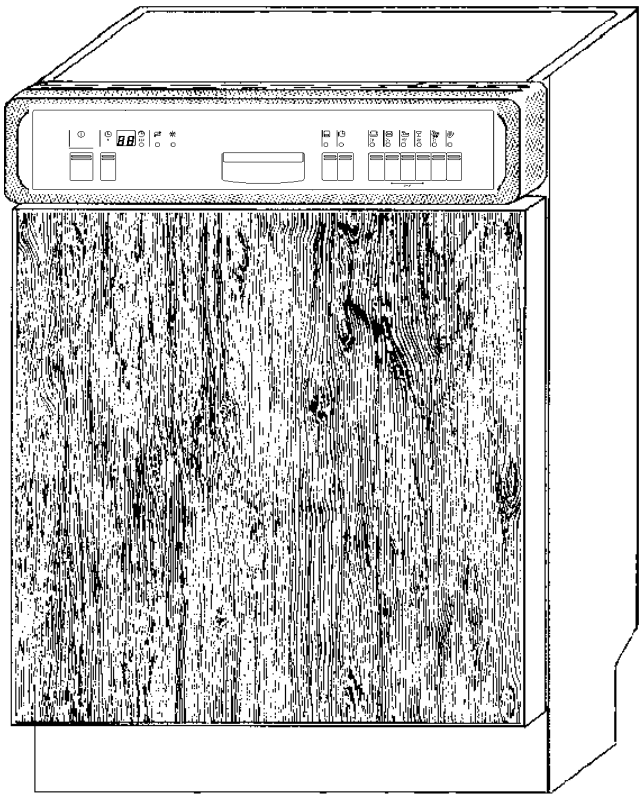


Integrated dishwashers

Series 634

IG 669.2

IG 659.2

IG 644.2

IG 634.2

Küppersbusch

THE HEART OF A GOOD KITCHEN

GB

Service Manual: H7-410-02-03

Responsible:	D. Rutz	KÜPPERSBUSCH HAUSGERÄTE AG
Email:	dieter.rutz@kueppersbusch.de	
Tel.:	(0209) 401-733	Kundendienst
Fax:	(0209) 401-743	Postfach 100 132
Date:	22.07.2003	45801 Gelsenkirchen

Contents

1. General technical specification

The purpose of this service manual is to provide service technicians who already have the know-how required to carry out repairs on dishwashers with specific information on the operational mode of the 634/ 635 series.

This manual deals with all of the appliance specifications relevant to this series.

Descriptions and operational modes of the component parts that are not new have therefore not been included in this edition.

Please refer to manual H7-410-02-02 Dishwasher series 630.

2. Safety

ATTENTION!

In the case of a fault, the outer casing and the frame are live!

In order to avoid electric shocks, please observe the following instructions:

- Always disconnect the appliance before commencing with any repair work!
- Should tests under electrical tension be necessary, always use an earth-leakage circuit breaker!
- Always ensure that the protective conducter connection is carried out correctly, since it is vital for human safety and for the functioning of the appliance.
- On completion of repair work, please carry out a test in accordance with VDE 0701, as well as an operational test and a leakage test.
- Dangerous voltages inside the appliance!
- Do not touch any component parts in the appliance. The modules too are connected to the mains voltage. Risk of damage to the appliance or to components!

Please pay close attention to the following points:

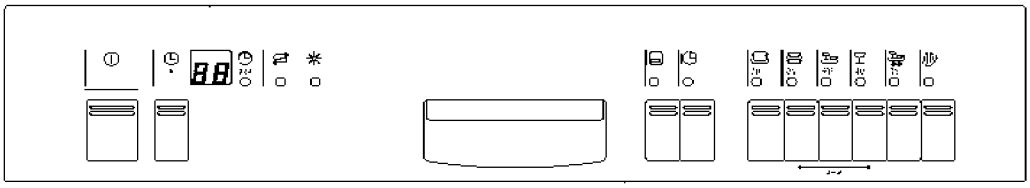
- On testing in accordance with VDE 0701 via the wall plug, the heater (continuous flow heater) is not included.
- Please observe EGB instructions!
- **Never attempt to carry out repair work by means of ”a random exchange” of components!**
- ***Always proceed systematically and observe the instructions on fault-finding!***

3. Description of operation

3.1 General

The appliances are equipped with an alternating rinse system and a glass protection system. The alternating rinse system is explained under the sub-title water diverter. The glass protection system comprises the prewashing program, the natural water valve and the heat exchanger.

3.2 Control panel design



Buttons and indicators are labelled from left to right

Main switch

Double-polar On/Off switch with a mechanical link to the door lock.

Time setting

The time-setting button enables the starting time to be postponed by up to 24 hours.

Remaining time indicator 2H

While the program is operating, the indicator shows in minutes how much time is still likely to be required. Should the required time exceed 99 min., 2H is indicated on the display. If the time-setting has been set, the number will appear on the display with a small “h“. The programm duration will automatically be adjusted in accordance with the type of dishes being washed, the quantity of dishes, the water temperature and the water pressure. On completion of the programm, the display will indicate “0“.

Soaking

The button for soaking can be pressed as a supplement to any program. When the button is pressed, an additional pre-rinse program with heating up to 55°C will take place in the lower basket, resulting in an extension of the program time of approx. 20 min. Recommended for washing various types of dishes (top basket: sensitive dishes / bottom basket extremely dirty robust dishes).

Time reduction

The time reduction button can be pressed as a supplement to any program. When the button is pressed, the circulating time and the drying time, and therefore the washing and drying performance, are reduced (see circuit diagrams and consumption data).

3.3 Programs

Intensive 70°

This program comprises a pre-rinse at 50°, cleaning at 70°, two intermediate rinses, rinsing with a rinsing agent at 70°, and drying. Please ensure that rinsing is only carried out in the bottom basket until the required temperature has been reached.

Normal 65°

This program comprises cleaning at 65°, two intermediate rinses, rinsing with a rinsing agent at 69°, and drying. The aqua sensor is not activated in this program. Please ensure that rinsing is only carried out in the bottom basket until the required temperature has been reached. Consumption data.

Eco 50°

This program comprises cleaning at 50°, an intermediate rinse, rinsing with a rinsing agent at 66°, and drying. The aqua sensor is not activated in this program. Please ensure that rinsing is only carried out in the bottom basket until the required temperature has been reached. Consumption data

Gentle 40°

This program comprises cleaning at 40°, an intermediate rinse, rinsing with a rinsing agent at 55°, and drying.

Fast

This program comprises cleaning at 35°, an intermediate rinse, rinsing with a rinsing agent at 55°, and no drying. The aqua sensor is not activated in this program.

Pre-rinse

This program comprises a pre-rinse only. The aqua sensor is not activated in this program.

3.4 Special functions

3.4.1 Adjustment of the water softener

Keep the Eco button pressed and switch on the appliance. The setting will be indicated in the number indicator. The setting rises once every time the eco button is pressed. Once the setting has reached 7, the indicator returns to 0.

When the appliance is switched off, the setting is stored.

Recommendation:

At each initial visit the setting of the water hardness level should be checked and, if necessary, adjusted. Do not apply the maxim "the lower the water hardness setting, the better"

.

°dH	°fH	°Clarke	mmol / l	Setting
0-3	0-6	0-4	0-0.6	0
4-6	7-11	5-8	0.7-1.1	1
7-9	12-16	9-11	1.2-1.6	2
10-12	17-21	12-15	1.7-2.1	3
13-16	22-29	16-20	2.2-2.9	4
17-21	30-37	21-26	3.0-3.7	5
22-30	38-54	27-38	3.8-5.4	6
31-50	55-89	39-62	5.5-8.9	7

3.4.2 Setting intensive drying

Keep the "Normal 65°" button pressed and switch on the appliance. 0 will appear on the number indicator. By pressing the normal button once again, 1 will appear on the display, meaning that the intensive drying program is switched on. If the appliance is switched off, the setting is stored. Activating intensive drying raises the temperature by 3 K in the rinse program with a rinsing agent.

3.4.3 Program interruption (reset)

With the appliance switched on, press the Normal 65° button and the next button but one for 3 sec. A 0 appears on the display and water will be pumped off for approx. one minute. The cleaning agent compartment should then be closed, so that the dispensing device is also reset.

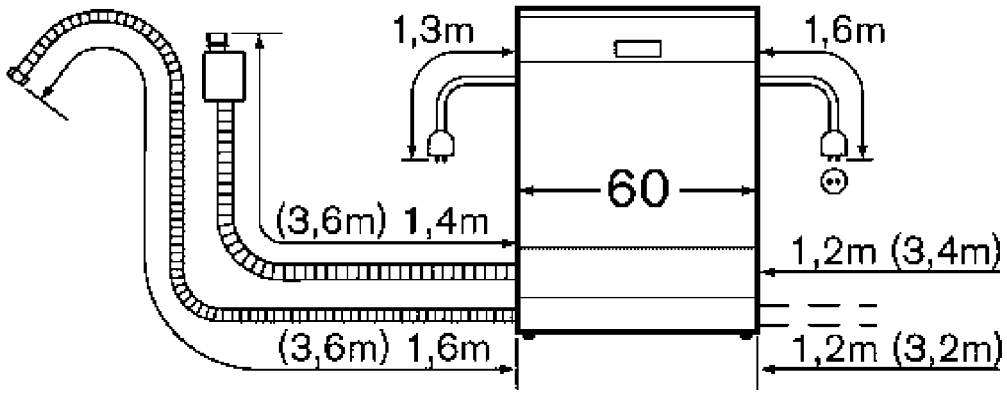
4. Installation and connection

4.1 Installing

In order to ensure that the lock functions perfectly and to prevent any leakages in the area of the door, the appliance must be perfectly aligned by means of the adjustable feet. In the case of integrated appliances, it is possible to adjust the middle adjustable foot at the back from the front. Please note: for built-under and integratable appliances, screw the appliance in an upward direction by means of the adjustable feet until the outer casing is at the same level as the working top.

4.2 Water connection

If the appliance is installed onto the drain with the standard length of hose, the max. permissible height above the floor is 90 cm. If the discharge hose is extended, a max. height of 80 cm is not to be exceeded.



Connection dimensions
for all dishwashers 60 cm
( ) Figures with lengthening pieces

4.3 Electric connection

Connect the appliance to a wall socket with earthing in accordance with regulations only. Please observe details on the identification plate (see technical data).

5. Functions

5.1 Aqua stop system

The valve system comprises two solenoid valves in line, with parallel electric controls, the fill-up valve and the safety valve. The safety function can be triggered by means of the safety level chamber or electrically by means of the float in the base pan. The water flow is then stopped mechanically. An electric solenoid valve, encased, is attached to the tap. From the valve the water supply hose leads to the integrated water inlet, and the electric control mechanism for the solenoid valve is guided through a leakage water hose to the inside of the machine where the base pan is located.

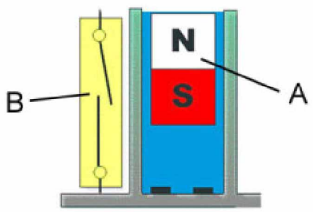
5.2 Safety function

Should functional defects in the dishwasher control system or in the structural elements occur, resulting in an over-filling of the machine, the valve combination will be closed by means of the safety system, thus blocking off the water supply. The discharge pump is switched on by means of the safety level switch. Pumping will continue until the filling level has once again been reached. Any leaks occuring within the machine are collected in the base pan. Leaks in the supply hose are guided to the base pan by means of the leakage water hose.

Once a set level in the base pan has been reached, the float activates the safety level switch by means of a switch lever, which then switches off the filling and safety valve electrically. At the same time the discharge pump is switched on, the rinse water is removed from the rinsing container, and the discharge pump switches onto continuous operation.

5.2.1 Salt and rinsing agent display

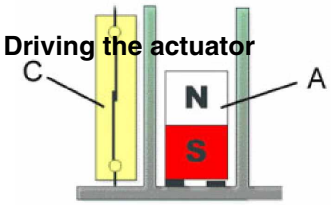
The reservoir is provided with a float and an integrated permanent magnet. This magnet triggers via the magnetic field a reed switch, which is fitted on the outside of the reservoir. This switch turns on the lights of the defect display in the operation panel.



A = Permanent magnet

B = Reed switch open

C = Reed switch closed



5.2.2 Spraying system

The rotor spraying system comprises three spraying levels, the lower and the upper spray arms and a top sprayer. The water supply to the upper spray arm and the top sprayer comes via a supply pipe installed on the inside of the back wall of the container. This pipe is connected on one of its two exits by means of a direct plug connection with the continuous flow heater located under the pump cavity.

The upper spray arm is attached direct onto the upper basket by means of its inlet pipe. The connection to the supply pipe is carried out by means of a variable attachment. In the case of appliances with a height-adjustable upper basket, the water supply to the spray arm is adjusted by means of this variable attachment.

The lower spray arm is mounted to the second outlet of the continuous flow heater directly above the pump cavity, and has a nozzle on the bottom in order to clean the flat sieve.

5.2.3 Continuous flow heater

In the water circulation, the continuous flow heater is used for the spray arms. When rinsing water is flushed through, a rubber membrane attached to the flange is actuated, and this flange switches on the safety pressure switch for the heater. When the pressure drops, the heater is switched off. The heating position is crossed and dry heating is prevented.

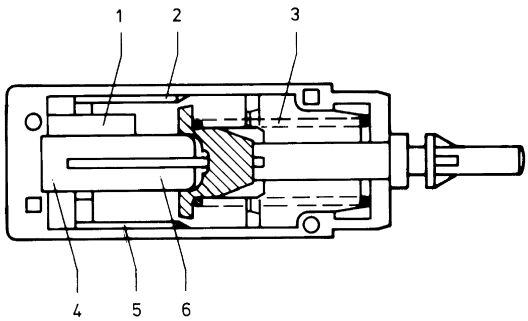
5.2.4 Rinsing and pump system

The circulating pump and the discharge pump as well as the continuous flow heater are connected to the pump cavity by means of plug connections. The continuous flow heater is also screwed to the pump cavity in such a manner that no pressure can occur. The sieve system comprises a fourfold filter system (a course filter, fine sieve cylinder, a fine flat sieve and a micro-fine sieve). The pump cavity in which the micro-fine sieve is positioned, is covered by the flat fine sieve. The flat fine sieve and the combined coarse and fine sieve cylinder are attached to the bottom of the pump cavity by means of a bayonet catch. The rinse water which flows into the pump cavity is sucked up by the circulation pump and forced into the continuous flow heater. If the pressure is sufficient, the push button for the heater is actuated by means of the flange membrane. Overheating is prevented by means of a temperature control which is connected in series and switches off at 85°C. This temperature control is combined with an NTC sensing element (negative temperature coefficient), comprising one component part.
The surface of the sensing element makes direct contact with the rinse water. The aqua sensor is positioned at the exit of the continuous flow heater and has its sensor in the flow of the rinse water in order to determine how dirty the rinse water is. The direct fitting of the discharge pump onto the pump cavity means that the impeller and the non-return flap are accessible when the cover in the rinse cavity is removed.

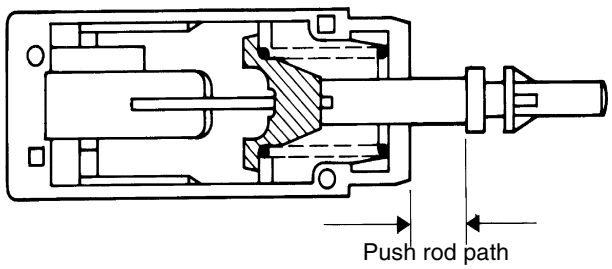
5.2.5 Actuator

The thermohydraulic system comprises a metal cylinder with a push rod. The cylinder is filled with a substance which expands greatly on heating.
A PTC (positive temperature coefficient) serves as a source of heat, making direct contact with the metal cylinder. A strong pressure spring brings the push rod back to its original position subsequent to switch-off of the heat source.

Construction

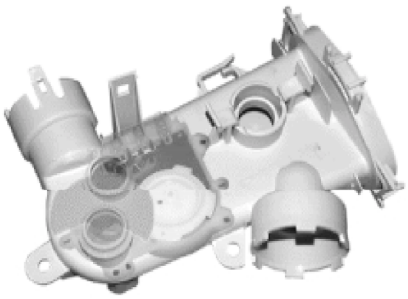


Actuator triggered



After voltage has been applied to the PTC, it heats up and transmits the heat to the metal cylinder which is filled with wax. The wax expands and presses the push rod out of the cylinder to the outside. The push rod transfers the mechanical movement to the release mechanism of the cleaning agent and rinsing agent dispenser. If the source of heat is switched off, cooling reduces the volume of wax. The pressure spring returns the push rod to its original position.
The release period is approx. 2 min.; the resetting time is approx. 3 min.

5.2.6 Water diverter



The water diverter is responsible for alternating the rinsing (the appliance alternates rinsing in the upper and in the lower basket, lower basket 60 sec. / upper basket 55 sec., alternation takes approx. 5 sec.), and comprises a synchronous motor with a gear transmission, a cam plate, a micro-switch and a slide. The synchronous motor is controlled by a triac. The synchronous motor drives the gear transmission, therefore driving the cam plate and the slide. The slide closes the respective water channel to the spray arms. Information on the position of the slide is passed on to the control system by the micro switches, which are activated by the cam plates. The water diverter is integrated in the continuous flow heater, and may only be exchanged as one whole unit.

5.2.7 NTC

The temperature safety switch applied (>85°C) is combined with the NTC sensing element for the programs. In the case of a defect, the heater is switched off when the water temperature reaches 85°C (impulse).

Temperature C°	Resistance in ohms	Tolerance+/- °C
25	48409	7.9
50	16542	6.2
60	11067	5.6
63	9669	5.5

5.2.8 Natural water valve / glass protection technology

Irreversible clouding of glass (glass corrosion) is a result of :

a) a low-alkaline cleaning agent
b) excessively soft water (< 3° dH)
c) the quality of the glass

If the degree of water hardness subsequent to recovery is in the range of below 3°C dH, there is an increased risk that the water could cause changes in the surface of the glass.
In the case of water hardness below 5° dH, the natural water valve adds tap water which has not been softened, so that the water reaches the region of 5° dH, which is gentle on glass.

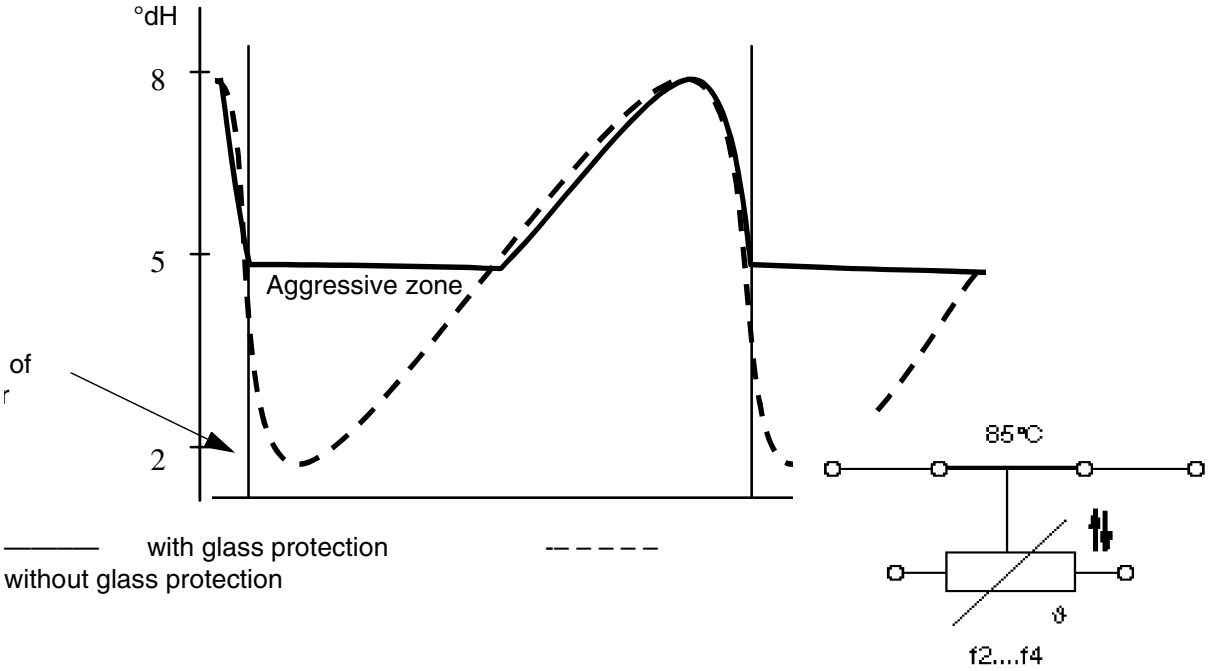
Attention: The natural water valve is closed without tension! -> Natural water is filled in !

Since the natural water valve has an ED of 25 - 30%, activation of the valve is limited in time (max. 210 sec.).

