



OPERATING INSTRUCTIONS

for vertical sterilizer

KSG 40/60-2
KSG 50/70-2
KSG 50/80-2

double-walled model

Temperature regulation

by

contact thermometer and timer

with

semiautomatic mechanical control

and

condensation vessel

for sterilization of hospital utensils
as instruments, laundry and rubber goods

Modifications reserved. 12.10.09
Order No. 183466
Serial No. 7825
Electric diagram No. 01E040602EU001

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1. Description

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Apparatus No.:

7825

Year of construction:

2009

Full mark of steam sterilizer:

KSG 40/60-2
Aukl 002 067
Heik 048 103
Zube 004 002
Steb 102 002
double-walled
electrically heated

KSG 50/70-2

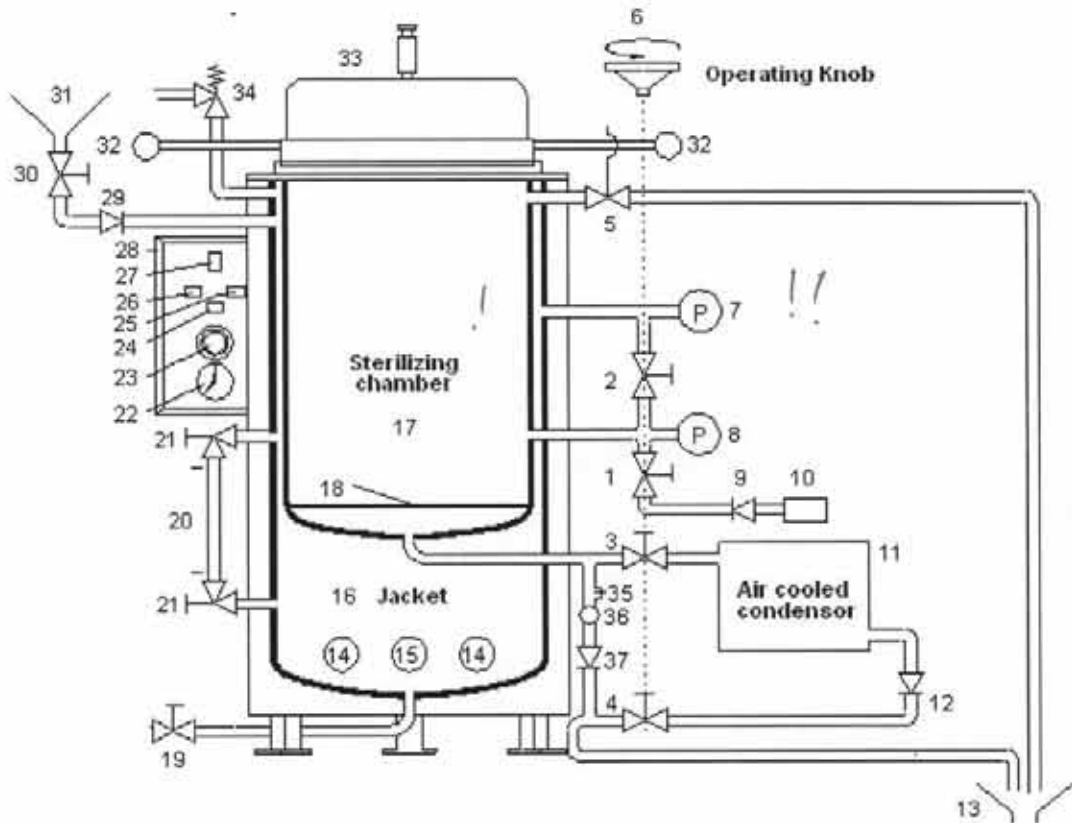
double-walled
electrically heated

KSG 50/80-2

double-walled
electrically heated

2. Legend

Schematic diagram



1	Air inlet valve (on control unit)
2	Steam admission valve to chamber (on control unit)
3	Steam release valve of chamber (on control unit)
4	Steam release valve of condensation vessel (on control unit)
5	Lid interlock
6	12-position operating-wheel (on control unit)
7	Pressure gauge: jacket pressure
8	Pressure gauge: chamber pressure
9	One way valve for air inlet
10	Air filter (HEPA/bacterium filter)
11	Air-cooled condenser
12	One-way valve (prevents unfiltered air entering chamber)
13	Gully for steam exhaust from condenser and door interlock. Exhaust to lead out of room!
14	Heating elements
15	Overheating protection device (low-water cut-out)
16	Jacket
17	Sterilizing chamber
18	Sterilizing chamber bottom support plate
19	Water drain valve for jacket
20	Water level gauge (with minimum and maximum water level marks)
21	Water level gauge isolation cocks (always open; only to be closed in case of broken gauge glass)
22	Sterilizing timer
23	Sterilizing temperature indicator
24	Indicator light Red: "Low water":
25	Indicator light White: "Sterilization"
26	Indicator light Orange: "Heating"
27	On/Off switch with indicator light "Power On"
28	Electrical control cubicle
29	One way valve (as safety, preventing steam escaping when opening water filling valve 30)
30	Water filling valve
31	Water filling funnel
32	Lid opening handle
33	Lid
34	Safety valve
35	Temperature sensor part of 23
36	Condensate trap
37	One way valve (prevents backflow of air into chamber)

3. Installation

Read the operating instructions before setting the apparatus into operation.

Take care that electric supply satisfies the valid regulations on site, see name plate.

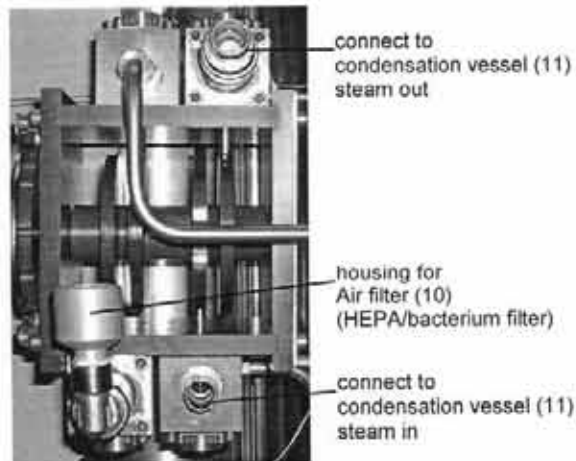
Take care that the electric power supply satisfies the valid regulations on site.

Take care that under the sterilizer there is a water outlet (e.g. gully) for the waste pipes of the sterilizer.

To guarantee the stability of the sterilizer, the apparatus feet have to be fixed to the ground.

Properly connect the sterilizer and the condensation vessel. Make sure that the condensation vessel is put such that it can easily release its heat. Install it away from the hot sterilizer as far as the hoses permit. Keep the condenser at least 10 cm from the wall. Air should be able to freely rise from the radiator both in front and back. By no way the free air flow should be blocked!

The following two connections must be realized with the provided pressure proof hose:



mechanical control unit – side view



condensation vessel (11)
side view right
steam in



condensation vessel (11)
side view left
steam out

The lower connection of the mechanical control unit is connected to the upper connection of the condensation vessel and vice versa. Wrong connection prevent proper operation.

