

GD 600

GO TECH

Service manual

EN

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Declaration of Conformity

The Manufacturer:

GRANULDISK AB
Jägershillgatan 15
SE-213 75 MALMÖ, Sweden

declares that the following machinery:

The Granuldisk system GD 600

Basic conception

a) is manufactured in conformity with the Svenska Arbetarskyddsstyrelsens Författningssamling AFS1994:48. This law conforms with the COUNCIL DIRECTIVE of 22 June 1998 concerning harmonisation of member states` legislation for machinery (the Machinery Directive 98/37/EG), with particular reference to Annex 1 concerning the essential health and safety requirements relating to the design and construction of the machinery.

b) is besides the provisions under a) manufactured according to the following directives: the EC Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC

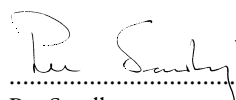
c) is manufactured in conformity with the following harmonised standards: EN 60204-1, EN 55014, EN 60335-2-58, EN 60439-1, EN 418, EN 294, EN 50081-1:1992 and EN 50082-2:1995

d) is manufactured in conformity with the following national standards and technical specifications: ELSÄK-FS 1994:7

e) is manufactured in accordance with EN 1717 and fitted with a return flow protection of type AB with an air gap in accordance with EN 13077.

Malmö, Sweden 01.03.2005

Signed on behalf of
GRANULDISK AB



Per Sandberg
(Managing Director)

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To the user

The GD 600 is a granule potwashing machine – a potwashing machine for commercial kitchens that is designed for washing/cleaning things like pots and pans.

This manual is your guide for the correct installation and use of the GD 600 granule potwashing machine.

Granuldisk AB recommends that you study the manual thoroughly to be sure that the machine is installed and used correctly and safely.

Ensure that the manual is always available during the whole life of the machine.

Granuldisk AB accepts no responsibility for damage to the equipment or other damage or injury caused by not following the directions in this manual.

Safety regulations

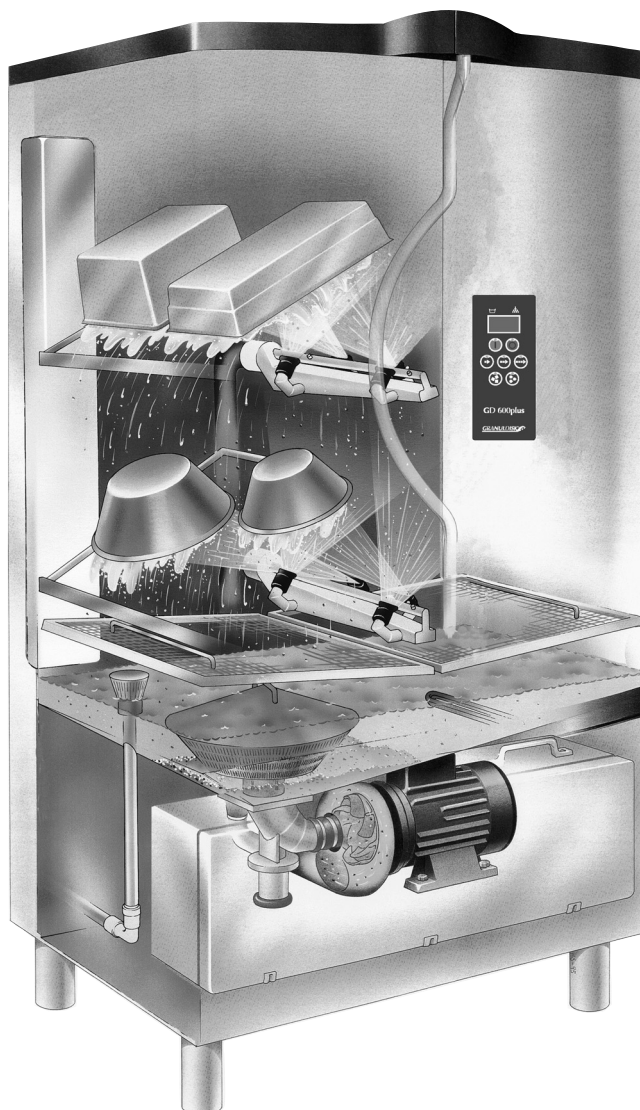
The plastic in the granules is approved for use in conjunction with food.

The machine uses hot water. Avoid contact with the skin as there is a risk for scalding.

There is a risk for slipping if granules are left on the floor.

Formaldehyde, which is dangerous if inhaled, may be formed if the granules catch fire.

Regarding the handling of detergent in the manual, please see the manufacturer's instructions.



I. Technical data

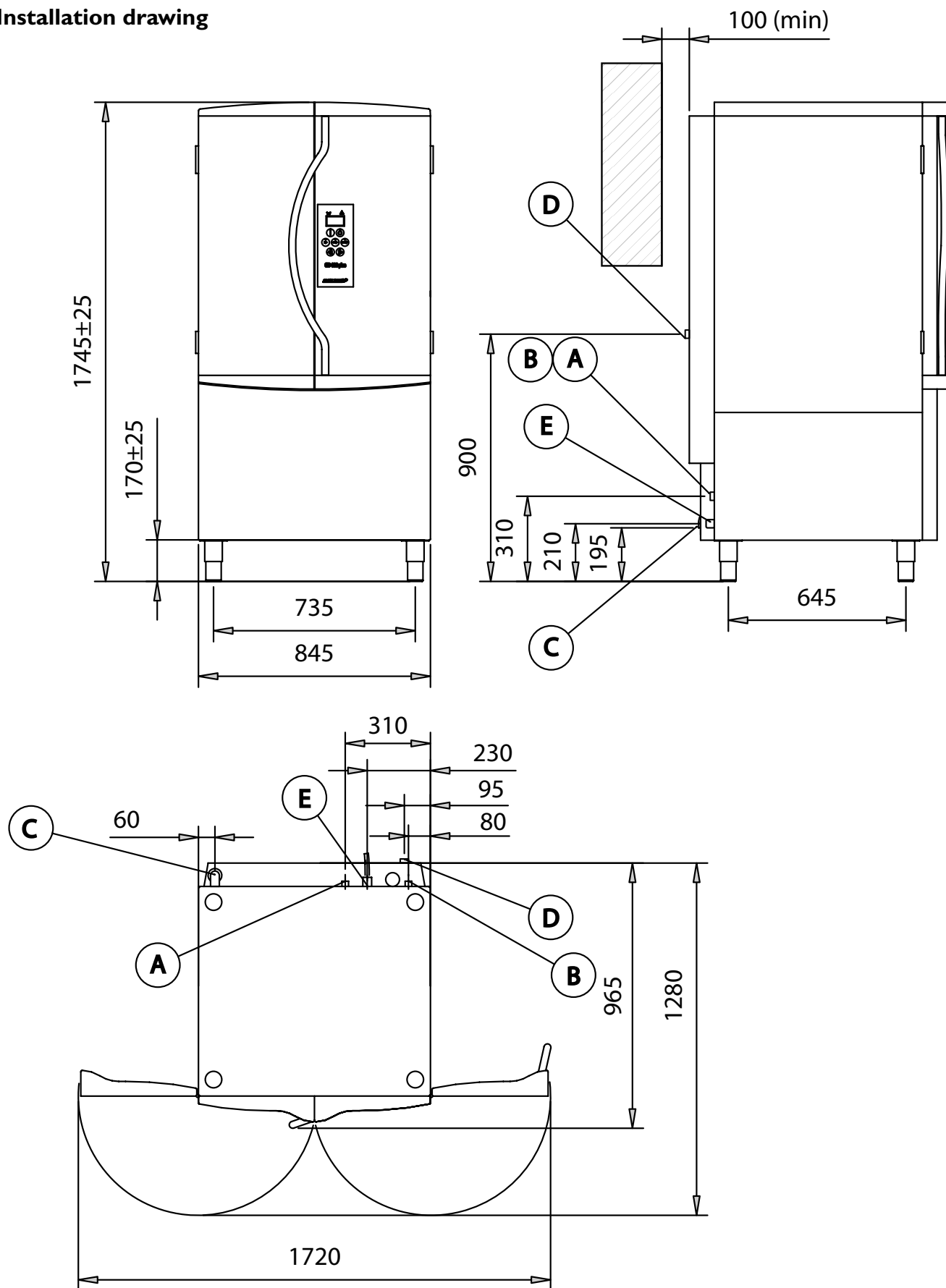
Weight	343 kg filled machine
Tank volume	84 litres
Granules	6 kg
Wash power	7 % granule concentration
Wash water temperature	65 °C
Rinse water temperature	85 °C
Rinse water volume	8 litres/wash cycle. To obtain 3.600 HUE according to ANSI/NSF, 3, 2001, 8 litres is necessary. In other cases the volume can be reduced to 5 litres.
Wash programmes	Short 2 min 40 s., Normal 4 min 40 s., Long 6 min 40 s. Programmes without granules are 1 minute shorter.
Time for condensation	1 minute
Design	2 extractable fittings
Loading volume	205 litres, width 600, height 650, depth 530 mm
Capacity	4 GN 1/1, 200 mm deep or 8 GN 1/2, 200 mm deep containers or the equivalent in pots and other utensils
Max capacity/h	65 GN 1/1 (washing with granules)
Normal capacity/h	42 GN 1/1 (washing with granules)
Power**	400 V (standard), 3-phase, earthed 200, 208, 230, 415, 440 V (options), 3-phase, earthed
Fuse**	400, 415, 440 V: 25 A 230 V: 35 A 200, 208 V: 50 A
Frequency	50 Hz or 60 Hz
Maximum power	12,5 kW
Wash pump	3 kW
Rinse pump	0,37 kW
Wash tank element*	9 kW
Rinse tank element*	9 kW
Encapsulation class	IP 55
Hot water connection	1/2" (DN15) int. 55-65 °C, 3-7 °dH NB! Osmosis water and totally softened water must not be used.
Hot water pressure/flow	1-6 bar with magnetic valve open / 15 litres/minute
Cold water connection	1/2" (DN15) inv. 3 - 10°dH
Cold water pressure/flow	3-6 bar with open magnetic valve / 15 litres/minute
Recommended extraction capacity	150 m ³ /h
Outflow	Pipe Ø 32 mm
Drain	Required capacity 100 litres/minute