5.2.9 Glass protection technology (aqua-mix)

By means of a targeted control of the degree of water hardness, the effect of aggressive soft water on the dishes is avoided. Depending on the degree of hardness set (8 settings, from 0 to 7, setting on the front panel) and by means of a "bypass," fresh tap water is mixed with the softened rinse water, so that the degree of water hardness in the appliance is always at least 5°dH. The aqua-mix valve is activated by the electronics system and is located on the water softening device. In the case of naturally soft water, which has no negative effects on glass, the softening can be set onto "0", and the glass protection technology will then not be activated.

Change in degree of hardness of the water in the appliance during several rinses

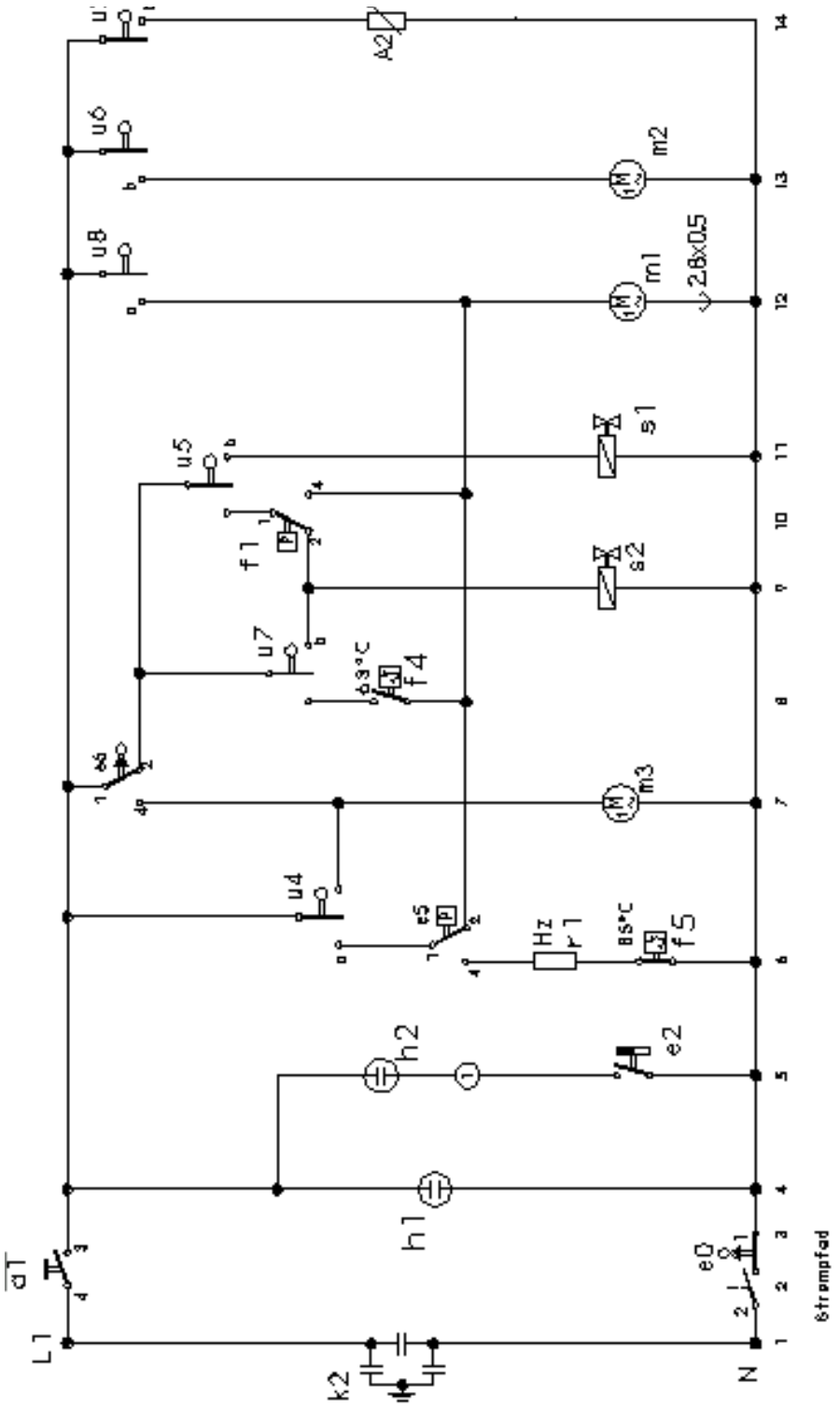


5.2.10 Alternating pumping procedure

In order to achieve a better cleaning of the fine sieve, the water is circulated and pumped out alternately 3 times for 5 sec. This means that water flows through the sieve in both directions. (Attention: noises).

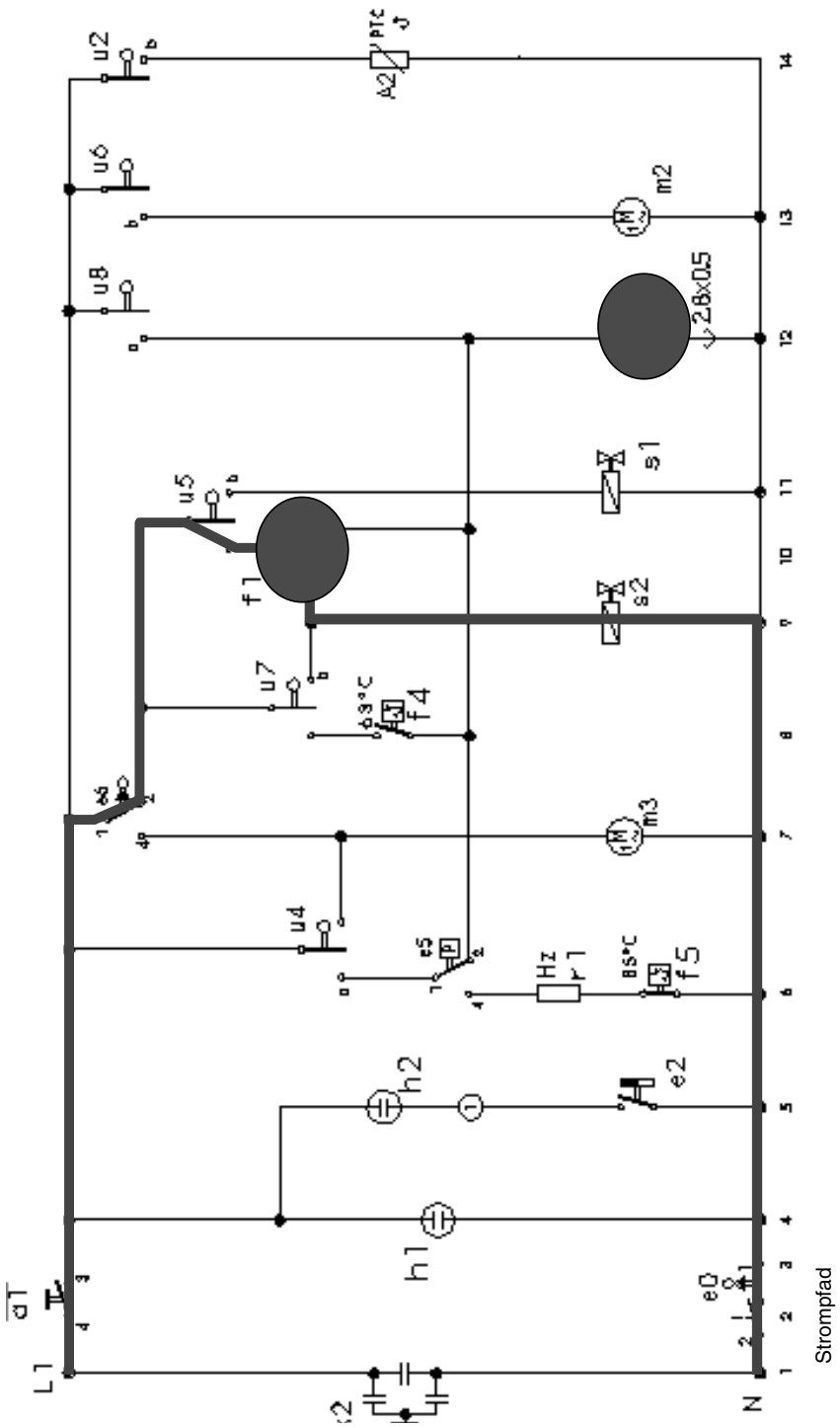
5.3 Filling procedures

5.3.1 Control without setting a time on filling (Static filling / dynamic filling)



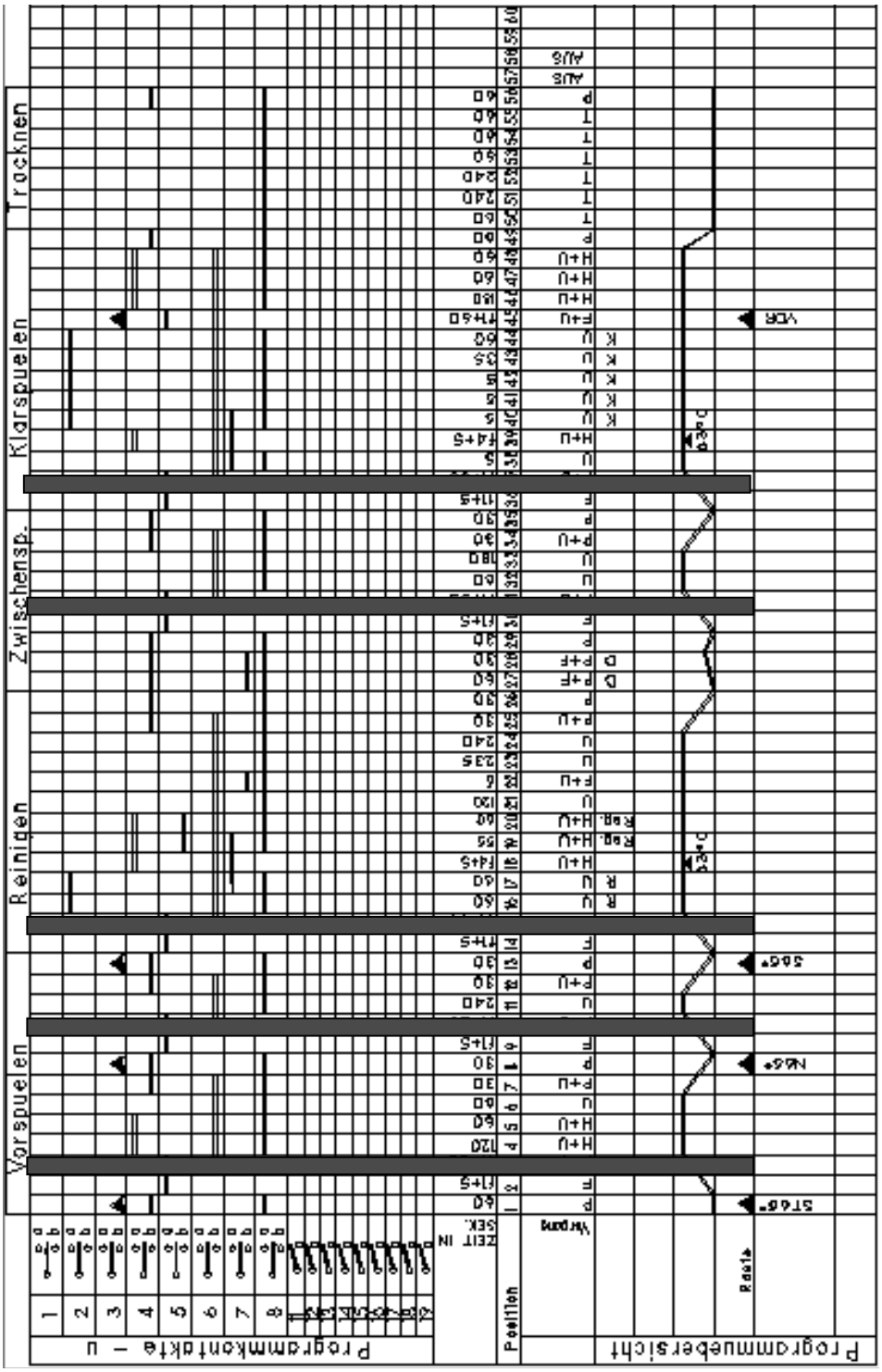
5.3.2 Control without setting a time on filling (Static without circulating)

Filling until the filling switch f1 activates the operating mechanism motor m1..

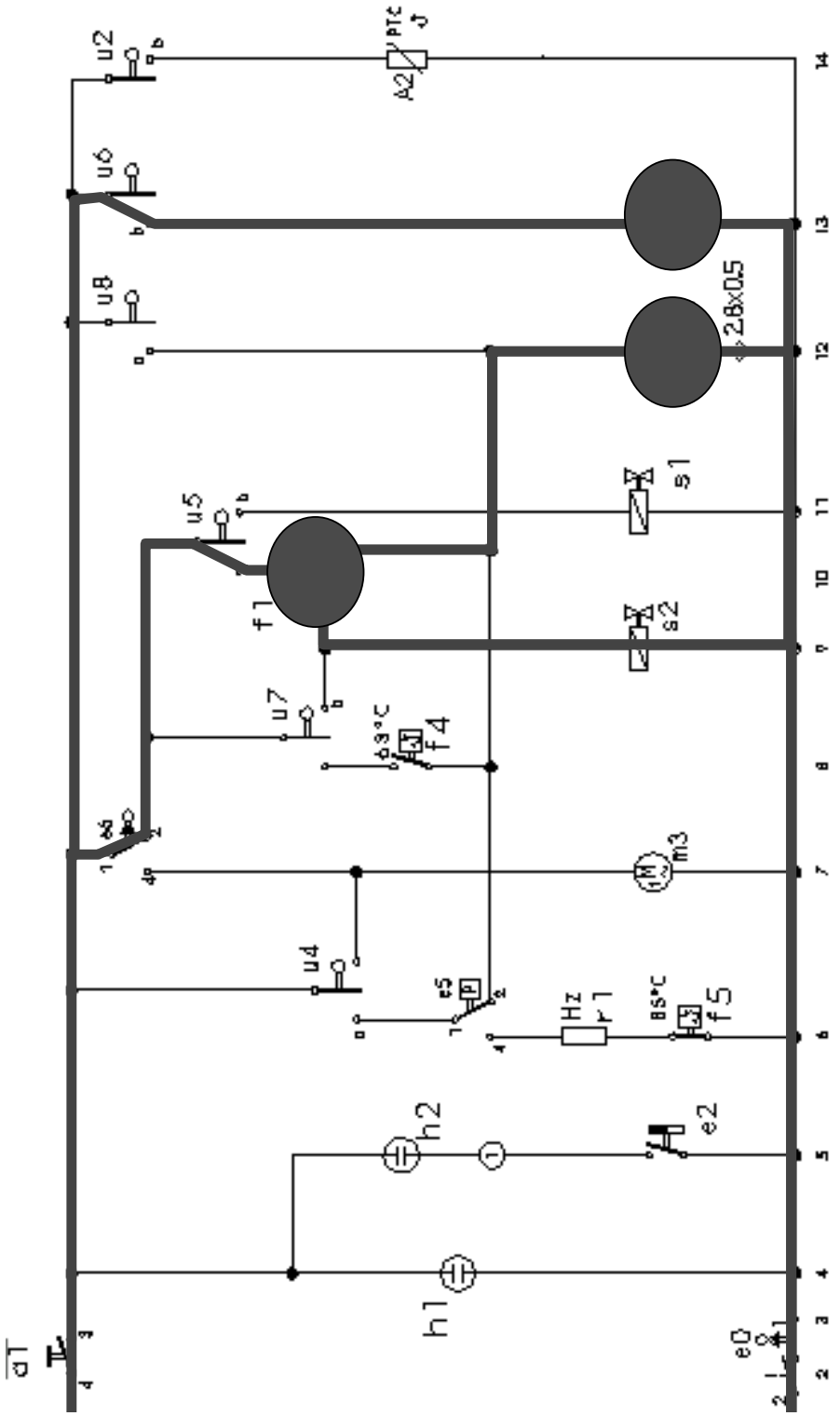


5.3.3 Control without setting a time on filling (Dynamic without circulation m2)

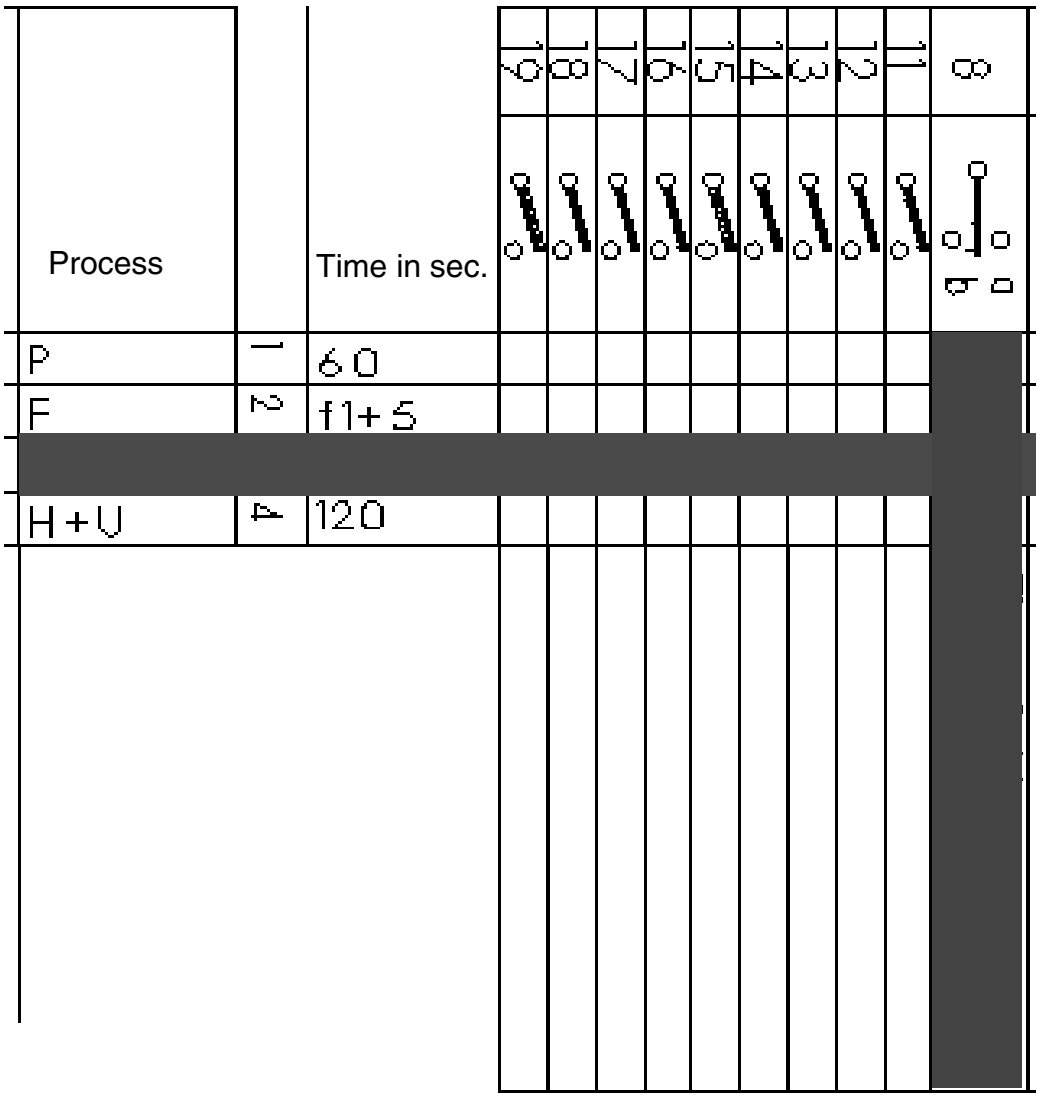
Filling until the filling switch f1 activates the operating mechanism motor m1.