Make sure that all piping and hose connections are tight. Any leakages will cause loss of performance of the vacuum system.

3.1. General Remarks

Feeding water: For operation of the sterilizer either distilled, demineralized or completely desalted water is necessary.

Indications concerning the filling quantity of operating water for steam jacket in case of empty chamber until min. water level (NW) and from minimum water level (NW) to max. level (HW) can be taken from paragraph 8. **Technical data.**

Attention: Main switch to be installed on site

3.2. Overview – Important devices of the sterilizer

3.2.1 Heating elements, overheating protection device and water level gauge

The jacket is heated with two heating elements (14) to produce the steam needed for sterilization.

The overheating protection (low water cut-out) is realized with a with micro heating element 0,5 kW and water shortage protection switch with sensor (15), resettable by pressing the reset button.



2 heating elements (14), micro heating element and water shortage protection sensor and reset switch (15)



water level gauge (20)
with isolation cocks (21)



isolation cock (21) and water gauge emptying cock

The water level gauge indicates the volume of water in the jacket if the isolation cocks are open. The red markings indicate the maximum and minimum water level. If the water level drops below the minimum the overheating protection is initiated.

3.2.2 Water filling devices

The water filling valve (31) and water filling funnel (30) are used to manually fill the jacket with the needed water.



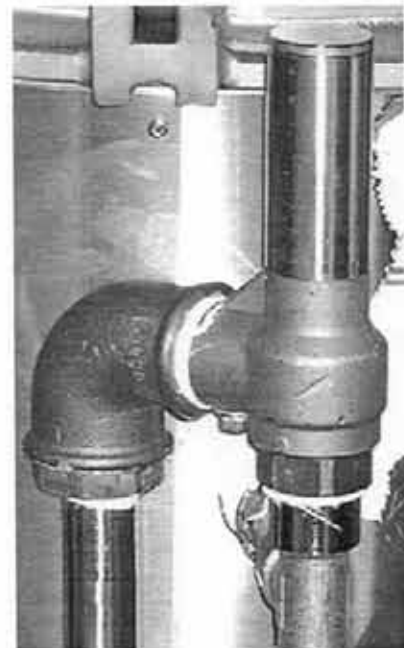
water filling funnel (31), water filling valve (30) and one way valve (29)

3.2.3 Pressure control and safety

The jacket pressure is controlled with the jacket pressure regulator (not shown in diagramme). With the adjustment of the knob located on top of the regulator the maximum pressure in the jacket is adjusted up to a maximum pressure of 2,5 bar.



pressure regulator for jacket pressure



safety valve (34)

If there is a malfunction in the pressure regulator the pressure would rise above the preset value. In order to prevent this type of hazard pressure exceeding the tolerable level is released via the safety valve (34). *Si il y a une défaillance dans le régulateur de pression, la pression la valeur définie d'avance. Pour empêcher ce type de pression de danger (hasard) excédant le niveau tolérable est sorti via la valve de sécurité (34)*

3.2.4 Operation Controls *(Contrôles d'opération)*

The sterilizer is equipped with two types of controls. The mechanical control unit and the electrical control cubicle (27). *Le stérilisateur est équipé de deux types de contrôles. L'unité de commande mécanique et le Compartiment de Contrôle électrique (27)*

6.3.1.1 The electrical control cubicle : *LE COMPARTIMENT DE CONTRÔLE ÉLECTRIQUE*

The electrical control cubicle is used to control and regulate the pressure in the jacket and furthermore to indicate the chamber temperature. With this chamber temperature sensor and the associated timer the sterilization time is controlled and indicated.

- Le Compartiment de contrôle électrique est utilisé pour contrôler et régler la pression à la veste et en outre indiquer la température de chambre. Avec ce capteur de température associé le temps de stérilisation est contrôlé et indiqué.



→ Compartiment de Contrôle électrique (28) avec marche / Arrêt (27) l'échange (le commutateur), l'indication allume (éclaire) l'orange (chauffant - 26), - Orange (chauffant - 26), - Blanc (stérilisation - 25), - Rouge (Eau courte - 24)

en outre il tien le minuteur de stérilisation (23) et l'indicateur (le signifiant) de température stérilisant et l'échange (le commutateur) dirigent l'expert (23)

Electrical control cubicle (28) with ON/OFF (27) switch, indication lights orange (heating - 26), white (sterilization - 25) and red (water shortage - 24). Furthermore it holds the sterilization timer (23) and the sterilizing temperature indicator and switch point adjuster (23).

The ON/OFF switch is used to initiate heating of the jacket in conjunction with the above mentioned pressure regulator. The sterilization timer is used to ensure that the appropriate sterilization temperature is achieved in the chamber for the appropriate amount of time.

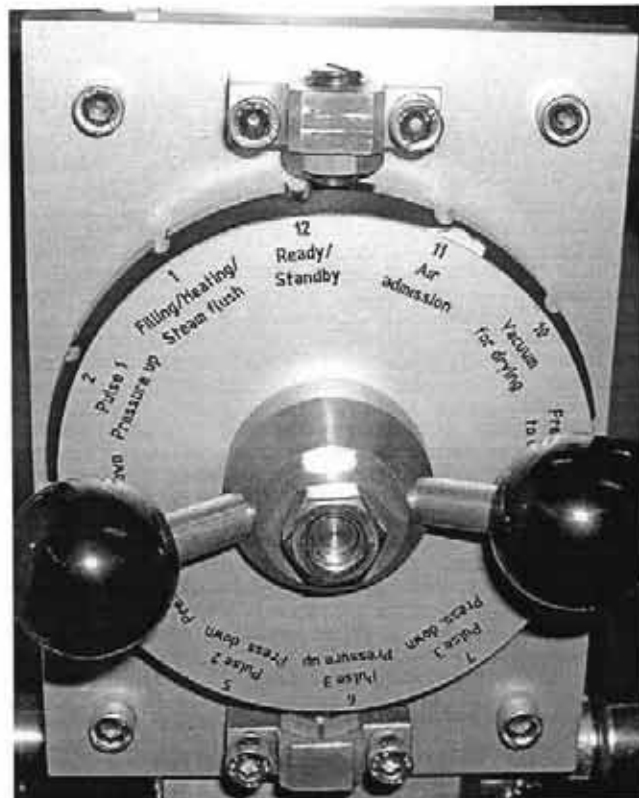
The lamps indicate whether the unit is heating the jacket, the sterilization time is running and if there is a water shortage in the jacket ("low water level")

→ Marche/Arrêt l'échange (le commutateur) est utilisé pour amorcer (introduire) le chauffage de la veste en accord avec le régulateur de pression mentionné ci-dessus. Le minuteur de stérilisation est utilisé pour assurer que la température de stérilisation s'approchant est archivée dans le chambre pour la quantité (le montant) s'approchant de minuteur.

→ Les lampes indiquent si l'unité chauffe la veste, le minuteur de stérilisation fonctionne (court) et s'il y a un manque d'eau dans la veste (le niveau de basse mer).

