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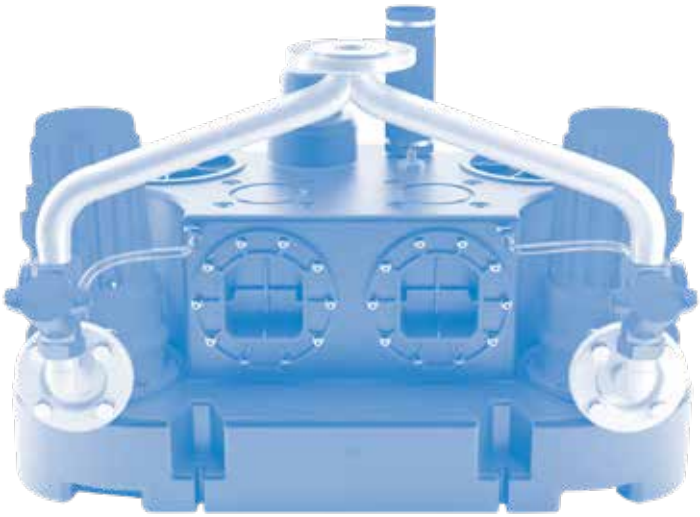
SANICUBIC® GR

SANICUBIC® 1 GR

SANICUBIC® 2 GR



(UK) **Sewage Lifting unit with cutting system** • Operation manual

(DE) **Abwasserhebeanlagen mit Schneidwerk** • Betriebsanleitung

(FR) **Station de relevage des eaux usées à pompe dilacératrice** • Mode d'emploi

(IT) **Stazione di pompaggio acque reflue con trituratore** • Istruzioni per l'uso

(NL) **Afvalwater opvoerinstallaties met versnijder** • Gebruikshandleiding

(ES) **Equipos elevadores de aguas residuales con bomba trituradora** • Manual de instrucciones

(PT) **Unidades elevatórias de águas residuais com unidade de corte** • Manual de instruções

CONTENTS

1. SAFETY

WARNING
This device can be used by children who are at least 8 years old and by people with reduced physical, sensory or mental capacities or those without knowledge or experience, if they are properly supervised or if they have been given instructions on safely using the device and the associated risks have been understood. Children should not play with the device. Children should not clean or perform maintenance on the device without supervision.

ELECTRICAL CONNECTIONS:

The electrical installation must be done by a qualified electrical engineer.
The device's power supply must be connected to ground (class I) and protected by a high sensitivity differential circuit breaker (30 mA). Devices without plugs must be connected to a main switch on the power supply which disconnects all poles (contact separation distance of at least 3 mm). The connection must be used exclusively to provide the power to the product.
If the power cord is damaged, to prevent possible danger, it must be replaced by the manufacturer, customer service team or a similarly qualified individual.

This Operating Manual contains fundamental instructions that are to be observed when setting up, operating and maintaining the machine/system. Hence it is imperative that this Operating Manual be read by the technician and the responsible specialist personnel/ operators before assembly and initial operation and be permanently available at the site of usage of the machine/system.

You are bound to observe not only the general safety instructions that can be found under the main point Safety, but also other special safety instructions added to other main points, for example for private usage

1.1 Labelling of notes in the operating instructions

DANGER	**Danger** This term defines a high risk of danger, which can lead to death or serious injury, if not avoided.
	**Dangerous area** This symbol characterises hazards that could lead to death or injury.
	**Dangerous voltage** This symbol characterises dangers associated with the voltage and provides information on voltage protection.
ATTENTION 	**Property damage** This symbol, in combination with the keyword **ATTENTION**, characterises dangers to the machine and its proper operation.

It is imperative to observe signs that are attached directly to the machine (for example, rotational direction arrow, sign for fluid connections) and they must be kept fully legible.

1.2 Personnel qualifications and training

The personnel responsible for operating, maintaining, inspection and assembly of the machine/system must be appropriately qualified for whatever work they do. The customer is responsible for exactly regulating areas of responsibility, authority and monitoring of personnel. Should personnel not avail of the necessary knowledge, they are to be trained and instructed. This can be done, if necessary, by the manufacturer/supplier, on commission of the purchase of the machine. Furthermore, the customer has to ensure that the relevant personnel have fully understood the contents of the Operating Manual.

1.3 Dangers from non-observance of the safety instructions

Non-observance of the safety instructions can result in danger to persons and damage to the environment and the machine. Non-observance of the safety instructions can lead to loss of any claims for damage compensation.

In detail, non-observance can for instance involve the following hazards :

- Failure of important machine/system functions
- Failure of prescribed methods for maintenance and repairs
- Danger to persons through electrical, mechanical and chemical hazards
- Danger to the environment through leakage of harmful substances

1.4 Safety-awareness at work

The safety instructions described in this Operating Manual, the valid national regulations on accident prevention, and possible internal regulations of the customer on work, operation and safety are to be observed.