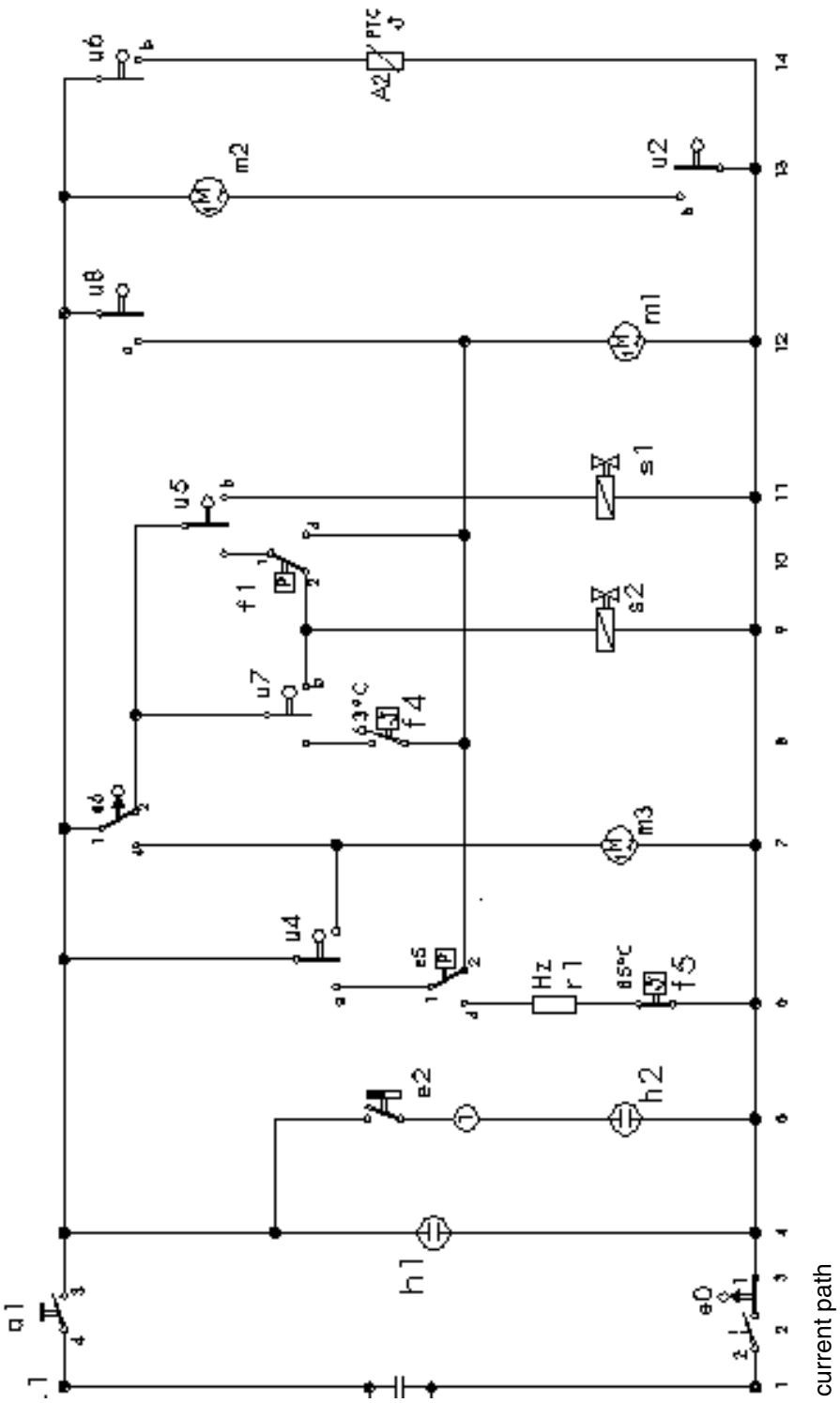
5.3.4 Control without setting a time on dynamic filling



5.3.5 Control without a time setting on dynamic filling

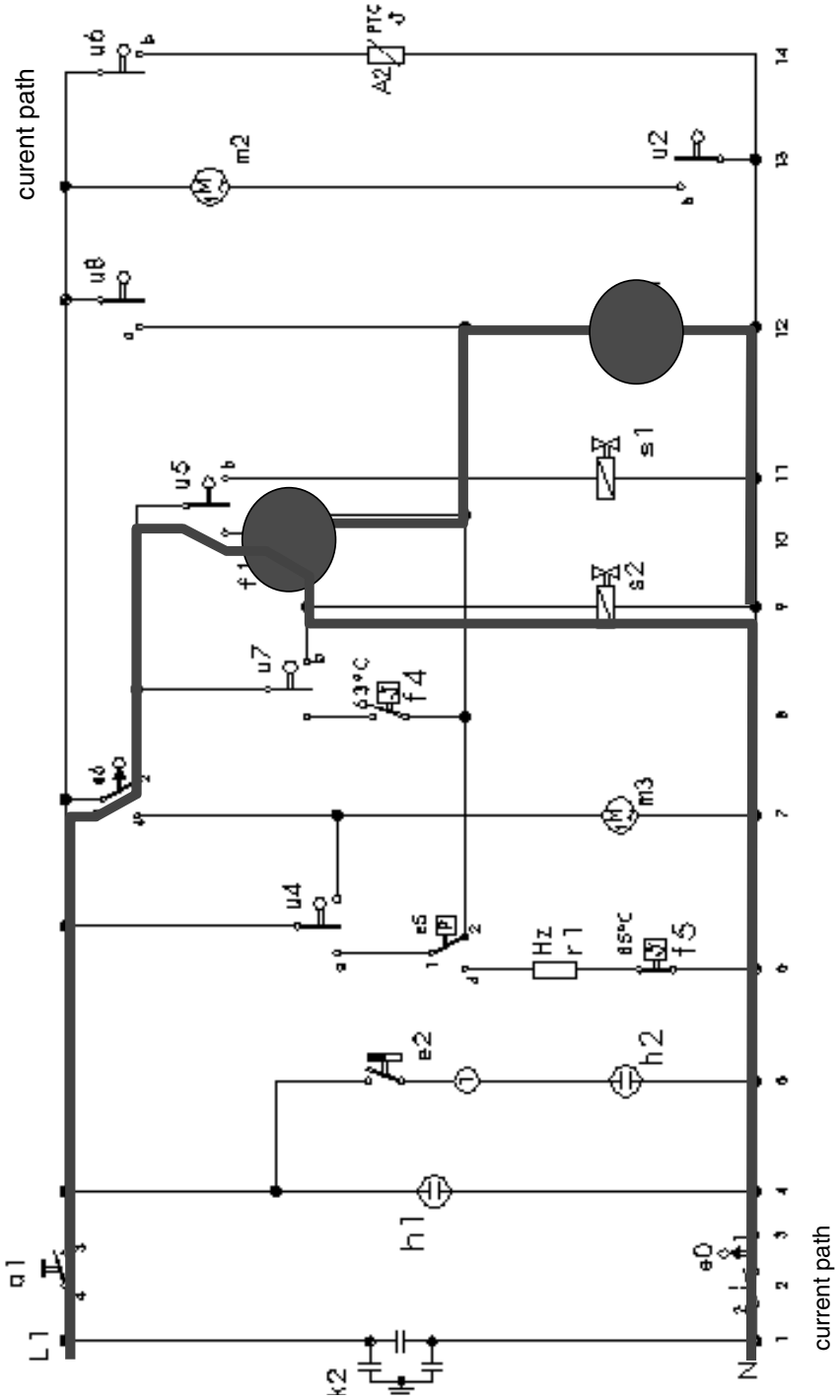


5.3.6 Control with a time setting on dynamic filling (Static filling / dynamic filling)



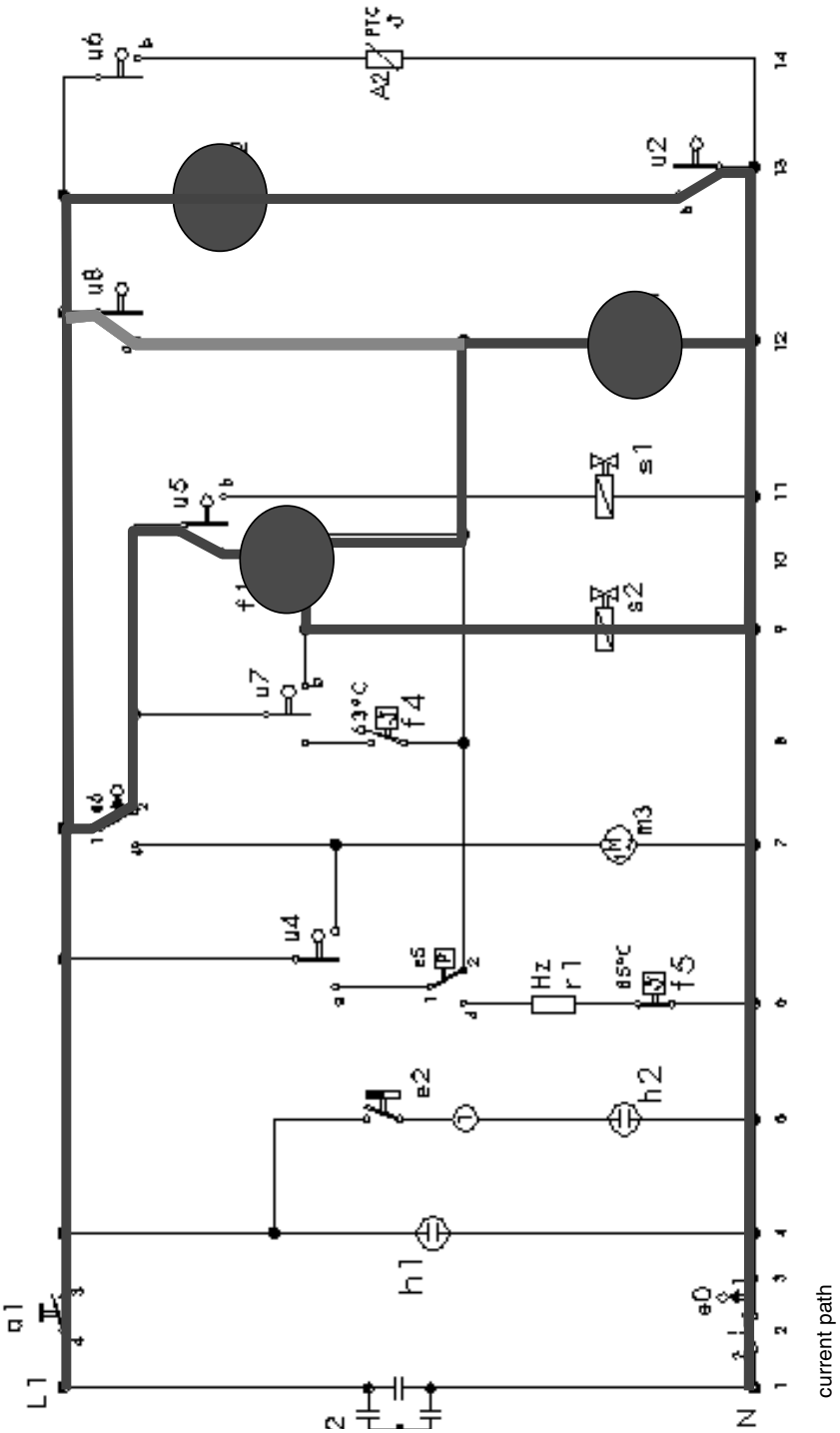
5.3.7 Control without a time setting on dynamic filling (Static without circulation)

Filling until the filling switch f1 activates the operating mechanism motor m1.

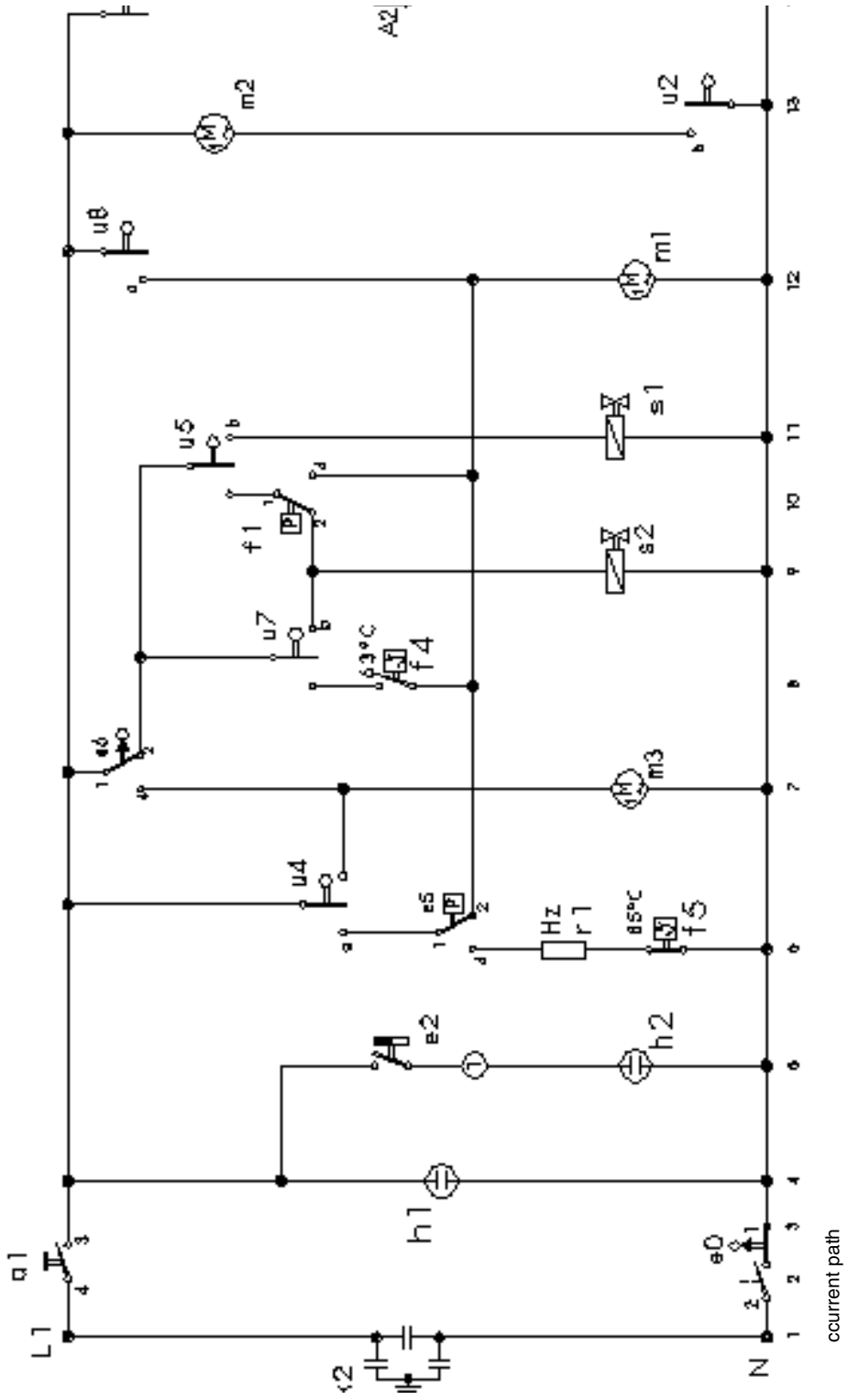


5.3.8 Control with a time setting on dynamic filling (Dynamic with circulation m2)

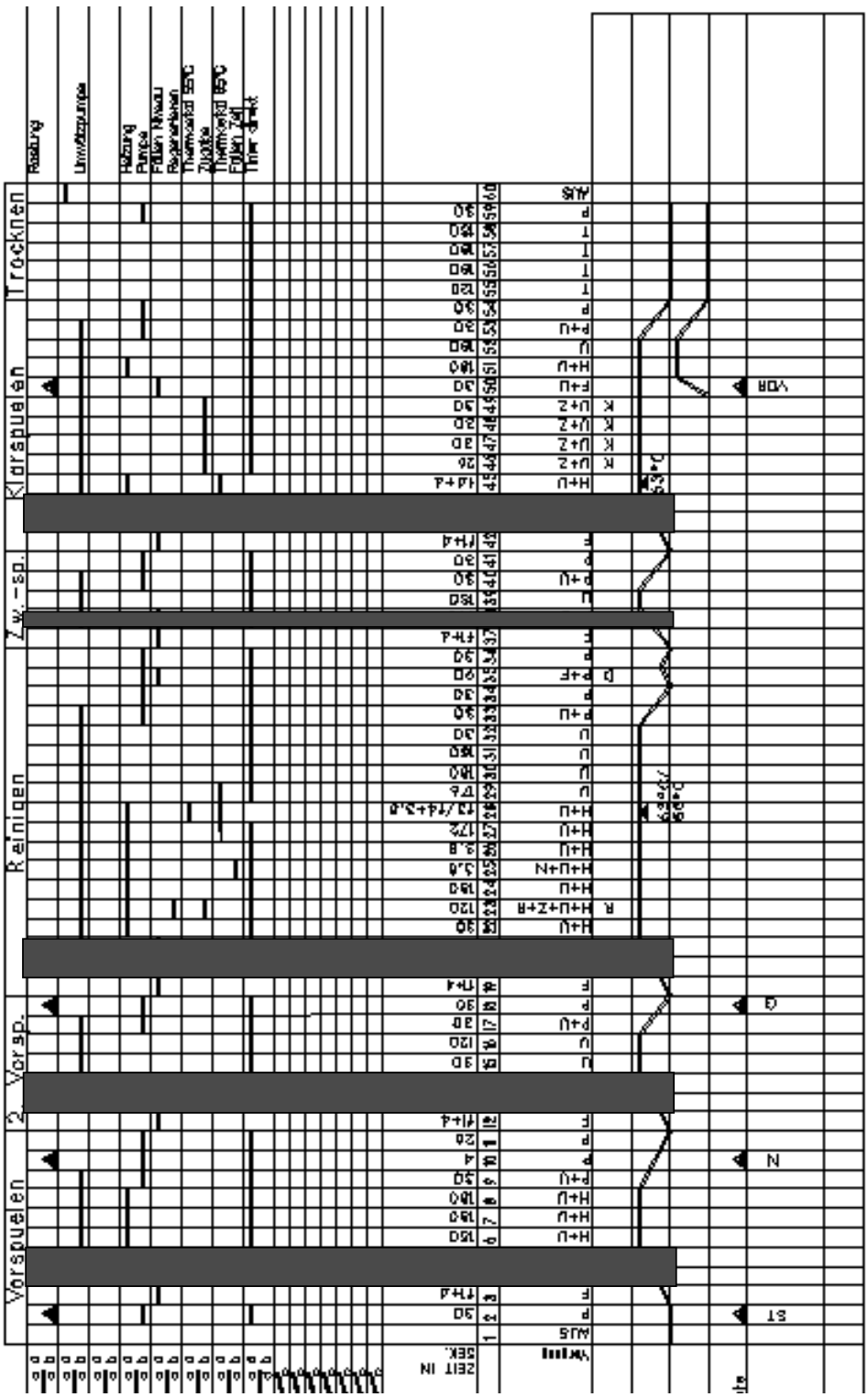
Filling until the filling switch fl activates the operating mechanism motor m1. Should, however, the filling switch not switch on, the contact u8 will activate the operating mechanism motor.



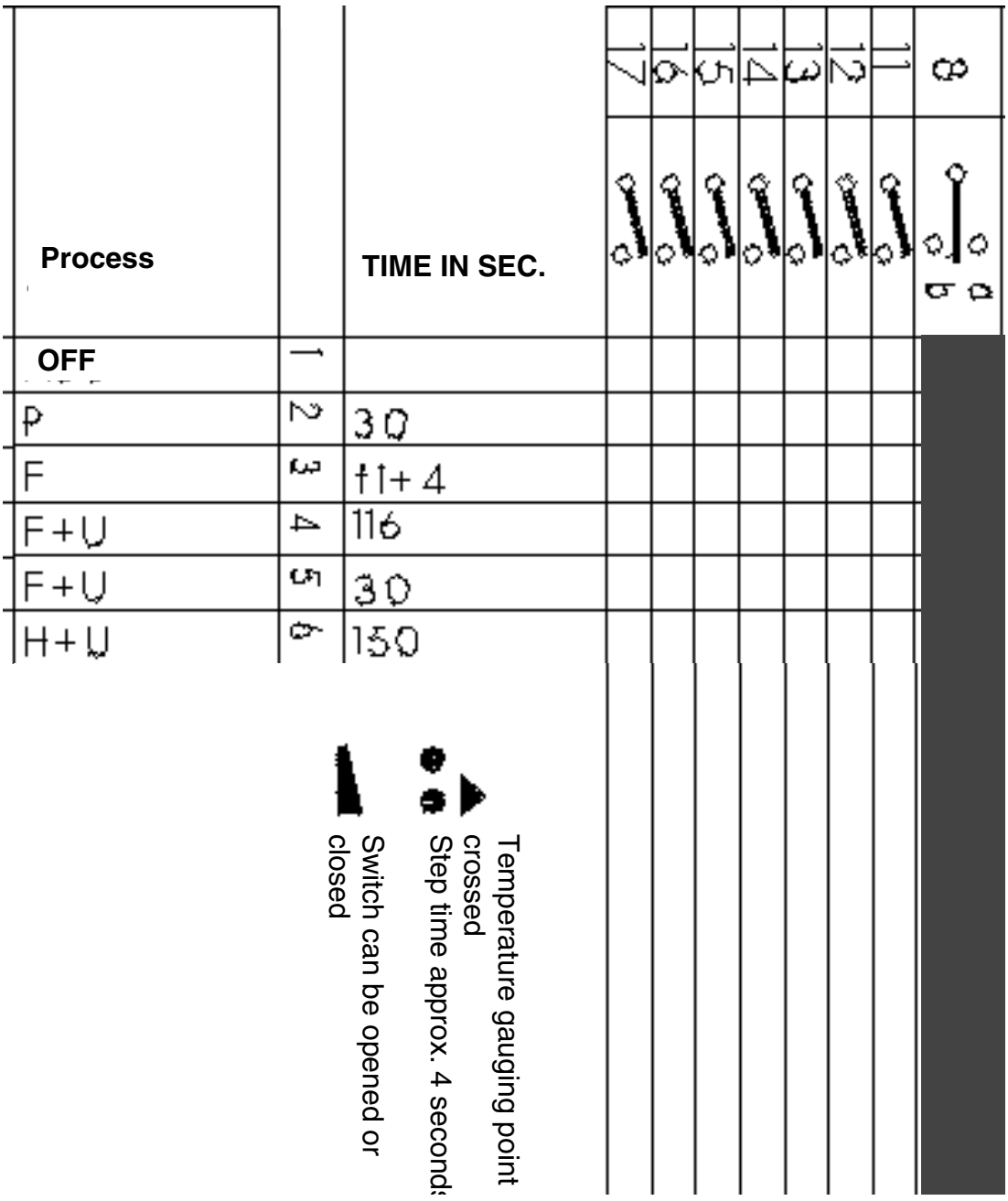
5.3.9 Control with a time setting on dynamic filling



5.3.10 Control with a time setting on dynamic filling



5.3.11 Control with a time setting on dynamic filling



6. Technical Data

6.1 Consumption I

	Intensive 70°	Normal 65°	Eco 50°	Gentle 40°	Fast 35°	Pre-rinse
Time in min. (Time saved with time limit button approx.)	112 (-25)	131 (-25)	140 (-130)	72 (-20)	31 (-2K on cleaning)	19 (-3)
Power consumption in kWh	1.6	1.45	1.05	0.8	0.6	0.1
Water consumption in litres (without activated aqua sensor)	21 (18)	18	12	15 (12)	10	4
Aqua sensor activated	yes	no	no	yes	no	no

The figures indicated may deviate upwards or downwards. The figures represent laboratory test data in accordance with EN50242.

