INSTRUCTIONS FOR INSTALLATION, OPERATION AND MAINTENANCE

KESSEL Grease separator *EasyClean* ground Mix, Auto Mix, Auto Mix & Pump - in the engineering chamber in NS 1, 2, 4

GB Page 1- 52

for installation in the ground

Product advantages

- ❏ in accordance with DIN 4040
- ❏ in accordance with Euro standard EN 1825
- ❏ 100% resistant against aggressive grease acids
- ❏ Easy operation
- ❏ Low weight
- ❏ Simple and fast installation
- ❏ 20-year guarantee for tanks

☐ Installation ☐ Putting into operation ☐ Instructional briefing for the system was carried out by your specialist company:

Name/signature Date Town/City

Stamp of specialist company

KESSEL

As at 2020/02

Code no. 010-298_SON_EN

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1 Introduction

Dear Customer,

We are pleased that you have decided to buy one of our products. We are certain that it will fully meet your requirements.

These installation, operating and maintenance instructions contain important information that has to be observed during installation, assembly, operation, maintenance and repair. Prior to carrying out any work on the system, the operator and the responsible specialist staff must carefully read and heed these instructions. We wish you smooth and successful installation.

In trying to keep our quality standard as high as possible, we rely on your help of course. Please let us know of any possible improvements we could make to our product.

Do you have any questions? We look forward to hearing from you.

1.1 Product description, general

The grease separator separates greases, oils and sludge out of the wastewater. The grease separator has been designed in accordance with EN 1825. The separated material can be drawn off / pumped away at any time and during operation. Depending on the model type, the grease separator system is equipped with an electric system control and pump as well as various control valves.

1.2 Use

Animal and vegetable oils and fats must not be discharged into public disposal systems and into bodies of water, since they can cause narrowing of cross-sections and blockages in the disposal pipes when they set. In addition, fatty acids are produced after a short decomposing time, leading to unpleasant odours and corroding pipes and constructional elements of the draining systems. The solidified grease layer on the surface of the water also hinders the necessary oxygen supply to bodies of water and sewage treatment plants.

DIN 1986 Part 1 requires harmful substances to be trapped. For these reasons, grease separator systems according to DIN 4040 or prEN 1825 must be planned, and disposal must take place accordingly.

1.3 System types

C D F

The following versions of the grease separator are produced:

System type (code for installation)	System designation	Control unit type	One pump for cleaning and rinsing	One pump cleaning, rinsing and disposal	Refill inlet	Sampling point, type Nuremberg	2 solenoid valves	Two-way valve, electric
C	Grease separator Mix - in the engineering chamber	-	x		x	x		
D	Grease separator Auto Mix - in the engineering chamber	“Auto Mix”	x		x	x	x	
F	Grease separator Auto Mix & Pump - in the engineering chamber	“Auto Mix & Pump”		x	x	x	x	x

Optional system components	C	D	F
Sensor *SonicControl* (art. no.: 917821) for NS2 and NS4	x	x	x
Duct set for sensor cable *SonicControl* (art. no.: 917822)	x	x	x
Connection set (art. no.: 917421)	x	x	x
RemoteControl (art. no.: 916601) (wired remote control)		x	x
Disposal chamber (art. no.: 917420)	x	x	x
Operation log book for grease separator (art. no.: 917409)	x	x	x
Maintenance contract (art. no.: 917412)	x	x	x
General inspection contract (art. no.: 917411)	x	x	x

1.4 Overview of article numbers

Nominal size	C	D	F
1	93001/80B-K-DS1	93001/80B-K-DS-P1	93001/80B-K-P1
	93001/80D-K-DS1	93001/80D-K-DS-P1	93001/80D-K-P1
	93001/120B-K-DS1	93001/120B-K-DS-P1	93001/120B-K-P1
	93001/120D-K-DS1	93001/120D-K-DS-P1	93001/120D-K-P1
2	93002/80B-K-DS1	93002/80B-K-DS-P1	93002/80B-K-P1
	93002/80D-K-DS1	93002/80D-K-DS-P1	93002/80D-K-P1
	93002/120B-K-DS1	93002/120B-K-DS-P1	93002/120B-K-P1
	93002/120D-K-DS1	93002/120D-K-DS-P1	93002/120D-K-P1
4	93004/80B-K-DS1	93004/80B-K-DS-P1	93004/80B-K-P1
	93004/80D-K-DS1	93004/80D-K-DS-P1	93004/80D-K-P1
	93004/120B-K-DS1	93004/120B-K-DS-P1	93004/120B-K-P1
	93004/120D-K-DS1	93004/120D-K-DS-P1	93004/120D-K-P1

Note:
80B corresponds to filling of 80cm above the inlet pipe and a cover with load class B
120D corresponds to filling of 120cm above the inlet pipe and a cover with load class D

1.5 Type plate

Information on the grease separator system type plate

10	Serial number
52	Material description
53	Material number
55	Standard
56	Free text / explanation
57	Free text / explanation
58	Free text / explanation
59	Free text / explanation
75	Free text / explanation
76	Material
77	Approval
78	Gross weight
79	Date of manufacture
80	Order number

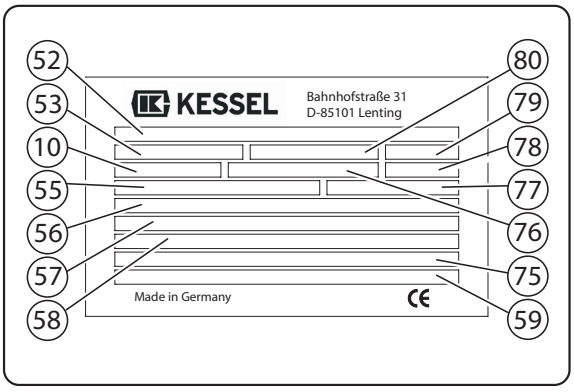


Abb. [1]

Information on the type plate of the control unit

1	Name of the control unit
2	Material number of the control unit
3	Connection voltage and connection frequency
4	Current consumption range
5	Protective rating (IP)
6	Serial number of the control unit
7	Spare part number of the control unit
8	Danger sign (electr. control unit)
9	Protective class I - protective earthing
10	CE marking
11	Hazardous waste electric device - emptying not via domestic waste
12	Hardware revision status

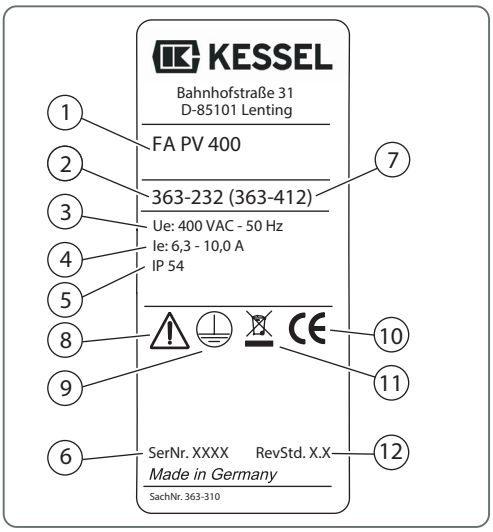


Abb. [2]

1.6 Scope of delivery

- Grease separator system (see 1.8 Assemblies, functional characteristics and dimensions on page 9)
- Engineering chamber with equipment installed
- Solenoid valves (except for system type C - “Mix” variant)
- Operating and maintenance instructions

1.7 General information on these operating and maintenance instructions

Symbols and keys used

<1>	Reference in the text to a key number in an illustration
[2]	Reference to an illustration (Figure)
•	Work step
3.	Work step in numbered order
–	List
Italics	Italic type: Reference to a section / item in the control menu

CAUTION: Warns of a hazard for persons and material. Disregard of the instructions marked with this symbol can lead to serious injuries and material damage.

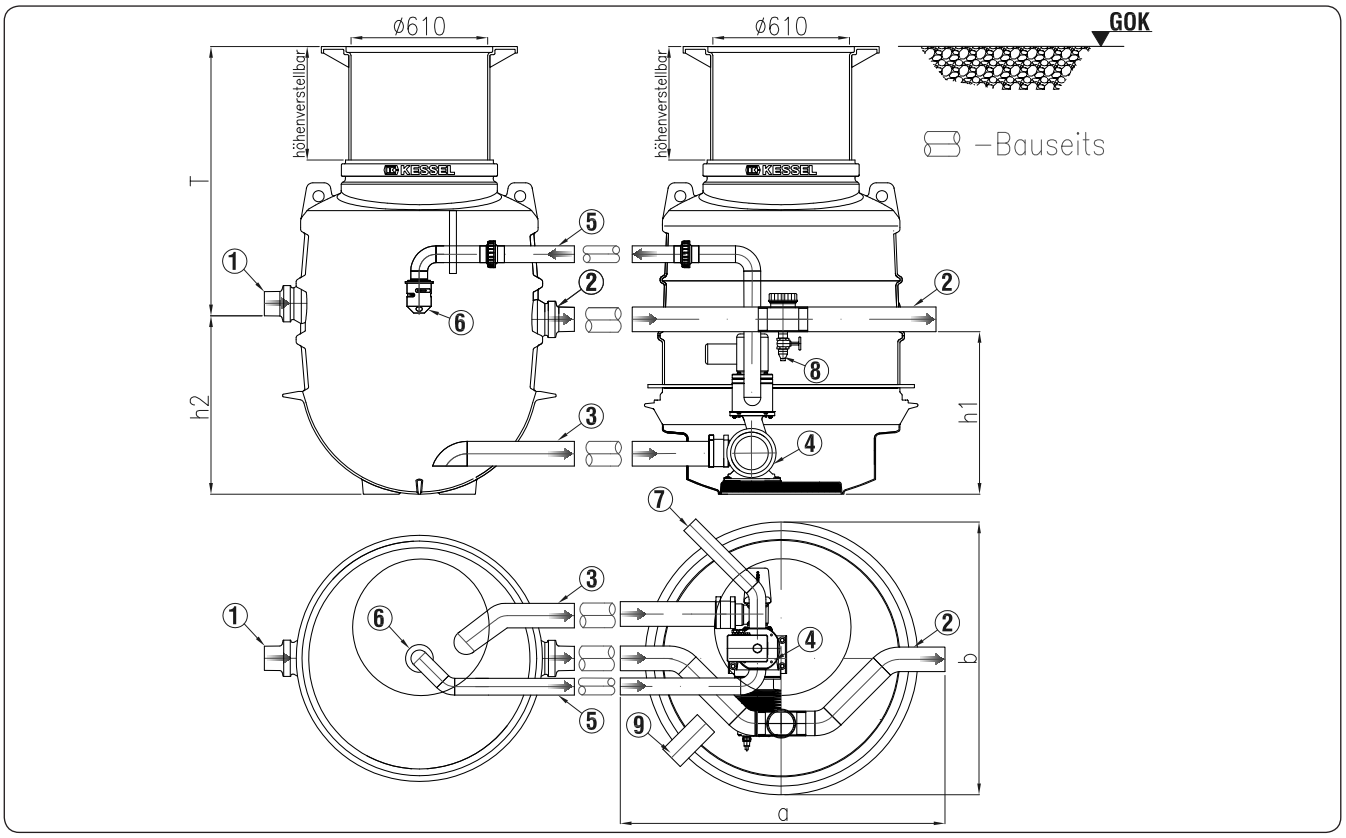
Note: Technical information or instructions which must be paid particular attention.

To avoid the descriptions of control unit operation becoming unnecessarily difficult to read, no menu prompting details are described if these can be considered standard and self-explanatory.

If, for example, a section such as Maintenance is to be selected, then the manual does not read Actuate cursor down key => Select entry Maintenance => Actuate OK key, it simply contains the instruction “SelectMaintenance ”.