1.5 Safety instructions for the customer/operator

- The possibility of hot or cold machinery means that parts could become a hazard, the customer has make provisions to avoid these parts being touched.
- Protective devices to prevent touching moving machinery (e.g. coupling) may not be removed from operating machines.
- Leakage (e.g. shaft seals) of dangerous conveyed products (e.g. explosive, poisonous, hot) has to be led off in such a way that there is no endangerment to persons or environment. Legal stipulations are to be maintained.
- Hazards through electric energy are to be eradicated (for details, see national regulations and those of the local power supply companies).

1.6 Safety instructions for maintenance, inspection and assembly work

The customer has to ensure that all maintenance, inspection and assembly work is carried out by authorised and qualified specialist personnel, who have been sufficiently informed through relevant and adequate study of the Operating Manual.
Work on the machine is to be done on principle only when it is shut down. The procedure for shutting down the machine is described in the Operating Manual and is to be followed without deviation.

Pumps, or pump units that convey hazardous media have to be decontaminated. Immediately after finishing work, all safety and protective devices have to be re-attached and put into effect.

Prior to initial (re-)start-up, you are to take heed of the points listed in the section Initial Operation.

1.7 Unauthorised re-equipping and spare-part production

Re-equipment and modification of the machine are only permitted after consultation with the manufacturer. Original spare parts and accessories authorised by the manufacturer are all part of the safety strategy. Use of other parts can eliminate liability for the consequences that ensue.

1.8 Prohibited methods of operation

Operational safety of the delivered machine is only guaranteed when it is used appropriately according to Section *2 - General* in the Operating Manual. The limit values specified in the data sheet may on no account be exceeded.

2. GENERAL

2.1 Introduction

This Operating Manual applies to the effluent lifting units with cutting unit pump(s) of the SANICUBIC® GR production series.

The warranty automatically expires if the Operating Manual is not observed - especially the safety instructions - and also if the device undergoes unauthorised re-equipment, or if non-original spare parts are installed into it. The manufacturer is not liable for any damage resulting from this!
As with other electrical devices, this product is also liable to fail through lack of main power supply or a technical defect. Damage may ensue for you for these reasons, you should plan an emergency power supply unit according to usage, a manual diaphragm pump, a second system (double system) and/or an alarm unit independent of the mains. As manufacturers, we are happy to advise you at any time, also after purchase. Please consult your dealers in case of any defects or in case of damage.

Products in the range :

SANICUBIC® 1 GR SE71.1 S	SANICUBIC® 2 GR SE71.1 T
SANICUBIC® 1 GR SE71.1 T	SANICUBIC® 2 GR SE71.2 T
SANICUBIC® 1 GR SE71.2 T	SANICUBIC® 2 GR SE71.3 T
SANICUBIC® 1 GR SE71.3 T	SANICUBIC® 2 GR SE71.4 T
SANICUBIC® 1 GR SE71.4 T	

2.2 Queries and orders

Please send your queries and orders to your specialist dealer.

2.3 Technical specifications

Power specifications

Typ SANICUBIC® GR	Power P1 [kW]	Power P2 [kW]	Voltage U [V]	Power reception I_N [A]	Rotational speed [n^{-1}]	Flage Pump	Inlet	Inlet height h [mm]
SE71.1 S	2,2	1,7	230	10,5	2 800	DN 50	single unit: DN 100 DN 50/100	250 576
SE71.1 T	2,1	1,7	400	3,7	2 800	DN 50		
SE71.2 T	2,1	1,7	400	3,7	2 800	DN 50		
SE71.3 T	3,9	3,2	400	6,5	2 800	DN 50	double unit: DN 100 DN 100/150	250 586
SE71.4 T	3,9	3,2	400	6,5	2 800	DN 50		

Maximum medium temperature: 55°C

Materials

Container	PE HD
Pump housing	GG 20
Rotor	GG 20
Seal supports	GG 20
Cutting flange	Stainless steel

Cutting blade	Stainless steel
Motor shaft	Stainless steel
Seals	NBR, FPM
Axial face seals	SiC (silicon carbide)

2.4 Area of usage

The effluent lifting units of the SANICUBIC® GR production series are used for the disposal (collection and conveying) of domestic and industrial effluent that develops underneath the canal backflow level. The model with cutting unit pumps enables pumping off over greater conveying heights and pressure main lengths. The pressure main may be laid at a dimension of DN 50.
Double systems are used wherever an interruption of the effluent disposal system is not permitted to occur, in terms of DIN 1986.