*Not activated simultaneously.

** See the machine's sign for more detailed information on this machine.

The machine is supplied with a 2,5 m long electrical cable which is connected to the mains box on the wall.
The mains box is not included with the equipment.

Installation drawing



A = Hot water, G 1/2" int, 1-6 bar, 15 litres/min., 3-7 °dH

B = Cold water, G 1/2" int, 3-6 bar, 15 litres/min., 3-7 °dH

C = Drain, Ø 32 mm, Capacity: 100 litres/min.

D = Detergent connection, 24 and 230 VAC signals in separate connection box

E = Electrical connection, 2,5 m cable, 400 V (standard), 3-phase, earth, 25 A, 12,3 kW

2. General description

The GD 600 potwashing system is designed to cope with the requirements of small to medium-size kitchens. The pots are washed in the machine with a mixture of granules, water and detergent. All the components are included in the system for efficient potwashing. From collection of pots through preparation to putting the clean pots back on the shelf. The GD 600 is specially equipped for granule potwashing but also gives excellent results without granules.

Design

The machine has a capacity for 4 gastronorm 200 mm deep 1/1 containers. There are various fittings available. These are designed to accept the whole gastronorm range from 2/1 to 1/9 trays. Other kitchenware from ladles and whisks to large saucepans can also be washed by altering the fittings in a simple operation. The machine is delivered as standard with two fittings.

3. Functional description

All operations described in this chapter may only be carried out by qualified staff.

All electrical components described in this chapter apply to 400-volt machines. Recalculated electrical values apply to other voltages (see technical data).

Method of Operation

The machine comprises a wash tank containing water and granules. The wash pump sucks water and granules from the bottom of the wash tank through a coarse grid, so preventing large objects from being sucked into the pump. In the bottom of the tank is a granule valve which controls whether washing is to take place with or without granules. The mixture of water and granules is distributed evenly over the items to be washed via spray pipes and special nozzles. The water and granules re-circulate in the system. There are heater elements in the wash and rinse tanks to heat the water to operating temperature.

After the washing phase there is a separation phase with just water to rinse away the remaining granules from the items being washed. Finally the items being washed are rinsed with fresh water pumped from the open rinse tank, which is entirely separated from the water mains network by means of what is known as a type AB airgap, in accordance with EN 1717, and the rinse water is pumped out from this via separate final rinse pipes and nozzles. The final rinse is to wash away any granule residue and to increase the temperature of the items being washed to guarantee a disinfectant cleaning. During the final rinsing phase the refilling of the machine with water will occur.

Wash programmes

There are three wash programmes to choose from: short, normal or long programmes, plus these programmes with or without granules. If other times or combinations are required, these can be programmed by an authorised service engineer.

The granules are separated out from the wash water once the granule cycle is complete. The wash pump stops after 1 minute of washing without granulate, then the final rinse starts. The final rinse is set to guarantee a water temperature of 85 °C for 30 seconds.

If the rinse water temperature is too low, the wash time is extended until it is at 85 °C. The wash programmes without granules are 1 minute shorter than those with. When the steam reduction function is used, the hot steam is condensed for 1 minute at the end of every programme.

Wash water system

The wash tank is fitted with a 9 kW heater element to keep the wash water at the right temperature. The wash tank is filled with heated water from the rinse tank. A temperature sensor in the wash tank ensures that the wash water is at the right temperature. A level sensor at the back of the wash tank maintains a constant water level. Wash water and granules are pumped through the two spray pipes and sprayed at high pressure at the items to be washed. Water and granules are re-circulated in a closed system. The granules are gradually rinsed out of the items to be washed during the separation phase and rinsed out of the wash water.

Rinse water system

The rinse tank has a capacity of some 12 litres and is entirely separated from the water mains network by means of what is known as a type AB airgap, in accordance with EN 1717. 8 litres of water are used for every final rinse. The water in the tank is heated by a 9 kW heater element. The final rinse starts once the wash cycle is completed. The rinse water at 85 degrees is pumped and distributed through the nozzles on the rinse pipe. This rinses away chemical residue while at the same time killing bacteria.

The final rinse jets are divided up on a four pronged final rinse arm located in the lid together with the wash arm. They are located so that the rinse water is directed evenly over the items being washed. The machine is also filled with water via these nozzles.

Heater elements and temperature sensors

The GD 600 is fitted with one heater element for heating the wash water and one heater element for heating the rinse water. The water temperature is regulated by means of temperature sensors, one in the wash tank and one in the rinse tank, and these emit signals via the control card to the relay switches for the respective heater elements. The heater elements in the wash tank and rinse tank operate alternately with priority for the rinse tank during washing and for the wash tank in standby mode. In the event of an error in any of the temperature sensors, the wash cycle is interrupted and the machine is returned to stop mode. An error code relating to the temperature sensor is shown in the display: see Troubleshooting on page 20. There are overheating protectors in both the wash tank and the rinse tank in order to prevent damage due to overheating of the heater elements.

Drain valve

At the bottom of the machine, on the front, is a handle for the wash tank drain valve. This valve is fitted with a sensor which senses whether the valve is open or closed. If the machine is in an active process and the valve is opened, the machine switches to stop mode and an error message is shown in the display.

WARNING!

Only qualified electricians may work with the electrical unit.

The main fuse shall always be removed when working with the electrical components.

Incorrect connections can cost lives.

Door sensors and door-locking

There is an automatic sensor on each door. These are connected in series so that both doors must be closed to indicate doors closed to the circuit board. Only then can the machine fill with water and start. The sensor on the right-hand door locks before filling or starting of a cycle, so that neither door can be opened during washing.

Alarms and error codes

The GD 600 is provided with a number of alarm functions. When an alarm is activated, all diodes on the panel flash and an error message or error code is shown in the display. For more information on error messages, see the section entitled Troubleshooting on page 23.

Steam reduction

Steam reduction is comprised of an ejector into which cold water is sprayed via a jet. The steam reduction occurs as the steam in the cabin condenses then circulates through the ejector. The Steam reduction time is circa 1 minute.

Pumps

The wash pump is of a centrifugal pump type and is customised for operation with granules from Granuldisk AB. Behind the pump is a distributor housing which evenly distributes water and granules to the spray pipes.

The rinse pump is connected to the open rinse tank and used during the rinse process, as well as when the wash tank is filled.

Granules

The operator can select washing with or without granules. This is done on the control panel, which is marked with symbols for water alone or granules, see section Control Panel.

Granuldisk AB's granule potwashing machines work best with our specially designed granules. The granules are designed to give the best wash results and the longest working life for granules and machines. The guarantee is only valid if granules from Granuldisk AB are used in the machine.

Granule valve

The granule valve is located at the bottom of the tank and opens with the help of a solenoid valve. The valve closes with help of a return spring. The granule valve's working movements are 20 - 30 mm. The granule valve's function can be controlled by a computer with the aid of Granuldisk's service program for authorised technicians.

Note: While operating the valve function no one should have their hands near the granule valve where there is a risk of them getting jammed.