6.2 General technical data

Voltage / Frequency	230 - 240V / 50Hz
Connected load	2.3 kW
Filament energy consumption	2.15 kW
Fuse protection	10 / 13 A

6.3 Component parts: technical data

	Circulation pump	Rinse pump EBS./2AL.	Actuator	Heater	Aqua stop valve	Natural water valve	Recovery/ discharge valve	Water diverter
Nominal voltage	230-240 V	230-240 V	110-240V	230-240 V	230-240 V	230-240 V	230-240 V	230-240 V
Frequency	50Hz	50Hz	50/60Hz	50Hz	50Hz	50Hz	50Hz	50/60Hz
Output		10W / 17W	-	2150W	-	-	-	3.2W
Resistance in	Ha = 80.5 HI1 = 85.5 HI2 = 13.4	170 ± 12 / 124 ±10	0.5-1.5k	22	2k	2.45k	2.45k	9.3k ±2.5%
Lift	3.1m	0.9m						
Delivery performance	60 l/min	10 l/min						
Flow rate					2.75 l/min			
Water pressure					0.5-10 bar			

7. Instructions for repair

7.1 Check list – Pumping off (draining)

Customer's information	Cause	Remedy
The pump can be heard to be working, but it does not pump any water, or, if so, only a little	Sieves are blocked.	Advise the customer, observe instructions on cleaning sieves in the instruction manual. Clean the sieve.
	Grid in suction supports (pump cavity) dirty.	Advise the customer. Clean the grid in the suction supports of the pump.
	Impeller cover (in the pump cavity) is not properly in position.	Instal the impeller cover correctly
	Non-return flap in the discharge is stuck (in the pump cavity under the impeller cover)	Remove the non-return flap. Check to see whether the flap and its location are soiled, and clean if necessary.
	Discharge pipe blocked.	Remove the blockage (do not forget the pipes in the appliance) Blockage in the region of the pipe connection to the water supply. Remove both discharge pipes in order to check.
Pump is making a buzzing noise	Pump is mechanically blocked (blockage or damage to the pump)	Clean the pump above the impeller. If necessary remove the pump
Pump is not working.	See too: pump is making a buzzing noise or pump can be heard to be working.	
	Pump is not being driven. The program was interrupted by switching off or opening the door, is still in operation (end position or 0 on the display was not waited for).	Advise the customer. Wait for the end of the program, or interrupt the program (reset) (press intensive 65° button and the second button on the right next to it for 3 sec.).
	Water tap was closed on drying, the heat exchanger had not yet been filled, the filling switch is waiting for the level.	Advise the customer. Wait for the program to end, only then close the tap. (If available, refer to aqua-stop).
	Pump is not activated.	Activate the pump (test routine) and check in accordance with the circuit diagram. Observe safety instructions.
The appliance pumps off for a while, circulates, pumps off, ...	Alternating pumping (rinse water pump and circulation pump are being activated alternately)	Advise the customer, see alternatingpumping.

7.2 Check list - Noises

Customer's information	Cause	Remedy
Knocking noises in the pipe network on letting in water	Rerouting or crosscut of the water pipes (usually only occurs in appliances with an aqua-stop valve, since the valve is connected direct to the tap).	Advise the customer and refer to a plumber (have a pressure reducer installed)
Rattling noises during the washing procedure	Spray arm is hitting dishes	Advise the customer, dishes have not been properly arranged in the dishwasher
Alternating noises in the rinse program	Alternating rinse technology (55 sec. period of rinsing in the upper basket, 5 sec. are required for alternating, followed by 60 sec. in the lower basket) by means of water diverter	Advise the customer, arrange the dishes in the dishwasher (dishes should definitely be put in on the left side of the bottom, at the back), see water diverter
	Alternating pumping (rinse water pump and circulation pump are activated alternately)	Advise the customer, see alternating pumping

7.3 Check list - Odour

Customer's information	Cause	Remedy
A smell of burning	Connections improperly extended.	Advise the customer. Observe safety instructions in the instruction manual.
	The socket to which the appliance is connected is charred (cause: poor contact with the socket)	Advise the customer; socket and connections must be replaced.
	Damage to the casing or insulation faults of the consuming device	Measure the entire consuming device (test routine), and check it with respect to the circuit diagram. Observe the safety instructions
	Poor electrical connection or leakage paths on electrical component parts (pay attention to the edge connector).	Clear leakage paths and contact resistances. Pay attention to porosity, maximum current circuits may not be extended.
A smell of chemicals	Cleaning or rinsing agent Binding means from the sound insulation (fleece or insulating mats)	Advise the customer. Customer determines chemicals, possibly change a product (with a lemon scent) or recommend a fragrance dispenser. Advise the customer with respect to a new fragrance.
	Evaporation of electronic component parts or plates.	Advise the customer.
Smell of rotting	Permanent excessively low dosage of the cleaning agent	Advise the customer; observe instructions for dosage.
	Deposits under the sieve cover, in the pump cavity or in the area of sealing.	Advise the customer, recommendation: Machine care product or a more intensive program.
	The smell comes from the drain of the sink (the siphon may be extremely soiled or has been sucked empty. Appliance incorrectly connected to the siphon.	Advise the customer and contact a plumber. If possible, connect properly, and if necessary refer customer to a plumber.

7.4 Check list - Control / Module

Customer's information	Cause	Remedy
2 H on the display	The appliance operates for more than 99 min.	Advise the customer; see consumption data.
Running time too long	Alternating rinse technology, energy saving.	Advise the customer, see consumption data or alternating rinse technology.
Component part is not being activated	Triac on the module does not connect through, possible traces of clouding visible on the module.	Prior to replacing the module, it is essential to fully measure the connected consumption appliance test (valves, actuators, etc.). Observe the safety instructions.
Incorrect pre-rinse time	On pre-rinsing, the appliance indicates 11 min. on the display, and runs for 19 min. (19 min. are indicated in the instruction manual; software error	Advise the customer. Replacing the module will at present not result in any remedy.
Charred connections	Connection plug	The plug repair set Mat.-No. 26 6753 can be used for defect connections to electrical controls.

7.5 Calcareous deposits

Customer's information	Cause	Remedy
Calcareous deposits on the dishes	Degree of hardness incorrectly set or hard natural water > 50°dH Check the remaining hardness in the cleaning program and rinsing program with a rinse agent	Set the range of hardness Advise the customer, use a cleaning agent containing phosphates.
	Does not recover	Set the recovery setting and control the function (observe the emptying of the recovery chamber) Closely check the recovery valve (mechanical– valve shaft; electrical – control / coil)

7.6 Starch deposits

Customer's information	Cause	Remedy
Starch deposits on the dishes	Insufficient cleaning agent (wrong cleaning agent)	Advise the customer, use a cleaner with enzymes.
	Wrong program selected (selected program too weak)	Advise the customer. Select the right program.
	Appliance connected to the warm water supply, water inflow temperature too high	Check the hot water connection (should be less than 60° C). Advise the customer. Possibly connect to the cold water supply.

7.7 Check list –Results after washing

Customer's information	Cause	Remedy
Residual food or sandy-type deposits on the dishes	Coarse sieve, micro sieve and fine sieve dirty; sieve not engaged in the pump cavity	Advise the customer, sieve insert and care
	Spray arm nozzles, top spray blocked	If necessary, clean the parts, advise the customer
	Spray arm pivot moves with difficulty (Dirt in the region of the pivot)	If necessary, clean the parts, advise the customer
	Foreign body in the region of the discharge hose connections to the water inlet (drain passage)	Clean
	Grid in the pump cavity partly blocked	Advise the customer, clean
	Discharge hose buckled	Instal the discharge hose correctly
	Excessively low dosis of cleaning agent, wrong program selected	Advise the customer, follow the instructions for dosing the cleaning agent, use programs with higher temperatures (see instructions for use)
	Unsuitable arrangement of dishes (very large dishes such as pots in the bottom basket), avoid contacting, rows of spikes bent	Advise the customer, align the rows of spikes (see instructions for use)
	Spray arm blocked by dishes or cutlery	Advise the customer
Residual food or sandy-type deposits on the dishes in the upper basket	Air suction noises; irregular operation of the circulation pump, too little water in the appliance (pay attention in the case of alternating rinse technology: intervals of approx. 1 min.)	Check the level regulating function (carry out the filling procedure)
	Non-return flap leaking, dirty water flows back into the appliance	Remove the non-return flap (under the rinse water pump cover), check the flap and its location for dirt and, if necessary, clean.
	Rinsing in the bottom basket only	Blockage in the rinse circulation of the upper basket. It is essential to observe that in the case of some programs, rinsing only takes place in the bottom basket until the required temperature has been reached. See programs or circuit diagrams.

7.8 Water-soluble deposits or deposits of regenerating salt on the dishes

Customer's information	Cause	Remedy
Water-soluble deposits	Regenerating salt on the dishes	
	Lid of the salt dispenser not tight (check the screwing)	Advise the customer, rectify the leak.
	Recovery valve leaking (recovery chamber slowly emptying)	Check the valve and its positioning
	Recovery valve constantly activated	Electrical check using the circuit diagrams
	Glass starts to cloud: can only apparently be wiped off	See damage to the dishes
	Retarding of rinse water	See residual food

7.9 Discolouration / colour deposits

Customer's information	Cause	Remedy
Colour deposits	Insufficient cleaning agent used	Advise the customer, increase the quantity of the cleaning agent
	Discoloration of plastic caused by tomato deposits, tea, coffee, etc.	Use a cleaning agent containing chemic. In the case of discolouration in the appliance, recommend a machine cleaning agent.
	Cleaning agent very lumpy, cleaning effect and dissolving properties deteriorating	Advise the customer, store the cleaning agent in a closed container in dry conditions.
	Weak program selected (in the case of short cycle times and low temperatures the contact time of the oxygen bleach is too short	Use the program
Rainbow-like streaks	Silicate deposits only on glasses (cannot be removed)	No remedy possible (damage to glass)
	Rinsing agent dosage set too high (can be rinsed off with water)	Reduce the dosage setting
Silver cutlery tarnished	Discoloration occurs due to sulfur compounds contained in the air and in various food rests.	Advise the customer. Rinse silver cutlery immediately after use.

7.10 Residual cleaning agent

Customer's information	Cause	Remedy
Residual cleaning agent	Cleaning agent dispenser top blocked by dishes (does not open completely)	Advise the customer, unsuitable arrangement of dishes
	Cleaning agent dispenser top does not open completely	Replace the spring on the dispenser.
	Unsuitable program selected	Advise the customer
	Tabs used in the fast or economy program	Dissolving time of the tabs too long
	Tabs used incorrectly (observe use in the dispenser or in the cutlery basket)	Advise the customer, observe the instructions for use for the tabs
	Spray arm nozzles blocked, (sieves not properly engaged)	Advise the customer
	Dispenser device blocked from spray, (large pot or similar object placed on the left side)	Advise the customer
	Check draining, non-return flap	See residual food
	Cleaning agent very lumpy, cleaning effect and dissolving properties deteriorating	Advise the customer

7.11 Damage to the dishes

Customer's information	Cause	Remedy
Beginning or has already occurred, irreversible (not to be remedied)	Degree of hardness set too high, residual hardness in the cleaning or rinsing process <5°dH	Optimise the setting subsequent to testing
Glass clouding	Glasses not dishwasher-compatible (glasses are usually only suitable for use in dishwashers)	Advise the customer, extract from a letter on glass by Riedel (manufacturer of glass)
	Selected program too intensive	Advise the customer, select the most gentle program possible in the case of glass (low temperature < 50°C)
	Reaction time of steam too long in the drying process	Advise the customer, do not switch on the appliance and then only take the dishes out after a long time, such as leaving the dishes in the dishwasher overnight
Mechanical damage (scratches or breakage)	Scratches caused by contact points or contact surfaces with other dishes	Advise the customer, avoid contact points when putting the dishes into the dishwasher
Dishes faded	Dishes not dishwasher-compatible	Advise the customer, use dishes which are dishwasher-compatible
Rust on the cutlery	Rust on the cutlery: cutlery not dishwasher-compatible (knife/knife blade steel is usually less rust-resistant	Use dishwasher-compatible cutlery ! (higher proportion of chrome and nickel, at least 18/8 or 18/10)
	Very thick film of rust: caused by corrosive dishes or dish baskets	Advise the customer, do not wash any rusty objects such as old pots or pans in the dishwasher.

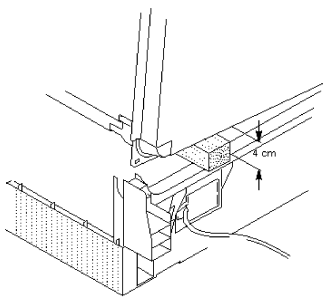
7.12 Results after drying

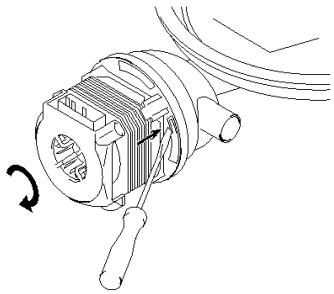
Customer's information	Cause	Remedy
Does not dry properly	No rinsing agent in the dispenser	Advise the customer
	Appliance connected to the warm water supply. The appliance is suitable for connection to the warm water supply; this is, however, not recommendable.	Advise the customer, point out the function of the heat exchanger and, if necessary, connect the appliance to the cold water supply
	Appliance does not heat up.	Check the heating circuit using the wiring diagrams. Pay attention to the pressure switch on the continuous flow heater (the circulation pump can only build up sufficient pressure if there is enough water in the appliance).
	Program without drying selected	Advise the customer, see program procedures
	In the case of tabs with an integrated rinsing agent, the rinsing agent has dissolved too soon.	Advise the customer, tabs not suitable for this particular program
	Dishes which do not dry easily.	Advise the customer, and, if necessary, switch on the intensive drying cycle

8. Dismantling the component parts

8.1 Circulation pump

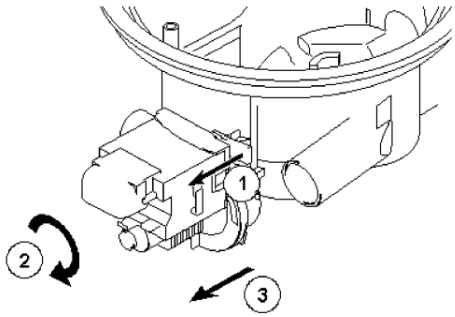
Remove the side walls and the base sheet, loosen the connection between the stainless steel container and the plastic base pan on the right, comprising 2 screws (at the front and at the back). Lift up the container and secure it with an object which is approx. 4 cm thick (picture on the left). The circulation pump is engaged. Using a screw driver, press the latch on the right side of the circulation pump to the inside and turn the pump to the right (picture on the right). The pump can then be pulled off. Assembly is carried out by means of a reverse procedure. Prior to installment, it is advisable to use dishwashing liquid so that the seal will slide more easily.





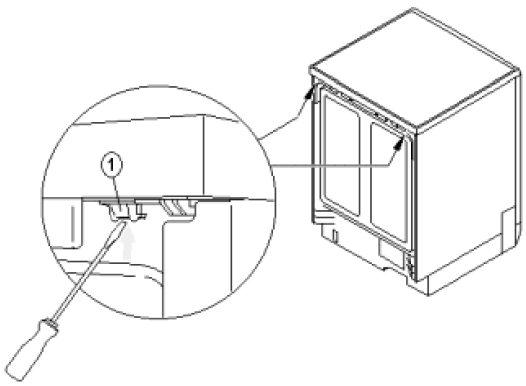
8.2 Rinse-water pump

Remove the base cover and the base sheet. The rinse-water pump is engaged to the pump cavity at the front on the left. In order to dismantle it, the lever (1) must be disengaged, then the pump must be turned towards the front (2). After approx. a quarter turn, the pump can be lifted off (3)



8.3 Working top

At the back of the working top, on the left and on the right, latches (1) are located, and these must be pressed upwards. The working top is then pulled to the back and lifted.



9. Controls, customer service test routine and circuit diagrams

Abbreviations / terms

A	=	Drain rinse (heat exchanger)
R	=	Rinse (softener)
F	=	Fill
H	=	Heat
P	=	Pump
RE	=	Regenerate
C	=	Circulate
Z	=	Dispenser-cleaning agent/ rinsing agent
ME	=	Measure the inflow temperature
PA	=	Pause
PR	=	Check regeneration
TR1	=	Measure turbidity
TR2	=	Calibrate the turbidity sensor
PF	=	Pre-fill (by means of F1 – level switch)
UB	=	Upper basket rinse
DB	=	Double basket rinse
HP	=	Heating plus (temperature increase of 2 °C)
CW	=	Cold water
WW	=	Warm water

a1	=	Main switch
e0	=	Integrate door switch
e2/3	=	Reed switch
e6	=	Float switch
f1	=	Water level regulator
NTC	=	Temperature detector
f5	=	Temperature regulator
k5	=	Interference suppression
k1	=	Display and operating module
k2	=	Control module
k3	=	Time preselection
m2	=	Recirculation pump
m3	=	Draining of pump
m5	=	Soft water
r1	=	Heater
e5	=	Interruptor
s1	=	Regeneration valve
s2	=	Fill valve
s3	=	Outlet valve
A1	=	Upper basket actuator
A2	=	Dispense actuator
I4	=	Aqua sensor
x2	=	Service connection
s4	=	Natural Water

Aktuator	=	Actuator
Anlass-PTC	=	Starter PTC
Anzeige- und Bedienmodul	=	Display and operating module
Aquasensor	=	Aqua sensor
Bedien- und Steuermodul	=	Operating and control module
Enstörung	=	Interference suppression
Hauptschalter	=	Main switch
Heizung	=	Heater
Integr. Türschalter	=	Integrated door switch
je nach Ausstattung	=	acc. to equipment
je nach Farbe	=	acc. to colour
je nach Motortyp	=	acc. to motor type
Klemme mit Entstörung	=	Interference suppression terminal
Kondensatormotor	=	Capacitor motor
Kupplung	=	Coupling
Laugenpumpe	=	Drain pump
Magnetventile	=	Magnetic valves
Modul	=	Module
Niveaudruckdose	=	Level gauge
PTC-Motor	=	Motor PTC
Reedschalter Salz/Klarsp.	=	Reed switch salt / rinse aid
Reedschalter	=	Reed switch
Schutzleiter	=	Protective conductor
Schwimmerschalter	=	Float switch
Sicherheitsschalter	=	Safety switch
Steuerungsmodul	=	Control module
Temperaturregler + NTC	=	Temperature regulator + NTC
Temperaturregler	=	Temperature reguator
Temperatursensor	=	Temperature detector
Türschalter	=	Door switch
Wasserstandsregler	=	Water level regulator
Zeitvorwahl	=	Time preselection

9.1 Coding instructions for an electronics system with H controls
(IG 634.2)

Subsequent to the replacement of the standard electronic control mechanisms installed, the control system must once again be coded to comply with the appliance programs (see chart).

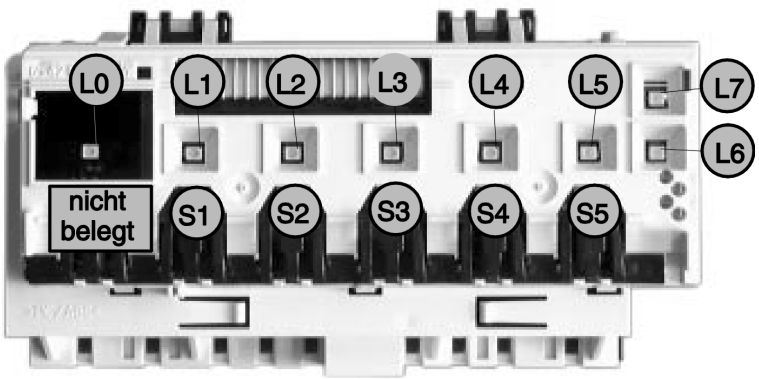
Attention: In the case of appliances with 3 programs/buttons, the control system must be programmed prior to fitting the panel cover.