2.5 Scope of delivery

The effluent lifting units of the SANICUBIC® GR production series are delivered with:

- assembled cutting unit pump(s) of the SANIPUMP® ZFS 71 production series
- connection for emergency evacuation
- pneumatic control and switch boxes
- inflow bend DN 100
- flexible connection for ventilation of the collection chamber
- pressure decrease bend DN 50
- back-kick flap(s) DN 50
- forked pipe DN 50/50/50 (only for double system)

3. TRANSPORT AND INTERIM STORAGE

3.1 Transport

The effluent lifting units of the SANICUBIC® GR production series may not be thrown or dropped. Moreover, they are to be transported in a horizontal position.

3.2 Interim storage/conservation

The machine can be kept in interim storage and conserved in a cool, dark, dry and frost-free site. The systems should stand in horizontal position.

4. DESCRIPTION

4.1 General

The effluent lifting units of the SANICUBIC® GR production series are single systems that are ready to plug in and safe against flooding, with collection chambers made of gas- and odour-proof plastic. They work with vertical cutting unit pumps with automatic pneumatic level control. They are completely equipped with switch boxes and all necessary switching elements.

4.2 Construction and work method

The effluent falls into the collection chamber of the SANICUBIC® GR effluent lifting unit through the DN 100 (HT pipe) inflow.

The water rises in the back-up pipe screwed onto the top side of the chamber and compresses the air located in the back-up pipe until the pressure activates the banking up pressure switch in the switch box. This switches on the pump and conveys the water out of the chamber via the pressure main in the canal lying above.

The back-kick flaps in the pressure main prevent the return flow of the water from the pressure main into the chamber.

The switching system is provided with an acoustic alarm which is activated when the pump(s) fail(s) or when the supply flow is too strong. The motor is automatically switched off at overload (excessive current consumption or excessive coil temperature).

5. INSTALLATION

5.1 Preparations

A fault-free operation of the lifting unit is not least dependent on a correct and flawless assembly. For this reason you have to note the following points:

- The set-up site should be a room that is well ventilated, dry and free of frost.
- The set-up site must be sufficient in dimensions. The height of the room should be around 2 to 2.5 m. According to DIN 1986 (German standard) part 3: "...All system parts...(and)... all operating elements... have to be accessible at all times and be operable without difficulties. ...These system parts are not to be blocked by stored commodities, furniture, cladding, casings and so forth..."
- The substructure of the set-up site is to be designed to bear the potential loads, depending on system size.
- Lower interior spaces tend to collect water from the water table or percolation water. Therefore there should be a small tank in the corner of the room, where these liquids collect and can be disposed of with a cellar drainage pump.
- A hook in the ceiling above the set-up site of the lifting unit facilitates assembly and potential maintenance and repair work on the pump.
- Prior to assembly, all construction and connection measurements should be checked and compared with the dimensions of the system. Here you should pay special attention that the constantly downward-inclining supply connection never lies lower than the inflow height of the collection chamber.

5.2 Assembly

Pay urgent heed during assembly to a voltage-free and leak-proof installation of the pipelines and fittings.

5.2.1 Set-up

The effluent lifting units of the SANICUBIC® GR production series are aligned on the set-up site according to whatever pipelines are provided. It is set up horizontally and fastened to the floor by means of the fixing screws supplied in delivery.

DIN 19 760 (German standrad) Part 1:"...The excrement lifting installation is to be designed so that distortion and buoying upwards caused by fixing devices are avoided ..."

5.2.2 Supply

The supply connection is attached at the inflow bend supplied in delivery (single system) or directly onto the chamber (double system). It must always lie at a downward incline. Ascending stretches along the supply line are prohibited.

IMPORTANT:
When using the minimum supply height of 250 mm, note that the level control system is adjusted so that during normal operation the water level in the chamber rises a little above the lower edge until the supply pipe is filled to a maximum of ½ before the pump switches on. Hence, a corresponding water level adjusts for all pipes that are connected lower. This may mean that dirt deposits cannot be excluded in supply lines in this area and in extreme cases may cause a stoppage of the pipe.

5.2.3 Pressure main

A bend DN 50, 90° is mounted as standard on the horizontal pressure discharge of the pump, which ends in a vertical direction drilled with 5/4" internal thread.
The installation back-kick flaps is imperative in the pressure main of the lifting unit. DIN 19 760 (German standard) Part 3: "...After interruption of the supply flow, back-flow inhibitors have to prevent back-flow of the effluent from the pressure main automatically. When the inflow supply starts, the back-flow inhibitor must open automatically..."

We thus recommend the installation of a gate valve behind the back-kick flap, to facilitate any cleaning or exchange of the back-kick flap.