Spray pipe motor

The wash cabin contains two spray pipes operated by the spray pipe motor. The spray pipe motor is a 230 VAC single phase motor. Should the operation for any reason be obstructed, there is a safety guard that stops the machine operating, the washing cycle is paused and the machine is switched to the stop setting. The motor is connected to the two spray pipes by means of a transmission system. These execute a back-and-forth rotating movement so as to allow the water to strike the entire surfaces of the items to be washed.

On every wash arm there are four jets. There is also a fixed jet in the cover. The wash arm motor is located at the rear of the machine together with the transmission system.

NB! When servicing, engineers should ensure that the power is shut off so that the machine cannot be started with a risk for injury.

Distribution box

The GD 600 is supplied with a separate electrical cabinet that is located on the machine's bottom plate behind the front plate. The control system and all electrical components are located in the electrical cabinet. To work in the electrical cabinet you only need to unscrew the cover so that all components become accessible. The electrical cabinet can be removed to access other parts of the machine.

The machine is supplied with 2.5 metres of fitted cable which leads to the back of the machine. The GD 600 connects to 400V, 3-phase, earthed and is protected with 25A.

Cover plates

The machine is protected cover plates around the machine. These plates may only be removed during service work.

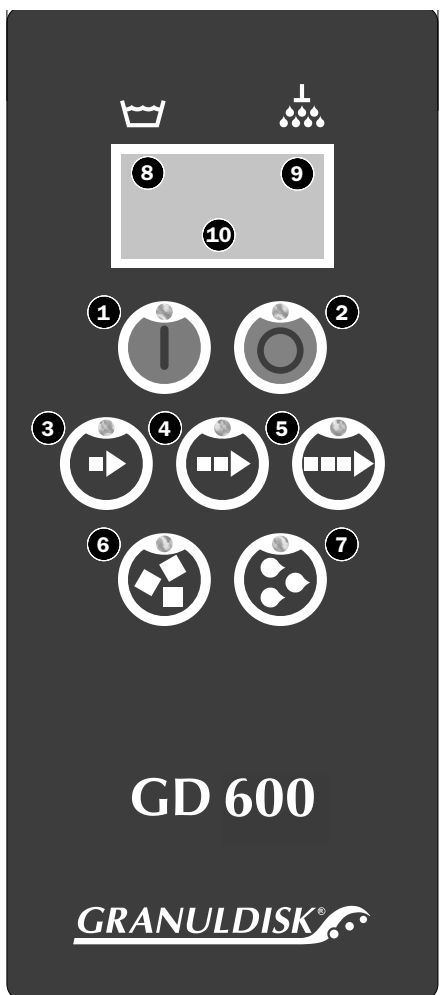
NB! Always use heavy-duty protective gloves when removing or replacing the cover plates. Use care if the machine is run without the cover plates.

WARNING!

Only qualified electricians may work with the electrical unit.

The main fuse shall always be removed when working with the electrical components.

Incorrect connections can cost lives.



Control Panel

- 1** START button
This button starts the wash program described in the display. This button is also used to answer “Yes” to a question shown in the display window.
- 2** STOP button
This button stops all ongoing activities in the machine and resets any alarms.
- 3** Short programme selection
- 4** Normal programme selection
- 5** Long programme selection
- 6** Washing with granules
- 7** Washing without granules
- 8** Temperature, wash tank: if the figures are flashing, the water is being heated.
- 9** Temperature, rinse tank: if the figures are flashing, the water is being heated.
- 10** Wash programme selected

WARNING!

Only qualified electricians may work with the electrical unit.
The main fuse shall always be removed when working with the electrical components.
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Display

The temperatures in the wash tank and rinse tank are always shown in the display. How much time is remaining for the wash programme is also shown while washing is in progress. And error messages are also shown. How these are to be rectified is described in section 10 of this manual. All diodes on the panel flash when an alarm is activated.

One of the following three questions will be shown in the display, depending on the machine mode at the time:

1. Fill wash tank?
2. Heat wash tank?
3. Choose programme?

Press the START button **1** to start the process indicated.

Starting the machine

The GD 600 fills with water via the solenoid valve for incoming water located on the rear of the machine. A requirement for filling is that the doors are closed. Filling with water is activated by pressing the START button on the control panel when the question “Fill washtank?” appears in the display. The machine then starts when you select the wash programme and press the START button. The machine is programmed so that it cannot be started if the temperature in the wash tank is lower than 65 °C directly after the water has been added. This block function is set to 60 °C for subsequent starts. The machine may be reprogrammed only by an authorised engineer.

Note: The GD 600 cannot be started until it is full of water.

GD Memo™

GD Memo is a function which informs the user of the machine's most important maintenance requirements. With GD Memo™, it is possible to ensure optimum wash results, avoid stoppages under high loads and maintain the lowest possible operating costs. This function is integrated in the control panel and informs the user of three actions: changing the wash water, changing the granules and when the annual service is due.

HACCP Operation and Hygiene documentation

Granuldisk® Documentation Tool, GDTdirect™, is an integrated function for the documentation of the dishwashing machine's operating parameters and critical hygiene control points, HACCP. This function can be used in two different ways. Operating data for the last 100 wash programmes run is viewed directly in the control panel window. An external computer can be linked to the machine and operating data stored in separate files so that all historical data can be saved. See also section 8 on page 19.

Energy saving – GD Powersave (option)

The GD 600 can be prepared to operate in a central power restriction system. In this instance, the machine is supplied with a 24 VAC relay (K50 in the electrical cabinet) which interrupts the power supply to the two heater elements from an external 24 V signal.

Operating indication – GD Contact (option)

The machine can be supplied ready for the connection of operating indication, such as an external lamp. In this instance, it is fitted with a 24 VAC relay (K51 in the electrical cabinet) which is enabled when the power to the machine is switched on.

4. Installation

All operations described in this chapter must only be carried out by qualified staff.

All electrical components described in this chapter apply to 400 volt machines. Recalculated electrical values apply to other voltages (see technical data).

1. On delivery first check that the machine has not been damaged. The GD 600plus is delivered well packaged on a pallet. Remove all packaging so that the machine stands free on the pallet. Lift the machine on a pallet lift. Remove the pallet beams and lower the machine carefully onto its feet. Remove the pallet by unscrewing the fastening screws.

2. Put the machine in place and adjust the feet until it is level. Check too that all external screws as well as the screws on the door's hinges are tightened.

3. Connect the hot water and cold water supplies. See water connection.

4. Connect the drain pipe on the left to the drain. The drain capacity should be 100 litres/minute.

Note: The plastic pipe on the right side of the machine is an evacuation pipe and should not in any way be connected to the drain.

5. The electrical connections in the electrical cabinet must be tightened before the input electricity supply is connected. Connect the electrical cable to the main switch on the wall. Check that the power supply complies with the Technical Data on the rating plate.

6. Open the water supply and switch on the power. Close the drain valve which is located on the front plate of the machine. Close the doors. The display then shows the message: "Fill wash tank?". Press the START button to start filling the machine. See starting the machine.

7. The rinse pump operates when the machine is filling. Check that the phase sequence is correct as shown in "Checking phase connection" on page 11.

8. Set the correct user language; see further instructions on page 12.

9. Check that there are no leakages and do an operations check according to chapter 6 p. 13.

10. Once installation is complete tighten the wash hoses. The door hinge screws should also be checked and tightened if necessary.

Connecting the water supply

The machine must be connected to a hot and cold water supply. Use flexible connecting hoses with an internal diameter of no less than 10 mm. Take care to ensure that you have at least an extra 500 mm of hose so that you can move the machine forwards for servicing. The connections are located on the rear of the machine. For further specifications see the technical data and installation diagram. If the water pressure is in excess of 6 bar, a relief valve should be installed.

Connecting drainage

Place the drain valve in open position (shown by symbols on the front plate). Connect a plastic pipe, Ø32 mm, between the hole in the bottom plate and the drain. See the installation drawings on page 9. The drain capacity must be at least 100 litres/minute. The machine should not be placed directly over a floor drain. It is important for the drain to be accessible for cleaning.

Note: The plastic pipe on the right side of the machine is an evacuation pipe and should not in any way be connected to the drain.

Connecting to a power supply

The machine is provided with a 2.5 m electrical cable for connection to 3-phase and earth. See the rating plate for other electrical data. The main switch is not included in the machine delivery.

Checking phase connection

The wash pump and rinse pump are affected by the phase connection. This is checked in the following way.

1. Close the drain valve which is located on the front of the machine. Start the machine filling by closing the doors. Check that the display asks: "Fill wash tank?", then press the START button.
2. While the machine is filling up with water, the rinse pump runs to fill the wash tank. It is difficult to tell from the noise of the pump whether this is running in the right direction. Check by carefully placing a cable tie, for example, in the impeller. Clockwise is the correct impeller direction.
3. If the phases are incorrect, switch two phases on **the incoming line**.