1. **Instructions:**
   Press the buttons S2, S3, S4 and S5 simultaneously, keep them pressed and activate the main switch. As long as the buttons S2 to S5 remain pressed, the LEDs L2 to L5 will flash.
   Subsequent to releasing the buttons S2 to S5, the current coding will be indicated as a binary code by means of the LEDs L2, L3 and L4 (see code chart).
2. **Setting variants:**
   The various variant codes (see chart) can be set by pressing the S2 button.
3. **Storing the code:**
   On switching off the appliance, the new variant/code is stored.

Code chart

Coding	S1	S2	S3	S4	S5	LED 2	LED 3	LED 4
0	Intensive 70°	Normal 65°	ECO 50°	Fast 35°	Pre-rinse	o	0	0
1		Normal 65°	ECO 50°	Fast 35°	Pre-rinse	X	0	0
2		Normal 65°	ECO 50°	Pre-rinse		0	X	0
3						X	X	0

LED off = 0 LED on = X



Program symbols

Intensive 70° ECO 50°

Normal 65° Fast 35° Pre-rinse

9.2 Customer service test program: control H (without heat exchanger)

No.: 5600 009 888 (Abbreviations see 4.2.8)

	INDEX	Function	Temperature	Time [s]	Sensor	Filling quantity ZK / OK
	0	P		30		
	1	PF				
	2	F			F1	max. 6l
	3	C + H + Z	max. 72°C	120		
	4	C + H	65°C			
	5	C + H + R	max. 72°C	120		
	6	P		60		
	7	R		60		
	8	P		30		

The test program has been selected if the S2 and S4 buttons are pressed when switching on the dishwasher at the main switch.

The following will be indicated on the control panel:

- LEDs L2 and L4 are flashing.
- As long as both the S2 and the S4 buttons are kept pressed after switching on, the variant coding will be indicated as a binary code by means of the L2, L3 and L4.
  e.g.: L2 always on = Variant 1 ,
  L2 + L3 always on = Variant 3, and so on.
- The respective LED will light up when one of the program buttons is pressed.
- On pressing the S3 button, the fault indicators and the end LEDs will also light up.

The customer service program is started when the S2 and S4 buttons are pressed. The customer service test routine ends when the main switch is switched off.

- The fault is indicated by means of the program LEDs:

  L2 always on = heating fault

  L3 always on=filling fault

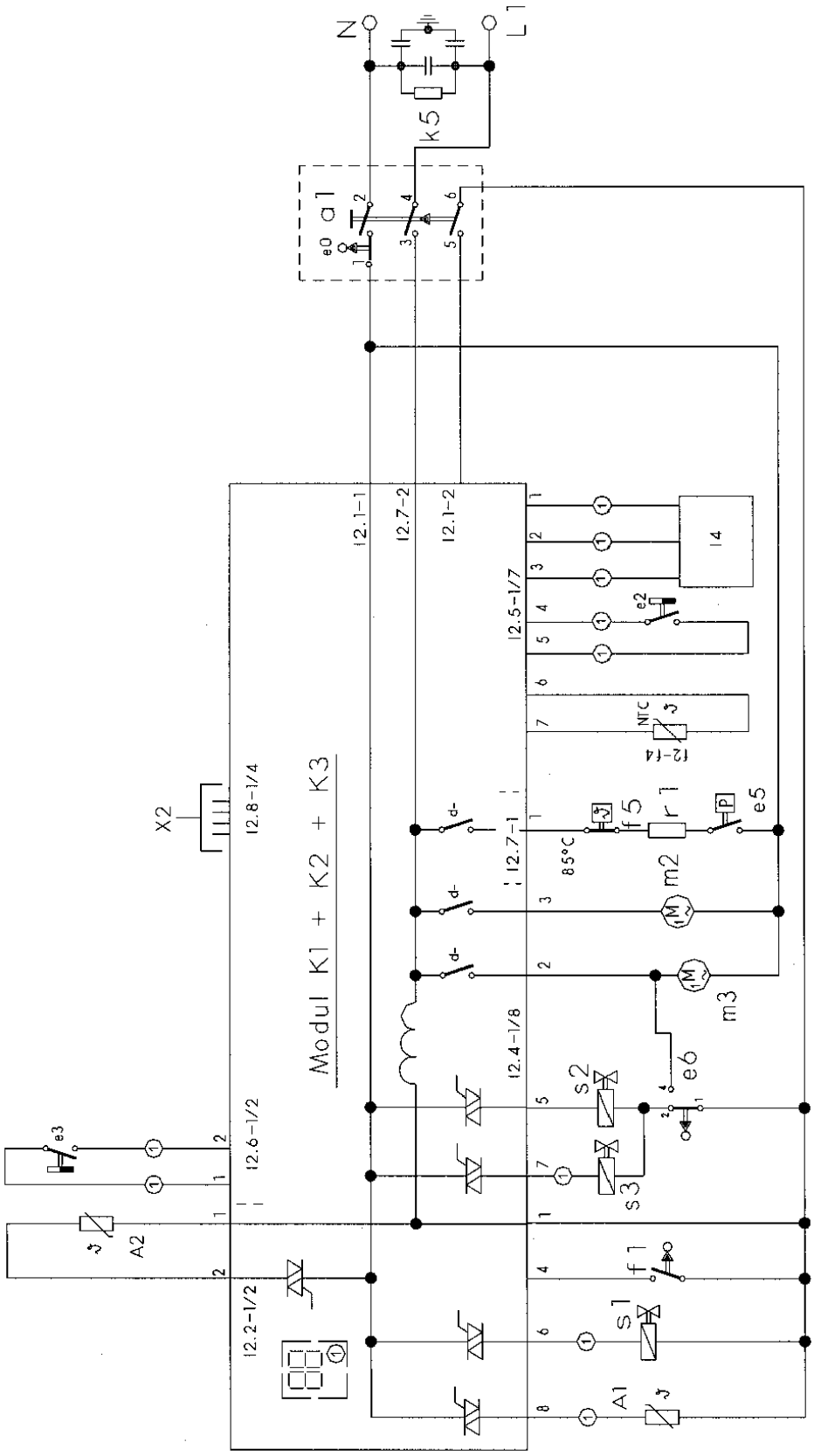
  L4 always on=NTC fault (interruption or short circuit)

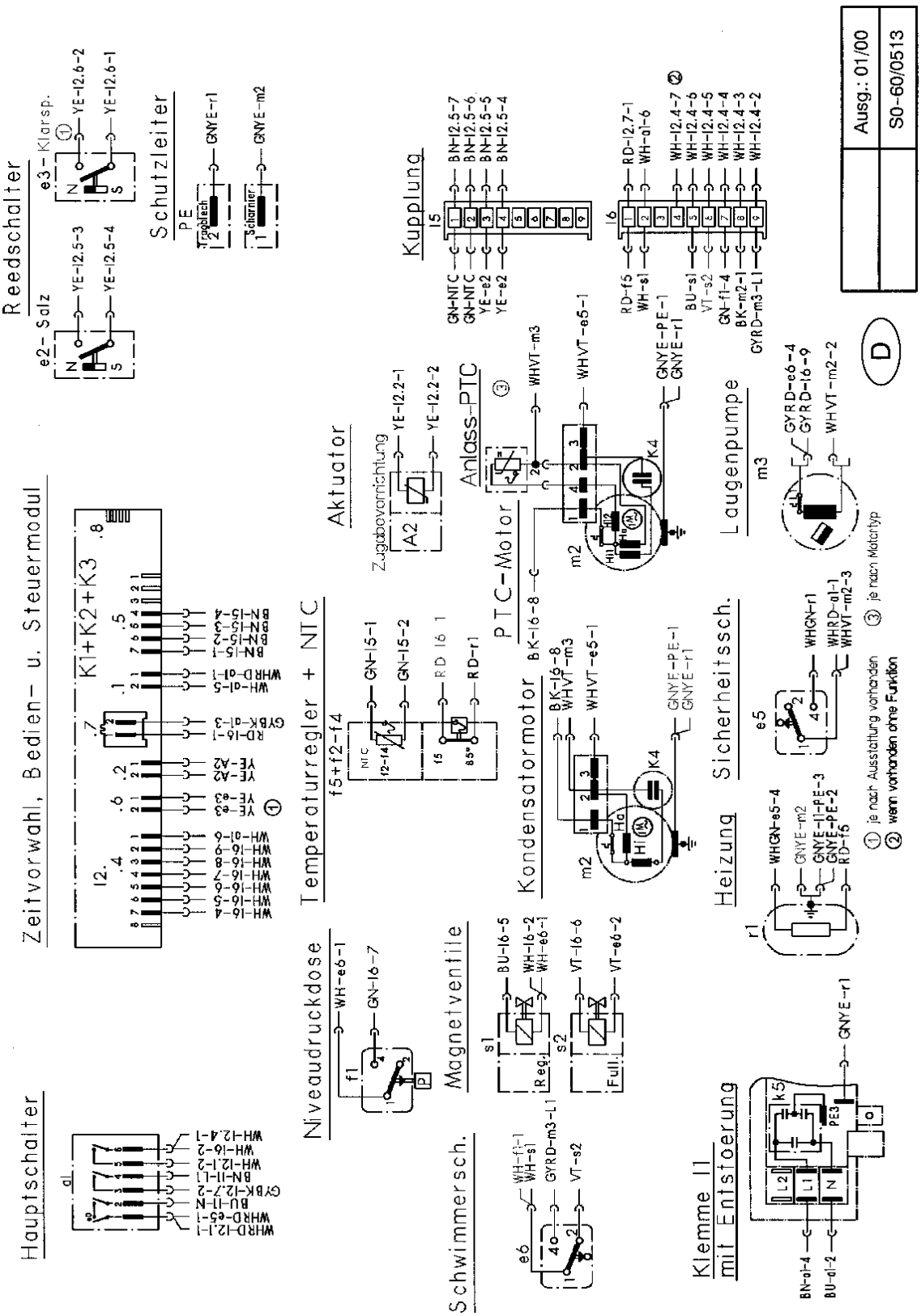




The next step in the progra be started when the S3 b ed
(Exception: In the filling s is only possible to cont xt stage by means of the filling switch F1).

9.3 Circuit diagrams IG 634.2





9.4 Coding instructions for an electronics system with G controls

(IG 644.2)

Subsequent to the replacement of the standard electronic control mechanisms installed, the control system must once again be coded to comply with the appliance programs (see chart).

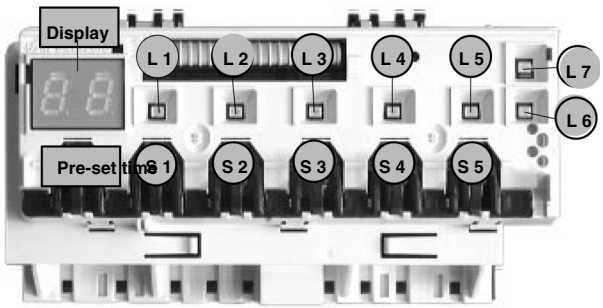
Attention: In the case of appliances with 3 or 4 programs/buttons, the control system must be programmed prior to fitting the panel cover.

1. **Instructions:**
   Press the buttons S2, S3, S4 and S5 simultaneously, keep them pressed and activate the main switch. As long as the S2 to S5 buttons remain pressed, the LEDs L2 to L5 will flash.
   Subsequent to releasing the buttons S2 to S5, the current coding will be indicated as a code on the display (see code chart).
2. **Setting variants:**
   By pressing the S2 button the various variant codes can be set (see chart).
3. **Storing the code:**
   On switching off the appliance, the new variant/code is stored.

Code chart

Code indication in the display	**S0**	**S1**	**S2**	**S3**	**S4**	**S5**	**Button** Coding
20	PST	Intensive 70°	Normal 65°	ECO 50°	Fast 35°	Pre-rinse	0
21	PST	UB	Normal 65°	ECO 50°	Fast 35°	Pre-rinse	1
22	PST	Normal 65°	ECO 50°	Fast 35°	Pre-rinse		2
23	PST	UB	Normal 65°	ECO 50°	Pre-rinse		3
24	PST		Normal 65°	ECO 50°	Pre-rinse		4
25	PST	Normal 65°	ECO 50°	Gentle 40°	Fast 35°		5
26	PST	Normal 65°	ECO 50°*	Fast 35°	Pre-rinse		6
27	PST	Intensive 70°	Normal 65°	ECO 50°*	Fast 35°	Pre-rinse	7

PST = Pre-set time UB = Upper basket rinse *= Energy label A-B-D



Program symbols

Intensive 70° ECO 50° Gentle 40°

Normal 65° Fast 35° Pre-rinse

9.5 Customer service test program: control G (with heat exchanger)

	INDEX	Function	Temperature	Time [s]	Sensor	Fill quantity ZK / UB
	0	P		30		
	1	PF			F1	
	2	F				4.5 / 3.6
	3	C+H+TR1+TR2	max. 72°C			
	4	C + H + Z	max. 72°C	120		
	5	C + H	65°C			
	6	C + H + R	max. 72°C	120		
	7	P		60		
	8	D + A		60		
	9	P + A		30		

The customer service special program is selected if the S2 and S4 buttons are pressed when switching on the dishwasher at the main switch.

The following will be indicated on the control panel:

- LEDs L2 and L4 are flashing.
- As long as both the S2 and the S4 buttons are kept pressed after switching on, the variant coding will be indicated.
  e.g.: 20 = Variant 0,
  21 = Variant 1, and so on.
- The respective LED will light up when one of the program buttons is pressed.
- On pressing the S3 button, the display and the fault indicator LEDs will also light up.
- On pressing the pre-set time button, an 8h will light up in the 7-segment display.

The customer service program is started when the S2 and S4 buttons are pressed. No pre-set time is possible, and the customer service special program ends when the main switch is switched off.

- The fault number is indicated on the display:
  1 = Aqua sensor defect **(Attention: Indicator even if there is no aqua sensor!)**
  2 = Heating fault
  3 = Fault combination of fault 1 + fault 2
  4 = Filling fault
  5 = Fault combination of fault 1 + fault 4
  8 = NTC fault (interruption or short circuit)
  9 = Fault combination of fault 1 + fault 8

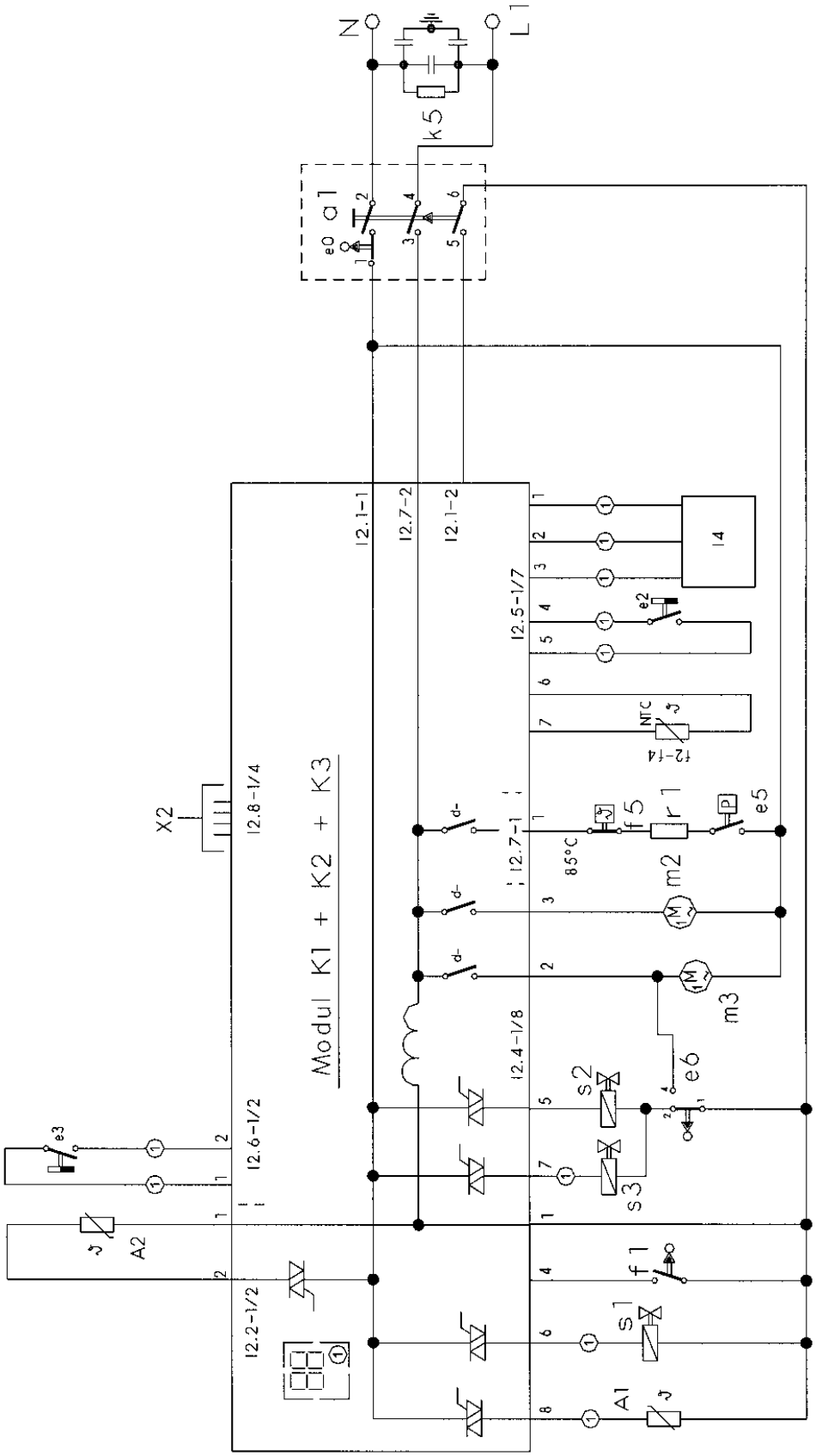
In the case of fault combinations, the figures are added accordingly.

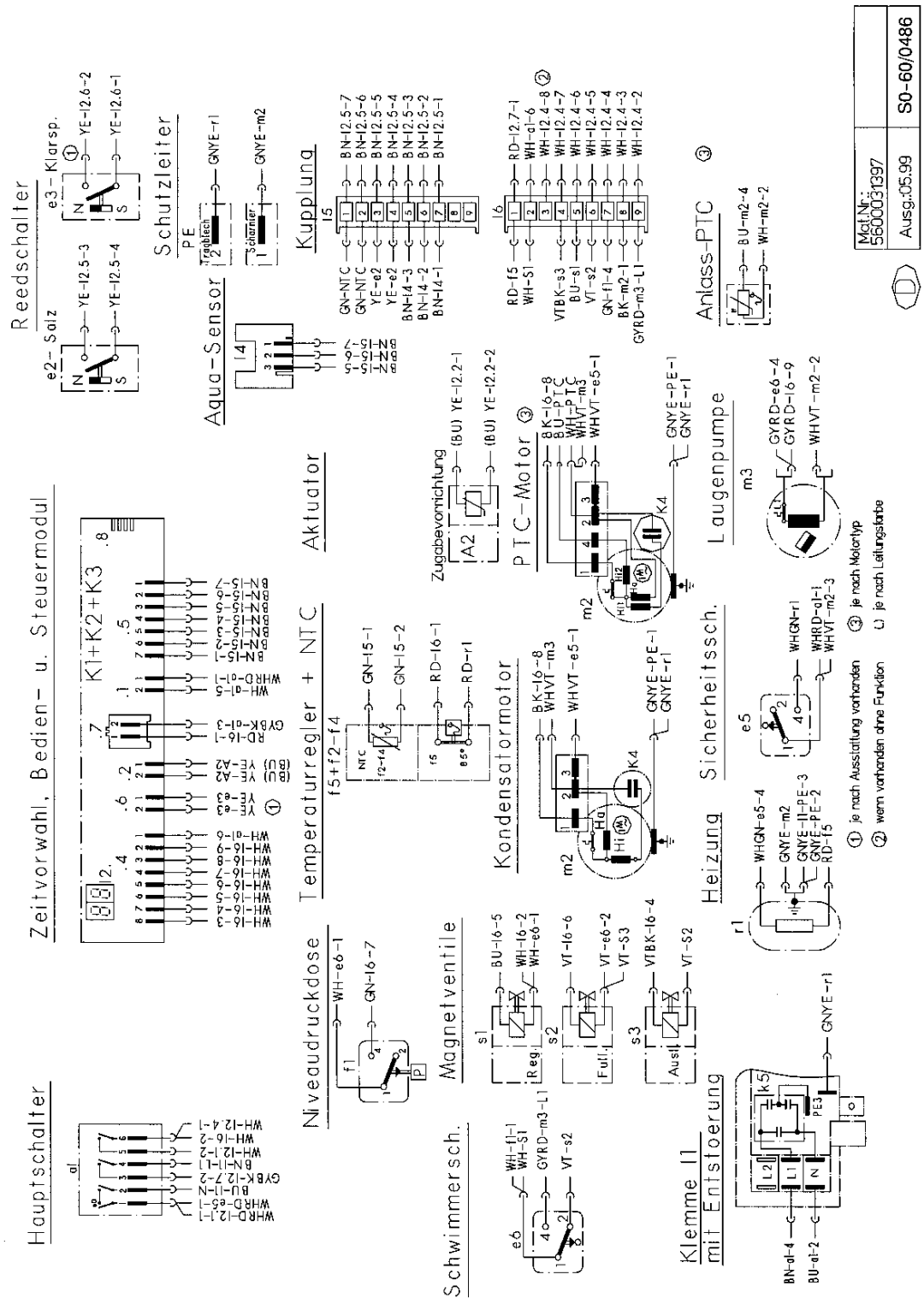





The upper basket function is activated for the entire program procedure. The next step in the program can be started w e S3 button is activated. If th ting stage is skipped, a heating fault will be indicat **eption: In the filling stage it ly possible to continue to the next stage by mea nefilling switch F1)**.