1.8 Assemblies, functional characteristics and dimensions

Illustration shows system type F



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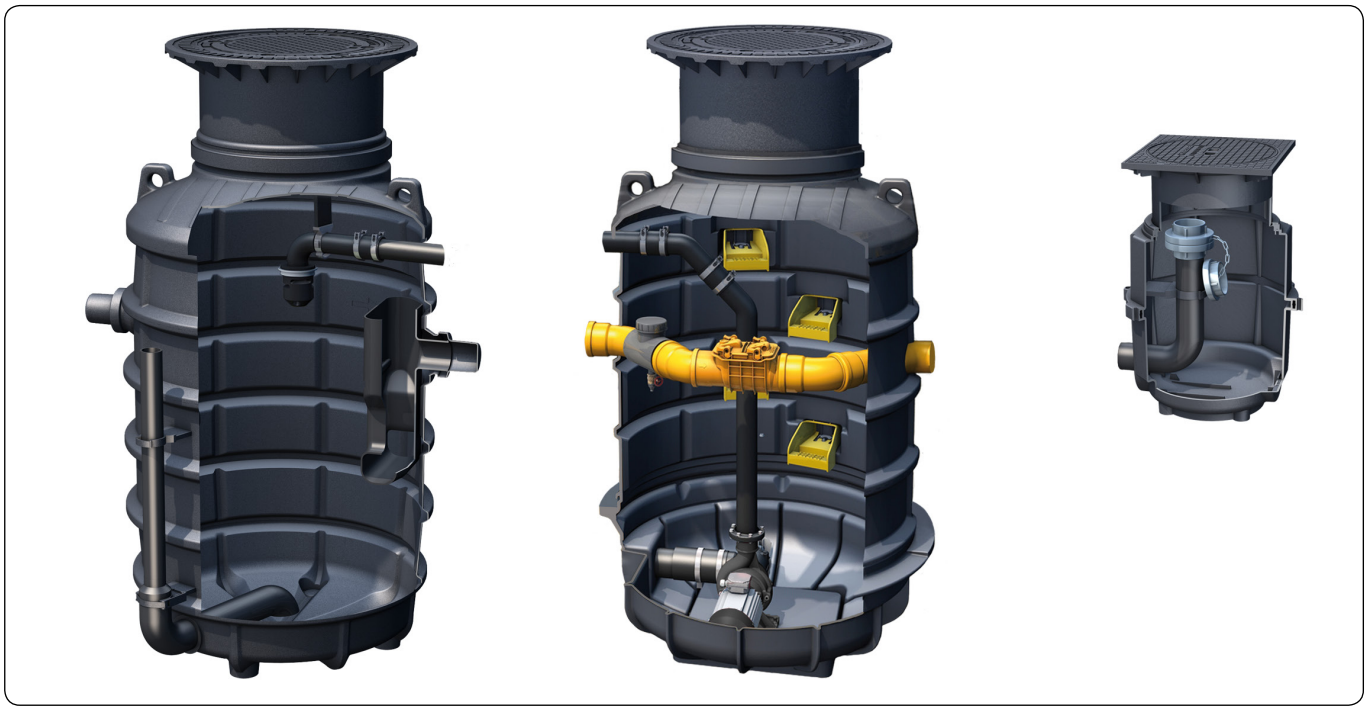
1	Inlet DN100 (DA110)
2	Outlet DN100 (DA110)
3	Pump intake pipe
4	Pump 2.6 kW
5	Pump pressure pipe
6	Mixing nozzles
7	Disposal pipe DN65
8	Sampling point, type Nuremberg
9	Cable duct

NS	DN	OD	a	b	h1	h2	Sludge storage	Wastewater content separator	Grease storage	Total volume
NS 1	100	110	1380	1220	690	795	140 l	230 l	70 l	370 l
NS 2	100	110	1380	1220	940	1045	200 l	370 l	120 l	570 l
NS 4	100	110	1380	1220	1210	1295	400 l	370 l	160 l	770 l

Note: The dimensions apply for all system types.

1.8.1 Illustration system types - C

C D F



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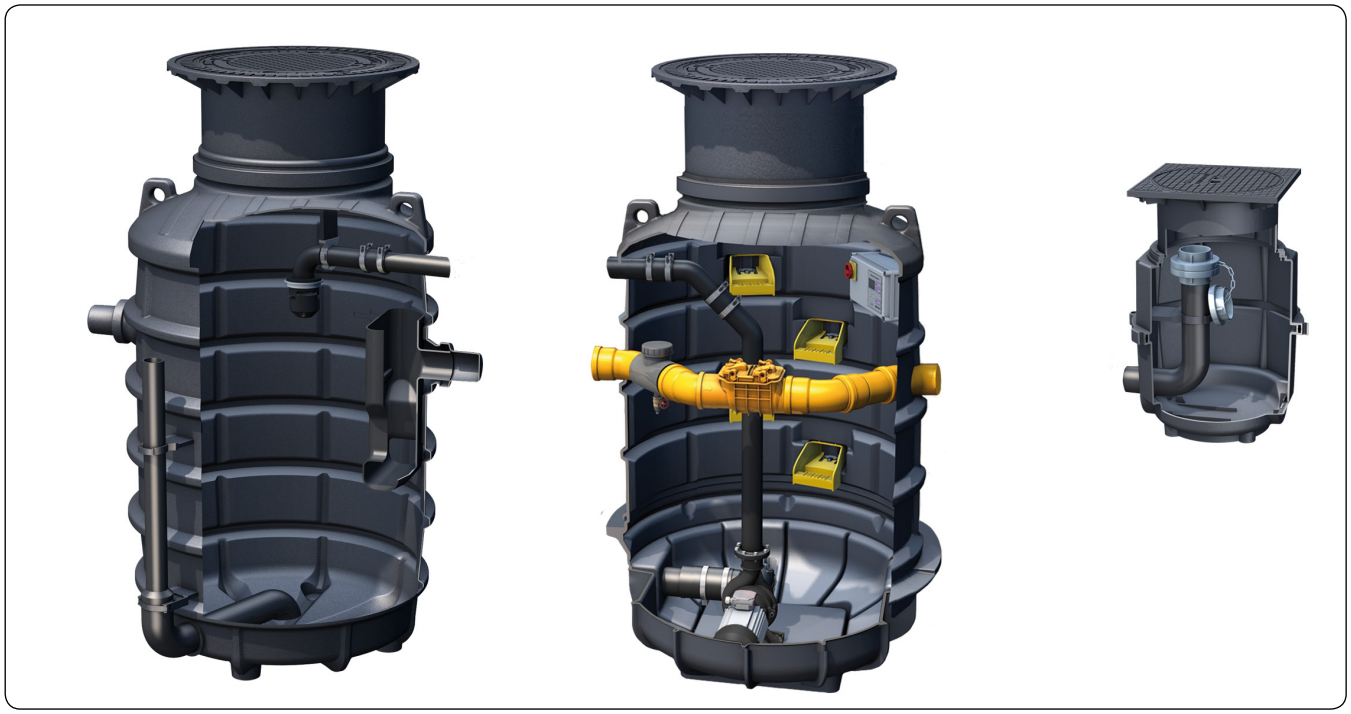
1.8.2 Illustration system types - D

C D F



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1.8.3 Illustration system types - F

C D **F**

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1.8.4 Control unit

1.8.4.1 “Auto Mix & Pump” control unit for system type F

C D F

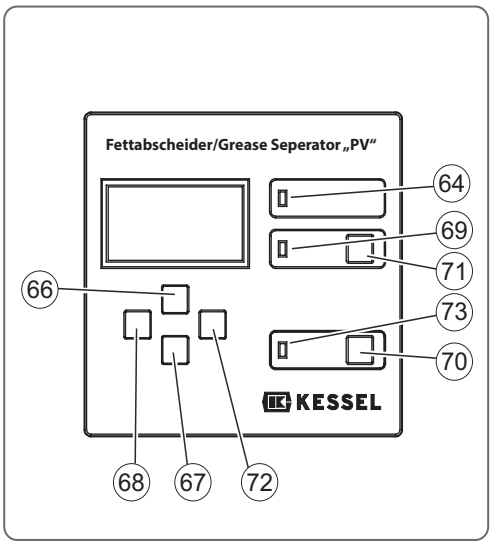
General information

The menu prompting has an operating and a standby mode.

If over a period of approx. 60 seconds none of the keys are pressed, standby mode is activated automatically, the background lighting of the display is then switched off.

Operation, function keys

64	LED	Ready for operation
66	Cursor up	Scrolling in the menu
67	Cursor down	Scrolling in the menu
68	ESC	Deletion of an entry, back
69	LED	Alarm LED
70	Start / Stop	Start / stop emptying operation
71	Alarm	Acknowledge the acoustic alarm
72	OK	Confirmation of an entry, next level
73	LED	Pump operation LED



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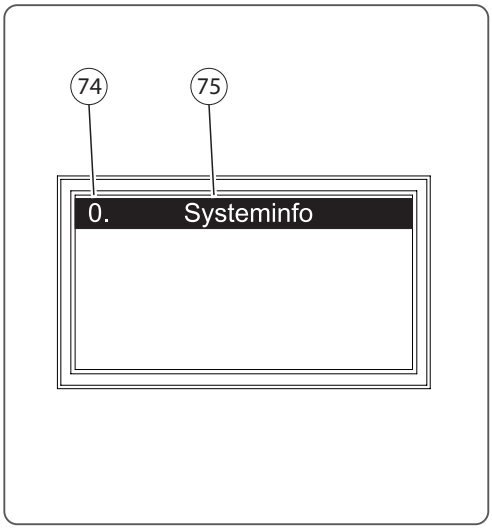
Display

74	Number of the menu
75	Name of the menu



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2 Safety

2.1 Intended use

The grease separator system has been exclusively designed for clearing wastewater of waste and grease.

The system must not be used in a potentially explosive environment.

Any

– modifications or attachments
– use of non-genuine spare parts
– carrying out of repairs by companies or persons not approved by the manufacturer

without the express and written approval of the manufacturer can lead to a loss of warranty.

Later extensions to the Kessel grease separator systems must be carried out by Kessel Factory Customer Service.

2.2 Personnel selection and qualification

People who operate and/or install the grease separator systems must

– be at least 18 years old.
– have been sufficiently trained for the respective tasks.
– be familiar with and follow the relevant technical rules and safety regulations.

The owner-operator decides on the required qualifications for the

– operating personnel
– maintenance personnel
– repair personnel

The owner-operator must ensure that only qualified personnel work on the grease separator.

Qualified personnel are persons who, on the basis of their training and experience as well as their knowledge of the relevant provisions, current standards and accident prevention regulations, can carry out the required tasks and both recognise and avoid any possible hazards.

Work on electrical components may only be carried out by specially trained personnel and under adherence to all the valid accident prevention regulations (UVV).

2.3 Organisational safety measures

The operating and maintenance instructions must always be kept near the grease separator system.

2.4 Hazards caused by the product

2.4.1 Risk caused by electric current and cables

All live parts are protected against unintentional contact as well as splashwater from all directions (IP 54). Before housing covers, plugs and cables are opened they must be switched voltage-free. Work on electrical components may only be carried out by specialist staff (see 2.2).

The electrical components of the grease separator system are not protected against flooding. VDE 0100 applies for all electrical work on the unit. The unit must be supplied through a residual-current-operated protected device (RCD) with residual current of ≤ 30mA. The control unit is live and must not be opened. Only qualified electricians may carry out work on electrical equipment. The term qualified electrician is defined in VDE 0105.

2.4.2 Risk caused by heat development at the pump(s)

If the drive motors of the pumps run over a longer period, temperatures of more than 70°C can result. Burning hazard when touched.

2.4.3 Risk caused by gases and vapours

Toxic gases and vapours can result at the grease separator. For this reason, there are risks such as a risk of suffocation, risk of poisoning and risk of explosion.

2.4.4 Risk caused by working in the chamber

There is a danger of slipping during entry into the inspection chamber. A suitable access aid has to be available. For this reason, a second person must always be available to monitor the entry into the chamber from the outside.

Moreover pumping equipment may only be removed, if it is ensured that no water can flow into the chamber. To ensure this, all unit components must be emptied and the chamber must be blocked off against further inlet. If necessary, appropriate shut-off valves are to be used at the inlet.

In the event of a flood, a system chamber can fill with water within a very short time. If there is a risk of water entering, the inspection chamber must not be entered until there is no danger involved.

There can be a high physical and mental strain during work in deep, narrow or dark spaces. In addition, there is a risk of falling.

2.4.5 Risk of infection in case of contact with the wastewater

The wastewater contains bacteria. There is a risk of infection in the event of contact with mucous membranes, eyes, wounds or when absorbed into the body. Any parts of the body which come into contact with wastewater should be cleaned immediately, change soiled clothing. Wear personal protective equipment.

3 Installation

3.1 Installation recommendations

The KESSEL grease separator system *EasyClean* ground is delivered ready for operation.

Each tank is packed separately on a pallet. Set-up material and accessories are included on the pallets, and can sometimes also be in the tanks.

Examine the system for transport damage before installation.

The grease separator for underground installation should be installed outside the building as close to the drains as possible. If necessary, the inlet connection pipes to the grease separator should be routed heat-insulated or heated.

The necessary frost-free installation depth is achieved using telescopic upper sections and adaptation to the inlet and outlet pipe (sewer). The covers for the load classes A / B , D are screwed odour-tight and correspond to DIN EN 124.

The following points must be heeded during installation:

– The foundation soil must be horizontal and level to guarantee the functional ability of the system. In addition, the foundation soil must have a sufficient load bearing capacity. A layer of compacted gravel 0/16 (97% Dpr) 25 - 30 cm thick is required as a base. On top a top layer of around 10 cm must be applied.

– Set the tank(s) completely into the prepared gravel layer.

– Connect both Tanks (intake pipe and pessure pipe) using the connecting kit Art.-No.: 917421.

