¹	2850 / 3450		
Noise level (EN ISO 2151) (50Hz / 60Hz)	dB(A)	63 / 64	60 / 69	64 / 72
Ambient temperature range	°C	-20 ... 40		
Ambient pressure		Atmospheric pressure		
Weight approx.	kg	19	27	31

		SB 0310 D0		
Nominal pumping speed volume flow (50Hz / 60Hz)	m ³ /h	315 / 375		
Max. differential pressure vacuum version (50Hz / 60Hz)	hPa (mbar) abs.	-200 / -190	-260 / -260	
Max. differential pressure pressure version (50Hz / 60Hz)	hPa (mbar) abs.	+190 / +180	+270 / +250	
Nominal motor rating (50Hz / 60Hz)	kW	2.2 / 2.55	3.0 / 3.45	
Service Factor		1.15		
Nominal motor speed (50Hz / 60Hz)	min ⁻¹	2850 / 3450		
Noise level (EN ISO 2151) (50Hz / 60Hz)	dB(A)	64 / 70	68 / 71	
Ambient temperature range	°C	-20 ... 40		
Ambient pressure		Atmospheric pressure		
Weight approx.	kg	40	41	

		SB 0430 D0			SB 0530 D0	
Nominal pumping speed volume flow (50Hz / 60Hz)	m ³ /h	415 / 500			530 / 620	
Max. differential pressure vacuum version (50Hz / 60Hz)	hPa (mbar) abs.	-160 / -140	-240 / -230	-260 / -300	-220 / -190	-320 / -300
Max. differential pressure pressure version (50Hz / 60Hz)	hPa (mbar) abs.	+150 / +120	+220 / +200	+320 / +310	+210 / +180	+300 / +280
Nominal motor rating (50Hz / 60Hz)	kW	2.2 / 2.55	3.0 / 3.45	4.0 / 4.55	4.0 / 4.55	5.5 / 6.3
Service Factor		1.15				
Nominal motor speed (50Hz / 60Hz)	min ⁻¹	2850 / 3450				
Noise level (EN ISO 2151) (50Hz / 60Hz)	dB(A)	64 / 70	68 / 71	69 / 71	66 / 70	71 / 75
Ambient temperature range	°C	-20 ... 40				
Ambient pressure		Atmospheric pressure				
Weight approx.	kg	40 / 50*	41	56 / 64*	115	122

*high voltage range: > 360 V

		SB 0710 D0		
Nominal pumping speed volume flow (50Hz / 60Hz)	m ³ /h	700 / 800		
Max. differential pressure vacuum version (50Hz / 60Hz)	hPa (mbar) abs.	-150 / -90	-230 / -190	-290 / -310
Max. differential pressure pressure version (50Hz / 60Hz)	hPa (mbar) abs.	+140 / +80	+210 / +180	+310 / +280
Nominal motor rating (50Hz / 60Hz)	kW	4.0 / 4.55	5.5 / 6.3	7.5 / 8.6
Service Factor				
Nominal motor speed (50Hz / 60Hz)	min ⁻¹	2850 / 3450		
Noise level (EN ISO 2151) (50Hz / 60Hz)	dB(A)	66 / 70	71 / 75	71 / 75
Ambient temperature range	°C	-20 ... 40		
Ambient pressure		Atmospheric pressure		
Weight approx..	kg	115	122	133

		SB 1100 D0		
Nominal pumping speed volume flow (50Hz / 60Hz)	m ³ /h	1050 / 1250		
Max. differential pressure vacuum version (50Hz / 60Hz)	hPa (mbar) abs.	-190 / -150	-290 / -270	-360 / -380
Max. differential pressure pressure version (50Hz / 60Hz)	hPa (mbar) abs.	+180 / +140	+280 / +260	+500 / +460
Nominal motor rating (50Hz / 60Hz)	kW	7.5 / 8.6	11.0 / 12.6	18.5 / 21.3
Service Factor		1.15		
Nominal motor speed (50Hz / 60Hz)	min ⁻¹	2850 / 3450		
Noise level (EN ISO 2151) (50Hz / 60Hz)	dB(A)	74 / 79		
Ambient temperature range	°C	-20 ... 40		
Ambient pressure		Atmospheric pressure		
Weight approx.	kg	184	204	226

		SB 1400 D0		
Nominal pumping speed volume flow (50Hz / 60Hz)	m ³ /h	1370 / 1645		
Max. differential pressure vacuum version (50Hz / 60Hz)	hPa (mbar) abs.	-120 / -80	-210 / -170	-330 / -340
Max. differential pressure pressure version (50Hz / 60Hz)	hPa (mbar) abs.	+110 / +70	+200 / +160	+340 / +340
Nominal motor rating (50Hz / 60Hz)	kW	7.5 / 8.6	11.0 / 12.6	18.5 / 21.3
Service Factor		1.15		
Nominal motor speed (50Hz / 60Hz)	min ⁻¹	2850 / 3450		
Noise level (EN ISO 2151) (50Hz / 60Hz)	dB(A)	71 / 75	74 / 78	74 / 78
Ambient temperature range	°C	-20 ... 40		
Ambient pressure		Atmospheric pressure		
Weight approx.	kg	216	236	226