9.6 Circuit diagrams IG 644.2





9.7 Coding instructions for an electronics system with E controls

(IG 659.2 and IG 669.2)

Subsequent to the replacement of the standard electronic control mechanisms installed, the control system must once again be coded to comply with the appliance programs (see chart).

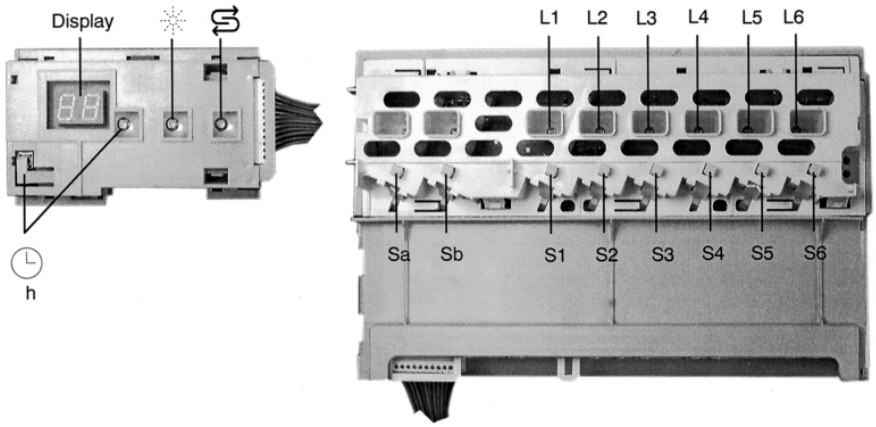
Attention: In the case of appliances with 5 or 6 programs/buttons, the control system must be programmed prior to fitting the panel cover.

1. **Instructions:**
   Press the buttons S2, S3, S4 and S5 simultaneously. Keep them pressed and activate the main switch. As long as the S2 to S5 buttons remain pressed, the LEDs L2 to L5 will flash.
   Subsequent to releasing the buttons S2 to S5, the current coding will be indicated as a code on the display (see code chart).
2. **Setting variants:**
   By pressing the S2 button the various variant codes can be set (see chart).
3. **Storing the code:**
   On switching off the appliance, the new variant/code is stored.

Code chart

Display	Sa	Sb	S1	S2	S3	S4	S5	S6
20	Soaking	TR	Intensive 70°	Normal 65°	ECO 50°	Gentle 40°	Fast 35°	Pre-rinse
21	Soaking	TR	Intensive 70°	Normal 65°	ECO 50°	Fast 35°	Pre-rinse	
22	UB	LB	Intensive 70°	Normal 65°	ECO 50°	Gentle 40°	Fast 35°	Pre-rinse
23	UB	LB	Intensive 70°	Normal 65°	ECO 50°	Fast 35°	Pre-rinse	
24								

TR = Time reduction UB = Upper basket rinse LB = bottom basket rinse
Soaking: additional pre-rinsing, temperature 55°C



Program symbols

Intensive 70° ECO 50° Gentle 40°

Normal 65° Fast 35° Pre-rinse

9.8 Customer service test routine: control E new (GV 634)

	INDEX	Function	Temperature	Time [s]	Sensor	Filling quantity
	1	P		15		
	2	PF			F1	
	3	F				3.9
	4	C+H+TR1+TR2	max. 72°C			
	5	C + H + Z	max. 72°C	120		
	6	C + H	65°C			
	7	C + H + R	max 72°C	120		
	8	P		60		
	9	D + A		60		
	10	P + A		30		

The test program has been selected if the S2 and S4 buttons are pressed when switching on the dishwasher at the main switch.

The following will be indicated on the control panel:

- LEDs L2 and L4 are flashing.
- As long as both the S2 and the S4 buttons are kept pressed after switching on the appliance, an identification of the variant coding will be shown in the case of a successful overlap contact interrogation,
  e.g.: 20 = Variant 0, 21 = Variant 1, and so on.
- The respective LED will light up when one of the program buttons is pressed.
- On pressing the S3 button, the display and the fault indicator LEDs will also light up.
- On activating the pre-set time button, an 8h lights up in the 7-segment indicator.

The customer service program is started when the S2 and S4 buttons are activated. No pre-set time is possible, the test program ends when the main switch is switched off.

- The fault number is indicated on the display:
  1 = Aqua sensor defect **(Attention: indicator even if there is no aqua sensor!)**
  2 = Heating fault
  3 = Fault combination of fault 1 + fault 2
  4 = Filling fault
  5 = Fault combination of fault 1 + fault 4
  8 = NTC fault (interruption or short circuit)
  9 = Fault combination of fault 1 + fault 8
  10= Fault combination of fault 2 + fault 8
  16 = Water diverter cannot be positioned

If neither of the two buttons (Sa/Sb) is selected, alternating rinsing is set. If the soaking/upper basket special function is selected, the water diverter is positioned for the upper basket. If the time reduction/ bottom basket special function is selected, the water diverter is positioned for the bottom basket.

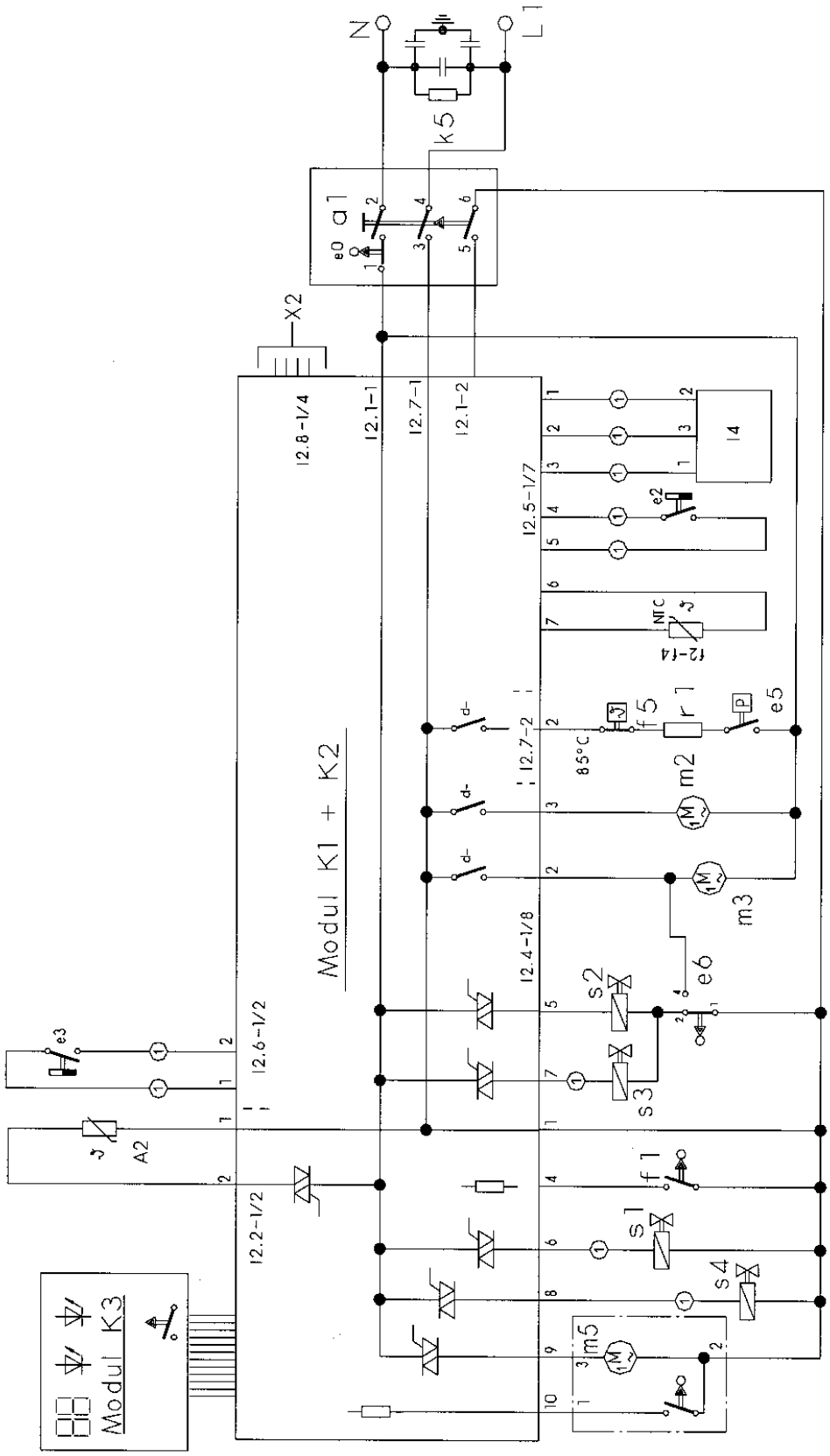


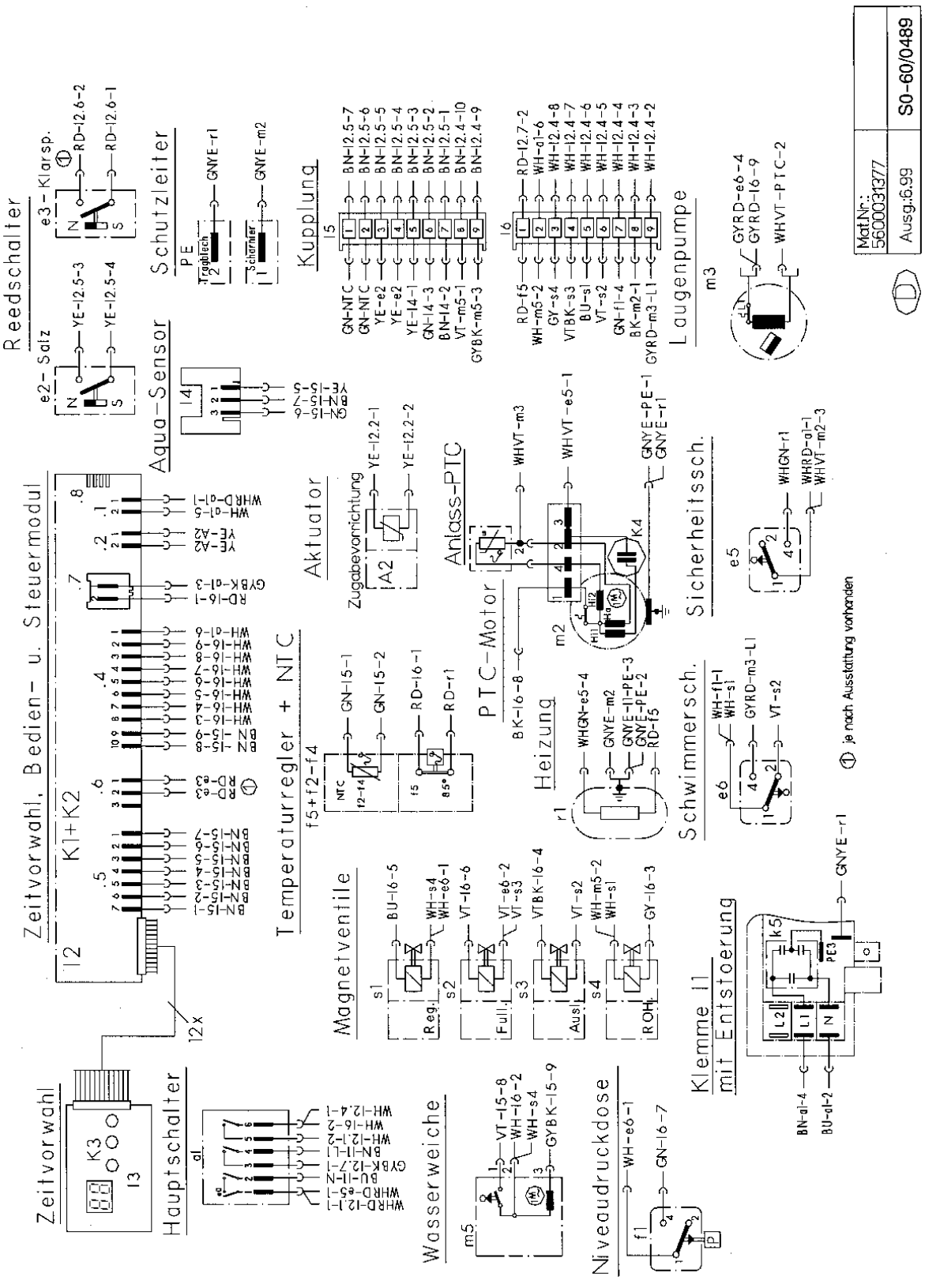



The next step in the progra e started when the S3 button i ated. If the heating stage is skipped, a heating fault ndicated. (Exception: in the fi tage it is only possible to continue to the next stage ans of the filling switch F1). t code indicator is in the

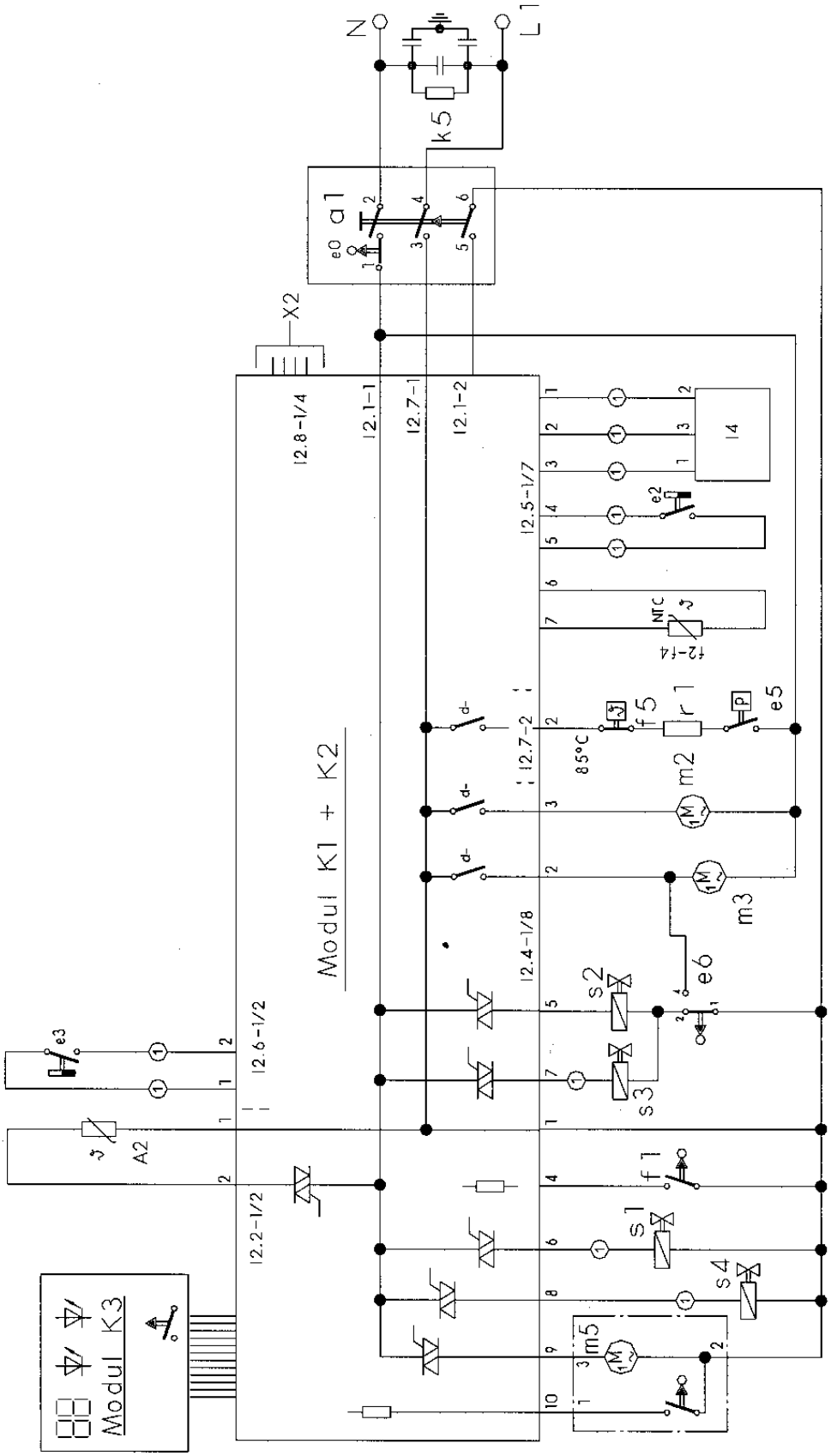
customer service test program only!