6.3.1.2 The mechanical control unit

The mechanical control unit consist of the 12-position operating-wheel (6) and the 4 valves which are operated with the control unit. *L'unité de Commande mécanique Consiste en 12 lieux d'exploitation de position (poste) (6) et les 4 valves qui sont opérées (exploitées) w.*



mechanical control unit - 12-position operating-wheel (6)

Each of the 12 positions of the operating wheel represents a distinct combination of valve settings for the 4 attached mechanical valves. Running through the numbered steps in ascending order will lead to a complete cycle. Please make sure that the wheel is always position that way that one of the notches is in the vertical upright position.

4. Operating Instructions

For setting the sterilizer into operation, please proceed as follows:

4.1. Control of feeding water

Level of feeding water at the water level gauge (20) has to be between the markings for minimum and maximum water level. Should this not be the case, the jacket (16) has to be filled with a corresponding quantity of water. **This can only be done when the jacket (16) is without pressure resp. cold, i.e. the pressure gauge for the steam jacket (7) indicates "0" bar.**

Note

When the water is up to the upper water level mark on the water level gauge (20), and when running the standard cycle, you will be able to approximately run 3 cycles as described here with a single filling, until the water level will reach the lower-water level mark.

4.1.1 Filling in of water for first filling of after having emptied the jacket completely – pressure gauge jacket (7) indicates "0" bar.

Put the operating knob (6) on position 1. This position allows air to escape from the jacket as the water level in the jacket increases, while filling the water.

Open water filling valve (30)

Pour water of adequate quality into the filling funnel (31). Fill water until water has reached the maximum level mark on the water level gauge (20). In case the water level was at the lower mark, you may have to add upto approx 16 litres of water.

Close water-filling valve (30).

Turn Operating wheel (6) **back** to position 12

4.1.2 Filling in of jacket water when the minimum marking is reached and the jacket(16) is heated up and under pressure between two sterilizing processes.

The filling of jacket water can only be executed when the jacket (2) is without pressure.

Make sure that the load has been taken out of the sterilizer

Switch off the ON/OFF switch (27) of the unit

Close the lid (33).

Keep door interlock (5) opened

Put operating knob (6) on position 1. Pressure in the chamber and jacket will go down. Wait until jacket pressure gauge (7) and chamber pressure gauge (8) indicate 0. (atmospheric pressure)
Open water filling valve (30)

Pour water of adequate quality into the filling funnel (31). Fill water until water has reached the maximum level mark on the water level gauge (20). In case the water level was at the lower mark, you may have to add upto approx 16 litres of water.

Close water-filling valve (30).

Turn Operating wheel (6) **back** to position 12

4.1.3 Filling in of jacket water when the min. marking has been passed, the jacket (16) is heated up and under pressure and the water shortage protection switch has reacted.

The filling of jacket water can only be executed when the jacket (2) is without pressure.

Make sure that the load has been taken out of the sterilizer

If the red control lamp "water shortage" (17) is illuminated at the electric switch board (12), the water level in the steam jacket has fallen below the admissible value during operation. Before filling the water into the jacket, it has to be put into a **pressureless** condition.

Switch off the ON/OFF switch (27) of the unit

Close the lid (33).

Keep door interlock (5) opened

Put operating knob (6) on position 1. Pressure in the chamber and jacket will go down. Wait until jacket pressure gauge (7) and chamber pressure gauge (8) indicate 0. (atmospheric pressure)
Open water filling valve (30)

Pour water of adequate quality into the filling funnel (31). Fill water until water has reached the maximum level mark on the water level gauge (20). In case the water level was at the lower mark, you may have to add upto approx 16 litres of water.

Close water-filling valve (30).

Turn Operating wheel (6) **back** to position 12

Afterwards the water shortage protection switch (15) has to be set into operation by pressing the reset button, which is situated behind the protection cover at the front side of the water shortage protection switch (15).

After having reset the unit into operation by actuating the ON/OFF switch (27), the adjusted steam pressure is produced in the outer jacket.

The sterilizing process interrupted by the water shortage must be repeated, as the goods cannot be sterile.

4.2. Heating / preheating of the sterilizer

The saturated steam necessary for sterilization is produced in the steam jacket (2) by means of two electric radiators (10). To start the heating process, please proceed as follows:

Control the water level at the water level indication (6).

Control that filling valve (31) is closed.

Make sure the control wheel (6) is on position 12

Press ON/OFF switch (27) to "ON"-position (control lamp lights green).

Now the initiated heating process lasts approx. 30 - 35 min., when there is maximum water level and maximum required pressure, until the necessary steam pressure is reached. As long as the operating pressure is not reached, heating is in operation. This can be seen by the lighting of the yellow control lamp "heating" (26).

The process of preheating is finished when the pressure gauge for the steam jacket (7) indicates the pressure preselected on the pressure regulator is reached and the yellow control lamp "heating" (26) goes out for the first time. Now the apparatus is ready for sterilization.

4.3. Loading

Prepare the load and put it in the chamber. Refer to notes on loading.

Close the lid (33) by turning it anticlockwise, using its both handles (32). Close to lid interlock valve (5) by turning it anti clock-wise until it's handle is fully in its groove.

4.4. Performing a sterilization cycle



After the loading is completed you can start the sterilization cycle, which runs through all the phases is indicated in the diagramme. Before starting the cycle control the position of the temperature switch point of the temperature indicator (23). This should be adjusted to 134 °C. Turn the sterilization timer (22) clockwise to 10 minutes.

The pressure curve on the following diagram shows the ideal pressure conditions in the sterilizing chamber during the individual programme steps. The diagram corresponds to sterilization at a temperature of 134° C and a pressure of approx. 2,3 bar operating pressure.

The diagram shows the actual valve positions during the corresponding programme steps.

The valve position is always shown by the location of the black line.

- RED line in the lower position* - Valve in closed position..
- BLUE line in the upper position* - Valve in opened position.

The sterilizer is not suitable for operation without supervision, as it needs a continuous control.

Process step		1	2	3	4	5	6	7	8	9	10	11	12
No	Valve	Filling/Heating/Flushing	1 st pressure build-up	1 st steam release	2 nd pressure build-up	2 nd steam release	3 rd pressure build-up	3 rd steam release	Pressure build up for sterilization	Pressure release to atmospheric	Vacuum for drying	Air admission	Off
1	Air admission	0	0	0	0	0	0	0	0	0	0	1	0
2	Steam to chamber	1	1	0	1	0	1	0	1	0	0	0	0
3	Condensor Inlet	1	0	1	0	1	0	1	0	1	1	0	1
4	Condensor exhaust	1	1	1	1	1	1	1	1	1	0	0	1
5	Door interlock	0	0	0	0	0	0	0	0	0	0	0	1
	Heating	1	1	1	1	1	1	1	1	0	0	0	0/1