The pressure main has to ascend continuously and without unnecessary jumps in a bend above the backflow level and then fall continuously to the canal connection. Pipe connection and fittings may have to be supported with pipe clips or brackets.

5.2.4 Ventilation

The chamber ventilation system DN 65 is either connected directly to the ventilation pipe of the building or separately installed via the roof.

5.2.5 Electrical Connection

The switch box has to be attached in such a way that the pneumatic hose for the pneumatic level control system lies at a continuous ascending incline. Only thus can a fault-free function of the automatic control system be guaranteed. The system plug (CEE, shockproof socket for single systems) is plugged in directly before initial operation. Pay heed at this point that the electrical system corresponds to the valid directives. The mains supply for double systems is designed according to the circuit diagram.
The circuit diagram for wiring the lifting unit is in the switch box and should be left there for the convenience of the maintenance and customer service personnel.

6. INITIAL OPERATION

Prior to initial operation, all connections should be checked once more for correct assembly, the gate valve must be open.

Now insert the plug into the socket and, for rotary current systems, check the rotational direction of the pump. This can be done by setting the manual/0/automatic switch briefly to "Manual". When the motor runs down, the rotational direction seen at the viewing port on the top side can be compared with the correct rotational direction (rotational direction arrow). Should the pump be running in a reverse direction, two of the three phases have to be exchanged.

DANGER

Disconnect the lifting station from the mains electricity before you do any work to the system !

Now set the manual/0/automatic switch to "Automatic" and do a trial run. To do this, the collection chamber is filled through the normal inflow (washbasin, toilet, etc.). The system has to switch on automatically, pump the chamber empty and switch on again. After switch-off, no water may run back into the chamber from the pressure main.

Correct the follow-up time according to installation conditions and conveying height so that the pump evacuates the collection chamber to a maximum and only runs dry for a short time (loud noise when pumping). The back-flow pipe may no longer be immersed into the liquid after the pumping process is finished. The follow-up time can be changed by means of the digital potentiometer on the switch device.

During the trial run, recheck all connections and fittings for leakage and re-seal where necessary.
If the lifting unit is running properly, the switch remains in the "Automatic" setting.

7. MAINTENANCE / REPAIRS

7.1 Inspection and maintenance intervals

Inspection and maintenance intervals according to DIN 1986 (German standard) Part 31: "Effluent lifting installations should be checked once a month by the customer by monitoring one switching cycle for operational capability and leakage...The system is to be serviced by a specialist. Inspection and maintenance intervals should be no longer than :

- 3 months for systems in commercial operations
- 6 months for systems in multiple family residences
- 1 year for systems in single family houses"

7.2 Maintenance work

DANGER

Disconnect the lifting station from the mains electricity before you do any work to the system !

7.2.1 Collection chambers

Open the inspection lid and spray out the chamber with a hose to remove dirt layers on the chamber walls.

7.2.2 Back-kick flap

Open the inspection lid and clean the back-kick flap from within.

7.2.3 Other

All other maintenance work has to be carried out by the customer service department.

8. MALFUNCTIONS, CAUSES AND TROUBLESHOOTING

DANGER

Disconnect the lifting station from the mains electricity before you do any work to the system !

Fault	Cause	Elimination
1. Motor is not running	- Voltage too low, lack of voltage	- Check main supply
	- Wrong power connection	- Correction
	- Electric cable defective	- Replacement/ Customer service department
	- Fault at condenser	- Replacement/ Customer service department
	- Rotor blocked	- Clean
	- Motor protection system switched off because of overheating, blocking, voltage error	- Check/Customer service department
	- Control system error / Pressure switch defective	- Check/Customer service department
	- Pneumatic hose or connection leaking	- Check/Replace
	- Motor defective	- Replacement/ Customer service department
2. Motor running but is not conveying	- Rotor stopped up or worn	- Clean/replace
	- Back-kick flap fowled up	- Clean
	- Gate valve fowled up or closed	- Clean/open
	- Pressure main fowled up	- Clean
	- Suction joints fowled up	- Clean
	- Rotational direction wrong	- Correction
	- Lack of water in the chamber	- Switch off/ Customer service department
	- Chamber ventilation stopped up	- Clean
	- Pump housing ventilation stopped up	- Clean
3. Motor runs then switches off	- Voltage error, or fluctuates	- Correction/Customer service department
	- Thermo-protection wrongly set	- Check/Customer service department
	- Current consumption too high	- Customer service department
4. Motor does not switch off	- Control system fault	- Customer service department
	- Pressure switch function not in order	- Replacement/ Customer service department

9. WARRANTY

As manufacturer, we assume a warranty for this device for 24 months as of purchase date if lifting station has been correctly installed as per the installation instructions.
The legal document certifying this is your purchase invoice. Within this warranty term we eliminate by repair or replacement according to our option all deficiencies caused by material or manufacturing faults.