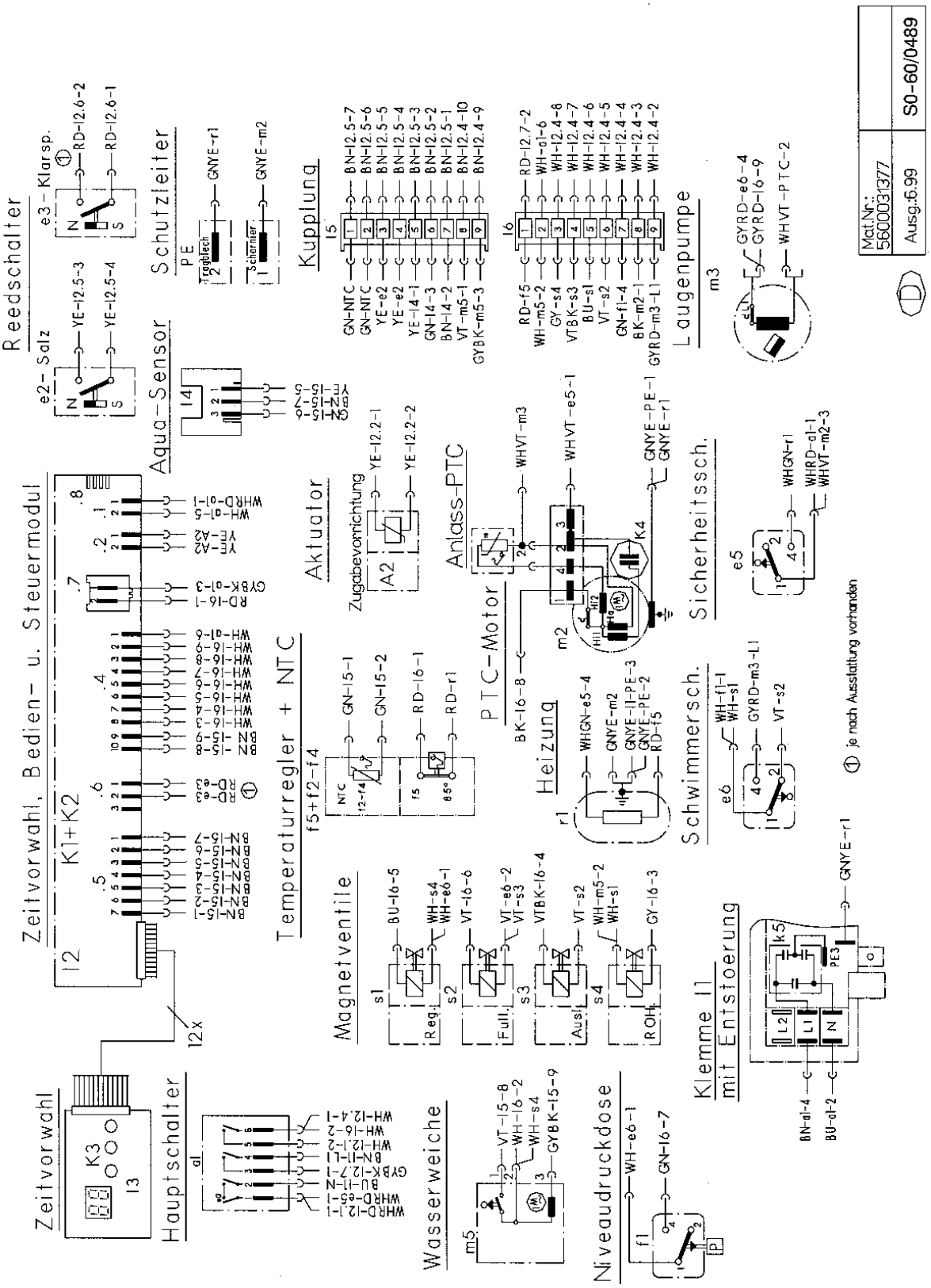
9.9 Circuit diagrams IG 669.2



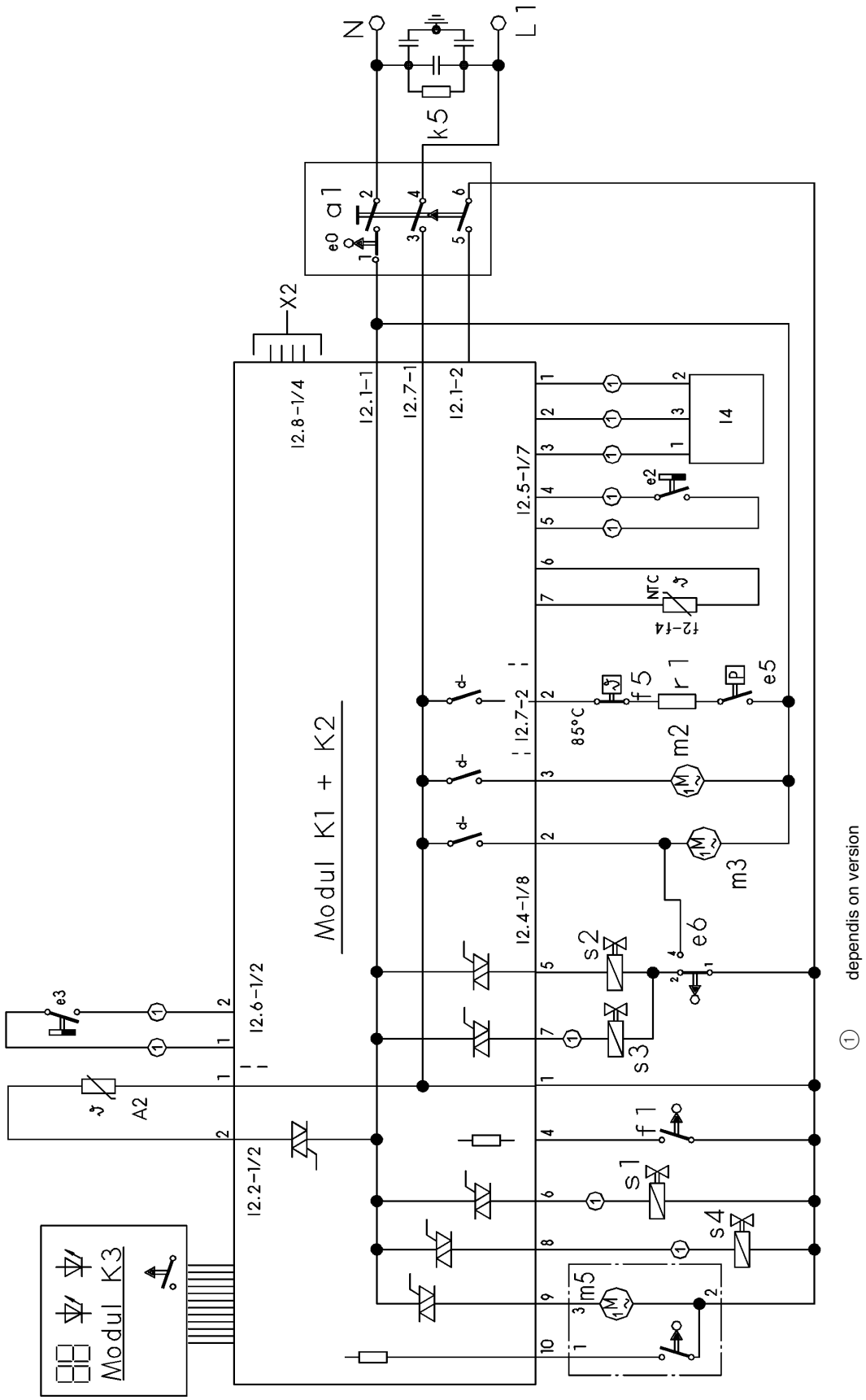

Reedschalter
e2- Salz
e3- Klarsp.
YE-12.5-3
YE-12.5-4
RD-12.6-2
RD-12.6-1
Schutzleiter
PE
Trogblech
Schrauber
GNYE-r1
GNYE-m2
Kupplung
Aqua-Sensor
Zeitvorwahl, Bedien- u. Steuermodul
K1+K2
Temperaturregler + NTC
f5+f2-f4
Aktuator
Zugabevorrichtung
Anlass-PTC
PTC-Motor
Heizung
Magnetventile
Laugenpumpe
Sicherheitssch.
Schwimmersch.
Zeitvorwahl
K3
Hauptschalter
Wasserweiche
Niveaudruckdose
Klemme 11
mit Entstoerung
12X
① je nach Ausstattung vorhanden
Mat.Nr.: 5600031377
Ausg.6.99
S0-60/0489

9.10 Circuit diagrams IG 659.2



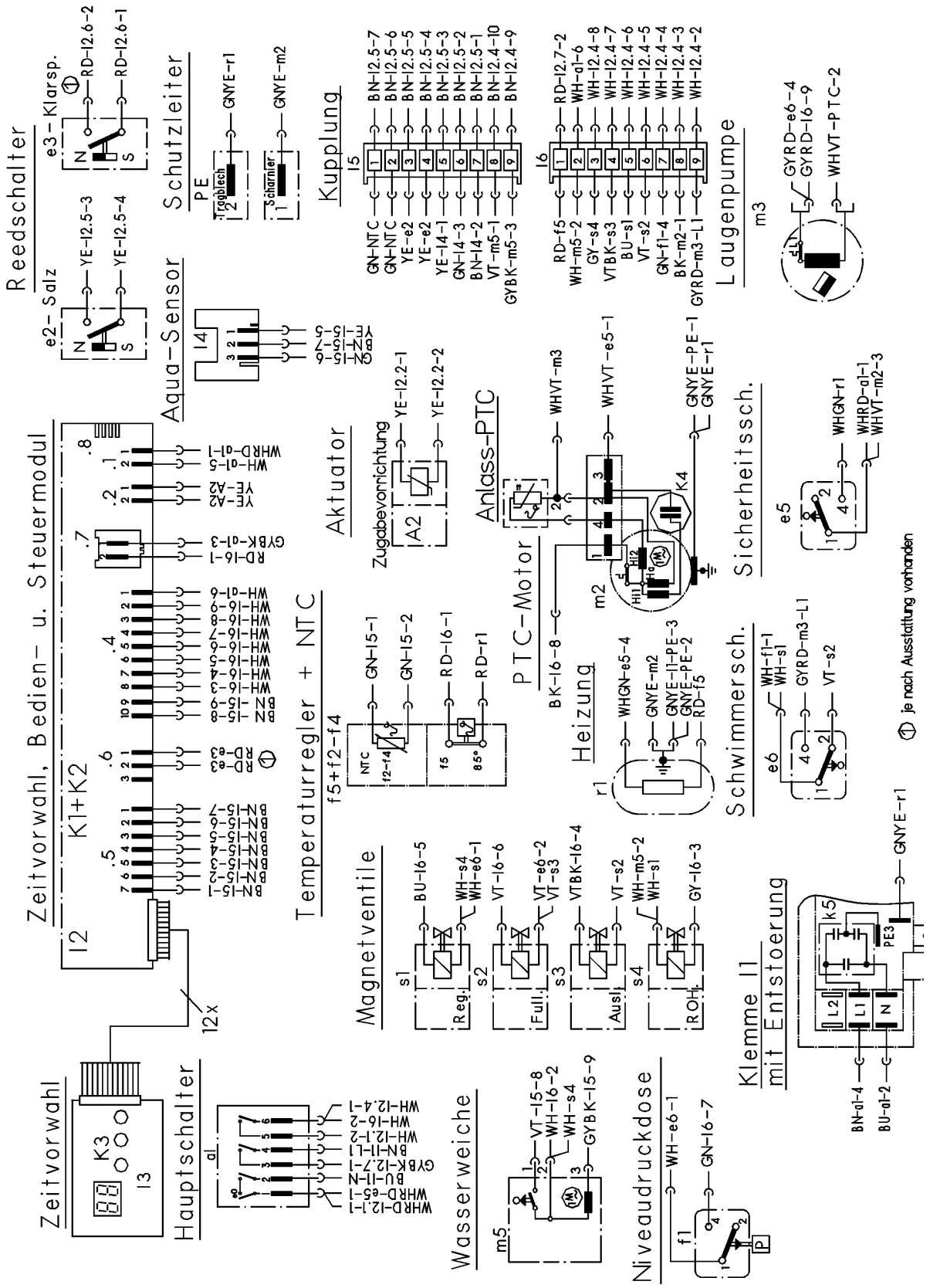

Reedschalter
e2- Salz
e3- Klar sp.
Schutzleiter
PE
Kupplung
Aqua-Sensor
Zeitvorwahl, Bedien- u. Steuermodul
K1+K2
Temperaturregler + NTC
f5+f2-f4
Aktuator
Zugabevorrichtung
Anlass-PTC
PTC-Motor
Heizung
Magnetventile
Laugenpumpe
Sicherheitssch.
Schwimmersch.
Zeitvorwahl
K3
Hauptschalter
Wasserweiche
Niveaudruckdose
Klemme 11
mit Entstoerung
12x
① je nach Ausstattung vorhanden
Mat.Nr.: 5600031377
Ausg.:6.99
S0-60/0489

9.11 Circuit diagram (S0-60/0488) IG 659.2



Küppersbusch
THE HEART OF A GOOD KITCHEN

9.12 Circuit diagram (S0-60/0489)



9.13 Customer service test routine: control E (GV 634) S0-60/0490

	INDEX	Function	Temperature	Time [s]	Sensor	Filling quantity
	1	P		15		
	2	PF			F1	
	3	F				3.9
	4	C+H+TR1+TR2	max. 72°C			
	5	C + H + Z	max. 72°C	120		
	6	C + H	65°C			
	7	C + H + R	max 72°C	120		
	8	P		60		
	9	D + A		60		
	10	P + A		30		

The test program has been selected if the S2 and S4 buttons are pressed when switching on the dishwasher at the main switch.

The following will be indicated on the control panel:

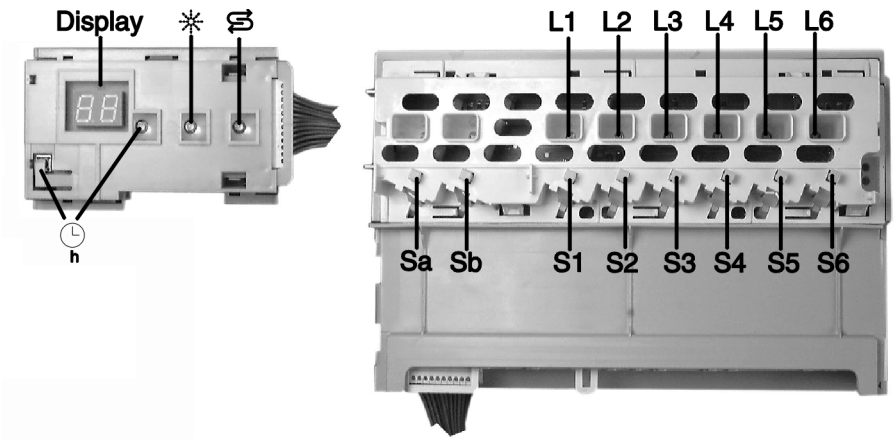
- LEDs L2 and L4 are flashing.
- As long as both the S2 and the S4 buttons are kept pressed after switching on the appliance, an identification of the variant coding will be shown in the case of a successful overlap contact interrogation,
  e.g.: 20 = Variant 0
  21 = Variant 1, and so on.
- The respective LED will light up when one of the program buttons is pressed.
- On pressing the S3 button, the display and the fault indicator LEDs will also light up.
- On activating the pre-set time button, an 8h lights up in the 7-segment indicator.

The customer service program is started when the S2 and S4 buttons are activated. No pre-set time is possible, the test program ends when the main switch is switched off.

- The fault number is indicated on the display:
  - 0 = no fault
  - 1 = Aqua sensor defect **(Attention: indicator even if there is no aqua sensor!)**
  - 2 = Heating fault
  - 3 = Fault combination of fault 1 + fault 2
  - 4 = Filling fault
  - 5 = Fault combination of fault 1 + fault 4
  - 8 = NTC fault (interruption or short circuit)
  - 9 = Fault combination of fault 1 + fault 8
  - 10= Fault combination of fault 2 + fault 8
  - 16 = Water diverter cannot be positioned

If neither of the two buttons (Sa/Sb) is selected, alternating rinsing is set. If the soaking/upper basket special function is selected, the water diverter is positioned for the upper basket. If the time reduction/ bottom basket special function is selected, the water diverter is positioned for the bottom basket.

The next step in the program can be started when the S3 button is activated. **(Exception: in the filling stage it is only possible to continue to the next stage by means of the filling switch F1)**. A fault code indicator is in the customer service test program only!



9.14 Coding instructions for an electronics system with G controls

(IG 644.2)

Subsequent to the replacement of the standard electronic control mechanisms installed, the control system must once again be coded to comply with the appliance programs (see chart).

Attention: In the case of appliances with 4 or 5 programs/buttons, the control system must be programmed prior to fitting the panel cover.

1. **Instructions:**
   Press the buttons S2, S3, S4 and S5 simultaneously, keep them pressed and activate the main switch. As long as the S2 to S5 buttons remain pressed, the LEDs L2 to L5 will flash.
   Subsequent to releasing the buttons S2 to S5, the current coding will be indicated as a code on the display (see code chart).
2. **Setting variants:**
   By pressing the S2 button the various variant codes can be set (see chart).

3. **Storing the code:**
   On switching off the appliance, the new variant/code is stored.

Code chart

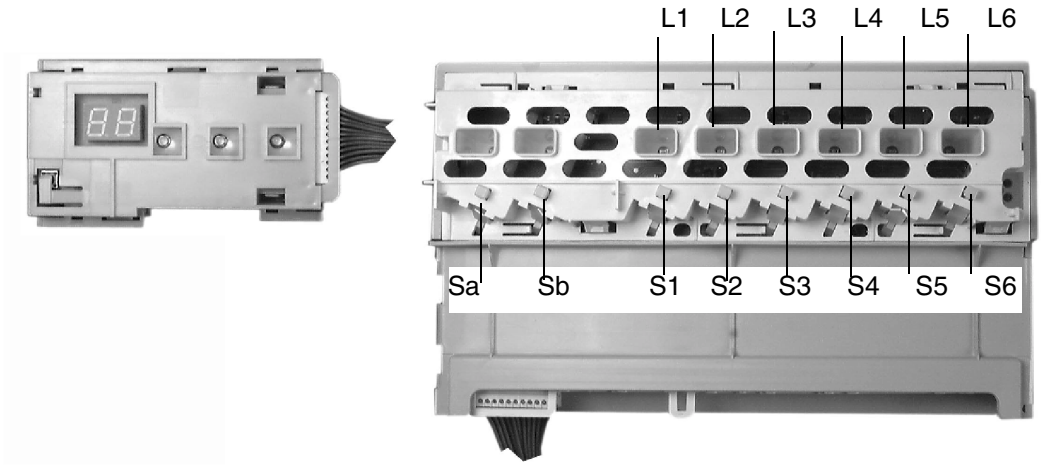
Display	Sa	Sb	S1	S2	S3	S4	S5	S5
0 (4)	SO	TR	Intensive 70°	Normal 65° auto 55°/65°	ECO 50°	Gentle 40°	Fast 35°	Pre-rinse
1 (5)	SO	TR	Intensive 70°	Normal 65° auto 55°/65	ECO 50°	Fast 35°	Pre-rinse	
2 (6)	UB	LB	Intensive 70°	Normal 65° auto 55°/65	ECO 50	Gentle 40°	Fast 35°	Pre-rinse
3 (7)	UB	LB	Intensive 70°	Normal 65° auto 55°/65	ECO 50°	Fast 35°	Pre-rinse	
8	UB	SO	Intensive 70°	Normal 65°	ECO 50°	Gentle 40°	Fast 35°	Pre-rinse

TR = Time reduction SO = Soaking UB = Upper basket rinse LB = Lower basket rinse

The coding ( ) only extends the operating period by 30 mins in the case of the ECO programm, resulting in better drying

Soaking: additional pre-rinse, temperature 55°C Time reduction: without normal rinse, drying phase

.



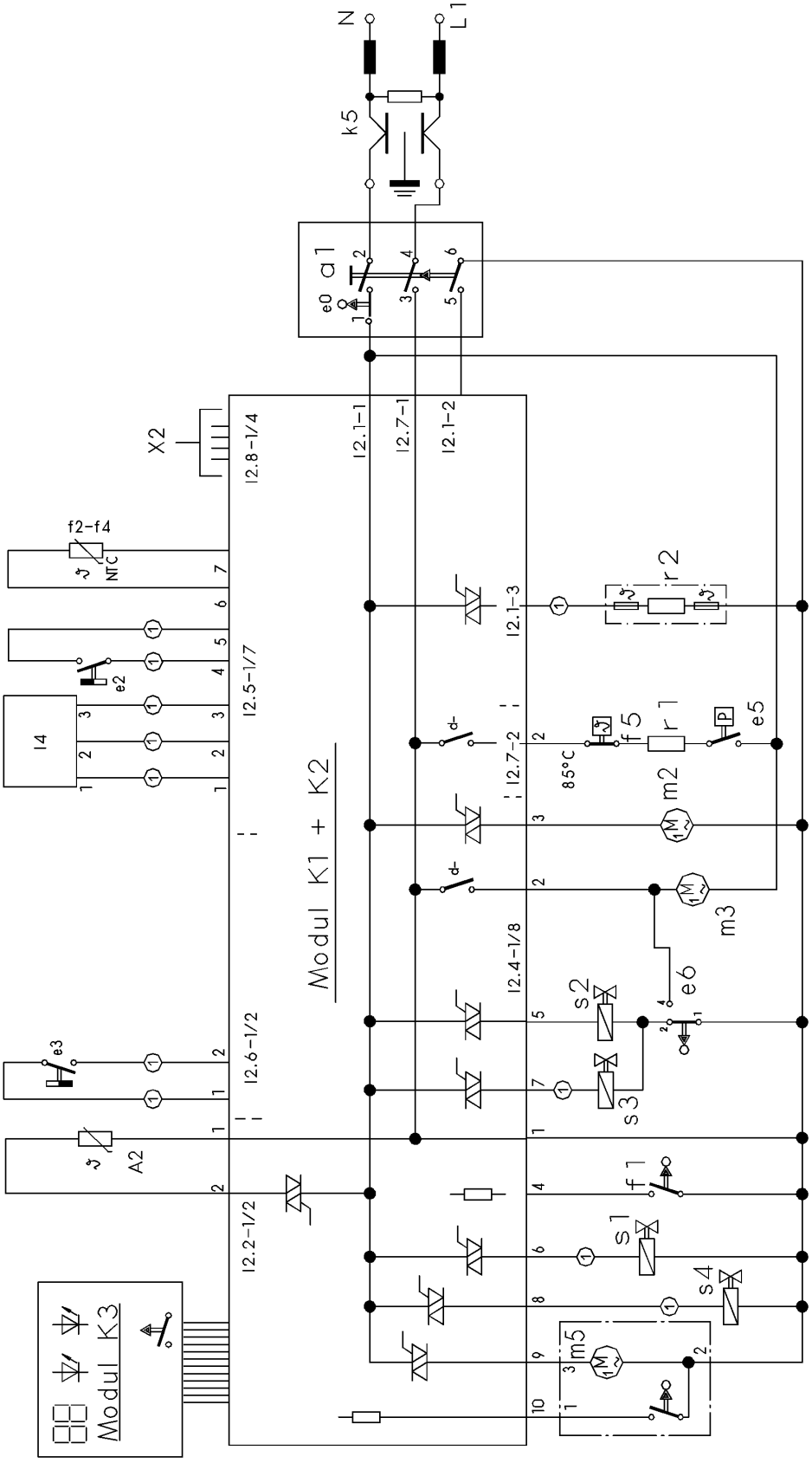
Program symbols

Intensive 70° Fast 70° Soaking Upper basket

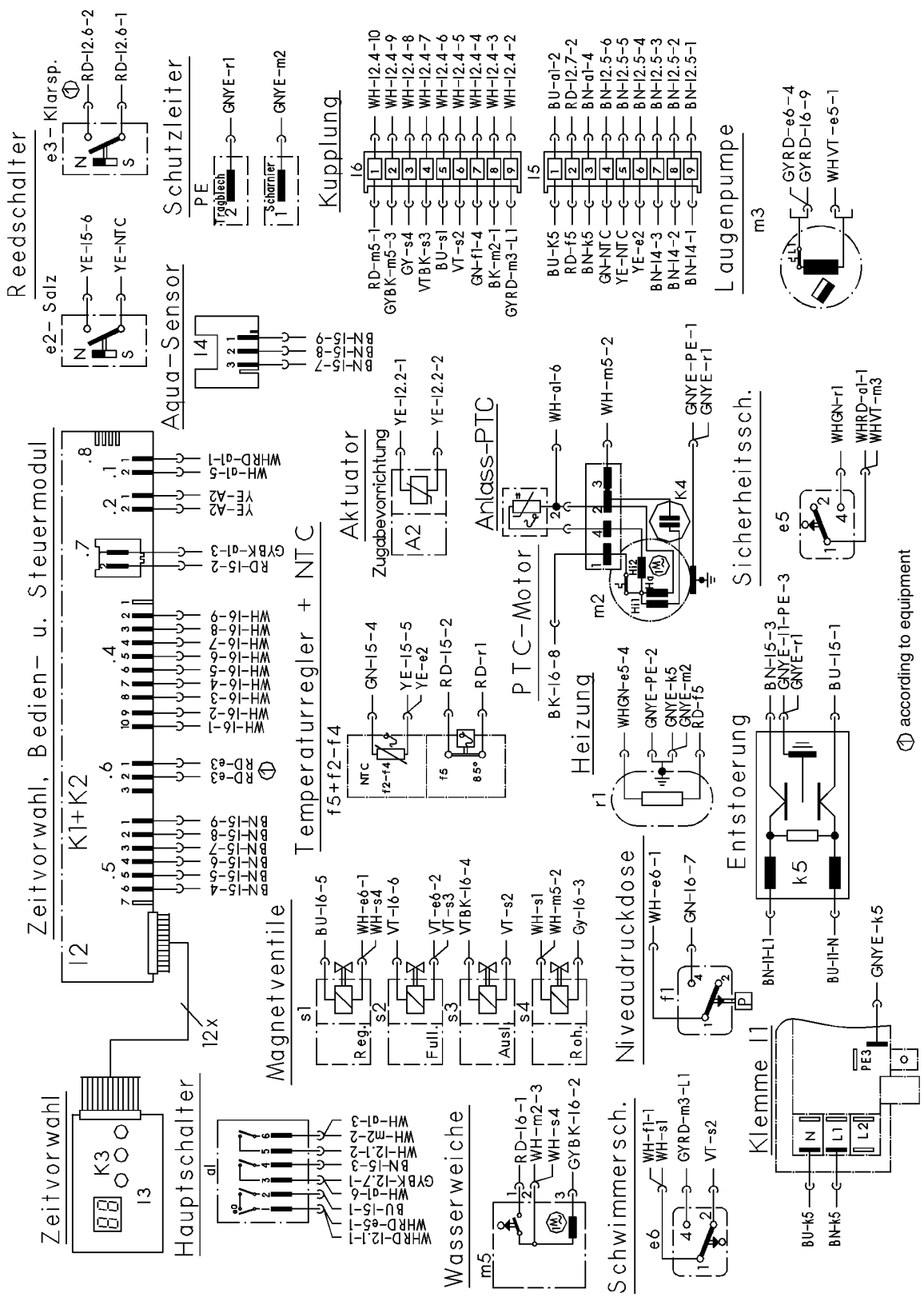
Normal 65°C Gentle 40° Time reduction Lower basket