– Fill the tank(s) with water up to the level of the drain, and check for any leaks. If water escapes, check the screw connection first and tighten this if necessary. If this does not solve the problem, make sure the profiled seal is fitted correctly, check for soiling or damage and replace if necessary.

– The space at the side of the tank must be filled with gravel 0/16. The individual layers should not exceed a height of 30 cm. A vibrator must be used for compaction.

– Once the system has been filled up to the inlet and outlet level, connect the inlet and outlet pipes. Then continue filling.

– With downpipe on the inlet site, there should be a stilling section of around 1m and a pipeline gradient of at least 1:50 before the seperator system. The transition from the drainpipe to the stilling section should be executed with two 45° bends. This reduces: - the danger of siphons and odour traps being suctioned dry
  - odour formation, since more oxygen is added
  - foam formation in the separator

The last layer is filled up with gravel 0/16 and lightly compacted (97% Dpr).

– Put the upper section into the required position and fix in place using a clamping ring. The fine adjustment to the final height is carried out using the adjusting screws. Make sure the inlets and outlets remain accessible for later cleaning purposes. If the upper section should project too far into the tank, it must be sawn off accordingly.

– Ground slopes up to a max. 5° can be compensated by tilting the upper section.

Leak test on the upper section

Install the tank according to the installation instructions. Before the upper section is set in place or the concrete layer is laid, the air-tightness of the upper sections must be checked. To do this, fill the tank(s) with water up to the upper edge of the upper section, and check for any leaks.

Class A 15:

In the case of installation in traffic areas that can only be used by pedestrians and cyclists or comparable areas e.g. green areas up to a load of 1.5 tonnes, the projecting upper section is vibrated into place with the ground surface cover.

Class B 125:

We recommend casting a reinforced base plate around the upper section when the system is installed in paths, pedestrian areas and comparable areas as well as in parking lots or multi-storey car parks with a load of up to 12.5 tonnes.

Class D 400:

In case of installation in traffic areas of streets, parking lots and other compareable fortified areas (e.g. highway parking lots) up to a load of 40 tonnes a reinforced base plate around the upper section have to be concreted. You will be sent a prepared reinforcement drawing for the respective nominal size on request.

Caution:

Upper sections may only be subjected to a load following complete installation (cured concrete).

– Grease separators for installation in the groundwater on request
– The grease separator system EasyClean ground standard is suitable wherever
  - odour pollution is not important during disposal,
  - attachment of the intake pipe from the disposal vehicle is not a problem.

Lifting station

If the grease separator system is installed below the locally specified backwater level, a lifting station must be installed downstream in accordance with DIN 1986 and prEN 1825, unless local regulations specify otherwise.

Lip seal

must be inserted in the groove of the dome and greased

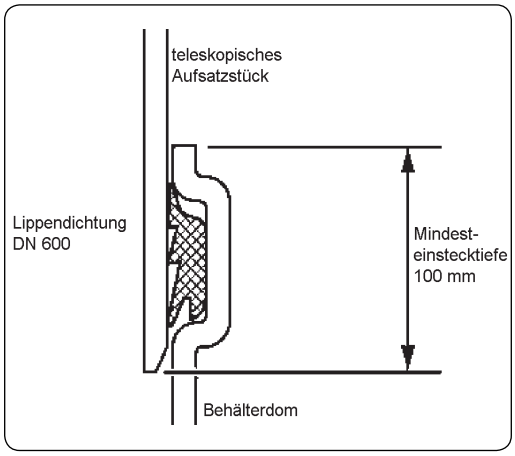


Abb. [9]

Ventilation

In accordance with DIN EN 1825-2, grease separator systems and their inlet and outlet pipes must be sufficiently vented and aerated.

This means the inlet pipe must be routed to above the roof as a ventilation pipe.

All connection pipes longer than 5 m must be aerated separately.

If the inlet pipe is longer than 10 m and there is no separately ventilated connection pipe available, the inlet pipe must be equipped with an additional ventilation pipe near the separator.

3.2 Piping

– The requirements in DIN 4040 / EN 1825 and EN 12056 must be heeded during installation!

– The system must be set up horizontally completely in the excavation pit.

– Connect the inlet and outlet of the grease separator system. After putting into operation, the connection pipes must be checked for leaks.

– The intermediate pipes (rinsing pipe DA75mm and intake pipe DA between separator and engineering chamber) must be connected using the Kessel connection set 917421. After putting into operation, the connection pipes must be checked for leaks.

– The disposal pipe must be connected to the disposal flange (flange connection DN 65, PN 10, DIN 2501, hole pattern 145 mm). At the end of the disposal pipe, the coupling included with 1/2 „ inner thread must be mounted in a spot easily accessible for the disposal vehicle. The disposal pipe must be routed at a slight gradient to the grease separator.

– The refill inlet provided must be fitted in the building above the backwater level. DIN 1988, DVGW work sheet must be heeded when connecting the filling and rinsing pipe. Route the filling pipe with a pressureless tube DN100 to the separator on the ground side. The connection can be integrated via the inlet before the separator. The filling pipe should be routed with a constant uphill gradient.

4 Electrical installation

4.1 General points

Electrical work may only be carried out by professional electricians. The connections have already been fitted in the factor and should be checked again before initial operation.

– The pump as well as the actuator valve and the solenoid valves must be connected in the engineering chamber in accordance with the terminal connection diagrams enclosed (circuit diagrams control unit type D and control unit type F). On site, the connection cable 5 x 2.5 mm² or 5 x 4 mm² must be installed, depending on the type of routing and cable length (as per DIN VDE)

– Fuse protection: see circuit diagrams => T 16 Amp. with a 2.6 kW pump

– The phase sequence of the electrical installation must always be checked (running noises, power data).

– The CEE motor protection plug must always be routed and attached dry and protected from frost and direct sun radiation (with system type C => “Mix” variant)

– The control unit must be installed in such a position that it is dry and protected from frost and direct sun radiation (with system type D and F => “Auto Mix” and “Auto Mix & Pump” variant

Please note:

– Operating instructions must be displayed near the separator.
– The disposal procedure must be carried out exactly according to the instructions.
– Only approved disposal companies may carry out disposal from the grease separator system.

4.2 Pump technology

A 2.6 kW pump is fitted as standard

Can also be delivered with a 4.0 kW pump (on request)

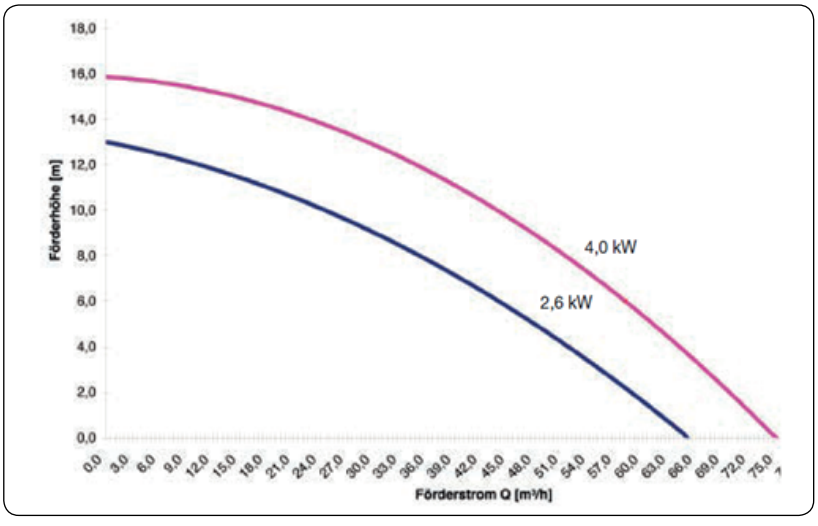


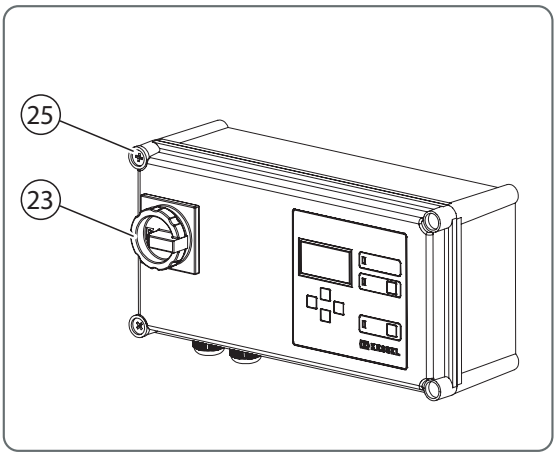
Abb. [10]

4.3 Mounting and installing the control unit

– Select an installation location for the control unit
  - Take the lengths of the pump and solenoid valve cables into account
  - Select the installation location in such a way that the type plate is easily legible for regular inspections

Caution, risk caused by electric current! The control unit may only be opened when the mains power supply has been disconnected.

- Move the main switch <23> into the OFF position.
- Undo the screws <25>.
- Open the housing.
- Install the housing at the planned spot, using all four attachment possibilities in the corners. There is a drilling template included in the scope of delivery.
- Establish the connections in accordance with the connection diagram (below and in the housing cover of the control unit).
- Close the housing and tighten the screws <25>.



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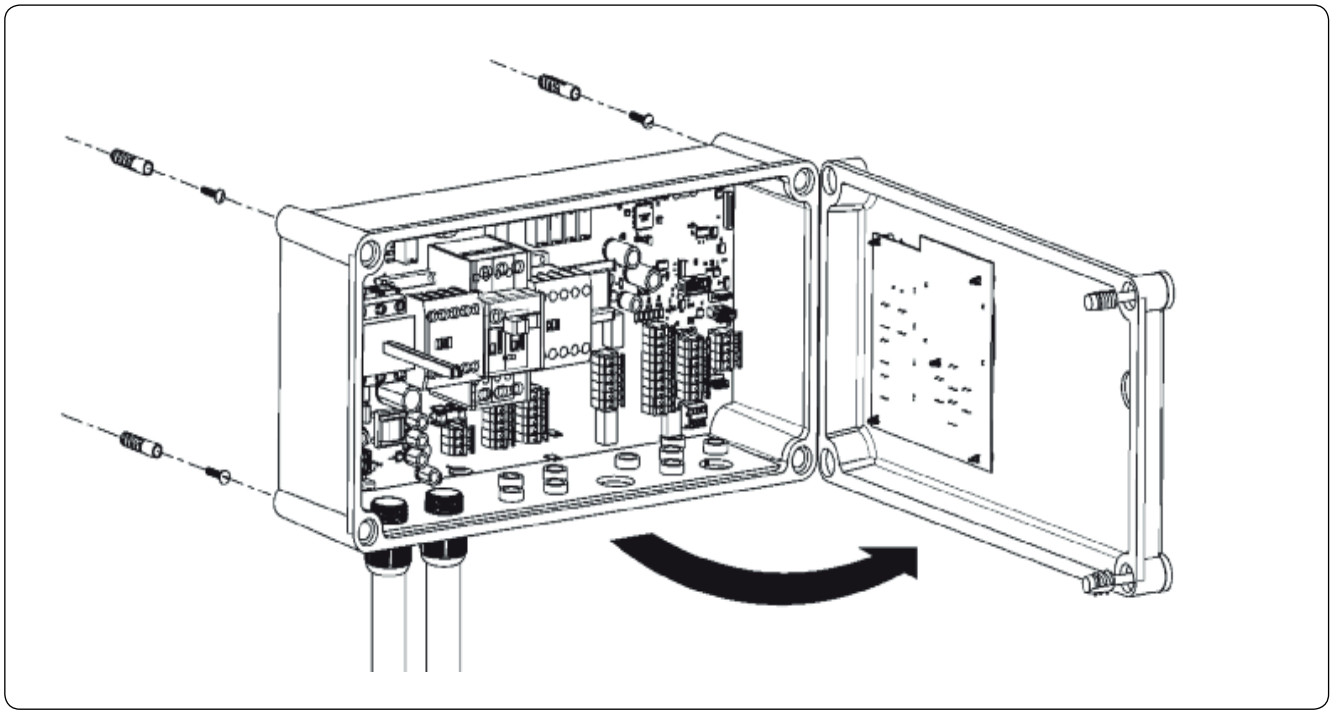
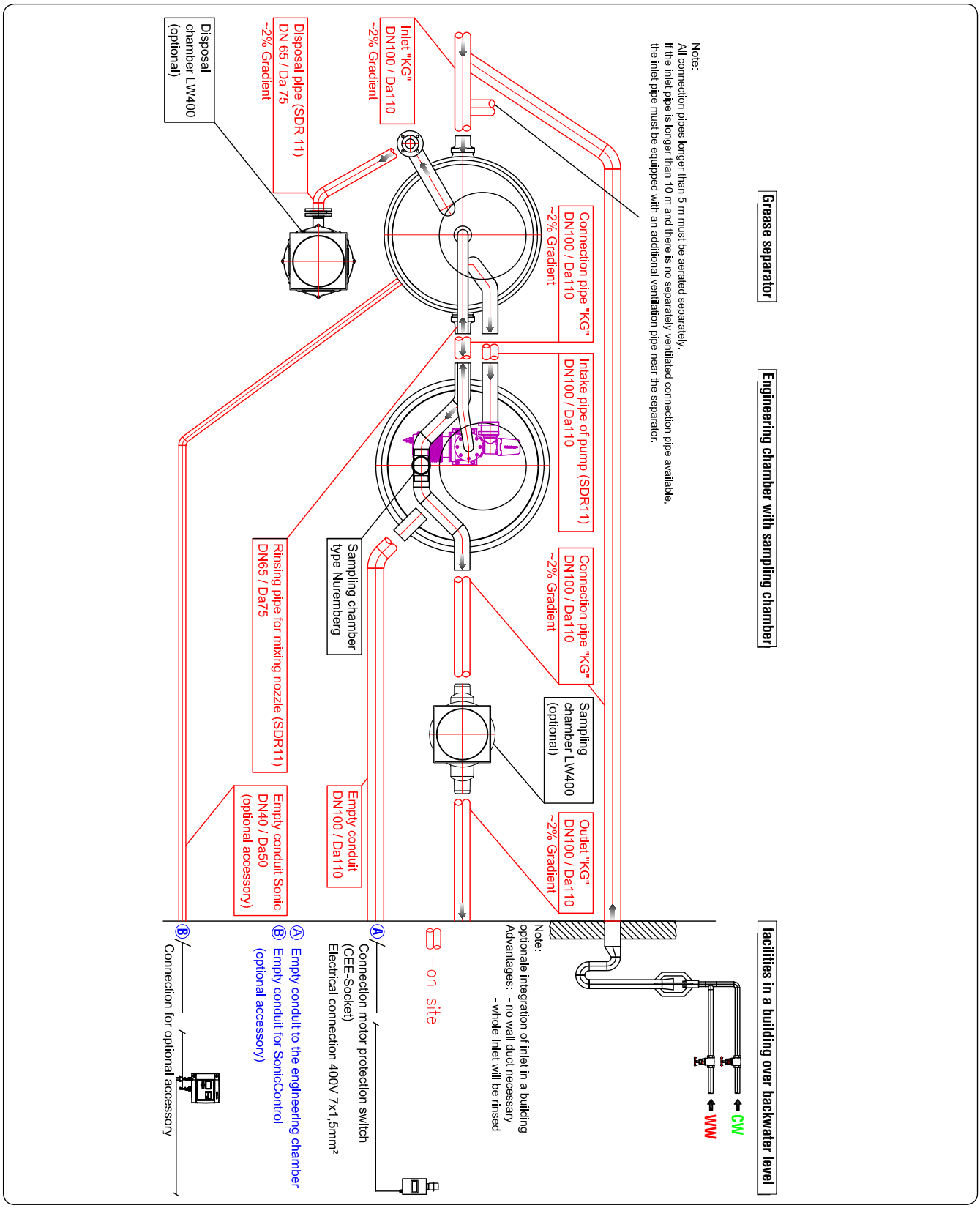