Ready/Standby
Air admission

Vacuum for drying

Pressure release to atmospheric

Pressure build for Sterilisation

Pulse 3 – Pressure down

Pulse 3 – Pressure up

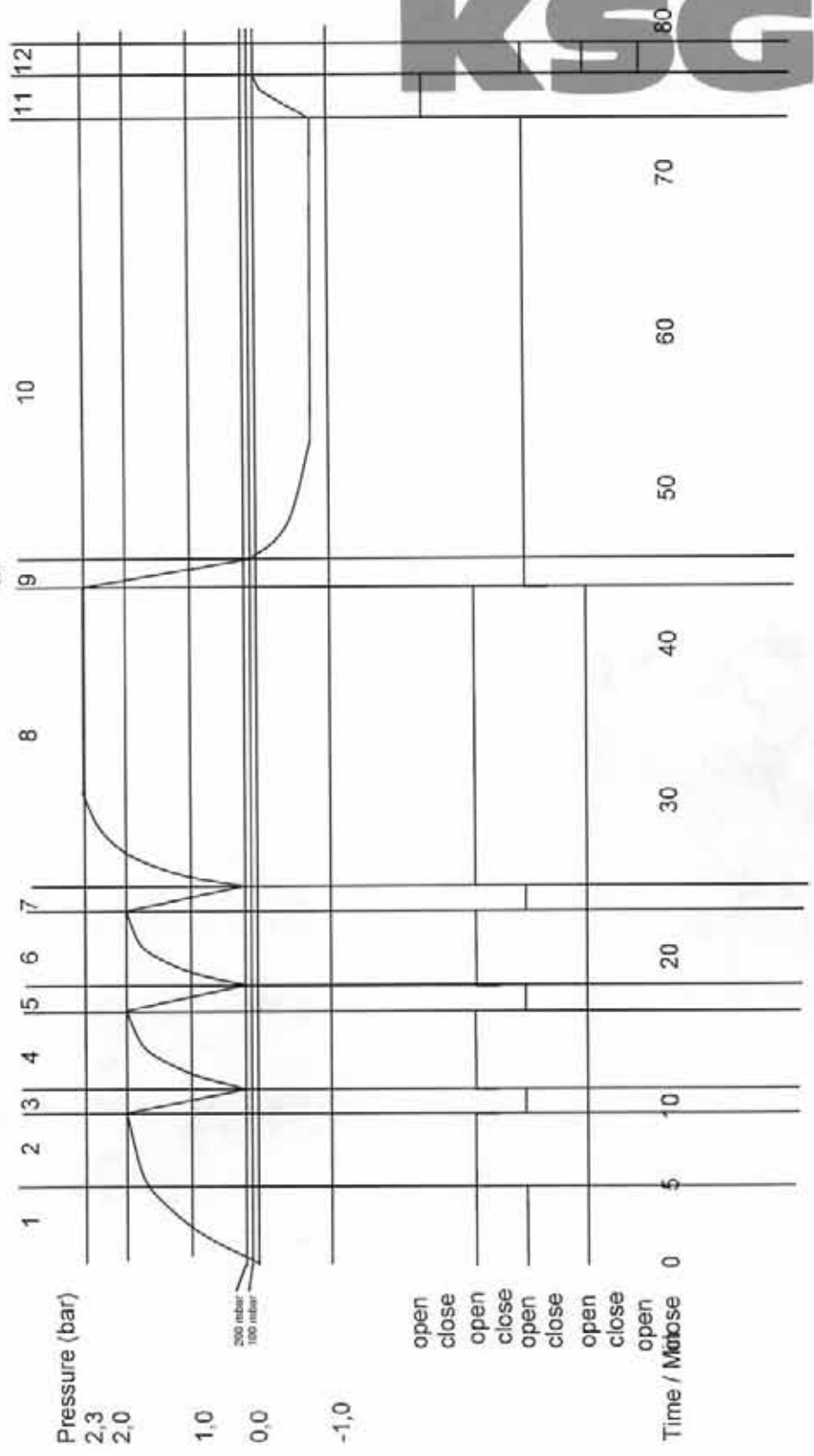
Pulse 2 – Pressure down

Pulse 2 – Pressure up

Pulse 1 – Pressure down

Pulse 1 – Pressure up

Filling/Heating/Steam flush



4.4.1 Steam flush – Position 1

Turn the control wheel (6) to position 1. Steam will enter the chamber (16) and also will flush through the load. Steam will be escaping from the exhaust (13). Flush the chamber in this way for 5 minutes. *Tournez la roue de contrôle (6) pour placer 1. La vapeur entrera dans la chambre (16) et sera aussi par la charge. La vapeur s'échappera de l'échappement (13). Nettoyez à grande eau la chambre de cette façon pour 5 minutes.*

4.4.2 First steam pulse – Position 2

Turn control wheel (6) to position 2. Pressure in the chamber will increase. When the chamber pressure, indicated by pressure gauge (8), has reached 2,0 Bar, turn the control wheel (6) to position 3. *quand la pression de chambre, indiquée par le manomètre (8), a atteint 2,0 barre, tour la roue de contrôle (6) à la position 3.*

4.4.3 First steam release – Position 3

Steam will be blown off from the exhaust (13) and pressure will go down. When chamber pressure gauge (7) reaches 0,2 Bar, turn control wheel (6) to position 4. *La vapeur sera enlevée de l'échappement (13) et la pression descendra, quand le manomètre de chambre (7) 0,2 bar des parties. Tournez la roue de contrôle (6) pour placer 4.*

4.4.4 Second steam pulse – Position 4

Pressure in the chamber will increase. When the chamber pressure, indicated by pressure gauge (8), has reached 2 Bar, turn the control wheel (6) to position 5.

4.4.5 Second steam release – Position 5

Steam will be blown off from the exhaust (13) and pressure will go down. When chamber pressure gauge (7) reaches 0,2 Bar, turn control wheel (6) to position 6. *La vapeur sera enlevée de l'échappement (13) et la pression ira down, quand le manomètre de chambre (7) 0,2 barre, des parties, tournez la roue de contrôle (6) pour placer à 6.*

4.4.6 Third steam pulse – Position 6

Pressure in the chamber will increase. When the chamber pressure, indicated by pressure gauge (8), has reached 2 Bar, turn the control wheel (6) to position 7. *La pression à la chambre augmentera, quand la pression de chambre, indiquée par le manomètre (8), a atteint 2 barre, tournez la roue de contrôle (6) à la position 7.*

4.4.7 Third steam release – Position 7

Steam will be blown off from the exhaust (13) and pressure will go down. When chamber pressure gauge (7) reaches 0,2 Bar, turn control wheel (6) to position 8. *La vapeur sera enlevée de l'échappement (13) et la pression descendra, quand le manomètre de chambre (7) 0,2 barre des parties, tournez la roue de contrôle (6) pour placer à 8.*

4.4.8 Sterilization – Position 8

Pressure in the chamber will be increasing. When the chamber temperature has reached the adjusted value of 134 °C the sterilization timer will start to run in counterclockwise direction. The indicator light "sterilization" (25) is light while the temperature is high enough and the sterilization time is not exceeded. When the sterilization time is finished switch of the ON/OFF switch (28) to stop the heating and turn control wheel (6) to position 9. *quand la température de chambre a atteint la valeur ajustée à 134°C le minuteur de stérilisation commencera à fonctionner dans la direction en sens inverse des aiguilles d'une montre. La stérilisation de l'amp témoin (25) est allumée tandis que la température est assez haute et le temps de stérilisation n'est pas excédé. quand le temps de stérilisation est fini l'échange de ON/OFF, l'échange (28) pour arrêter le chauffage et la roue de contrôle de tour (6) de placer à 9.*

4.4.9 Steam release – Position 9

Pressure in the chamber will decrease. When chamber pressure gauge (8) has reached 0,1 Bar, turn control wheel (6) to position 10.