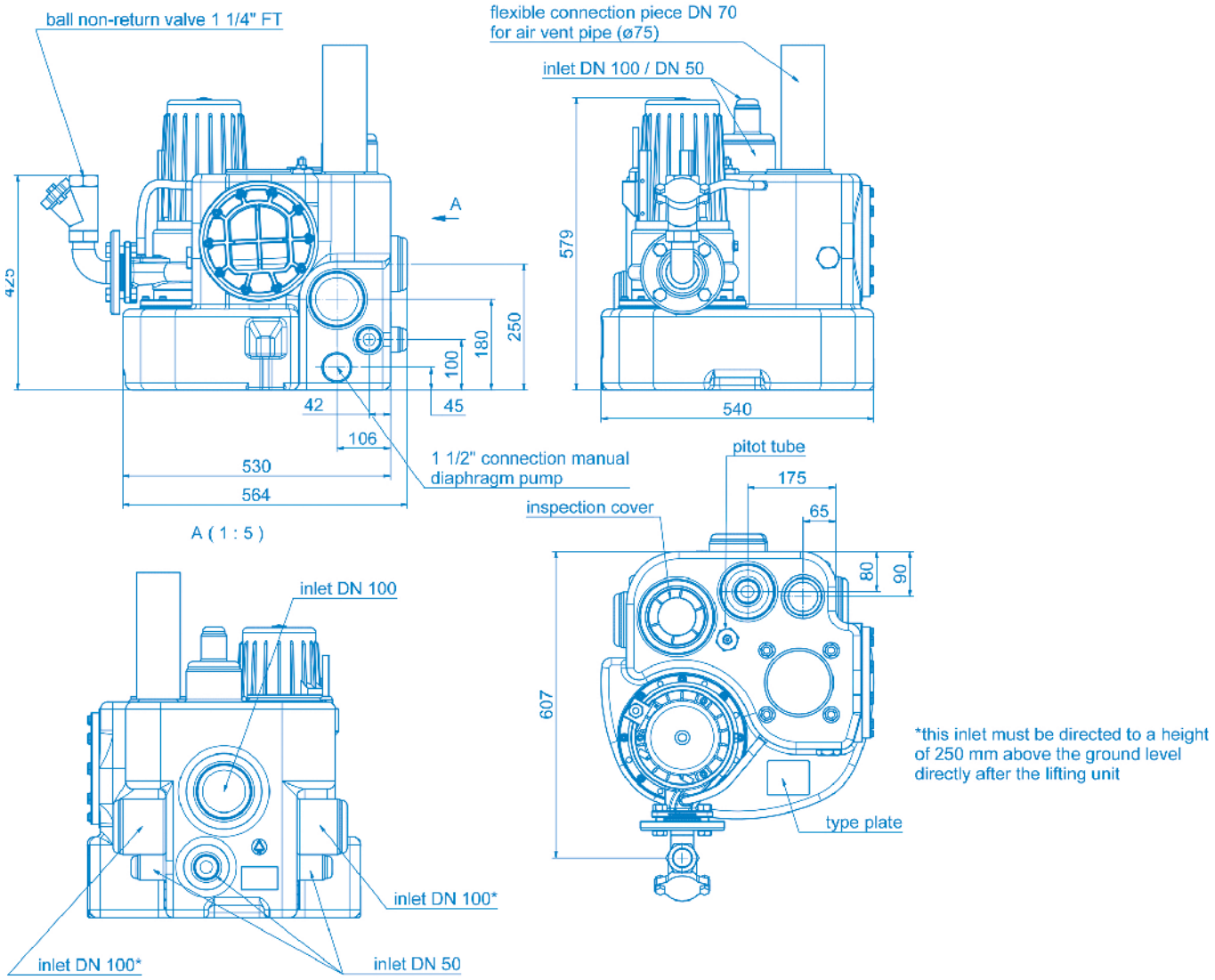
Excluded from the warranty is damage that is caused by inappropriate use and wear and tear. We are not liable for damage consequent to a failure of the device.