WARNING!

Only qualified electricians may work with the electrical unit.

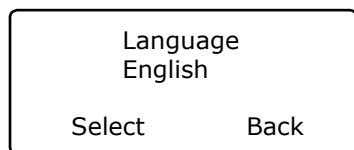
The main fuse shall always be removed when working with the electrical components.

Incorrect connections can cost lives.

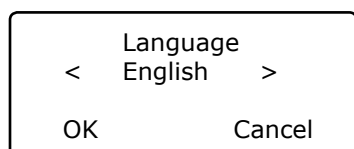
Language Selection

Follow the steps below to change the language settings for the machine.

1. Press the STOP button and wait for 3 seconds.
2. Press button 4, "Normal programme selection", five times.
3. The display shows the following:



4. Press the START button for "Select" and continue changing the language, or press the STOP button to cancel.
5. The display shows the following:



6. Scroll using the buttons for the short or long programme to step through the list of languages. Select a language by pressing the START button.
7. Then press the STOP button to quit programming mode.

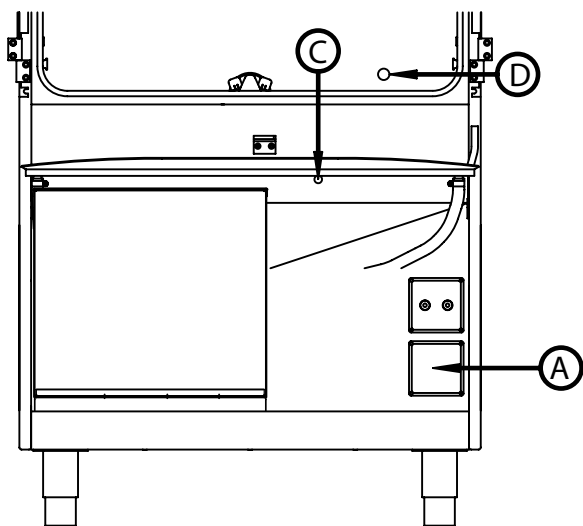
Detergent and rinse agent installation

The machine does not need to be moved but remove the front plate. The drive voltage and control signals for the detergent and rinse agent equipment are located in the terminal box (A) on the front of the wash tank. There are terminal blocks as listed below in the terminal box:

Connection of detergent and rinse agent

Constant 230 VAC	Cable J1-2
Zero 230 VAC	Cable J1-6
Connection for detergent equipment 230 VAC	Cable J1-7/D
Connection for rinse agent equipment 230 VAC	Cable J1-1/R
PE	

Image I



Constant 24 VAC	Cable 113
Zero 24 VAC	Cable J7-7
Connection for detergent equipment 24 VAC	Cable J8-9/D
Connection for rinse agent equipment 24 VAC	Cable J8-4/R
Tank full	Cable J8-5/TF
Emergency stop	Cable J8-3
Emergency stop	Cable J8-8

For detergent regulation there is a preparation hole (D) to the right and rear of the cabinet when viewed from the front. The hole is Ø10 mm.

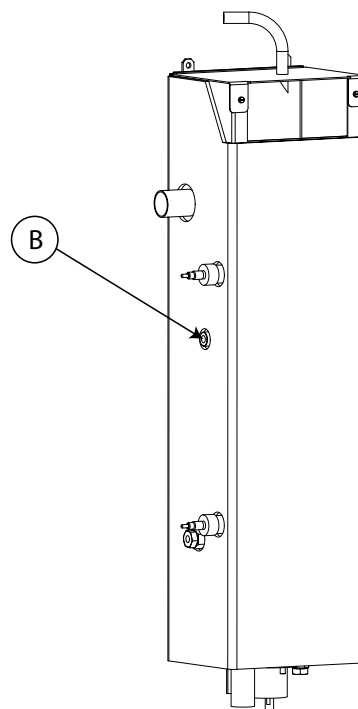
Note:

- It is very important for the detergent supplier to use the prepared hole so that no unnecessary holes are made in the machine.
- Some type of angle piece must be fitted when connecting detergent into the cabin in order to prevent granules from collecting in the pipe. Alkali sensors are installed there for the design hole (C) in the front right part of the tank: see figure 1.

There is a connection for rinse agent (B) on the rinse tank (1/8, internal thread).

Note:

- Granuldisk AB advise against the use of pulse controlled regulation equipment as the detergent concentration becomes uncontrollable.
- All dosing equipment must be fitted with a main switch.



5. Operations check

The installer must implement this section together with the person who is going to be responsible for the machine, e.g. the restaurant manager or kitchen manager.

The function of the machine is inspected and the most important rules for its operation must be reviewed. This ensures correct handover, which is important for the security of the customer and the validity of the warranty.

Granuldisk will not be held responsible for any equipment failure or other damage caused by users failing to follow the instructions in the manual.

Filling

Check that the overflow filter is applied. Switch on the power and close the drain valve located at the bottom of the machine, on the front. Close the doors. The display then shows the message: "Fill wash tank?". Press the START button to start filling the machine. The programme selection diodes flash out of sequence with the diodes for the wash selection, with or without granules during filling. If the water is connected correctly, the filling time should be approximately 7 minutes.

It is possible to check as follows via the control panel that the correct water level has been attained in the wash tank or rinse tank:

1. Press the STOP button and wait 3 s.
2. Press button 4, "Normal programme selection", five times.
3. Use button 3, "Short programme selection", or button 5, "Long programme selection" until you see "Value on the level sensors" in the window. Confirm your choice by pressing the START button.

The values for the level sensors are displayed in the window for Wash Tank, Upper Rinse Tank and Lower Rinse Tank, e.g.;

WT: 750
URT: 750
LRT: 750

A value >500 indicates that the level has been attained.

Checking the temperature

Check that the temperatures in the wash and rinse tanks are 65 °C and 85 °C respectively when the machine is ready to operate. Heating the wash water from -65°C to 65 °C takes approximately 55 minutes.

Wash programmes

1. Wash programmes are started by pressing the START button. The display and programme diodes indicate that a wash programme has been selected. If no pre-selected wash programme is indicated in the display, select a normal programme with granules.
2. Check that the granulate is added and separated (the noise level will rise and fall respectively). The granule valve closes after three minutes so that all granulate can be flushed away over the remaining wash time. The diode on the START button goes out when the wash programme is complete.

Granule level check

There should be 6 kg of granules in the GD 600. The machine is equipped with granule collector (see image 2). The granule level in these must reach the mark in each collector. If the granules are left in the tank, the granule level should reach the lower plate of the granule valve (see image 3). The need for more granules can be checked regularly by levelling them out.

NB!

- Ensure that only original Granuldisk® granules are used.
- Never use too many granules in the machine.
- We recommend that all the granules are changed several times a year.

Checking dosing

Check with the detergent supplier that the correct amount of detergent and rinse aid are fed into the machine.

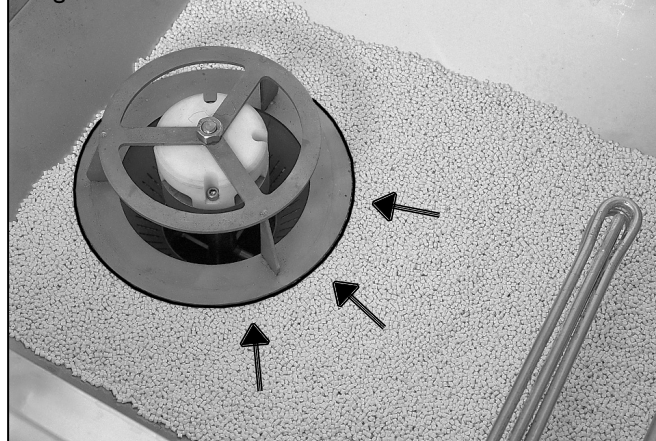
Warranty

For the warranty to be valid, a completed installation report (page 15) signed by the customer and the installer must be sent in to Granuldisk AB.

Image 2



Image 3



INSTALLATION REPORT



N.B. The manufacturer warranty will only be valid when this installation report has been sent back to Granuldisk AB.

Customer:

 E-mail: Tel:

Date:
 Machine type:
 Version:
 Serial no:

Installation preparations

In-house transport:	Water:	Drain:	Power:
---------------------	--------	--------	--------

Present at installation - name and position (detergent supplier, chef, staff, etc.)