Abb. [12]

4.4 Variant C (“Mix”)

C D F

4.4.1 Connection diagram



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4.5 Variant D (“Auto Mix”) C D F

4.5.1 Connection diagram

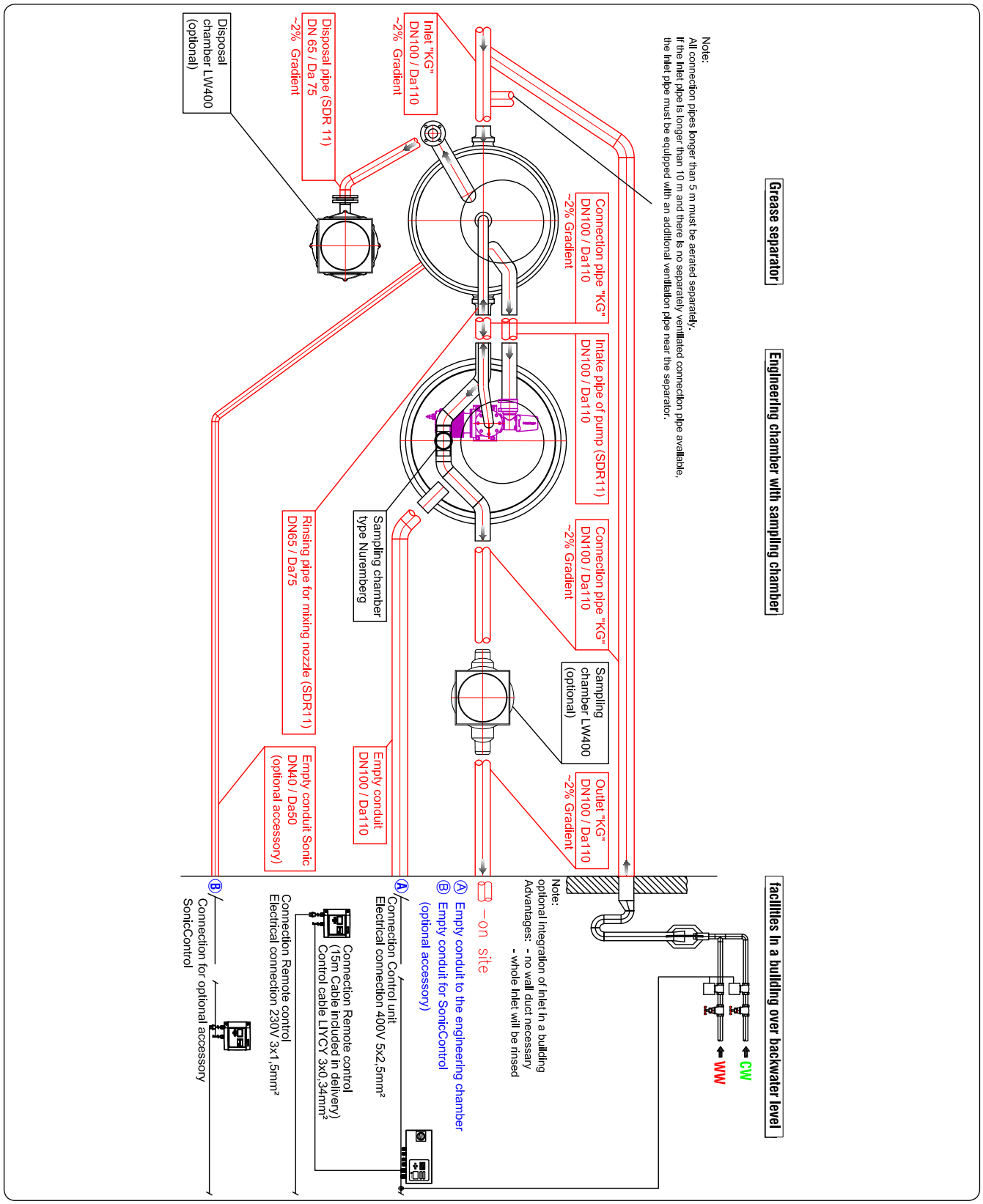

Abb. [14]

4.5.2 Establishing electrical connections

- Establish the connections in accordance with the connection diagram (below and in the housing cover of the control unit).

Connection diagram base

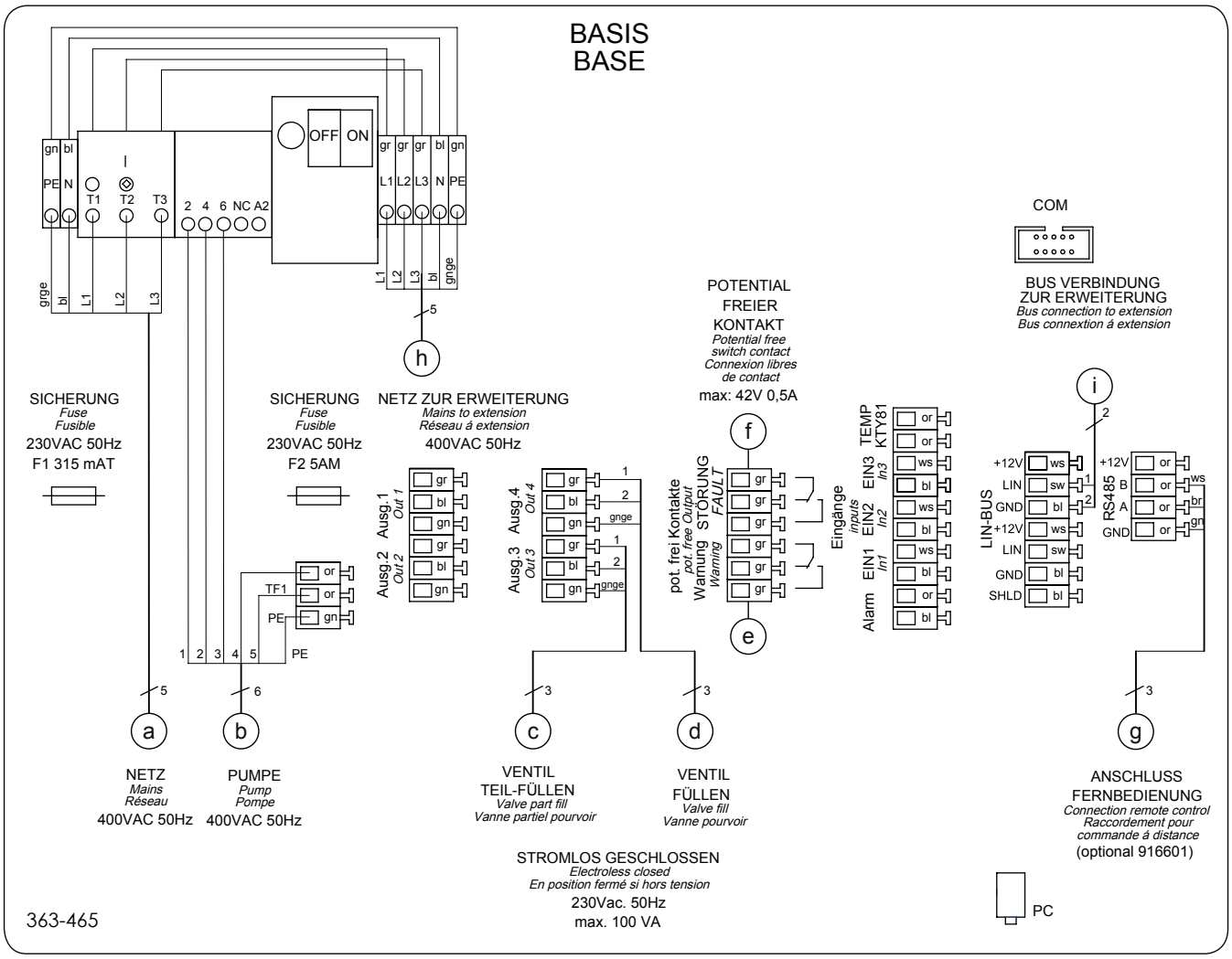

Abb. [15]

a	Mains
b	Pump
c	Hot water valve
d	Cold water valve
e	Potential-free contact warning
f	Potential-free contact alarm
g	Remote control (option)
h	Mains to extension for nominal sizes > NS15
i	Bus connection to extension for nominal sizes > NS15

4.5.3 Initialising the control unit

➡ Dry running of the pump(s) must be avoided at all costs. Do not press the *Start / Stop* key!

- Switch the power supply on and move the main switch to the ON position, the menu „3.8.1“, page 39 appears on the display.

➡ If the display does not offer initialisation (menu 3.8.1 (initialisation), the control unit has already been initialised. In this case, the parameters set (in accordance with the list below) must be checked via the operating menu (for operation of the control unit and the operating menu see page 38).

During initialisation, the following input is expected:

– Language
– Date / Time
– Nominal size
– Number and power of the pumps

Language

- Press OK.
- Use the cursor keys to select the language and apply by pressing OK, the menu *Date/Time* appears.

Date / Time

- Set the respective flashing figure in date and time and apply by pressing OK. Following the last entry, the menu *Nominal size* appears. The date for emptying also appears and is automatically saved (to change see „8.1 System type D“, menu 2).

Nominal size

- Select the nominal size in accordance with the type plate specifications and apply by pressing OK, the menu *Number of pumps* appears.