10. TECHNICAL MODIFICATIONS

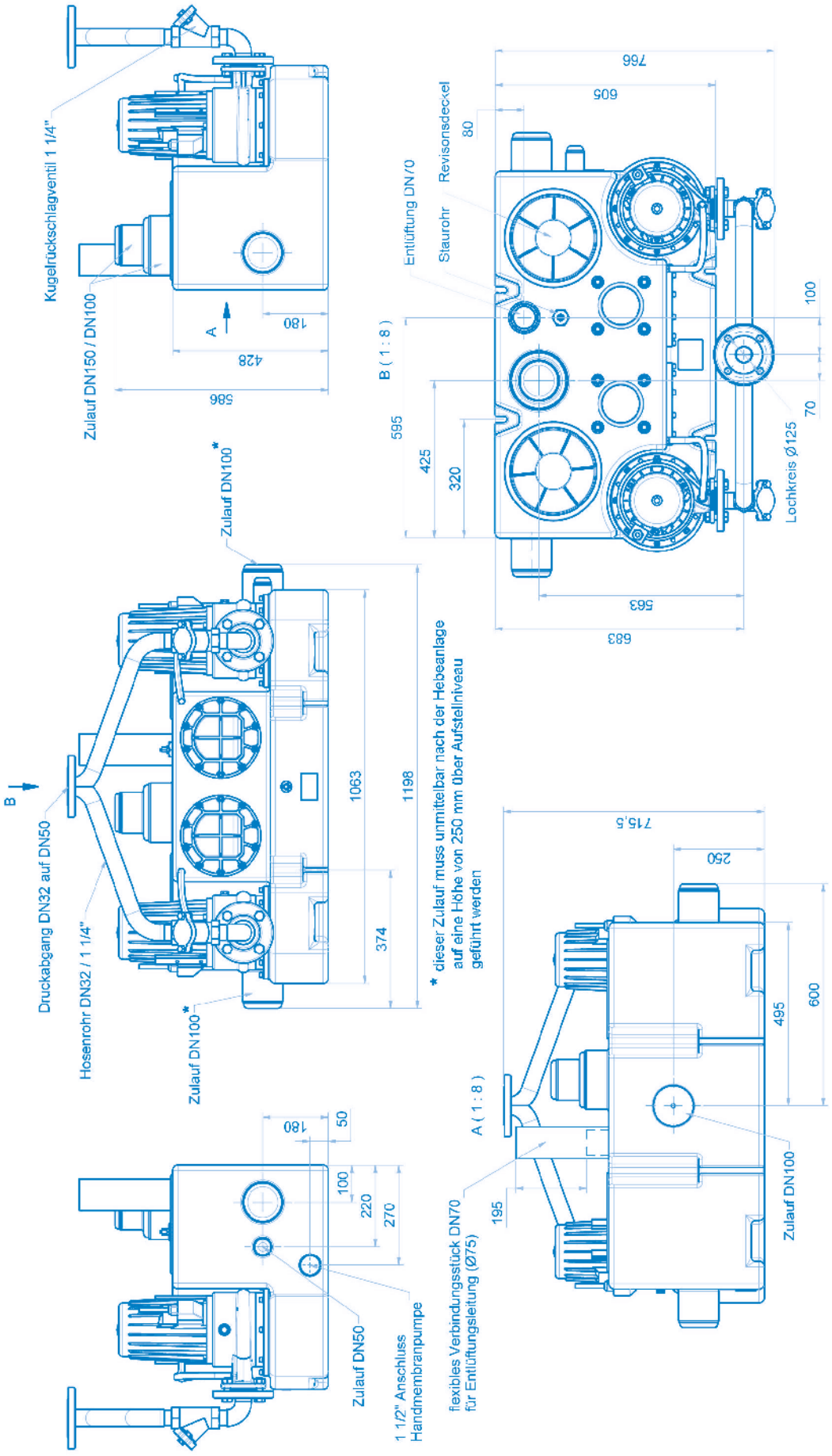
We reserve all rights for technical modifications in terms of further development.