Delivery damages:

Delivery corresponding with packing list:

Machine horizontally adjusted:	Connected to water:	Drain:	Power:	Detergent:
Screws tightened (in mains box, box cover, cover plates...):				Rinse agent:
Trolley OK (GD900 flow and freeflow):				

Water	Hot	Cold
Temp.	°C	°C
Pressure	bar	bar
Softness	°dH	°dH

Detergent/rinsing agent	Detergent	Rinse ag.
Brand and product		
Type (fluid, paste, powder...)		
Recommend. dosing	g/l	g/l

Function control

Doors locked during filling	
Rotation of all pumps	
All wash programs tested	
Control of detergent dosing (foaming)	
Steam reduction (condensing unit)	

Filling time (wash tank)	min
Leakages	
Granule separation	
PH-value (wash tank)	
Drain	

Wash cycle starts only when wash temp reached 65°C	YES / NO
Final rinse starts only when rinse temp reached 85°C	YES / NO

Wash temp	°C
Rinse temp	°C

Demonstration and training

Start up, preparation of utensils, pots&pans, working method	
Loading of wash goods, handling of accessories, programme options	
Function of wash programme (sequences), unloading, exchange of water	
Handling of granules - collecting, cleaning, filling, exchange	
Daily cleaning, annual maintenance	
Wall instruction mounted and documentation handed over	
GDTdirect™ presented: YES / NO... and software installed in customer's PC	

Does the customer need additional accessories, holders? which?

Signature of installation engineer:

Signature of customer:

6. Annual maintenance check

NB! All work described in this section may only be carried out by qualified staff! Wear and tear parts, such as o-rings, seals or nozzles, are not included in the warranty from Granuldisk AB.

1. Magnetic valve, inlet water	Check operation
2. Water hydraulics	Leakage pipes and hoses/connections/magnetic valve/ water fi lters
3. Tank level	Correct level/Check level sensor
4. Pump/hoses	Check for noise/leakage/pressure/hose-clips are secure
5. Final rinse pipes	Check nozzles/hoses
6. Spray pipe motor	Check operation/unusual sounds
7. Link system, bearings and nozzles	Wear and leakage in the spray pipe bearings and/or O-rings? Blockage or wear in the nozzles? Nozzles angled correctly? Binding in the pipes and link systems? Lubricate ball and socket joints and bearings.
8. Granule valve	Check opening and closing functions Check the sieve cover works and is clean. Check valve washer.
9. Wide drain sieve	Is it undamaged, clean and in place?
10. Door switch	Check operation 1: Ensure that there is no water in the wash tank. Close one door and leave the other open. Check that the machine does not fi ll with water when a programme is selected. Repeat with the other door. Check operation 2: Shut both doors and check that you cannot open them while the machine fills.
11. Doors incl. seals	Check leakage/door closing/ door seals/door bearings/control guide knobs
12. Temperatures	Check the temperature sensors Are the probes inserted properly in the wash/rinse tank? Are the probe screws tightened? Wash temperature = 65 °C Rinse temperature = 85 °C Check the heater elements
13. Rinse tank	Check the level sensor
14. Other water leakage	Welded joints, washers etc.
15. Distribution box	Check cable connections. Programme check (wash times etc.)
16. Control panel	Check lamps and buttons
17. Steam reduction unit	Check magnetic valve, Clean the whole system
18. Granules	Check amount and wear
19. Detergent and drying agent dosing	Does the machine dose correctly/ does food fat dissolve/is there foam in the wash water?
20. Emergency stop (where fitted)	Check operation, Located correctly?
21. Drain	Check emptying time. Are there granules in the drain water when emptying?
22. User manual/wall poster	Are tehy readily available?
23. Accesories for kitchenware	Check that welds etc. are undamaged

Parts to be changed annually

Part no.	Part	Quantity
6000075.....	Main seal	1
6005035.....	Radial seal	2
14478.....	Clip trim GD 600.....	1
6001121.....	Central strip.....	1
6001122.....	Wash jets.....	8
6005012.....	O-ring 9.3 x 2.4.....	2
60477.....	O-ring 19.2 x 3.0.....	2

These parts are available in a yearly service package with the part number: 18718

Parts to be changed every other year

Part no.	Part	Quantity
6005159.....	Pipe, wash, short	1
6005021.....	Pipe, wash, long.....	1
18451.....	Pipe, final rinse, upper	1
18452.....	Pipe, final rinse, lower.....	1
13930.....	Nozzle, rinse	8
13929.....	Nozzle, rinse	4
13928.....	Nozzle, rinse	4
60460.....	O-ring 15.3 x 2.4.....	2
14515.....	Connector 1/8" 90° ext.....	2
18285.....	Pipe, in flow rinse pump	1
18491.....	Pipe, drain rinse pump.....	1

NB!

After changing O-rings 60460, food type lubricating grease (Granuldisk article no. 14589) must be injected through the grease nipple.

These parts are available in a yearly service package with the article number: 18721

7. Routines for a shutdown

Routine for storing granules not in daily use.

1. Collect the granules in the machine in the granule collectors.
2. Rinse the granules with plenty of water so all the dirt is removed.
3. Place the granule collector with granules in a sink or trough over night. Place them in dishwasher detergent solution, 2ml/liter.
4. Empty out detergent solution.
5. Rinse the granules with plenty of water. Shake well to remove as much water as possible.
6. Store the clean granules in the granule collectors.
7. Place the granule collectors in the machine.
8. Ensure that the machine doors are not completely closed so that the air can circulate.

8. HACCP Hygiene and Operation Documentation

GDTdirect™

The Granuldisk® Documentation Tool, GDTdirect™, is an integrated function for documentation of the potwashing machine's operating parameters and critical hygiene control points, HACCP. The function can be utilised in two different ways. The operating data for the 100 most recent wash programmes can be read off directly in the control panel window. For complete storage of all historical data, an external computer can be connected to the machine and operating data can be stored in separate files. The system requirements for the connection of external computers are Windows 2000 or Windows XP.

Reading Data off the Control Panel

1. Press the STOP button and wait for 3 seconds.
2. Press button 4, "Select normal programme", 5 times.
3. Scroll with button 3, "Select short programme", or button 5, "Select long programme", until "Read operating data" is displayed in the window. Confirm your selection by pressing the START button.
4. Operating data for the most recent programme is displayed in the window, for example:

050121 15:19 SG 65/85 OK

The information is read as follows:

- Date – 050121 (21/01/05)
- Time – 15:19
- Programme type – S, N, L, corresponding to Short, Normal, Long programme.
- Selection of washing with granules is indicated with a "G". Otherwise this space is blank.
- 65 – indicates the mean value of the temperature in the wash tank during washing.
- 85 – indicates the mean value of the temperature in the rinse tank during the final rinse.
- OK – indicates that the rinse water volume is correct in accordance with the factory values. If the set values have been changed, NA (not applicable) is displayed instead.

If the wash programme has been interrupted on account of a handling error or a technical fault, the temperature indication is omitted and replaced by "Error:" and an error code. See the example below. For the most frequent potential errors, the error message is written in plain text. For other errors, please see the manual.

050121 15:19 SG Error 103

5. To obtain information about previous programmes, you can scroll forwards and backwards in the list with button 3, "Select short programme", and button 5, "Select long programme".
6. To finish scrolling and exit the list, press the START button.

Storing Data on an External Computer

To store complete operating data for the machine, it needs to be connected to an external computer via a serial cable. Software is installed on the computer which gradually collects and stores operating data from every wash programme run.

For storage to take place, the computer has to be switched on and the documentation program has to be active. Data is transferred and stored in the selected folder on the computer after every programme run. This program can be active without stopping the computer being used normally.

It is also possible to download the last 100 programmes by selecting "Washer/Get all log data" if the computer has not been connected. Note: Duplicates may appear in this mode.

Cable Connection

The machine is supplied with a 10 m cable and a serial contact for connection to the machine and a computer. If the computer does not have a serial port, a USB/serial adapter can be used. For information on what is suitable for your computer, contact your IT dealer. Connect the cable supplied in the start-up kit to the connector placed adjacent to the detergent connection. Then lay the cable to the computer via the kitchen's normal communication ducts and connect it to a free COM port.

Program Installation

The program is supplied on a CD and is installed as follows:

1. Create and name a folder for the program on the hard disk. Use "Explorer" in the computer's office program.
2. Insert the CD and click the program file gdt-direct.zip on the CD. Save the files in the folder you have just created on your hard disk.
3. Tip: create a shortcut on the desktop to make it easier to find the program when you need to start it.

Starting the Program

1. Start the program by double-clicking the program file gdt-direct.exe in the folder you created on the hard disk or by clicking the icon you created on the desktop.
2. When the program has started, you have to select the port to which the potwashing machine is connected. Click Ports and select the correct port.
3. Then select Washer and then Connect.
4. A window appears on the monitor and you have to select where you want to save the log file. Select the folder created under "Program Installation" above and give the file a name.