4.6 Variant F (“Auto Mix & Pump”) C D F

4.6.1 Connection diagram

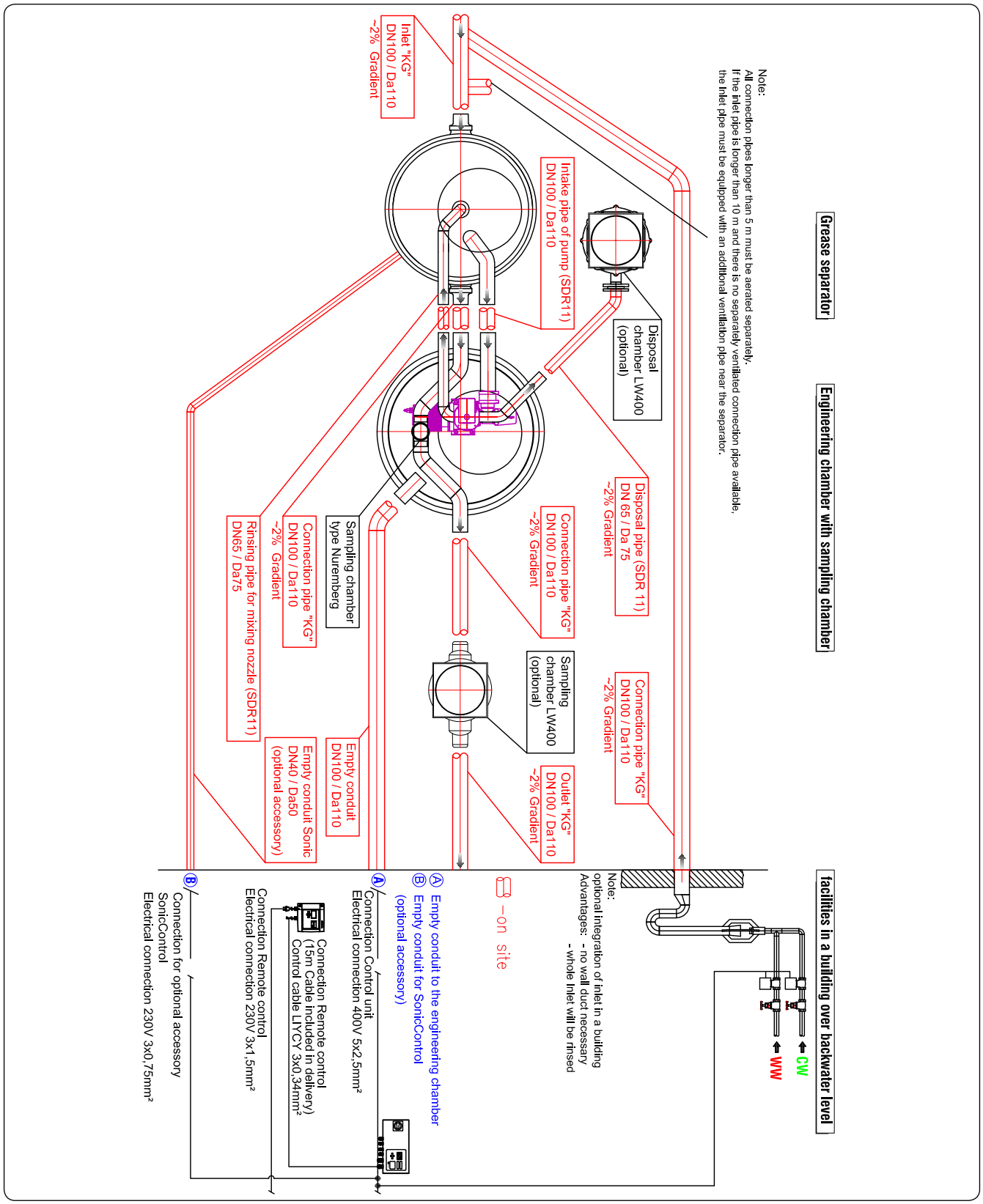

Abb. [16]

4.6.2 Establishing electrical connections

- Establish the connections in accordance with the connection diagram (below and in the housing cover of the control unit).

Connection diagram base

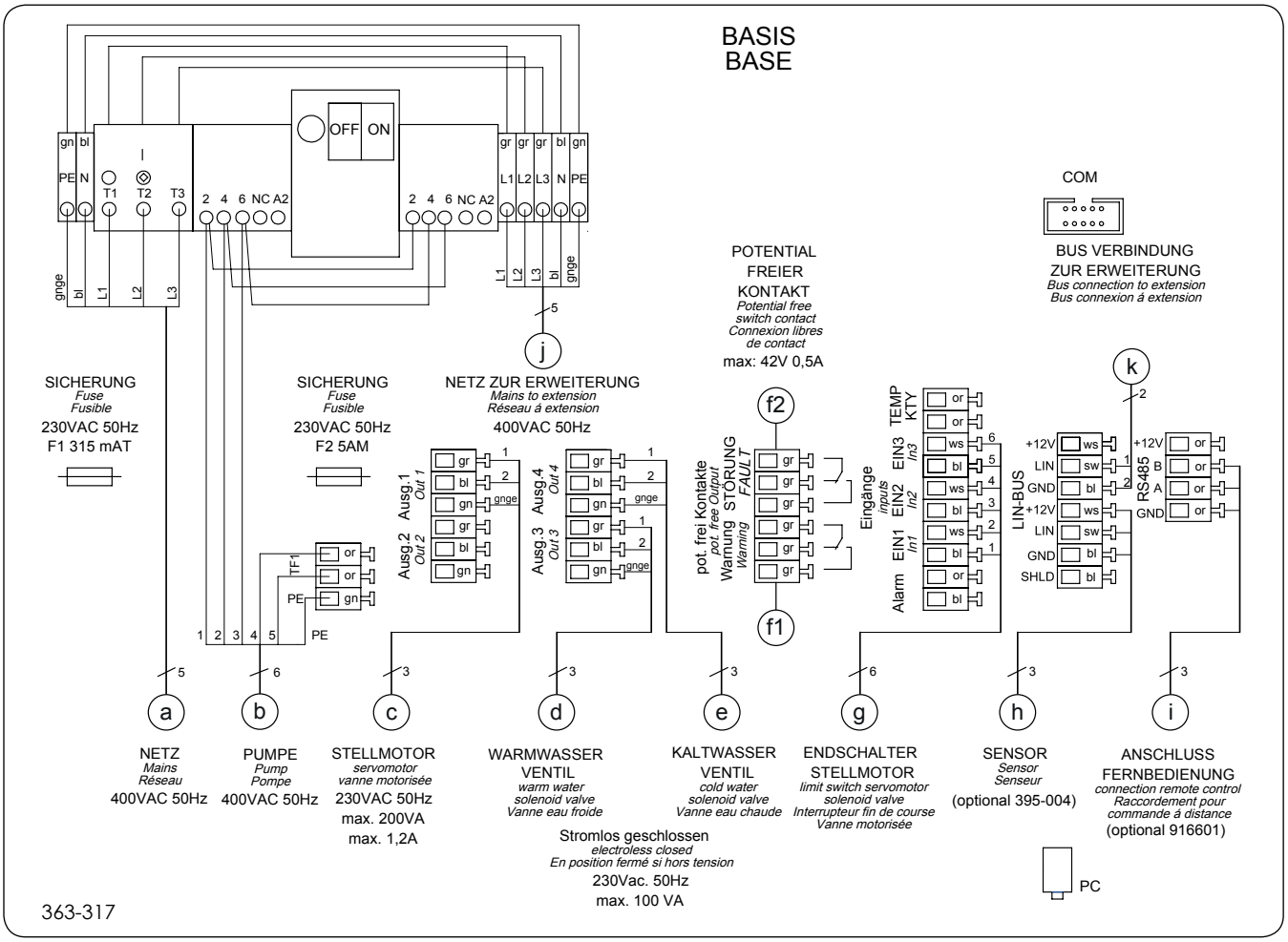

Abb. [17]

a	Mains
b	Pump
c	Actuator valve
d	Hot water valve
e	Cold water valve
f1	Potential-free contact warning
f2	Potential-free contact alarm
g	Limit switch actuator valve
h	*SonicControl* sensor (option)
i	Connection for remote control (option)
j	Mains to extension for nominal sizes > NS15
k	Bus connection to extension for nominal sizes > NS15

4.6.3 Initialising the control unit

➡ Dry running of the pump(s) must be avoided at all costs. Do not press the *Start / Stop* key!

- Switch the power supply on and move the main switch to the ON position, the menu „3.8.1“, page 44 appears on the display.

➡ If the display does not offer initialisation (menu 3.8.1), the control unit has already been initialised. In this case, the parameters set (in accordance with the list below) must be checked via the operating menu (for operation of the control unit and the operating menu see page 14).

During initialisation, the following input is expected:

– Language
– Date / Time
– SonicControl
– Standard
– Nominal size
– Number and power of the pumps

Language

- Press OK.
- Use the cursor keys to select the language and apply by pressing OK, the menu *Date/Time* appears.

Date / Time

- Set the respective flashing figure in date and time and apply by pressing OK. Following the last entry, if a *SonicControl* sensor is connected, the menu *SonicControlappears,* if not, the menu *Standard*appears. The date for emptying also appears and is automatically saved (to change see (see 8.2 System type F on page 40), menu „2.4“, page 42).

***SonicControl* sensor**

If there is a SonicControl (option) connected, answer the question with “yes”, otherwise continue with “no”, the menu *Standard appears.*

If “yes”:

- enter password (must be obtained from KESSEL).
- Select the system type from the selection displayed and apply by pressing OK, the menu *Standard*appears.

Standard

- Select Euro Standard 1825 and apply by pressing OK, the menu Nominal sizeappears.

Nominal size

- Select the nominal size in accordance with the type plate specifications and apply by pressing OK, the menu *Number of pumps* appears.

5 Putting into operation

5.1 Making the system ready for operation

Before wastewater containing grease is allowed to flow into the system, it must be completely cleaned (including inlets and drains); solids and coarse particles must be removed.

The cleaned system must be filled with cold water up to the overflow (this is not relevant, of course, if the tanks have been checked for leaks beforehand and the water has not been pumped out).

5.2 Instructional briefing / handover

Initial operation and instructional briefing are generally carried out by a fitter, but they can also be carried out by someone sent by KESSEL on request and for an extra charge.

The following persons should be present for the handover:

- Person authorised to perform the acceptance on behalf of the building owner
- Sanitary fitter

In addition, we recommend the participation of

- Operating personnel
- Disposal company

Preparation of instructional briefing and handover:

- Sanitary installations must be completed
- System filled with water and ready for operation

Instructional briefing:

- Check the system for leaks, transport and installation damage and check the pipe connections
- Information about disposal (extraction)
- Practical demonstration of the operating possibilities

Handover of installation and operating instructions

Drawing up the handover certificate.

Handover certificate see annex

Once the instructional briefing has been completed, the system must be made ready for operation again.

6 Operation

The grease separator separates greases, oils and sludge out of the wastewater. Different methods and / or control units are used for emptying the separated substances (see 1.3).

6.1 Switching on system type C

C D F

Following a successful functional check (cleaning, filling, leak test, handover), the grease separator (variant “Mix”) is ready for operation.

6.2 Switching on system type D and F

C D F

Following a successful functional check (cleaning, filling, leak test, handover), the grease separator system can be switched on; to do this:

- Switch the main switch on*. Following a successful system test, the display <65> shows the menu *0 System info* and the green LED <64> lights up, the grease separator system is ready for operation.

* The main switch only needs to be switched on for emptying.

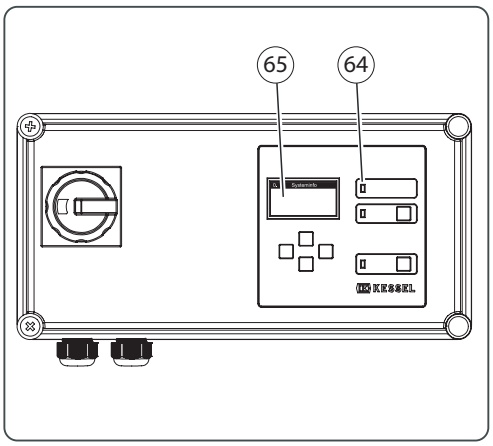

Abb. [18]

➡ If after switch-on the menu Language is displayed, carry out initialisation (see 4.5.3 Initialising the control unit on page 24).

6.3 Operation system type C

System type C is only suitable for manual operation.

6.4 Operation system type D and F

The control unit (system type D and F) has:

- A push button “START / STOP” < 5 > for the pump and for starting and stopping the automatic disposal process
- A push button < 3 > for acknowledging an alarm message
- Operating states are indicated by an operation LED < 1 >, an alarm or fault LED < 2 > and a pump running LED < 4 >
- With the aid of the navigation keys “Up” and “Down” or “ESC” and “OK” < 7 > the menu can be operated in the display < 6 >

Note:

Please observe the instructions for use < 8 >

and the safety instructions < 9 >

beachten.