Note: don't let pressure down to 0 Bar. This may impair performance of the vacuum system!

4.4.10 Vacuum for drying – Position 10

By condensation of steam in the condenser (11) vacuum will be created in the chamber. The Chamber pressure should go down to approx -0.7 Bar to -0.9 Bar.

From the moment of turning the control wheel (6) to position 10, time a period of 30 minutes for the drying period. After the 30 minutes are spent turn the control wheel (6) to position 11.

4.4.11 Air-admission – Position 11

Air will enter the chamber through air filter (10) and chamber pressure gauge will rise to atmospheric pressure(0 Bar). When the chamber pressure has reached 0 bar, open the lid interlock valve (5) and open the lid (33) by turning the handles (32) clockwise until it stops.

4.5. Removal of the load

Take out the load, and put it on a place where it can release its remaining moisture. Make sure that steam can escape also from below. Therefore put the load on for example a stainless steel grid or rack.

Note: The chamber wall and the load are still hot! Be careful not to burn yourself!

4.6. Preparations for further sterilizations

After the chamber has been emptied, the sterilizer can quickly be prepared for the next cycle following the steps of 5.2."Heating/Preheating of sterilizer".

5. Safety Devices

5.1. Water shortage in the jacket

A sensor (15) is built in above the heating elements, so that they cannot burn through in case of extreme shortage of distilled resp. demineralized water. The sensor consists of a small radiator with integrated temperature sensor. In case of water shortage the temperature sensor - heated up by the small radiator - gives a signal to the water shortage protected switch. Via a contactor this switch durably separates the radiators (14) and the small radiator in the water shortage sensor (15) from electric mains. At the same time the red control lamp "water shortage" (24) lights up.

5.2. Lid interlock valve

When the sterilizer lid is orderly closed, this valve (5) prevents by its operation lever that the lid can be opened when the sterilizing chamber is under pressure. If anyone tries to open the chamber nevertheless, the lever has to be operated first. This would mean that via the activated valve (5) possibly existing pressure would be reduced and be led away via the exhaust pipe.

5.3. Sterilizer lid

The sterilizer lid is opened and closed by a turning bayonet system. Because of the occurring friction (and because of 6.2) it is not possible to operate the lid bayonet in direction "open" when there is pressure inside. Should the lid be opened - due to an accumulation of misfunctions (depending on the apparatus or on wrong operation) - when there is still a remaining pressure inside the chamber, this inner pressure presses the lid into catch hooks, before it can be opened completely. Due to the arrangement of these hooks the remaining pressure between chamber and lid can escape, but a dangerous flying open of the lid is surely prevented.

5.4. Safety valve

If the radiators (14) are not switched off due to a failure of the regulator for sterilization pressure and an inadmissible high steam pressure is established inside the sterilizer, the safety valve (34) reacts upon an overpressure of more than 2,5 bar. It opens the way outside, removes safely the surplus pressure via a tube, thus preventing dangerous overpressure.

In case of reaction of the safety valve, switch off the apparatus by the ON/OFF switch (27) and examine the apparatus.

6. Maintenance of Sterilizer

In case of external contamination of unit and inner chamber, clean these parts moistly. When the switchboard is cleaned, separate it first from mains supply.

The inner chamber must always be kept clean. If necessary, wash it out.

In case of calcareous water, the apparatus has to be decalcified once a year. These intervals can be extended when the jacket is emptied regularly.

6.1. Sterilizer gasket

In course of time the sterilizer gasket (33) is subject to a natural wear and tear and has to be exchanged, if necessary, e.g. if it is deformed or damaged or if during sterilization steam escapes at the gasket.

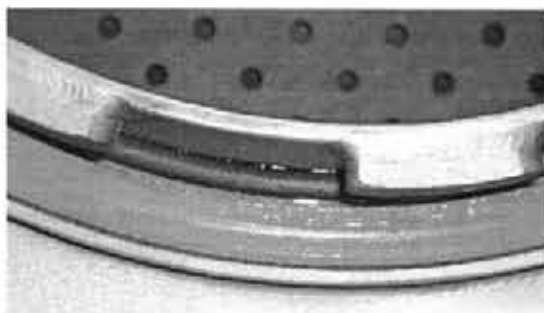
To achieve a longer durability of the door gasket and to guarantee a safe tightening between chamber and door blade, the blocking resistance of the chamber gasket must be maintained continuously.

The gasket has to be removed from the gasket groove, cleaned and greased daily, before put into operation with silicone grease. Cleaning of the gasket should be done when the unit is cold. For protecting the hands, the use of one-way rubber gloves is recommendable.

As the grease loses its separating ability also when the unit is not used, the maintenance intervals depend not only on the frequency of use, but also on the blocking resistance of the chamber gasket.

The gasket (33) and the copper ring (33a) has to be removed from the gasket groove by the S-shaped gasket-drawer. Then the gasket (33) and the copper ring (33a) has to be cleaned by a fluff-free cloth. Afterwards the gasket (33) has to be checked, whether there are no wear and tear spots or damages. A defective or worn-out gasket has to be replaced.

Afterwards the gasket groove must be cleaned. For greasing the gasket, take a small quantity (approx. the size of a walnut) of grease on the palm of one hand and rub it between both palms, before you draw the gaskets through your hands. Then put the copper ring (33a) and the greased gasket (33) back into the gasket groove.



6.2. Aeration filter

Acc. to its construction the aeration filter guarantees a safe air sterilization and makes it possible to exchange the filter elements easily.

Our service staff is instructed to exchange the filter elements acc. to the frequency of use under consideration of the local conditions, as dust and humidity.

To guarantee the operation safety of the sterilizer and to prevent a recontamination of the sterile goods, it is necessary that the filter elements are regularly exchanged every six months.

Under consideration of local conditions, like dust and humidity, as well as in case of frequent use, it might be necessary to exchange the filter more often.