ECO 50° Pre-rinse Time pre-selection

9.15 Circuit diagram (S0-60/0523)



9.16 Circuit diagram (S0-60/0546)



9.17 Customer service test routine (S0-60/0528)

	INDEX	Function	Temperature	Time [s]	Sensor	Filling quantity
	1	P		15		
	2	PF			F1	
	3	F				3.9
	4	C+H+TR	max. 72°C	120		
	5	C + H + Z	65°C			
	6	C + H + R	max 72°C	120		
	7	AS + KAL + IR		0 - 480		
	8	P		60		
	9	FWW + AWT		60		
	10	P + AWT		30		

The test program has been selected if the S2 and S4 buttons are pressed when switching on the dishwasher at the main switch.

The following will be indicated on the control panel:

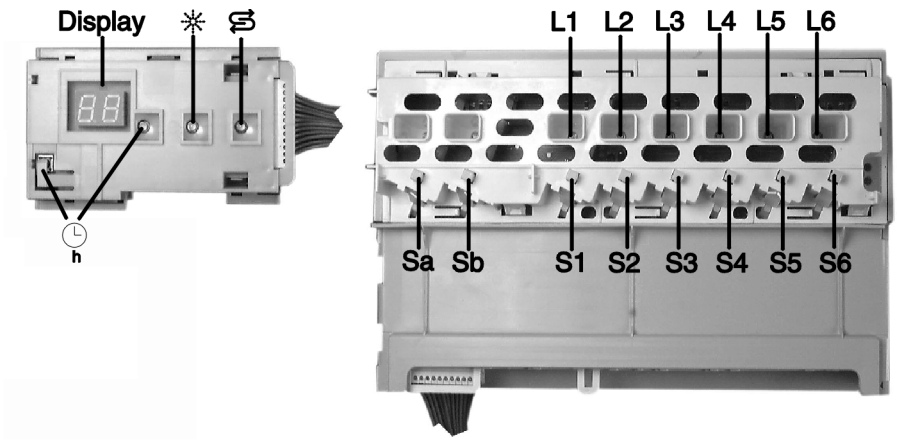
- LEDs L2 and L4 are flashing.
- As long as both the S2 and the S4 buttons are kept pressed after switching on the appliance, an identification of the variant coding will be shown in the case of a successful overlap contact interrogation,
  e.g.: 20 = Variant 0,
  21 = Variant 1, and so on.
- The respective LED will light up when one of the program buttons is pressed.
- On pressing the S3 button, the display and the fault indicator LEDs will also light up.
- On activating the pre-set time button, an 8h lights up in the 7-segment indicator.

The customer service program is started when the S2 and S4 buttons are activated. No pre-set time is possible, the test program ends when the main switch is switched off.

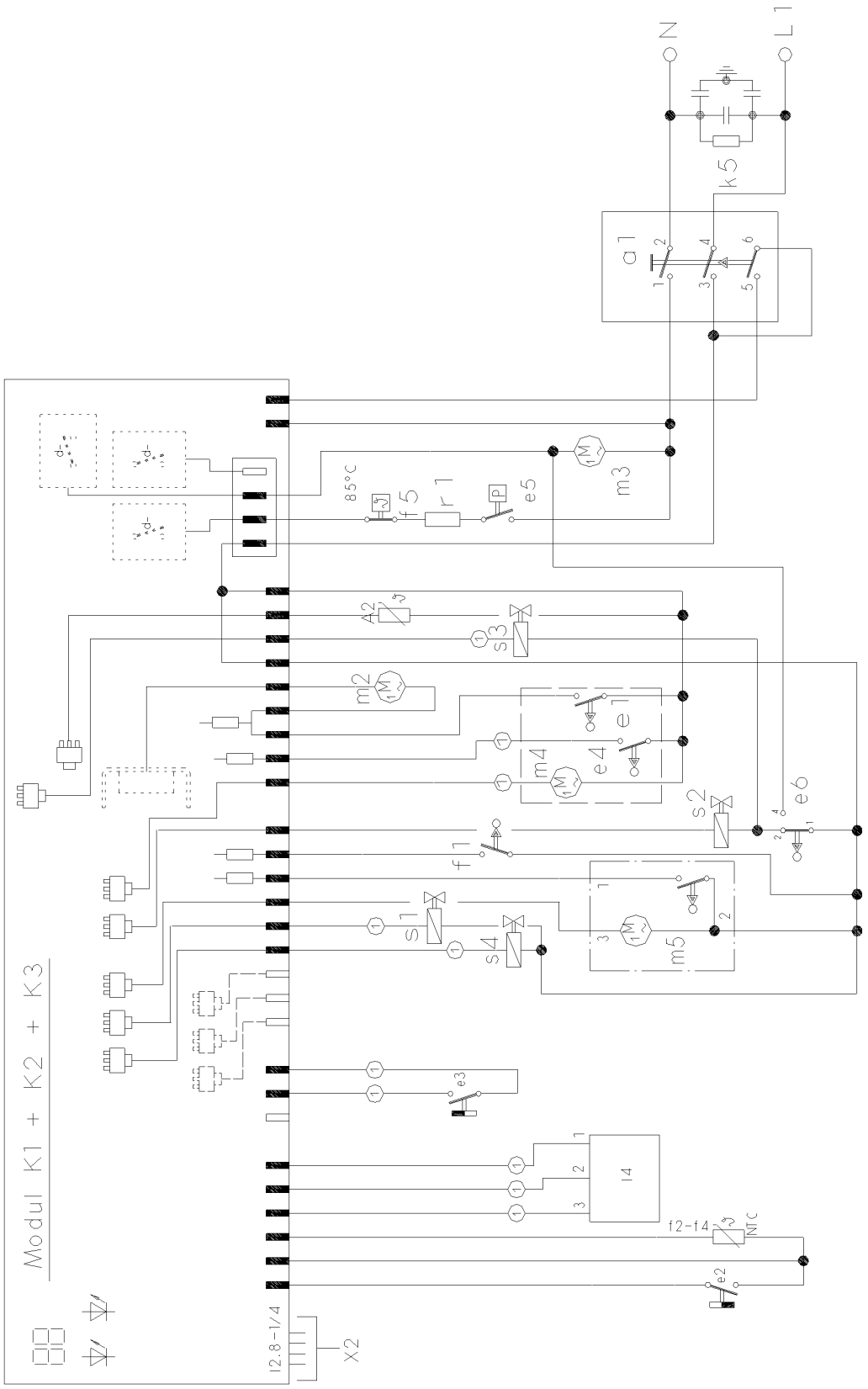
- The fault number is indicated on the display:
  - 0 = no fault
  - 1 = Aqua sensor defect **(Attention: indicator even if there is no aqua sensor!)**
  - 2 = Heating fault
  - 3 = Fault combination of fault 1 + fault 2
  - 4 = Filling fault
  - 5 = Fault combination of fault 1 + fault 4
  - 8 = NTC fault (interruption or short circuit)
  - 9 = Fault combination of fault 1 + fault 8
  - 10= Fault combination of fault 2 + fault 8
  - 16 = Water diverter cannot be positioned

If neither of the two buttons (Sa/Sb) is selected, alternating rinsing is set. If the soaking/upper basket special function is selected, the water diverter is positioned for the upper basket. If the time reduction/ bottom basket special function is selected, the water diverter is positioned for the bottom basket.

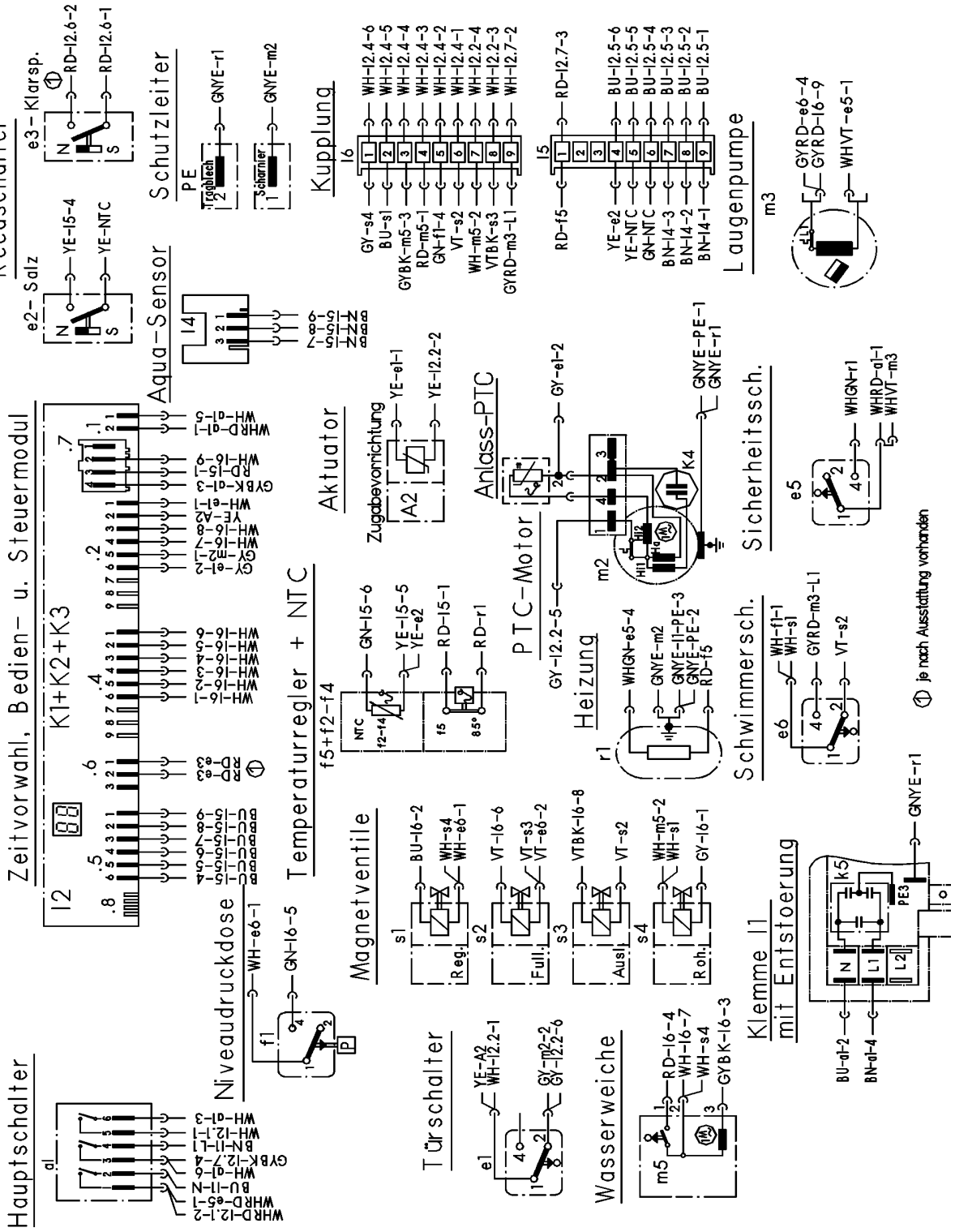
The next step in the program can be started when the S3 button is activated. **(Exception: in the filling stage it is only possible to continue to the next stage by means of the filling switch F1)**. A fault code indicator is in the customer service test program only!



9.18 S0-60/0540 IGV 659.2



9.19 Circuit diagrams (S0-60/ 556)



9.20 Customer service test program (S0-60/0541)

INDEX	Function	Temperature	Time [s]	Motor lock	Sensor	Filling quantity
1	P		15	closed		
2	PF			s	F1	
3	F					3.9 l
4	C+H+TR	max. 72°C	120			
5	C + H	65°C				
6	C + H + R	max. 72°C	120			
7	C + TR		120			
8	AS_KAL_IR		0 - 480			
9	P		60			
10	FWW + AWT		60			
11	P+AWT		30	open		

Select the test program: keep the S2 and S4 buttons pressed and switch on the main switch.

The following will be indicated on the control panel:

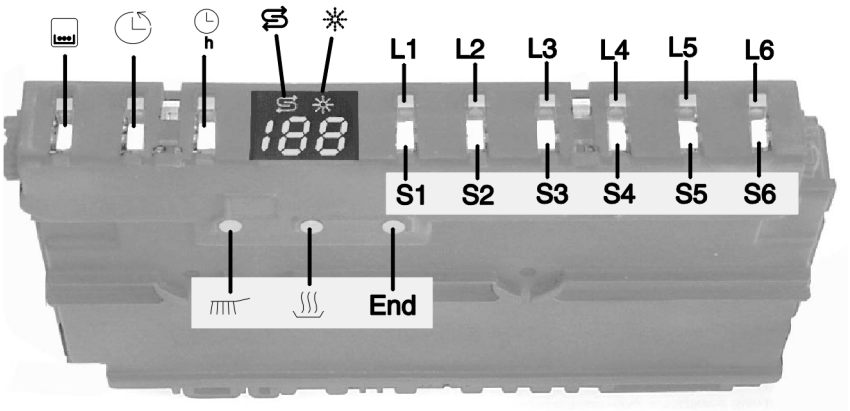
- LEDs L2 and L4 are blinking.
- As long as both the S2 and the S4 buttons are kept pressed after switching on the appliance, an identification of the variant coding will be shown subsequent to a successful overlap contact interrogation,
  e.g.: 20 = Variant 0,
  21 = Variant 1, and so on.
- The respective LED will light up when one of the program buttons is pressed.
- On pressing the S3 button, the display “188“ and the fault indicator LEDs and procedure LEDs will also light up. At the same time the buzzer will sound.
- On pressing the time pre-set button, an 18h will light up in the 7-segment display.

The customer service program is started when the S2 and S4 buttons are pressed. No pre-set time is possible, the special program customer service ends when the main switch is switched off.

- The possible fault code is indicated on the display.
  - 0 = No fault
  - 1 = Aqua sensor fault **(Attention: Indicator even if there is no aqua sensor!)**
  - 2 = Heating fault
  - 3 = Fault combination of fault 1 + fault 2
  - 4 = Filling fault
  - 5 = Fault combination of fault 1 + fault 4
  - 8 = NTC system fault
  - 9 = Fault combination of fault 1 + fault 8
  - 16= Water diverter cannot be positioned
  - 32= Motor lock position switch

If neither of the two special function buttons is selected, alternating rinsing will be set. If the soaking/ upper basket special function is selected, the water diverter is positioned for the upper basket. If the time reduction /bottom basket special function is selected, the water diverter is positioned for the lower basket.

The next step in the program can be started when the S3 button is activated. If the heating stage is skipped, a heating fault will be indicated. **(Exception: In the filling stage it is only possible to continue to the next stage by means of the filling switch F1)**. A fault code indicator is in the customer service test program only.



9.21 Coding instructions for the electronics system (S0-60/0549)

Subsequent to the replacement of the standard electronic control mechanisms installed, the control system must once again be coded to comply with the appliance programs (see chart).

Attention: In the case of appliances with 5 or 6 programs/buttons, the control system must be programmed prior to fitting the panel cover.

1. **Instructions:**
   Press the buttons S2, S3, S4 and S5 simultaneously, keep them pressed and activate the main switch. As long as the S2 to S5 buttons remain pressed, the LEDs L2 to L5 will flash.
   Subsequent to releasing the buttons S2 to S5, the current coding will be indicated on the display (see code chart).

2. **Setting variants:**
   The various variant codes in accordance with the program symbols (see chart) can be set by pressing the S2 button.

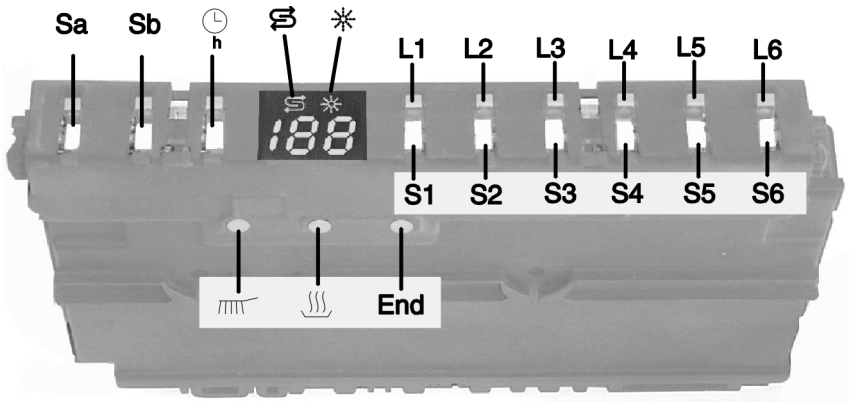
3. **Storing the code:**
   On switching off the appliance, the new code is stored.

Code chart

D	Sa	Sb	M.-lock	E.-RA.	S1	S2	S3	S4	S5	S6
0	SO	TR	X		Intensive 70°	auto 55°/65°	ECO 50°	Gentle 40°	Fast 35°	Pre-rinse
1	SO	TR	X		Intensive 70°	auto 55°/65	ECO 50°	Fast 35°	Pre-rinse	
2	SO	TR		X	Intensive 70°	auto 55°/65	ECO 50	Gentle 40°	Fast 35°	Pre-rinse
3	SO	TR		X	Intensive 70°	auto 55°/65	ECO 50°	Fast 35°	Pre-rinse	
4	SO	TR			Intensive 70°	auto 55°/65	ECO 50°	Gentle 40°	Fast 35°	Pre-rinse
5	SO	TR			Intensive 70°	auto 55°/65	ECO 50°	Fast 35°	Pre-rinse	
6	UB	LB			Intensive 70°	auto 55°/65	ECO 50°	Gentle 40°	Fast 35°	Pre-rinse
7	UB	LB			Intensive 70°	auto 55°/65	ECO 50°	Fast 35°	Pre-rinse	

TR = time reduction SO = soaking UB = upper basket rinse LB = bottom basket rinse
M.-lock = Motor lock E.-RA. = electronic setting for a rinse with a rinsing agent

Soaking: additional pre-rinse, temperature 55°C Time reduction: none standard rinsing performance, no drying phase.



Program symbols

Intensive 70°

Fast 35°

Soaking

Upper basket

auto 55° / 65°

Gentle 40°

Time reduction

Bottom basket

ECO 50°

Pre-rinse

Pre-set time