(Before working on the system

switch the control unit voltage-free)

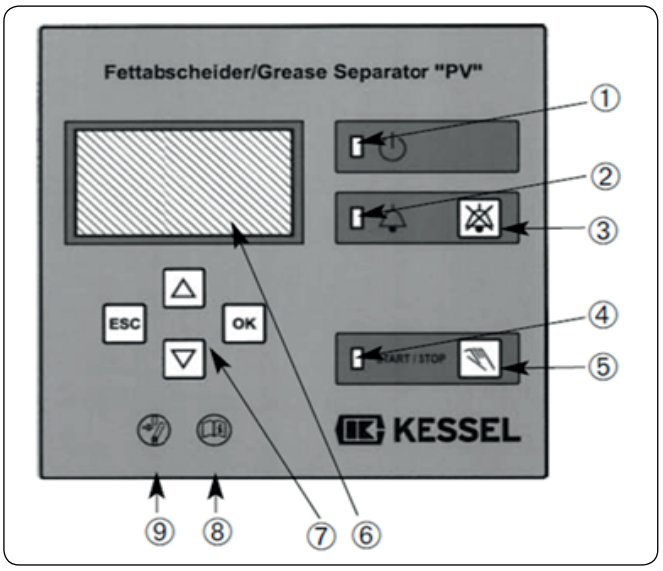

Abb. [19]

1	Operation LED
2	Alarm LED
3	Alarm push button
4	Pump operation LED
5	START/STOP
6	Display
7	Navigation keys for the menu “Up/down”
	+ “ESC” (deletion of an entry, back)
	+ “OK” (confirmation of an entry, next level)
8	Reference to instructions for use
9	Safety instructions (switch the control unit voltage-free)

6.5 Automatic control unit system type D and F

The automatic element of the KESSEL grease separator systems “Auto Mix” and “Auto Mix & Pump” is made up of a fully automated control unit, control elements and display as well as an optional remote control (protecting rating IP 55). The program for your grease separator version is pre-set in the factory.

Note: The pre-set parameters for the automatic control unit are only recommendations. Please check the prevailing circumstances such as pumping distance, pumping height and water pressure. In the event of changes (. g. replacement), see configuration

The control unit has been designed for the automatic mode of operation. The necessary program stages run in succession after the “START/STOP” button has been pressed and confirmed by the “OK” button.

It is also possible to select automatic mode in the menu item “Maintenance”.

6.6 Manual mode system type D and F

Pre-conditions:

- The cover of the separator is closed
- The system is switched on using the main switch on the switchgear.
- Connect the extraction hose of the emptying vehicle to the direct emptying pipe.
- To start disposal in manual mode, go to the menu “Maintenance” => “Manual mode” and then confirm the required disposal process by pressing the “OK” key.
- Start the program by pressing the “OK” key on the control unit or on the remote control.
- The program runs. The current program step is displayed both on the control unit and on the remote control.
- If it becomes necessary to change the disposal vehicle, interrupt the program using the “START/STOP” button.
- Disconnect the disposal hose
- Connect the disposal hose of the new vehicle
- Continue disposal by pressing the “START/STOP” button.
- When the step “Filling” is indicated on the control unit, disconnect the disposal vehicle and screw the locking cap on the Storz coupling if available. Lock the operating box.
- The system fills up completely, the presence of staff from the disposal company is no longer required.

Note: It is possible to switch from manual mode to automatic mode at any time! Switching from automatic mode to manual mode leads to the automatic mode being cancelled.

All the programme steps must be operated separately under the menu item “Maintenance” -> “Manual mode”.

All the operating states, program steps and faults are indicated on the control unit and the optional remote control.

The mixing, filling and rinsing times have been set in the factory. The times are only approximate and must be matched to the individual case in the parameters menu.

The system type F (“Auto Mix & Pump”) is also emptied by the fully automatic control unit. The emptying times are set in the factory. The times are only approximate and must be matched to the individual case in the parameters menu.

6.7 Additional functions with system type F (“Auto Mix & Pump”)

Cleaning program:

You can adapt the separator cleaning (flushing with hot water) to the general local conditions using menu *Cleaning program* (see 1.6.14 on page 41).

Legionella flushing:

The drinking water pipes can be flushed automatically using the menu *Legionella flushing interval* (see 1.6.15 on page 41).

7 Carrying out emptying

General information

The emptying cycles of the various system types are adapted to achieving complete emptying of the system tank coupled with best possible cleaning for medium degree of soiling of the wastewater. The pump cannot run dry on account of the design (exception: initial operation or putting back into operation).

Please note:

– Operating instructions must be displayed near the separator.
– The disposal procedure must be carried out exactly according to the instructions.
– Only approved disposal companies may carry out disposal from the grease separator system.

Note: - Subject to technical modifications!
- Follow the accident prevention regulations!
- During work on the open separator there must be no smoking due to possible formation of biogas.
- The first disposal must be carried out within 2-3 weeks of initial operation.

7.1 Emptying intervals

According to DIN 4040-2, unless specified otherwise, sludge traps and separators must be emptied, cleaned and refilled with fresh water every fourteen days, but at least monthly.

Caution!: Caution: Correct function can only be guaranteed if the system content is disposed of in good time. For this reason, a disposal contract should be concluded with a specialist company.

7.2 Emptying system type C

C D F

Workflow diagram for emptying cycle (Euro standard 1825)

A Emptying period
B Emptying vehicle is pumping off
1 Pump in operation (cleaning and shredding)
2 Hot water* supply
3 Cold water supply
4 Time required for the level to drop approx. 10 cm
* recommended

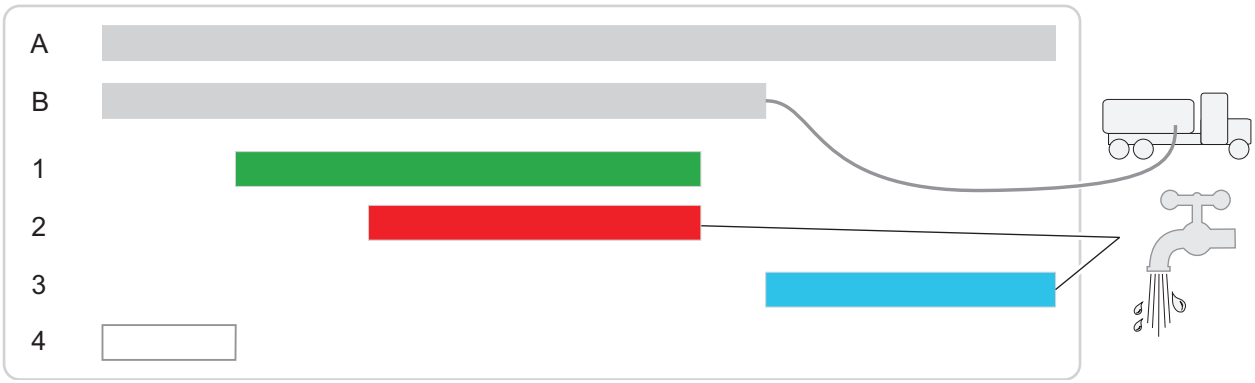

Abb. [20]

Carrying out emptying

- Connect the extraction hose of the emptying vehicle to the direct emptying pipe and start pumping off.
- Switch the pump (grease separator) on directly after starting the evacuation procedure (emptying vehicle). To do this, press button I (black) on the motor protection switch. The pump begins to mix up the complete contents of the grease separator evenly (cleaning and shredding). Any foreign matter in the tank is crushed and the tank walls are cleaned at the same time.
- When the system tank is about 1 third empty, open the hot water supply of the refill inlet.
- When the system tank is almost empty, stop the pump and the hot water supply. To do this, press button O (red) on the motor protection switch.

➡ If the system tank is not refilled with water after emptying (top of outlet structure of bottom part), grease and suspended solids can flow freely into the sewage system.

- When the system tank is completely empty, remove the extraction hose from the emptying vehicle and fill the system tank completely with cold water.
- Close the shut-off valve of the refill inlet once the system has been filled.

➡ If necessary: Open the chamber cover carefully. For taking off and replacing the chamber cover use the removal key included in the supply. (Caution! Risk of injury) Clean and check cover seal (renew if necessary). Check tank contents. Then carefully close the cover.

7.3 Emptying system type D

C D F

Workflow diagram for emptying cycle (Euro standard 1825)

		Setting in the menu
A	Emptying period	
	A1 Automatic operation (cleaning and shredding, part filling)	
	A2 Filling of the system tank (started by the user)	
B	Emptying vehicle is pumping off	
1	Pump in operation (cleaning and shredding)	3.1.1
2	Valve part fill (hot water supply*)	3.1.2
3	Valve fill (cold water supply, started by the user)	3.1.3
4	Time delay before pump (1) starts, so that the level drops by approx. 10 cm	3.1.4
	* recommended	

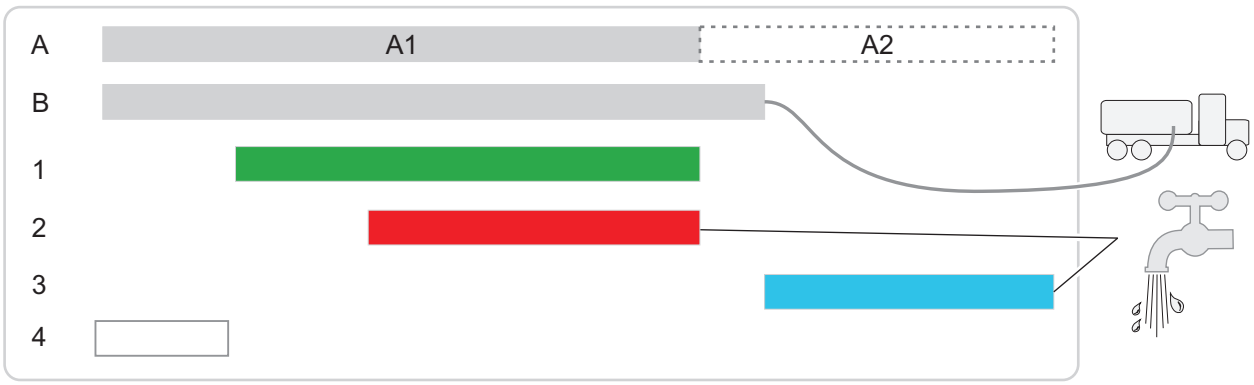

Abb. [21]

Carrying out emptying

- Switch the control unit on.
- Connect the extraction hose of the emptying vehicle to the direct emptying pipe.
- Automatic operation after the time delay has expired[1] see above<4>, the pump is switched on automatically for the time corresponding to the nominal size[1].
- Then the function part fill[1] is activated.

➡ If the system tank is not refilled with water after emptying (top of outlet structure of bottom part), grease and suspended solids can flow freely into the sewage system.

- When the system tank is completely empty, remove the extraction hose from the emptying vehicle.
- Function *Start filling?* by pressing OK, the system tank is filled completely with cold water.
- Then acknowledge the message *Filling successfully completed!* by pressing OK, and switch the control unit off.

➡ The operating times of the pumps (pumping off + *Reinigen und Schreddern*) as well as the hot water quantities supplied are based on empirical values. If the cleaning result should not be satisfactory, the operating times can be changed in the menu control of the control units (see „3.1“ Settings => Parameters).