7. Search for Errors

Temperature indication does not work

- > sensor defective
- > flowing obstructed
- > condensate trap defective

No pressure in the chamber

- > no water in the chamber
- > no current / fuse defective
- > water shortage protection disengaged

Chamber gasket leaky

- > gasket defective
- > dirt on the gasket
- > gasket has to be greased

8. Technical Data

Type	Chamber Diameter / Height / Volume	Current	Capacity	Operating Water to NW	Operating Water NW to HW
40/60 -2	40 cm 60 cm 075 dm ³	14,5 A	9,5 kW	25 Litres	16 Litres
50/70 -2	50 cm 70 cm 137 dm ³	19,0 A	12,5 kW	42 Litres	21 Litres
50/80 -2	50 cm 80 cm 157 dm ³	19,0 A	12,5 kW	40 Litres	18 Litres
50/95 -2	50 cm 95cm 186 dm ³	19,0 A	12,5 kW	XX Litres	XX Litres

Operating pressure p_e :	2,5 bar
Operating temperature:	134° C
Nominal voltage:	230/400 V
Current:	Rotary current
Nominal frequency:	50/60 Hz

SPARE PART LIST



KSG 30/50-1, 40/60-1, 40/60-2

KSG 50/70-1, 50/70-2, 50/80-1, 50/95-2

General Part List

Type	Art. No.	Description
Drrre	014 001	Pressure regulator RT 200, 0-6 bar, 3/8"
Fitt	025 064	Flat trap 1/2"
Glla	038 001	Bulbs T5,5 K, 36 V, 35 mA
Heik	048 017	Micro heating element, 500 W, 3/4"
Koab	055 002	Condensate trap BPT 13S, 1/2"
Mano	066 005	Pressure gauge, 80 mm diameter, -1 +5 bar, R 1/2"
Sive	097 012	Safety valve 1/2", 2,8 bar
Schü	096 006	Contactora DILM 9-10, 230 V, 50/60 Hz
Scha	091 019	Tumbler switch black/green
Üsch	116 005	Water shortage security ATHf-7
Veme	122 002	Ball valve 842, G 1/2"
Veme	122 005	Two-way ball valve LKH-322-1/2"
Veme	122 006	Two-way ball valve GKH-322-1/2"
Veme	122 007	Two-way ball valve GKH-322-3/8"
Wast	132 002	Water level tube, diameter 12 mm
Wast	132 005	Water level valve 1/2"
Dima	011 001	Gasket for water level glas

Type Specific Part List

Type Art. No. Description

KSG 30/50-1

Heik	048 009	Heating element, 3 kW
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KSG 40/60-1, 40/60-2

Heik	048 010	Heating element, 4,5 kW
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KSG 50/70-1, 50/70-2, 50/80-1, 50/80-2, 50/95-2

Heik	048 011	Heating element, 6 kW
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Execution with Sterilization Timer

Type	Art. No.	Description
Tein	107 006	Temperature instrument with sensor 50 – 150° C
Tein	107 010	Angle thermometer
Zeit	137 002	Timer 88256.5, 30 minutes

Execution with Vacuum Pump

Type	Art. No.	Description
Fitt	025 001	Dirt trap
Mots	068 027	Motor protection switch PKZM 0-4
Scha	091 040	Twin tumbler switch black/green
Schü	096 006	Contacteur DILM9-10, 230 V, 50/60 Hz
Veme	122 035	Flap trap
Kopu	084 063	Sniffing valve
Kopu	084 060	Vacuum pump LEMA 26
Veel	121 112	Magnetic valve 6213, 230 V, 50/60 Hz

Execution IUP (infusion Unit Project)

Type	Art. No.	Description
Schl	141 010	Silicone hose 1,5 m
Tein	107 010	Elbow Temperature instrument 0 – 200° C
Vesb	125 210	Steam Nozzle

Wear and Tear Parts

Type	Art. No.	Description
Dima	011 001	Gasket for water level glas
Koab	055 007	Inset for condensate trap

KSG 30/50-1

Dipr	012 020	Chamber gasket KSG 30/50-1
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KSG 40/60-1

Dipr	012 019	Chamber gasket KSG 40/60-1
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KSG 40/60-2

Dipr	012 032	Chamber gasket KSG 40/60-2
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KSG 50/70-1, 50/70-2

Dipr	012 028	Chamber gasket KSG 50/70-1, 50/70-2
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KSG 50/80-1, 50/95-2

Dipr	012 022	Chamber gasket KSG 50/80-1, 50/95-2
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Consumables

Type	Art. No.	Description
Filu	023 005	Sterile air filter
Lömi	063 003	Stainless steel spray
Fett	022 003	Grease for gasket, 100 g

KSG

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KSG

Maintenance Checklist KSG 40/60-2/ KSG 50/70-2 Serial No.: _____
KSG 50/80-2 Year of C.: _____

Maintenance after 400 cycles / half yearly / yearly

Customer

Address

- General visual control**
 - connections, fittings, piping system
 - outer casing, insulation

- Door closure**
 - visual and functional control.

- Door gasket**
 - remove, clean and check gasket
 - replace if necessary
 - clean gasket groove
 - reinsert gasket into groove

- Flap trap**
 - open maintenance screw,
 - visual control.
 - replace flap gasket if necessary.

- Dirt traps**
 - remove, clean, reinstall

- Manual valves**
 - Visual control,
 - check proper function and free movement

- Electrical components**
 - wirings tight
 - electrical contacts not deteriorated

- Boiler water**
 - remove complete water filling from boiler
 - rinse boiler

- Overheat protection**

(check without water in the chamber)

 - **Switch Off Heating fuses**
 - Switch On the unit,
 - micro heating element is activated.
 - wait till overheating is reached via the micro heating element
 - overheat protection must initiate
 - optical disturbance lamp water shortage must be lit
 - Switch Off unit

- Renew boiler water**
 - Refill the water up to max. level of water (observe water level glass)
 - press overheat protection device
 - **Switch On Heating fuses**