Appendix A : Main dimensions

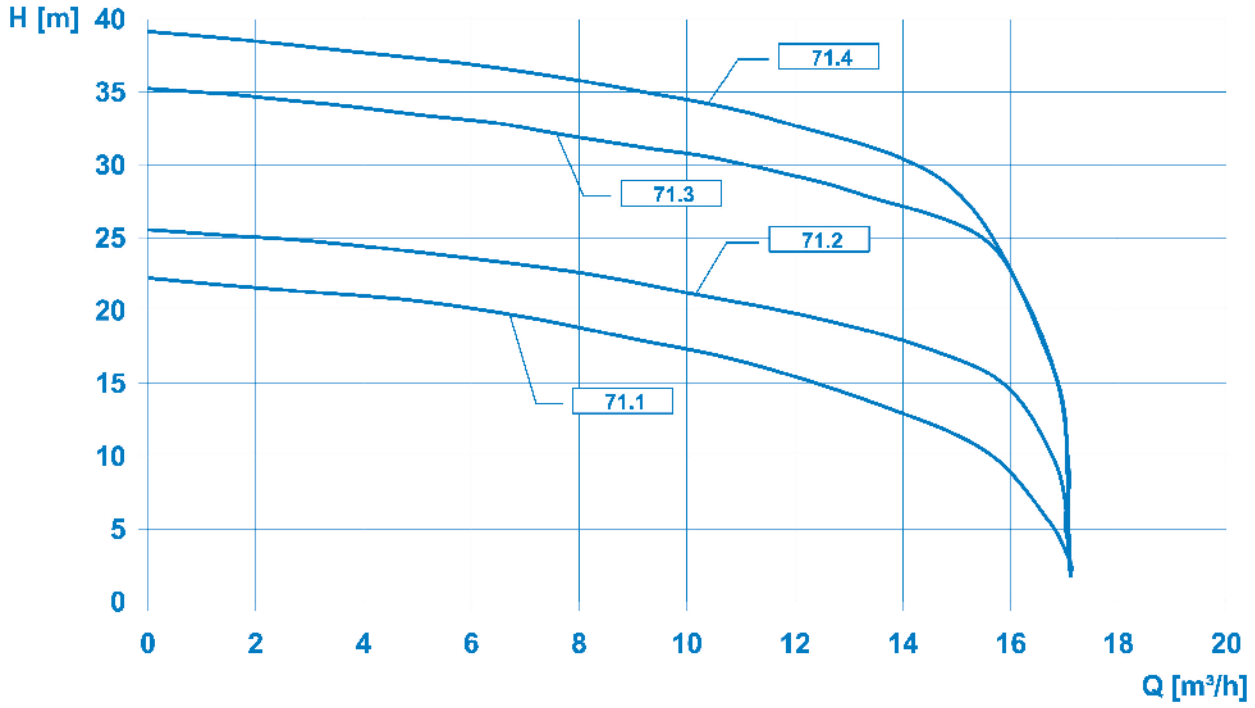
SANICUBIC® 1 GR



SANICUBIC® 2 GR



Appendix B : Power diagram

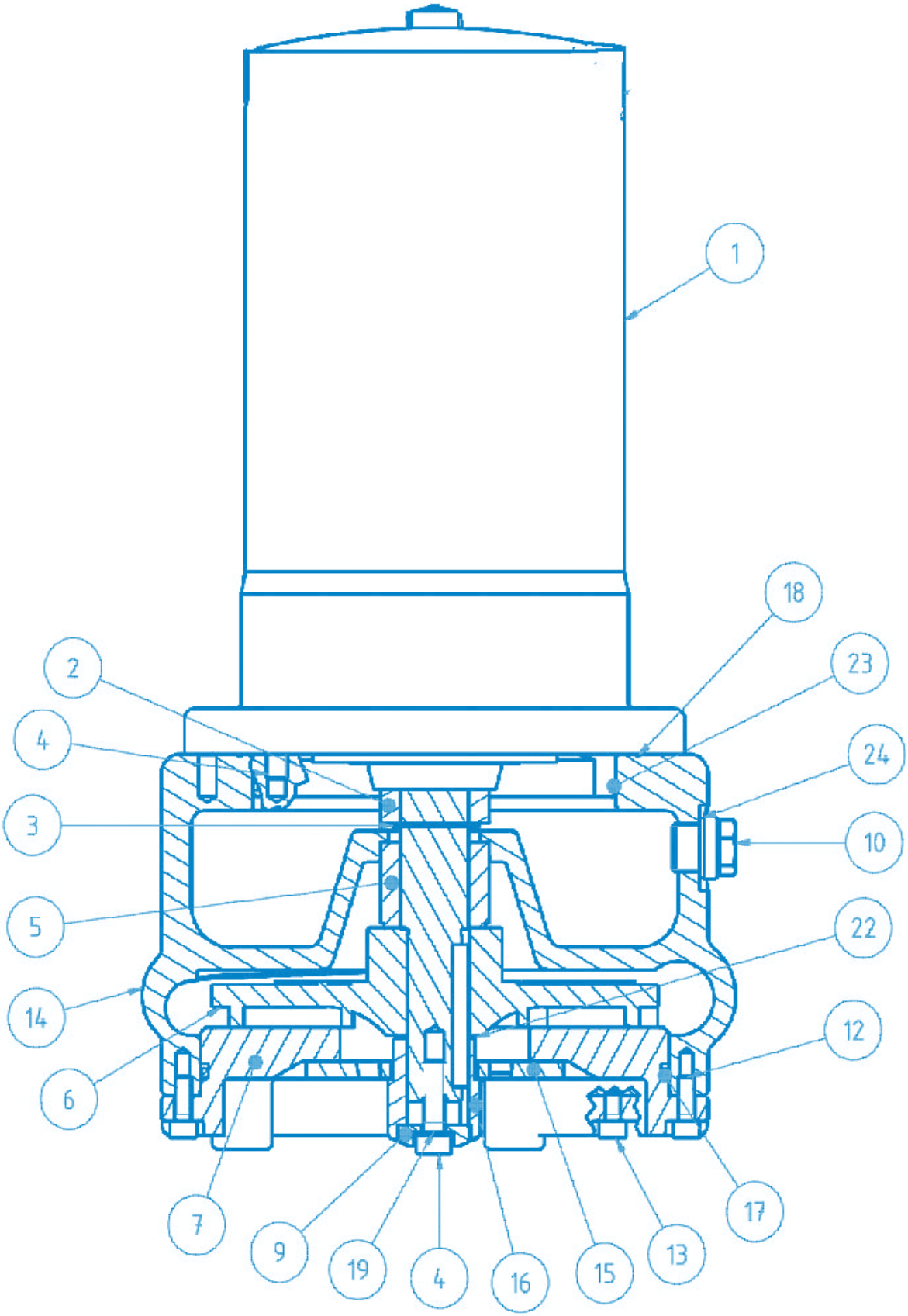


Appendix C : Spare parts list

Pos.	Item	Designation	Article no.
	1	Chamber SANICUBIC® GR SE 71	117337
	(1)	Chamber SANICUBIC® 2 GR SE 71	
	1 (2)	Suction nozzle SANICUBIC® GR SE 71	17481
	1 (2)	Hose nozzle straight R 3/8“	117191
	1	Pitot tube complete	60219
	1	Inspection cover with sealing	117012
	(2)	Inspection cover duplex unit	
	(2)	Sealing for inspection cover duplex unit	
	1	Switchgear SANICUBIC® GR SE 71 230 V	200102
	1	Switchgear SANICUBIC® GR SE 71 400 V	255302
	(1)	Switchgear SANICUBIC® 2 GR SE 71 400 V	

Appendix D: Section diagram and spare parts list of the pump

Section diagram



Spare parts list, pump

Pos.	Art. Nr.	Designation	Quantity
	17749	Pump for SANICUBIC® 1 GR SE71.1 S	1
	17463	Pump for SANICUBIC® GR SE71.1 T	1 (2)
	17562	Pump for SANICUBIC® GR SE71.2 T	1 (2)
	17563	Pump for SANICUBIC® GR SE71.3 T	1 (2)
	17564	Pump for SANICUBIC® GR SE71.4 T	1 (2)
1	17587	Pot-type motor SANICUBIC® 1 GR SE71.1 S	1
1	17586	Pot-type motor SANICUBIC® GR SE71.1 T and SE71.2 T	1
1	17588	Pot-type motor SANICUBIC® GR SE71.3 T and SE71.4 T	1