		SB 0140 D2		SB 0200 D2
Nominal pumping speed volume flow (50Hz / 60Hz)	m ³ /h	150 / 180		230 / 270
Max. differential pressure vacuum version (50Hz / 60Hz)	hPa (mbar) abs.	-310 / -300	-320 / -350	-370 / -400
Max. differential pressure pressure version (50Hz / 60Hz)	hPa (mbar) abs.	+280 / +250	+420 / +440	+410 / +380
Nominal motor rating (50Hz / 60Hz)	kW	1.5 / 1.75	2.2 / 2.55	3.0 / 3.45
Service Factor		1.15		
Nominal motor speed (50Hz / 60Hz)	min ⁻¹	2850 / 3450		
Noise level (EN ISO 2151) (50Hz / 60Hz)	dB(A)	65 / 68	67 / 77	71 / 73
Ambient temperature range	°C	-20 ... 40		
Ambient pressure		Atmospheric pressure		
Weight approx.	kg	32	36	67

		SB 0310 D2		SB 0530 D2
Nominal pumping speed volume flow (50Hz / 60Hz)	m ³ /h	320 / 370		520 / 620
Max. differential pressure vacuum version (50Hz / 60Hz)	hPa (mbar) abs.	-270 / -230	-400 / -350	-420 / -360
Max. differential pressure pressure version (50Hz / 60Hz)	hPa (mbar) abs.	+260 / +200	+360 / +320	+400 / +330
Nominal motor rating (50Hz / 60Hz)	kW	3.0 / 3.45	4.0 / 4.55	7.5 / 8.6
Service Factor		1.15		
Nominal motor speed (50Hz / 60Hz)	min ⁻¹	2850 / 3450		
Noise level (EN ISO 2151) (50Hz / 60Hz)	dB(A)	75 / 73	67 / 71	71 / 76
Ambient temperature range	°C	-20 ... 40		
Ambient pressure		Atmospheric pressure		
Weight approx.	kg	59	66	161

		SB 1100 D2		
Nominal pumping speed volume flow (50Hz / 60Hz)	m ³ /h	1120 / 1340		
Max. differential pressure vacuum version (50Hz / 60Hz)	hPa (mbar) abs.	-270 / -220	-410 / -360	-440 / -440
Max. differential pressure pressure version (50Hz / 60Hz)	hPa (mbar) abs.	+240 / +190	+360 / +300	+480 / +410
Nominal motor rating (50Hz / 60Hz)	kW	11.0 / 12.6	15.0 / 17.3	18.5 / 21.3
Service Factor		1.15		
Nominal motor speed (50Hz / 60Hz)	min ⁻¹	2850 / 3450		
Noise level (EN ISO 2151) (50Hz / 60Hz)	dB(A)	72 / 76		
Ambient temperature range	°C	-20 ... 40		
Ambient pressure		Atmospheric pressure		
Weight approx.	kg	299	307	302

13 EU Declaration of Conformity

This Declaration of Conformity and the CE-mark affixed to the nameplate are valid for the machine within the Busch scope of delivery. This Declaration of Conformity is issued under the sole responsibility of the manufacturer. When this machine is integrated into a superordinate machinery the manufacturer of the superordinate machinery (this can be the operating company, too) must conduct the conformity assessment process for the superordinate machine or plant, issue the Declaration of Conformity for it and affix the CE-mark.

The manufacturer

Busch Produktions GmbH
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DE-79689 Maulburg

declares that the machine(s): **SAMOS – IE3 / NP-Version**
SB 0140 D0/D2; SB 0200 D0/D2; SB 0310 D0/D2; SB 0430 D0;
SB 0530 D0/D2; SB 0710 D0; SB 1100 D0/D2; SB 1400 D0

has (have) been manufactured in accordance with the European Directives:

- ‘Machinery’ 2006/42/EC
- ‘Electromagnetic Compatibility’ 2014/30/EU
- ‘RoHS’ 2011/65/EU + Commission Delegated Directive (EU) 2015/863, restriction of the use of certain hazardous substances in electrical and electronic equipment

and the following standards:

Standard	Title of the Standard
EN ISO 12100 : 2010	Safety of machinery - Basic concepts, general principles of design
ISO 13857 : 2019	Safety of machinery - Safety distances to prevent hazard zones being reached by the upper and lower limbs
EN 1012-1 : 2010 EN 1012-2 : 1996 + A1 : 2009	Compressors and vacuum pumps - Safety requirements - Part 1 and Part 2
EN ISO 2151 : 2008	Acoustics - Noise test code for compressors and vacuum pumps - Engineering method (grade 2)
IEC 60204-1 : 2016	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
IEC 61000-6-2 : 2016	Electromagnetic compatibility (EMC) - Generic standards. Immunity for industrial environments
IEC 61000-6-4 : 2018	Electromagnetic compatibility (EMC) - Generic standards. Emission standard for industrial environments
EN ISO 13849-1 : 2015 ⁽¹⁾	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design

⁽¹⁾ In case control systems are integrated.

Person authorised to compile the technical file:

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Maulburg, 01.06.2020



Dr. Martin Gutmann
General Manager

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