- Indicating Instruments**
 - check and adjust if necessary

- Indicating lamps**
 - check for proper function

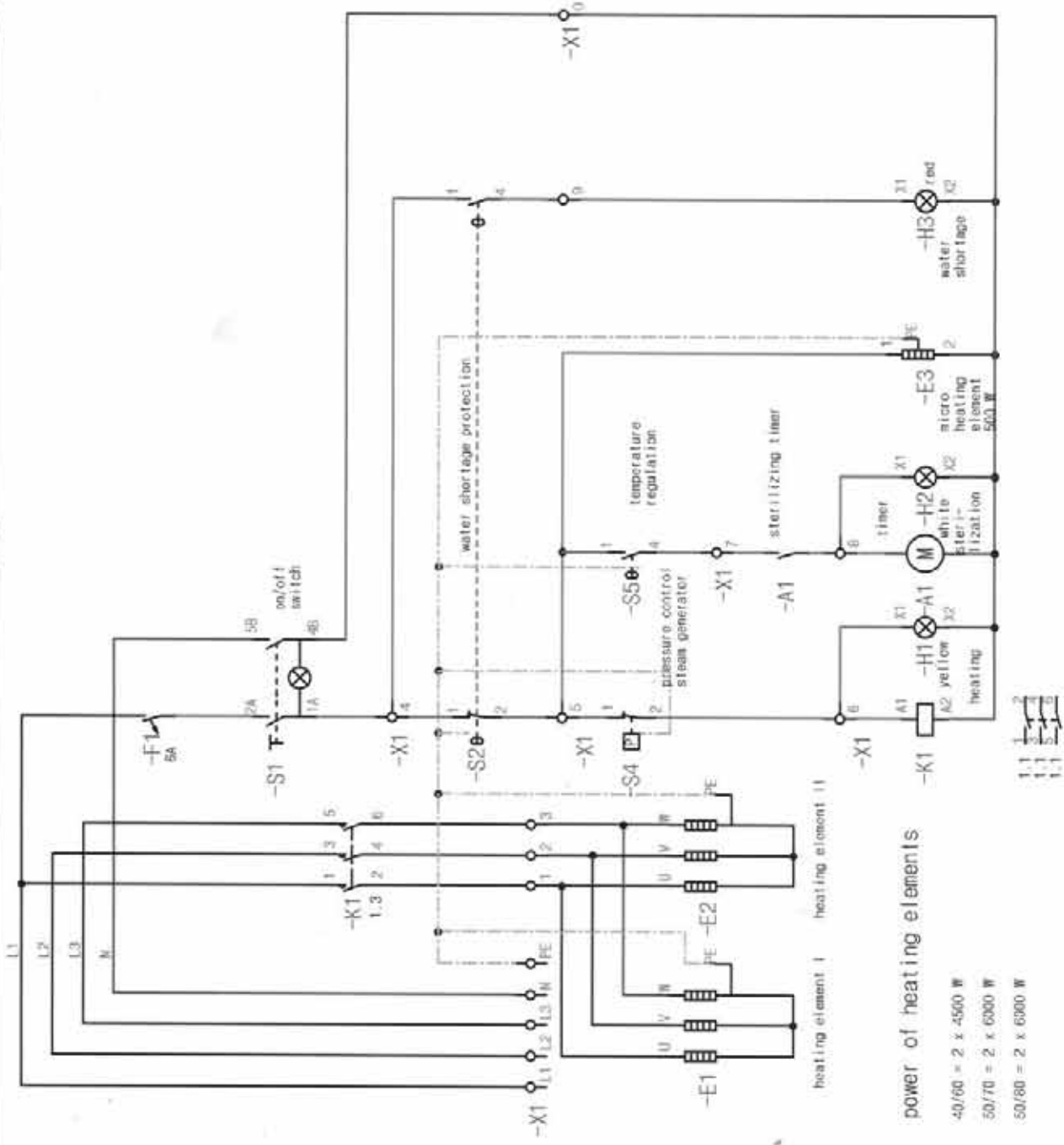
- Measurement and regulation instruments**
 - run normal work cycle
 - check cycle performance
 - check pressure controllers for proper setpoint
 - adjust if necessary
 - check and adjust contact thermometer (only if applicable)
 - check proper function of timer (only if applicable)

- Vacuum device(if provided)**
 - decalcify device
 - check performance
 - adjust coldwater amount if necessary

(Date)

(Signature of service technician)

(signature of client)



power of heating elements
 40/60 = 2 x 4500 W
 50/70 = 2 x 6000 W
 50/80 = 2 x 6000 W

K55 40/60-2 50/70-2 50/80-2
 Doppelwandige Ausführung, elektrisch beheizt
 double walled execution, electrically heated