Tip: name the file after the week or month so that it is easy to find the operating data stored. Example: "HACCP-w.17-2005". New data is saved in the same file after data saved previously until you choose to give the file a new name. Rename the log file at regular intervals so that the list does not become unnecessarily long.

5. Data is displayed directly on the computer monitor. See the picture on the next page. The view has a fixed size that cannot be changed, and table headings in English. The columns can be widened by placing the mouse cursor in the table

header and dragging it out.

From left to right, the following information can be read out:

Date; Time; Programme type – Short, Normal, Long; Granules – G/washing with granules or NO/Washing without granules; Temperature in wash tank; Temperature in rinse tank; Information on final rinse sufficient – OK or NA if the rinse volume was reduced.

To read out all data, the program must be active and connected to the potwashing machine.

Data Processing

Data can be processed by selecting View in the menu and then Log file. To read out data saved in older files, use “Explorer” to find and click the file name in the folder in which the files are saved. From Log file, the information can be cut and pasted in, for example, Excel for statistical processing. Saved files can also be placed on a common server or be emailed to a central HACCP manager.

9. GD Memo™

GD Memo is an integrated function which informs the user of the machine's most important maintenance requirements. With GD Memo, it is possible to ensure optimum wash results, avoid stoppages under high loads and maintain the lowest possible operating costs. This function is integrated in the control panel and keeps the user informed as follows:

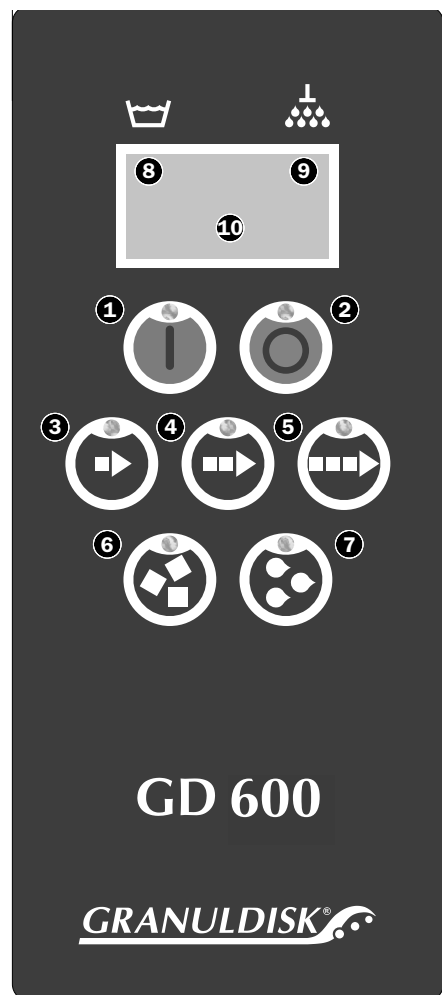
1. Time to change wash water

The “Washing without granules” button ⑦ flashes and the message “Change water” is shown in the display. This information disappears once the water has been changed or can be reset by pressing button ⑦ five times. This reminder appears after every 20 wash cycles.

2. Time to change granules – to maintain the wash power in the machine. The “Washing with granules” button ⑥ flashes and the message “Change granules” is shown in the display. This information disappears once the granules have been changed and this has been acknowledged by pressing the granule button ⑥ nine times and the normal programme button ④ once. A granule change reminder appears after every 2500 wash cycles.

3. Time for annual service

The STOP button ② flashes and the message “Service” is shown in the display. This information can only be reset by an authorised service engineer once a maintenance service has been completed. An annual service reminder appears after every 8000 programmes or one year, whichever occurs first.



I0.Troubleshooting/Alarms

NB! Controls in this chapter may only be carried out by qualified staff.

FAULT

Machine will not fill with water

CHECK

1. That the inlet water valve is open.
2. That a programme has been selected.
3. That the doors are closed and the door sensors are activated.
4. That the level sensor is clean.
5. That the solenoid valve works.

The machine will not start

1. The door sensors are activated.
2. The overheating sensor has not tripped out.
3. That the motor sensor QF1 in the electrical cabinet has not tripped out.
4. That the automatic sensor F3 or the glass sensors F4 and F5 in the electrical cabinet have not tripped out.
5. That the emergency stop is not depressed.
6. That the temperature sensors are intact.

Spray pipe alarm

- 1.If pots or other things hinder the spray arms' movement.
- 2.If the drive system is catching.

No granules when washing with granules

- 1.That the granule level is correct.
- 2.If the granule valve is seated properly.
- 3.That water pressure to the solenoid valve is OK.
- 4.That the magnetic valve for the granule valve is OK.
- 5.That the granule valve does not leak.
6. That the dirt filter and constriction is in place.

Granules left on the items to be washed

- 1.That nozzles are not blocked.
- 2.That pots are angled correctly.
- 3.That no foreign material is in the bottom of the granule valve and that the sealing ring is intact.
- 4.That the sieve cover is fixed in place.
- 5.That the granule valve is properly located in its thread.
- 6.That the SW1 switch on the circuit board is not in the *man.* position, (checked by an electrician).
- 7.That there is not too much foam in the machine while washing.
- 8.That the spray pipe motor and link system are OK.
- 9.That the return water pipe is not blocked.

Machine does not wash items clean

- 1.That the nozzles are not blocked.
- 2.That the wash water temperature is approx. 65 °C.
- 3.That detergent dosing is correct.
- 4.That the right amount of granules are in the machine.
- 5.That there is not too much foam in the machine.
- 6.That the spray pipe motor and link system are OK.
- 7.That the pots are placed correctly.
8. That the protective grid for the pump has not been blocked.

Wash water does not maintain the right temperature

- 1.That automatic breaker F1 in the distribution box is in position 1.
- 2.That the thermistor is undamaged and the temperature is correctly set.

Final rinse water does not maintain right temperature

- 1.That automatic breaker F1 in the distribution box is in position 1.
- 2.That the thermistor is undamaged and the temperature is correctly set.
- 3.That inlet water is approx. 55 °C.

Error code	Error message	Cause	Remedy
100	Spray pipe alarm	Something is preventing movement of the spray pipes.	Remove whatever is preventing movement, then reset the alarm by pressing the STOP button.
109	Door switch	Someone has attempted to open the doors during operation.	Reset the alarm by pressing the STOP button.
116	Low water level, problem with foam	Foam forming in the machine.	Avoid using detergent designed for washing up by hand. Change the wash water. Contact your detergent supplier if you still the problems with foam formation persist. Reset by pressing the STOP button.
118	Drain valve not closed	The drain valve has opened during an active process in the machine.	Close the drain valve and reset the alarm by pressing the STOP button.

The meaning of the other error codes can be read out from the table below.

Error code	Meaning	Cause	Remedy
001		Programme cancelled by operator.	This error code is displayed only when operating data is read in GDTdirect™.
100	Spray pipe alarm	Something is preventing movement of the spray pipes.	Remove whatever is preventing movement, then reset the alarm by pressing the STOP button.
103	Automatic circuit breaker for rinse pump tripped out.	The motor is overloaded, the programme is cancelled.	Find the cause of the problem. Reset the automatic circuit breaker in the electrical cabinet, then reset the alarm by pressing the STOP button.
104	Overheating protector for rinse tank tripped	The rinse tank heater element has overheated, the programme is cancelled.	Check the function of the level monitors, and check that the machine is filling with water. Reset the overheating protector located to the right of the electrical cabinet, then reset the alarm by pressing the STOP button.
105	Overheating protector for wash tank tripped out.	The wash tank heater element has overheated, the programme is cancelled.	Check the function of the level monitors, and check that the machine is filling with water. Reset the overheating protector located to the right of the electrical cabinet, then reset the alarm by pressing the STOP button.
106	Overheating protector for one of the heater elements tripped out.	One of the heater elements has overheated, the programme is cancelled.	Check the function of the level monitors, and check that the machine is filling with water. Reset the overheating protector located to the right of the electrical cabinet, then reset the alarm by pressing the STOP button.
107	Temperature not reached in wash tank	The wash water in the wash tank does not reach its preset temperature during the wash process, the programme is cancelled.	Check the heater element fuse in the electrical cabinet. Reset the alarm by pressing the STOP button. If the alarm recurs, contact service personnel.
108	Temperature not reached in rinse tank	The rinse water in the rinse tank does not reach its preset temperature during the wash process, the programme is cancelled.	Check the heater element fuse in the electrical cabinet. Reset the alarm by pressing the STOP button. If the alarm recurs, contact service personnel.
109	Door switch	Someone has attempted to open the doors during operation.	Reset the alarm by pressing the STOP button.