1) Period can be set in the “Settings” menu

7.4 Emptying system type F

C D F

Workflow diagram for emptying cycle (Euro standard 1825)	Setting in the menu
A Emptying period	
A1 Automatic operation	
A2 Filling of the system tank (started by the user)	
B Emptying vehicle connected	
C Pump starts running automatically	
C1 *Pump on* (pumping off, to the emptying vehicle)	1.6.1. / -3 / -6 / -9 / -12
C2 *Pump on* (cleaning and shredding)	1.6.2 / -5 / -8 / -11
D Valve switchover	
D1 Switching position pumping off	
D2 Switching position cleaning and shredding	
E Hot water* supply (*part fill*), automatic	1.6.4 / -7 / -10
G Emptying steps (from page 37)	1.6.13
* recommended	

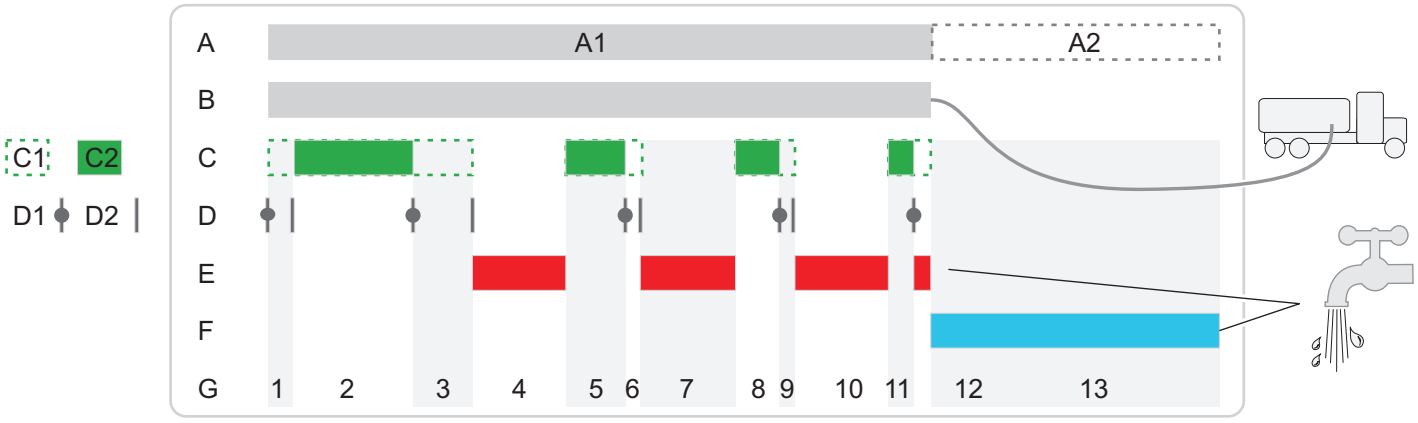

Abb. [22]

Carrying out emptying in automatic operation

- Switch the control unit on.
- Set up the hose connection between the emptying vehicle and the direct emptying pipe.
- Press the button Start / Stop , the menu Maintenance appears.
- Automatic operation and press OK, the menu Automatic operation appears.
- Select Start automatic operation the emptying workflow <A1> is activated. The functions pump operating times, hot water supply and the valve switchover are carried out automatically Abb. [22]

Carrying out emptying

Pr. step	Function	Setting switchover valve	NS 1	NS 2	NS 4	Pump	Valve hot water	Valve cold water	General information
1	Part empty	Empty	8 s	15 s	30 s	on	off	off	Lower water level by 10 cm
2	Mix	Rinse	35 s	70 s	130 s	on	off	off	
3	Empty	Empty	18 s	35 s	65 s	on	off	off	Until the pump runs empty
4	Fill	Rinse	28 s	55 s	95 s	off	on	off	approx. 25 cm filling height
5	Mix	Rinse	18 s	35 s	65 s	on	off	off	
6	Empty	Empty	5 s	10 s	15 s	on	off	off	Until the pump runs empty
7	Fill	Rinse	28 s	55 s	95 s	off	on	off	approx. 25 cm filling height
8	Rinse	Rinse	13 s	25 s	45 s	on	off	off	
9	Empty	Empty	5 s	10 s	15 s	on	off	off	Until the pump runs empty
10	Fill	Rinse	28 s	55 s	95 s	off	on	off	approx. 25 cm filling height
11	Rinse	Rinse	8 s	15 s	25 s	on	off	off	
12	Empty	Empty	5 s	10 s	15 s	on	off	off	Until the pump runs empty
13	Fill	Empty	85 s	170 s	310 s	off	off	on	Up to lower edge outlet assembly

➡ You will find the individual program steps with recommendations for operating time in the table above. Basis for calculation: Disposal times in accordance with Euro standard 1825 with water supply flow solenoid valve 1l/s for DN25 or 3.6 m³/h.

The times must be optimised according to pumping height, temperature and water pressure. Flow through solenoid valve DN 25 at 1 l/sec., in the case of deviated inflow rates the filling times must be adapted in the control unit. (see Operating menu on page 41) =>menu 3.1.1 to 3.1.13 can be set)

Every program step can be skipped by setting the reference time to 0.

- Remove the hose connection to the emptying vehicle.

➡ If the system tank is not refilled with water after emptying (top of outlet structure of bottom part), grease and suspended solids can flow freely into the sewage system.

- Switch the control unit off if appropriate.

8 Settings, operating menu

8.1 System type D

C D F

“Auto Mix” control unit

For general information and “Activating operating mode” see page 39

Operating menu

0	System info				
1	Information	1.1	Hours of operation	1.1.1	Total running time
				1.1.2	Run time pump
				1.1.3	Pump starts
				1.1.4	Power outage
		1.2	Log book	1.2.1	most recent E&F*
				1.2.2	E&F previous to that
				1.2.3	E&F previous to that
				1.2.4	…
		1.3	Control type	Alternating display for *SonicControl* option (4s)	
		1.4	Maintenance due	1.4.1	Last maint. separator
				1.4.2	Next maint. separator
		1.5	Current Measured values	1.5.1	Rotary field
		1.6	Parameters	1.6.1	Cleaning+shredding
				1.6.2	Valve part fill
				1.6.3	Valve fill
				1.6.4	On delay
				1.6.5	Legionella flushing interval
				1.6.6	Legionella flushing, cold
				1.6.7	Legionella flushing, hot
				1.6.30	Access remote control
2	Maintenance	2.1	Manual operation	2.1.1	Cleaning+shredding
				2.1.2	Valve part fill
				2.1.3	Valve fill
		2.2	Automatic operation		
		2.3	SDS	2.3.1	Test pump 1
				2.3.2	Test valve part fill
				2.3.3	Test valve fill
				2.3.4	Test pump 2
		2.4	Maintenance due	2.4.1	Last maint. separator
				2.4.2	Next maint. separator
		2.5	Clearance remote control	2.5.1	Clearance duration
				2.5.2	Deactivate

3	Settings	3.1	Parameters	3.1.1	Cleaning+shredding
				3.1.2	Valve part fill
Carry out setting in agreement with Factory Customer Service				3.1.3	Valve fill
				3.1.4	On delay
				3.1.5	Legionella flushing interval
				3.1.6	Legionella flushing, cold
				3.1.7	Legionella flushing, hot
				3.1.30	Access remote control
		3.2	Profile memory	3.2.1	Save parameters
				3.2.2	Load parameters
		3.3	Date/time*		
		3.4	Number of pumps*	3.4.1	1 pump 4-6.4A
				3.4.2	2 pumps 4-6.4A
				3.4.3	1 pump 6.5-8A
				3.4.4	2 pumps 6.5-8A
		3.6	Nominal size*	3.6.1	NS2
				3.6.2	NS3
				3.6.3	NS4
				3.6.4	NS7
				3.6.5	NS10
		3.7	Communication	3.7.1	Station name
				3.7.2	Own number
				3.7.3	Modem type
				3.7.4	PIN
				3.7.5	Text message-Headquarters
				3.7.6	Text message-Destination 1
				3.7.7	Text message-Destination 2
				3.7.8	Text message-Destination 3
				3.7.9	Status
		3.8	Language*	3.8.1	Deutsch
				3.8.2	English
				3.8.3	Français
				3.8.4	Italiano
				3.8.5	Nederlands
				3.8.6	Polski
		3.9	Expert mode	3.9.1	On delay
				3.9.2	Limit running time
		3.10	Reset		

* These parameters are expected for entry during initialisation and after “resetting” the control unit.

*E&F = Event and Fault

8.2 System type F

C D F

“Auto Mix & Pump” control unit

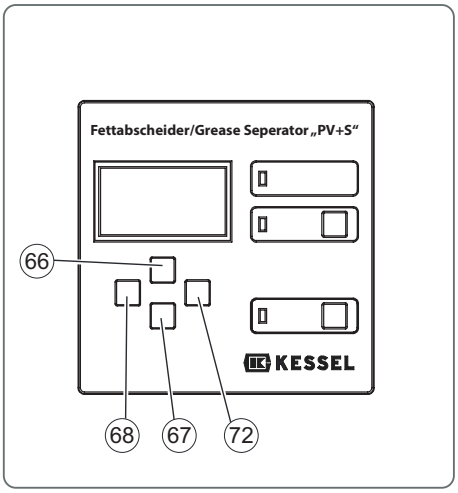

Abb. [23]

General information

The menu prompting has an operating and a standby mode. In operating mode the system settings made through the operating menu can be displayed and adjusted on the display. If over a period of approx. 60 seconds none of the keys are pressed, standby mode is activated automatically, the background lighting of the display is then switched off.

Navigation keys for the menu		
66	Cursor up	Scrolling in the menu
67	Cursor down	Scrolling in the menu
68	ESC	Deletion of an entry, back
72	OK	Confirmation of an entry, next level

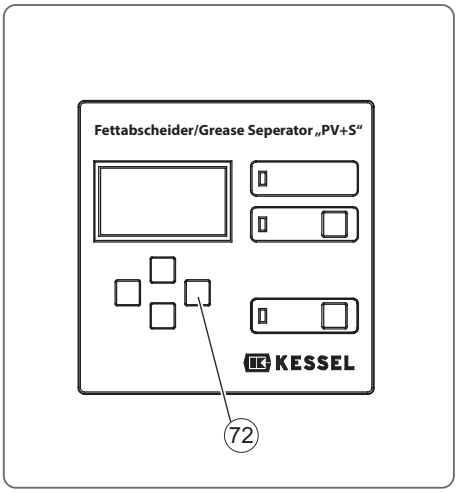

Abb. [24]

Activating operating mode

- Press the OK <72> key on the control panel, the background lighting of the display lights up and the start window (*System info*) appears.
- Press OK <72>, level 1 of the operating menu is activated.

Note: The display can vary depending on the configuration

The number of the respective menu level <63> is shown as a figure in the top line on the display.

Operating menu

0	System info				
1	Information	1.1	Hours of operation	1.1.1	Total running time
				1.1.2	Run time pump
				1.1.3	Pump starts
				1.1.4	Power outage
				1.1.5	Runtime *SonicControl*
				1.1.6	Op. above alarm level
				1.1.7	Op. above alarm temp.
				1.1.8	Number of emptying cycles
		1.2	Log book	1.2.1	most recent E&F
				1.2.2	E&F previous to that
				1.2.3	E&F previous to that
				1.2.4	…
		1.3	Control type alternating display for *SonicControl* option (5s)		
		1.4	Maintenance due	1.4.1	Last maint. separator
				1.4.2	Next maint. separator
				1.4.3	Last maint. *SonicControl*
				1.4.4	Next maint. *SonicControl*
		1.5	Current Measured values	1.5.1	Rotary field
				1.5.3	Layer thickness
				1.5.4	Temperature
				1.5.5	Battery voltage
		1.6	Parameters	1.6.1	Part empty
				1.6.2	Mix
				1.6.3	Empty
				1.6.4	Fill
				1.6.5	Mix
				1.6.6	Empty
				1.6.7	Fill
				1.6.8	Rinse
				1.6.9	Empty
				1.6.10	Fill
				1.6.11	Rinse
				1.6.12	Empty
				1.6.13	Fill
				1.6.14	Cleaning program
				1.6.15	Legionella flushing interval
				1.6.16	Legionella flushing, cold
				1.6.17	Legionella flushing, hot
				1.6.18	Alarm layer thickness
				1.6.19	Pre-alarm layer thickness

				1.6.20	Alarm temperature
				1.6.21	Start of measuring range
				1.6.22	End of measuring range
				1.6.23	Measuring interval
				1.6.24	Level comparison
				1.6.30	Access remote control
			1.7	Measuring data	1.7.1 Last layer thickness and temperature determined
					1.7.2 Layer thickness and temperature determined before that
					1.7.3 Layer thickness and temperature determined before that
					1.7.4 …
			1.8	Emptying	1.8.1 Last emptying
2	Maintenance		2.1	Manual operation	2.1.1 Part empty
					2.1.2 Mix
					2.1.3 Empty
					2.1.4 Fill
					2.1.5 Mix
					2.1.6 Empty
					2.1.7 Fill
					2.1.8 Rinse
					2.1.9 Empty
					2.1.10 Fill
					2.1.11 Rinse
					2.1.12 Empty
					2.1.13 Fill
					2.1.14 Counterclockwise
					2.1.15 *SonicControl*
			2.2	Automatic operation	
			2.3	SDS	2.3.1 Test pump 1
					2.3.2 Test actuator valve 1
					2.3.3 Test pump 2
					2.3.4 Test actuator valve 2
					2.3.5 Test pump 3
			2.4	Maintenance due	2.4.1 Last maint. separator
					2.4.2 Next maint. separator
					2.4.3 Last maint. *SonicControl*
					2.4.4 Next maint. *SonicControl*
			2.5	Clearance remote control	2.5.1 Clearance duration
					2.5.2 Deactivate

3	Settings	3.1	Parameters	3.1.1	Part empty
				3.1.2	Mix
Carry out setting in agreement with Factory Customer Service				3.1.3	Empty
				3.1.4	Fill
				3.1.5	Mix
				3.1.6	Empty
				3.1.7	Fill
				3.1.8	Rinse
				3.1.9	Empty
				3.1.10	Fill
				3.1.11	Rinse
				3.1.12	Empty
				3.1.13	Fill
				3.1.14	Cleaning program
				3.1.15	Legionella flushing interval
				3.1.16	Legionella flushing, cold
				3.1.17	Legionella flushing, hot
				3.1.18	Alarm layer thickness
				3.1.19	Pre-alarm layer thickness
				3.1.20	Alarm temperature
				3.1.21	Start of measuring range
				3.1.22	End of measuring range
				3.1.23	Measuring interval
				3.1.24	Level comparison
				3.1.30	Access remote control
		3.2	Profile memory	3.2.1	Save parameters
				3.2.2	Load parameters
		3.3	Date/time*		
		3.4	Number of pumps*	3.4.1	1 pump 4-6.4A
				3.4.2	2 pumps 4-6.4A
				3.4.4	1 pump 6.5-8A
				3.4.5	2 pumps 6.5-8A
		3.5	Standard*	3.5.1	DIN 4040
				3.5.2	DIN underground installation
				3.5.3	Euro standard 1825
				3.5.4	Euro standard underground installation
		3.6	Nominal size*	3.6.1	NS2
				3.6.2	NS4
				3.6.3	NS7
				3.6.4	NS10
				3.6.5	NS15

		3.6.6	NS20
		3.6.7	NS25
		3.6.8	NS30
		3.6.9	NS35
		3.6.10	NS S
3.7	Communication	3.7.1	Station name
		3.7.2	Own number
		3.7.3	Modem type
		3.7.4	PIN
		3.7.5	Text message-Headquarters
		3.7.6	Text message-Destination 1
		3.7.7	Text message-Destination 2
		3.7.8	Text message-Destination 3
		3.7.9	Status
3.8	Language*	3.8.1	Deutsch
		3.8.2	English
		3.8.3	Français
		3.8.4	Italiano
		3.8.5	Nederlands
		3.8.6	Polski
3.9	Expert mode	3.9.1	On delay
		3.9.2	Limit running time
		3.9.3	Conductivity
		3.9.4	Density
		3.9.5	Trigger
		3.9.6	SNR
		3.9.7	Noise
		3.9.8	Alarm sensor dry
3.10	Reset		
3.11	*SonicControl**		
3.12	Calibration of *SonicControl*	3.12.1	Calibr. with filled tank
		3.12.2	No calibration
		3.12.3	Calibr. in expert mode

* These parameters are expected for entry during initialisation and after “resetting” the control unit.