Schaltplan/wiring diagram
 mit Zeitschaltuhr
 with timer



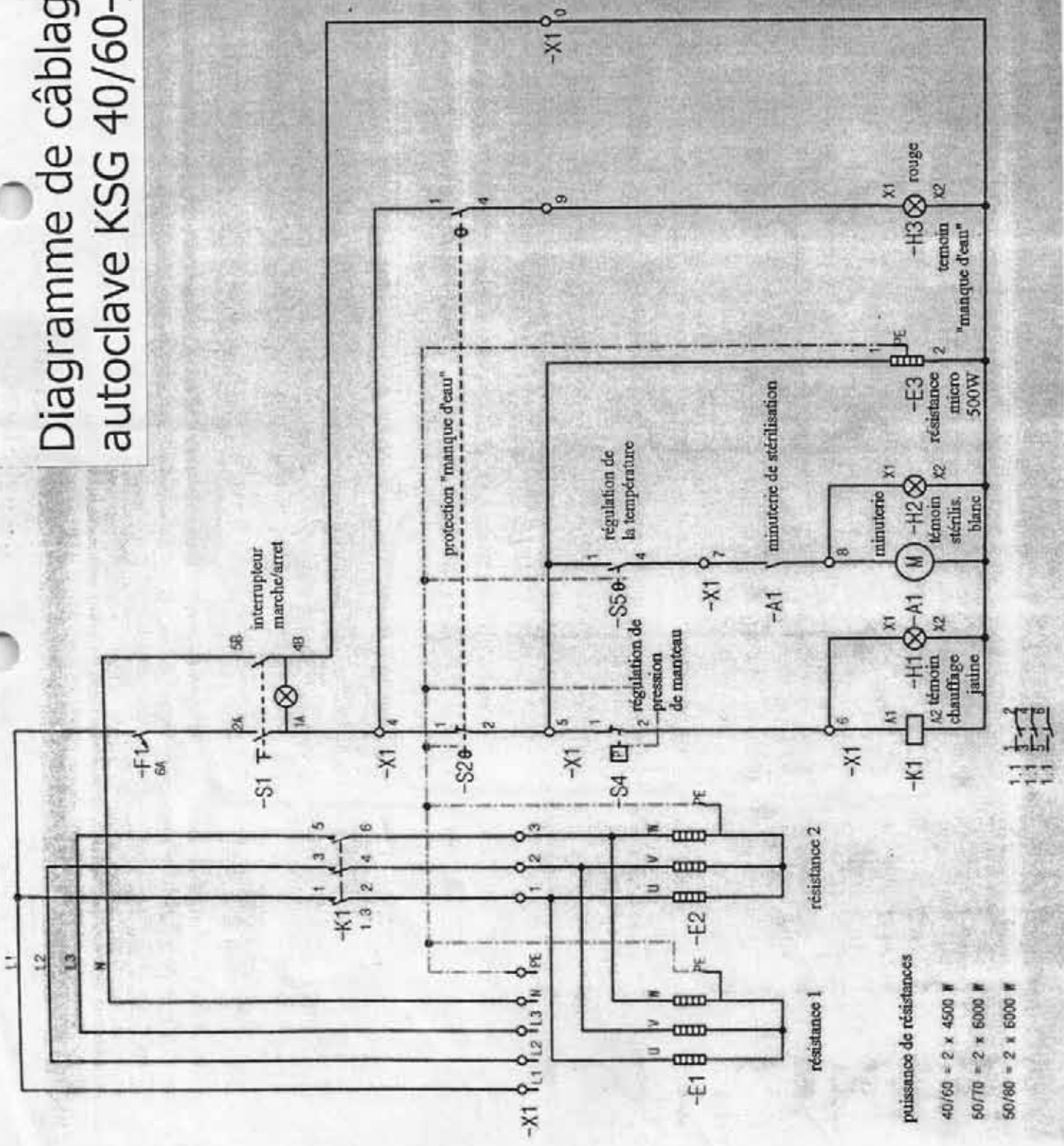
Plan-Nr. 01E040602EU001

Revision/revision 2.0 Datum/date 29.10.02 Bearbeiter/person in charge Knischtern

Blatt/page 1 von/of 1 Blattern/pages

Änderungen vorbehalten/modifications reserved

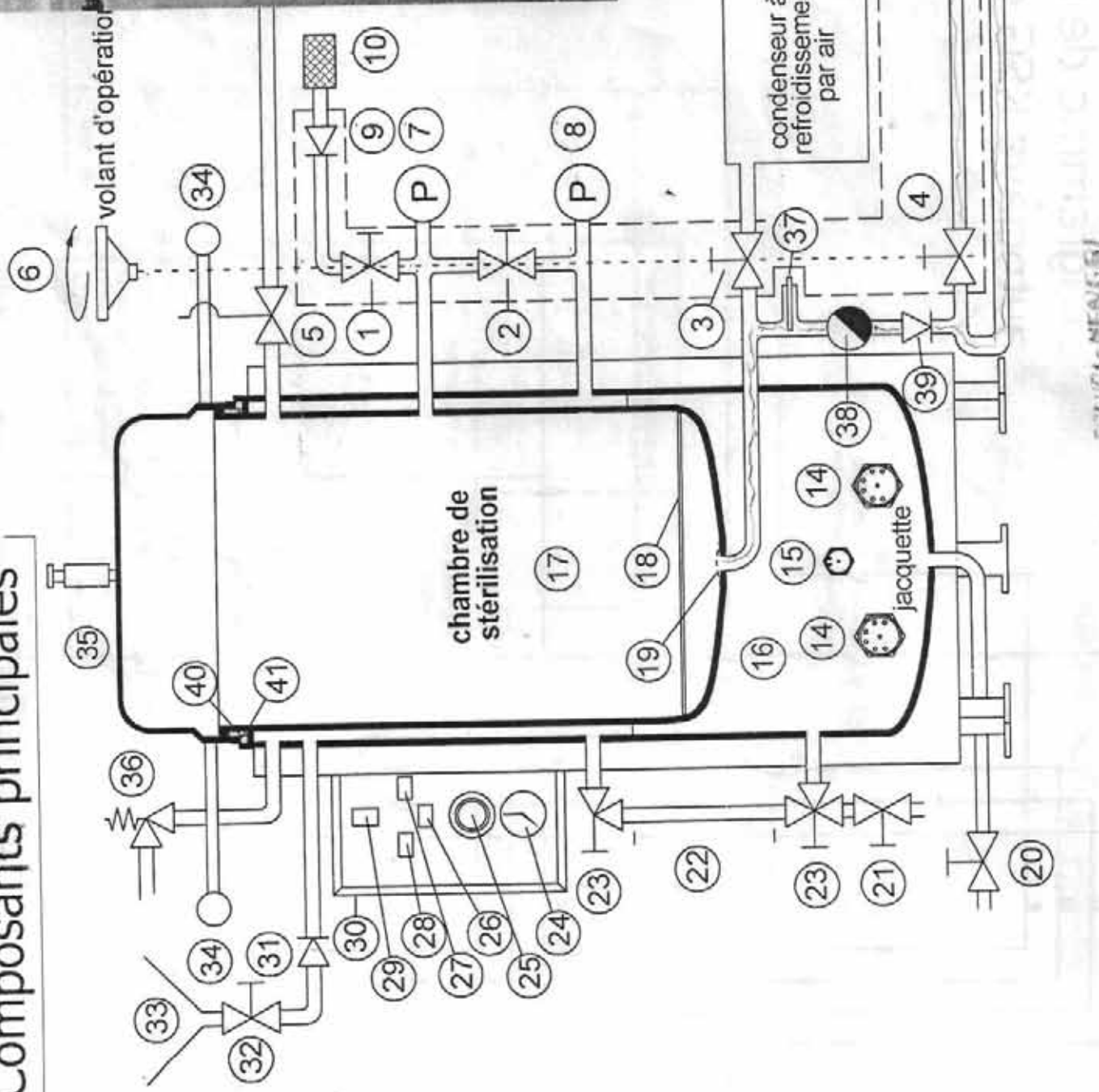
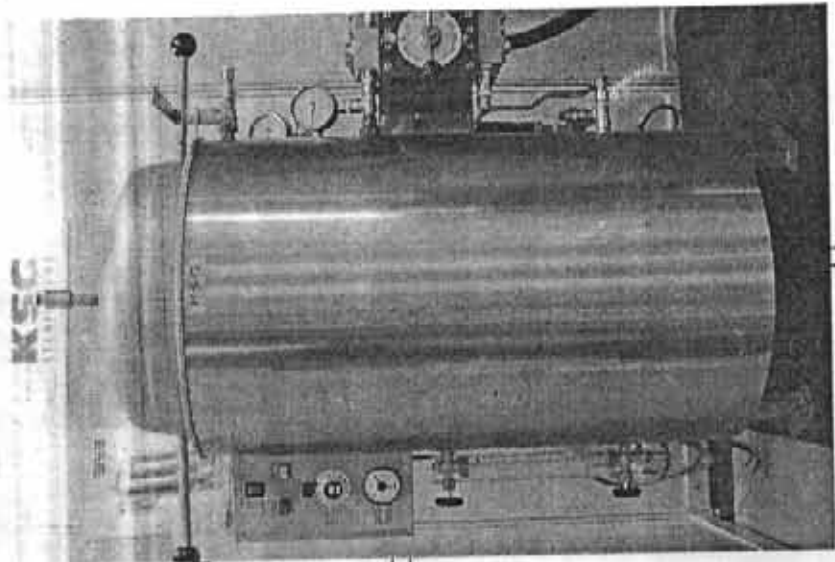
Diagramme de câblage autoclave KSG 40/60-2



puissance de résistances
 40/60 = 2 x 4500 W
 50/70 = 2 x 6000 W
 50/80 = 2 x 6000 W



Composants principales



JANUARI-MENGEN
 GORUM - LUDOVIC
 TEL: 5.51.46.5.477.22.73

CE – Konformitätserklärung

CE declaration of conformity

Hiermit erklären wir, daß der nachstehend bezeichnete Sterilisator in seiner Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den grundlegenden Sicherheits- und Gesundheitsanforderungen der EG – Richtlinie entspricht.

Bei einer mit uns nicht abgestimmten Änderung des Sterilisators verliert diese Erklärung ihre Gültigkeit.

Herewith we declare that the appliance designated below, on the basis of its design and construction in form brought onto the market by us, in accordance with the relevant safety und health requirements of the EC Directive.

If alterations are made to the sterilizer without prior consultation with us, this declaration becomes invalid.

Gerät:
Appliance:

Dampfsterilisator
Steam sterilizer

Typ:
Type:

KSG 30/50-1, 40/60-1, 50/70-1, 50/80-1
KSG 40/60-2, 50/70-2, 50/80-2, 50/95-2

Serien-Nr.:
Serial Number:

7825

EG – Bestimmung:
EC Council Directives

97/23/EWG Druckbehälter-Richtlinie

Angewandte Normen
u. techn. Spezifikationen:
Applied standards & technical specifications:

DIN 58946-2, EN 61010-1, EN 61010-2-041
AD 2000 Merkblätter

Ort / Datum der Ausstellung:
Place and date of issue:

Olching, den 12.10.2009

Name und Unterschrift:

Heinz Schmid



Funktion:
Position of signatory:

Geschäftsführer
General manager

*FREIHALTUNG
Produktionsbereich
KSG-Sterilisatoren GmbH*