Error code	Meaning	Cause	Remedy
110	Temperature sensor in rinse tank non operational	The temperature sensor in the rinse tank is broken.	Replace the temperature sensor in the rinse tank. Reset by pressing the STOP button.
111	Temperature sensor in wash tank non operational	The temperature sensor in the wash tank is broken.	Replace the temperature sensor in the wash tank. Reset by pressing the STOP button.
112	Water level too low in rinse tank	The level in the rinse tank has fallen erroneously.	Check the water connections to the rinse tank. Reset by pressing the STOP button.
113	Water level too low in wash tank	The level in the wash tank has fallen erroneously.	Check the water connections to the wash tank, as well as the drainage pipe. Reset by pressing the STOP button.
114	Long wash tank filling time	The level sensor in the wash tank has not been activated within 20 minutes of the solenoid valve opening, the programme is cancelled.	Check the water supply to the machine, as well as the solenoid valve for wash tank filling. Reset the alarm by pressing the STOP button.
115	Long rinse tank filling time	The level sensor in the rinse tank has not been activated within 5 minutes of the solenoid valve opening, the programme is cancelled.	Check the water supply to the machine, as well as the solenoid valve for rinse tank filling. Reset the alarm by pressing the STOP button.
116	Low water level, problem with foam	Foam forming in the machine.	Avoid using detergent designed for washing up by hand. Change the wash water. Contact your detergent supplier if you still the problems with foam formation persist. Reset by pressing the STOP button.
117	Long rinse time	The lower level sensor in the rinse tank has not indicated that the correct amount of water has been pumped out.	Check rinse pump function. Reset the alarm by pressing the STOP button. If the alarm recurs, contact service personnel.
118	Drain valve not closed	The drain valve has opened during an active process in the machine.	Close the drain valve and reset the alarm by pressing the STOP button.
119	Automatic circuit breaker for washpump tripped	The motor is overloaded, the programme is cancelled.	Find the cause of the problem. Reset the automatic circuit breaker in the electrical cabinet, then reset the alarm by pressing the STOP button.
128, 129, 130, 131	System error, control card non operational	A control card component is broken.	Replace the control card.

11. Warranty

The following rules apply for Granuldisk product warranty:

1. The warranty is valid for 12 months from commissioning or at the most 15 months from the date the goods are delivered from Granuldisk AB in Malmö, Sweden.
2. The warranty covers faults caused by defects in construction, materials or fabrication.
3. The warranty is valid only if the product has been utilized for normal and proper use in a catering kitchen, or similar, and is installed according to instructions supplied by Granuldisk AB.
4. Granuldisk AB shall remain liable for a period of twelve (12) months (warranty period) for the removal and replacement of any parts of the goods suffering from "Epidemic failure". The notification of such a defect shall be done by the Distributor prior to the end of the guarantee period.

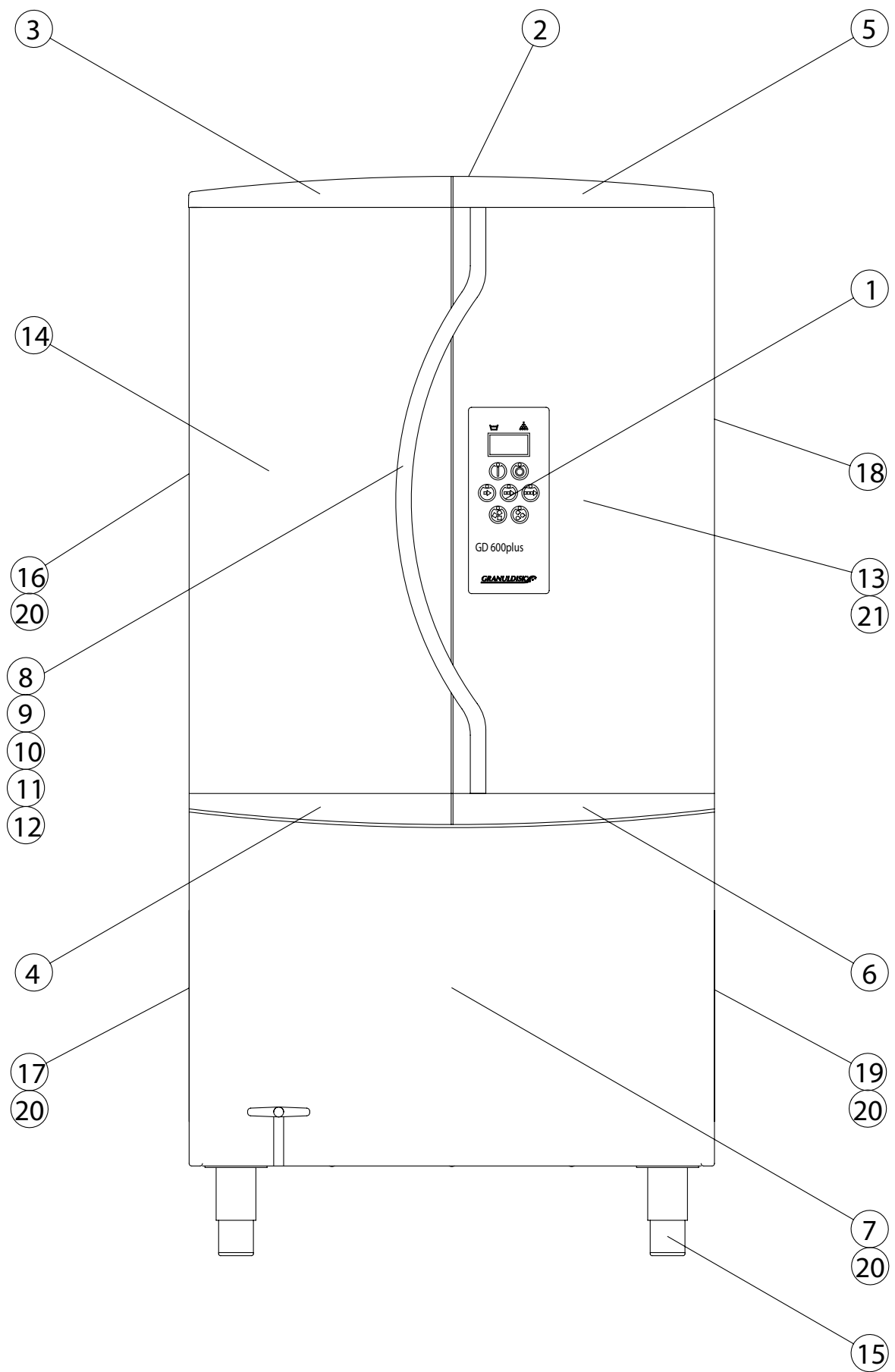
"Epidemic failure" is understood to be a defect which has appeared in any consecutive 12-month period in 10 % of any parts of the goods of a similar type and nature of each other.

5. The warranty does not include compensation for personal injury, loss of production, loss of profit or any other indirect damage.
6. The warranty does not cover wear metal and consumable supplies, such as light bulbs, filters, fuses, gaskets etc.
7. The distributor shall monthly supply Granuldisk AB with a list of spare parts which have been exchanged under warranty, specifying machine number and information about the defect. The distributor specifies if the parts should be replaced or credited. Granuldisk AB decides which spare parts will be sent back for examination at the factory.
8. The warranty is valid only if granules and original spare parts from Granuldisk AB are being used and if completed and signed Installation Protocol is returned to Granuldisk AB.
9. Compensation for working hours in connection with the warranty repair will not be covered by Granuldisk AB.