2	17356	GLRD LD1/25-G38 motor side	1
3	11679	Securing collar DIN471-A25x1,2	1
4	16381	Hexagonal socket head screw M8x25-A2	5
5	17377	GLRD MG1/25-G6 medium side	1
6	17373	Impeller SANIPUMP® ZFS 71.1 Ø135	1
6	17371	Impeller SANIPUMP® ZFS 71.2 Ø145	1
6	17372	Impeller SANIPUMP® ZFS 71.3 Ø160	1
6	17351	Impeller SANIPUMP® ZFS 71.4 Ø170	1
7	17391	Cover SANIPUMP® ZFS 71 for tank top mounting	1
8	17109	Countersunk screw M5x10-A2 DIN965	3
9	17352	Knife fitting SANIPUMP® ZFS 71	1
10	11640	Sealing screw, bea. G 3/8 (Entlüftung)	1
10	11639	Sealing screw G3/8 DIN910 (Öl)	1
11	11663	Ring screw DIN 580-M8-A2	1
12	15320	Hexagonal socket head screw M6x20-A2	4
13	10008	Hexagonal socket head screw M6x10-A2	4
14	17355	Pump housing SANIPUMP® ZFS 71	1
15	17353	Cutting plate SANIPUMP® ZFS 71	1
16	17354	Cutting knife SANIPUMP® ZFS 71	1
17	11822	O-ring 160 x 3,5-NBR70	1
18	11629	O-ring 147 x 3	1
19	11672	Sealing ring 8x14x1 Cu	1
20	11659	Handle	1
21	10666	Hexagonal socket head screw M6x12-A2 DIN 912	2
22	17375	Shim ring 10x30x0,1 1.4301	2
22	17376	Shim ring 10x30x0,5 1.4301	2
23	11656	O-ring 125x2-NBR70	1
24	11646	Sealing ring 17x22x1,5 Cu for Pos 230	2
70	11645	Tooth lock washers S8x13x0,8 A2	4
	11690	Wisura technical white oil NFW	0,4L