9 Technical data

9.1 Pre-conditions / basis for calculation

The parameters for operation (emptying) of the grease separator system are based on the following values:

– Pumping quantity (extraction capacity) of the emptying vehicle 10 l/s = 36m³/h.

– Cold / hot water supply 1l/s with DN25

	NS 1	NS 2	NS 4
Hot water requirements	83 l	165 l	480 l
Total wastewater contents	370 l	570 l	770 l
Total disposal volume (wastewater + hot water supply)	453 l	735 l	1055 l
Cold water requirements (inlet edge outlet assembly)	333 l	513 l	693 l

➡ Since the products described are customised versions, where the dimensions are produced in accordance with customer wishes, there can be minor deviations in the volumes.

9.2 General technical data / connected values

Operating voltage	400 V AC 50 Hz
Pump, connected value	400 V AC 50 Hz
Pump, weight	approx. 27 kg
Pump capacity	2.6 kW
Stand-by power (control unit)	approx. 5 W
Protective rating (complete system)	IP 68
Required fuse protection	C 16A
On site acc. to VDE 0100	Fault-current circuit breaker 30 mA

9.3 Torques

Description / use	Torque Nm	Spanner size
Door hinge screw A2 bright 6x40	4.5 ±0.5	T30
PT-screw 100x30 A2	7	T50
PT-screw KB60x30 WN 1411	4.5 ±0.5	T30
Metal clamp / on system tank	3	ISK 10 mm
Hexagon safety screw M8x30	10	Spanner socket 13 mm
Pipe clamp D=120	8-10	Spanner socket 13 mm
Pipe clamp D=84	8-10	Spanner socket 13 mm
PT-hexagon screw K80x40 WN 1447	5.5 ±0.5	Spanner socket 13 mm
Hexagon socket screws for shredder mix pump	35 Nm	ISK 8 mm

9.4 Connections

	Cable type	Shielding	Plug connection	Cable length in m	Maximum length	Extension
Remote control	LIYCY 3x0.34 mm²	Yes	Clamped connection	15	100 m	Do not extend - exchange
Remote control	H05VV-F 3x1.0mm²	no	Schuko earthing pin plug	1.25	100 m	Do not extend - replace by NYM 3x1.5mm² or Ölflex Classic 110
CU* “Auto Mix & Pump”	No cable fitted			-	40 m	Fitted with NYM 5x2.5mm² at max. length (depending on overall system nominal power)
CU* “Auto Mix”				-	40 m	
Refill inlet			1“			
Solenoid valve			1“			
Pressure pipe connection			DN 70 E socket welded fitting Plasson socket PN 10 fabric hose with 2 hose clamps			
Storz-B connection			2 1/2“			

* Control unit

10 Maintenance

Before housing covers, plugs and cables are opened they must be switched voltage-free. Work on electrical components may only be carried out by specialist st2.2 on page 13).

10.1 Maintenance intervals

The maintenance date for the grease separator system can be set in the menu *2. Maintenance => 2.4 Maintenance date* . In the factory, a period of 12 months is set automatically, calculated from the initialisation time. This can be changed in the menu at any time.

The grease separator system must be serviced once a year by a qualified person*. In addition to emptying, the following jobs must be carried out:

The term “qualified” is used to describe employees at the owner-operators or from third parties who, on account of their training, knowledge and practical experience, can guarantee that they carry out evaluations or tests in a professional way in the respective field.

- Check the inner wall areas of the grease separator system.
- Functional check on the electrical devices and installations, as appropriate.
- Records of the findings and work carried out must be kept in the operating log and evaluated.
- The mechanical or electromechanical assemblies such as pumps, valves, viewing glass, closure devices etc. must be serviced.

If present, the electro-mechanical assemblies such as pumps, valves, shut-off devices etc. must be serviced according to the manufacturer’s instructions twice a year.

10.2 Troubleshooting

Fault	Possible cause	Action(s)
Pumping capacity too low during emptying	Pumping height too large for the pump capacity	Use the pump on the emptying vehicle (suction) to support the grease separator system pump
	Rotary field incorrect	Swap mains wires (heed fault message at the control unit)
	Wrong direction of pump rotation	Check pump wires for correct connection
No or too little grease is flowing out	Coarse materials are blocking the grease extraction valve	Avoid feeding coarse materials (coarse materials screen)
Pumps do not start Capacity too low	Motor protection switch has triggered	If appr. see display message on the control unit
	Motor is blocked	Remove blockage / service the pump (heed the safety instructions)
	Motor turns sluggishly	Maintenance / repair by Customer Services
	Fault in the power supply: One or two phases are missing or there are heavy fluctuations in current	Check the white mains connection for phase failure
	Pump capacity reduced	Remove blockage / service the pump (heed the safety instructions)
	Wrong direction of pump rotation	Connect rotary field correctly. Make sure that the counterclockwise function is not activated (only on systems with corresponding control unit)
	1 or 2 phases do not have current or control unit fails due to excessive fluctuations in the mains current	Check fuses and electric cables and inform the electricity company
No display on the control unit	Power outage	Make sure of the power supply
	Supply cable faulty	Check mains cable for fault
	Control unit fuse faulty	Replace fuse (specialist staff)
Loud and unusual noises	Motor / pump components are blocked	Remove blockage / service the pump (heed the safety instructions)
	Motor / pump components are damaged	Check pump parts and replace if necessary (heed the safety instructions)

Permanent odour development

Fault	Possible cause	Action(s)
Putrid smell	Wastewater pipes leaking.	Check for tight fit and check seals, repair if necessary
	No venting pipe, cross-section too small	Retrofit on site
	System parts are leaking	Eliminate leaks
Acrid smell	Motor too hot, overloaded	Check motor and pump to make sure they are running easily, check system for switching malfunctions (particular motor protection switch)

Messages on the “Auto Mix” control unit, system type D

Display	Cause	Action(s)
Rotary field fault	Wrong rotary field for mains connection	Connect rotary field correctly.
Phase fault	One of the phases is no longer available	Check mains connection on the control unit Check fault-current circuit breaker
Relay switching cycles	Power contactor has carried out more than 100,000 switching cycles	Message can be acknowledged. Message appears again after a further 1,000 operating cycles. Have the power contactor replaced by Customer Services
Temperature fault	Winding temperature switch has triggered	Self-resetting when motor has cooled down, acknowledge fault message with alarm key, please contact Customer Services if further temperature fault messages are issued
Undercurrent	The minimum current of the pump is not being reached. (The cable from the control unit to the motor could be interrupted or damaged)	Check cable and repair if necessary Replace pump if faulty
Overcurrent	The maximum current of the pump has been exceeded. (e.g. blockage)	Remove blockage (heed the safety instructions) Replace pump if faulty
Relay error	Power contactor is no longer switching	Switch the voltage supply for the control unit off and have the power contactor replaced by Customer Services
Motor protection	Motor protection switch has triggered	
	Current value for pump not set correctly	Set current value correctly
	Motor current too high due to faulty or blocked pump.	Remove blockage (heed the safety instructions)
	Increased current due to phase failure	Check the mains connection for phase failure

Messages on the “Auto Mix & Pump” control unit, system type F

Display	Cause	Action(s)
Rotary field fault	Wrong rotary field for mains connection	Connect rotary field correctly.
Actuator valve fault	Actuator valve limit switches are not being reached	Check limit switch connections Check valve for blockages
Phase fault	One of the phases is no longer available	Check mains connection on the control unit, Fehlerstromschutzschalter prüfen
Relay switching cycles	Power contactor has carried out more than 100,000 switching cycles	Message can be acknowledged. Message appears again after a further 1,000 operating cycles. Have the power contactor replaced by Customer Services
Temperature fault	Winding temperature switch has triggered	Self-resetting when motor has cooled down, acknowledge fault message with alarm key, please contact Customer Services if further temperature fault messages are issued

Undercurrent	The minimum current of the pump is not being reached. (The cable from the control unit to the motor could be interrupted or damaged)	Check cable and repair if necessary
		Operate the pump counterclockwise briefly (“Maintenance” --> “Manual operation” --> “Counterclockwise”)
		Replace pump if faulty
Overcurrent	The maximum current of the pump has been exceeded. (e.g. blockage)	Remove blockage (heed the safety instructions)
		Operate the pump counterclockwise briefly (“Maintenance” --> “Manual operation” --> “Counterclockwise”)
		Replace pump if faulty
Relay error	Power contactor is no longer switching	Switch the voltage supply for the control unit off and have the power contactor replaced by Customer Services
Motor protection	Motor protection switch has triggered.	
	Current value for pump not set correctly	Set current value correctly
	Motor current too high due to faulty or blocked pump.	Remove blockage (heed the safety instructions)
	Increased current due to phase failure	Check the mains connection for phase failure

10.3 Clean the grease separator

- Make sure that no more wastewater can be fed into it.
- Empty the system tank as described under „Emptying“ (Chap7 on page 33).
- Disconnect the power supply.
- Remove the cover from the system tank.

➡ Do not clean the grease separator system using a water pressure of more than 5 bar and a water temperature of more than 50°C. Do not use a high-pressure cleaner on seals. If soap is used for cleaning, rinse out / extract the residues, as otherwise it could lead to functional problems.

- Clean all components with hot water.
- If present, clean the *SonicControl* sensor.
- Fit the cover to the system tank.
- Carry out the pressure test and subsequent function check

If all the system components are airtight, the grease separator can be put into operation again.

11 System passport / factory approval

Mat. Des.

Mat. no./Order no./Prod. Date

Rev.hrs./Material/Weight

Standard/Approval

Dimensions

Volume

Density

Designation 1

Designation 2

The system was checked for completeness and for leaks before it left the factory.

Name of the tester

Date

12 General inspection / maintenance requirements

The owner-operator of a separator system is obliged according to valid legal principles as well as according to DIN EN 1825 / DIN 4040-100 to subject the system to a general inspection with leak test before commissioning and repeated every 5 years. This test may only be carried out by a technical specialist. We will be happy to send you a quotation for the general inspection by an independent expert.

Maintenance requirements

For you, it is important that the quality and functional ability of your system is kept at the best possible standard, particularly when this is the pre-condition for warranty conditions.
If you have the maintenance carried out by the manufacturer of the system, we guarantee you continued updating and care for your system.

……

Would you like a quotation for a maintenance contract / general inspection? Please copy this page, complete it and then fax it to the following no. +49 (0)8456/27-173

If you have any questions please do not hesitate to contact our Service department under the no. +49 (0)8456/27-462

Quotation for a general inspection or a maintenance contract for separator systems

Please send me a non-binding quotation for maintenance o general inspection o. (Please mark with a cross accordingly)

Sender

Name: _____

Street: _____

Postcode/Town or city: _____

Contact: _____

Tel. no.: _____

Person receiving quotation

Name:_____

Street:_____

Postcode/Town or city: _____

Contact:_____

Tel. no.: _____

Building

Name: _____

Street: _____

Postcode/Town or city:_____

Contact: _____

Tel. no.: _____

Type plate data:

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