I 2. Spare parts list

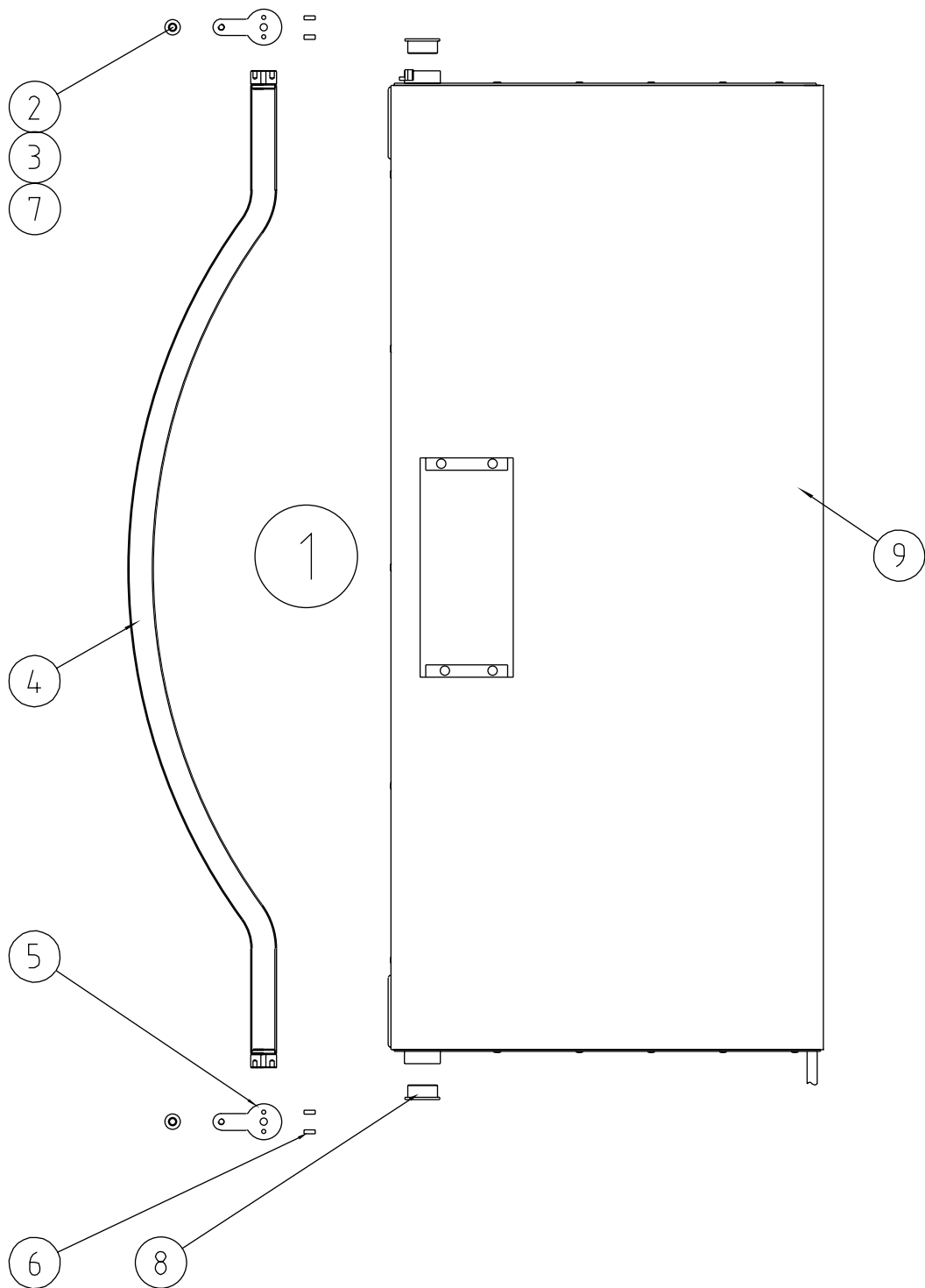
I 2.1 Front

Position	Part no.	Description	Quantity
Nr. 1	18710	Control panel spare part kit. Complete.	
Contents:			
.....	18151	Panel sheeting	1
.....	18322	Circuitboard control panel.....	1
.....	18313	Panel plate	1
Nr. 2	12158	Screw, door casing MFS M5x508	
Nr. 3	14028	Door casing, upper left	1
Nr. 4	13650	Door casing, lower left	1
Nr. 5	14663	Door casing, upper right	1
Nr. 6	14664	Door casing, lower right.....	1
Nr. 7	18466	Service hatch	1
Nr. 8	14659	Door handle	1
Nr. 9	14660	Lock arm	2
Nr. 10	10907	Peg, Cylindrical.....	4
Nr. 11	10537	Ballbearing.....	2
Nr. 12	600 0115	Stock, doorhandle	2
Nr. 13	18374	Door, right.....	1
Nr. 14	14680	Door, right.....	1
Nr. 15	600 5108	Leg.....	4
Nr. 16	600 1138	Side casing, upper left	1
Nr. 17	600 1136	Side casing, lower left.....	1
Nr. 18	18528	Side casing, upper right.....	1
Nr. 19	600 1130	Side casing, lower right	1
Nr. 20	12213	Screw, LKCS M6x16	17
Nr. 21	18551	Door, right, complete spare part (see separate diagram for details)	



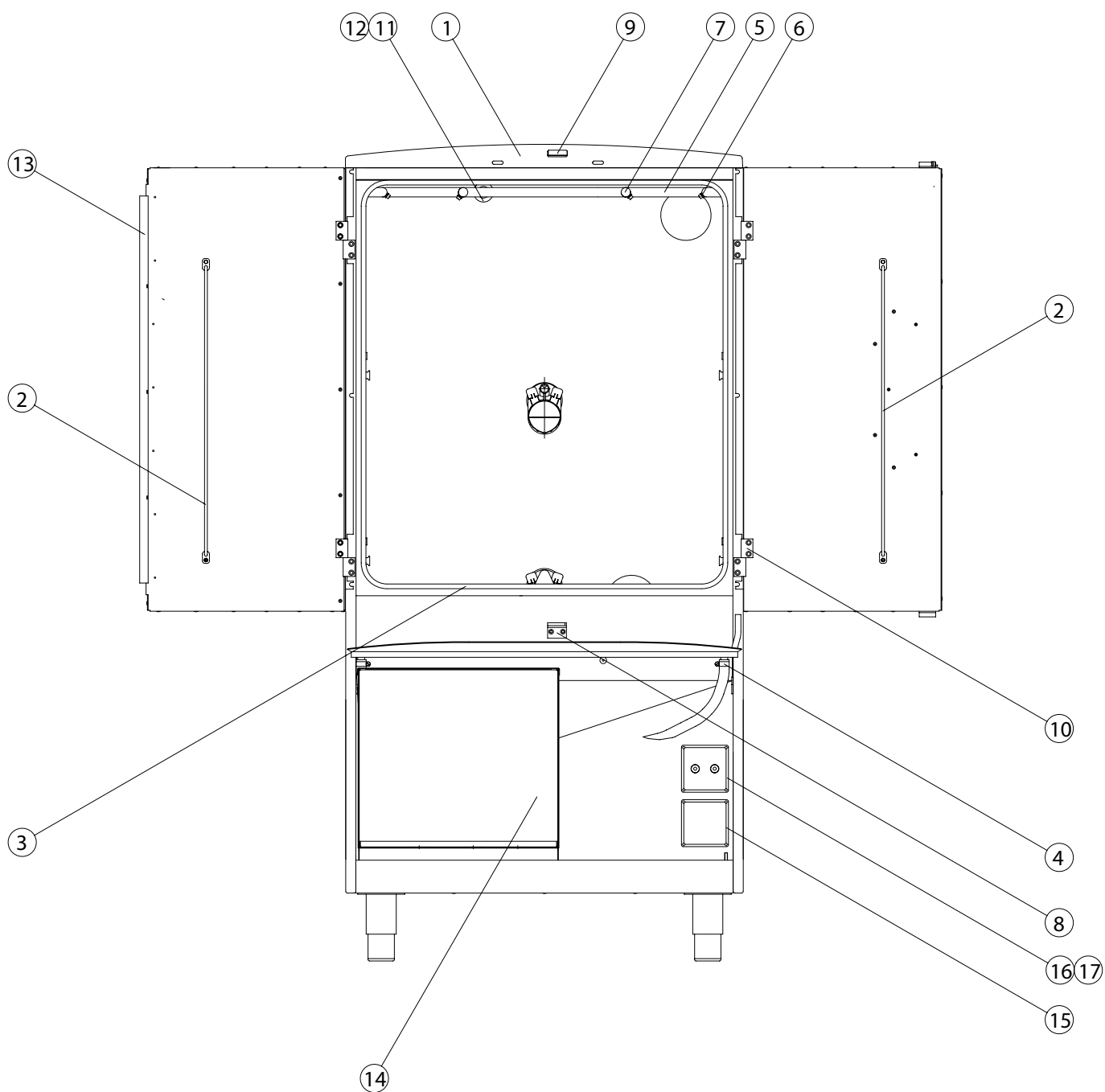
12.1 Door, right complete

Position	Part no.	Description	Quantity
Nr. 1	18551	Door, right, spare part complete	
Contents:			
Nr. 2	12084	Screw, MELC6S M6x10 A2.....	2
Nr. 3	12303	Washer 6.4x12	2
Nr. 4	14659	Door handle	1
Nr. 5	14660	Lock arm	2
Nr. 6	10907	Peg, Cylindrical.....	4
Nr. 7	10537	Ballbearing.....	2
Nr. 8	600 0115	Bearing, doorhandle.....	2
Nr. 9	18374	Right, door	1



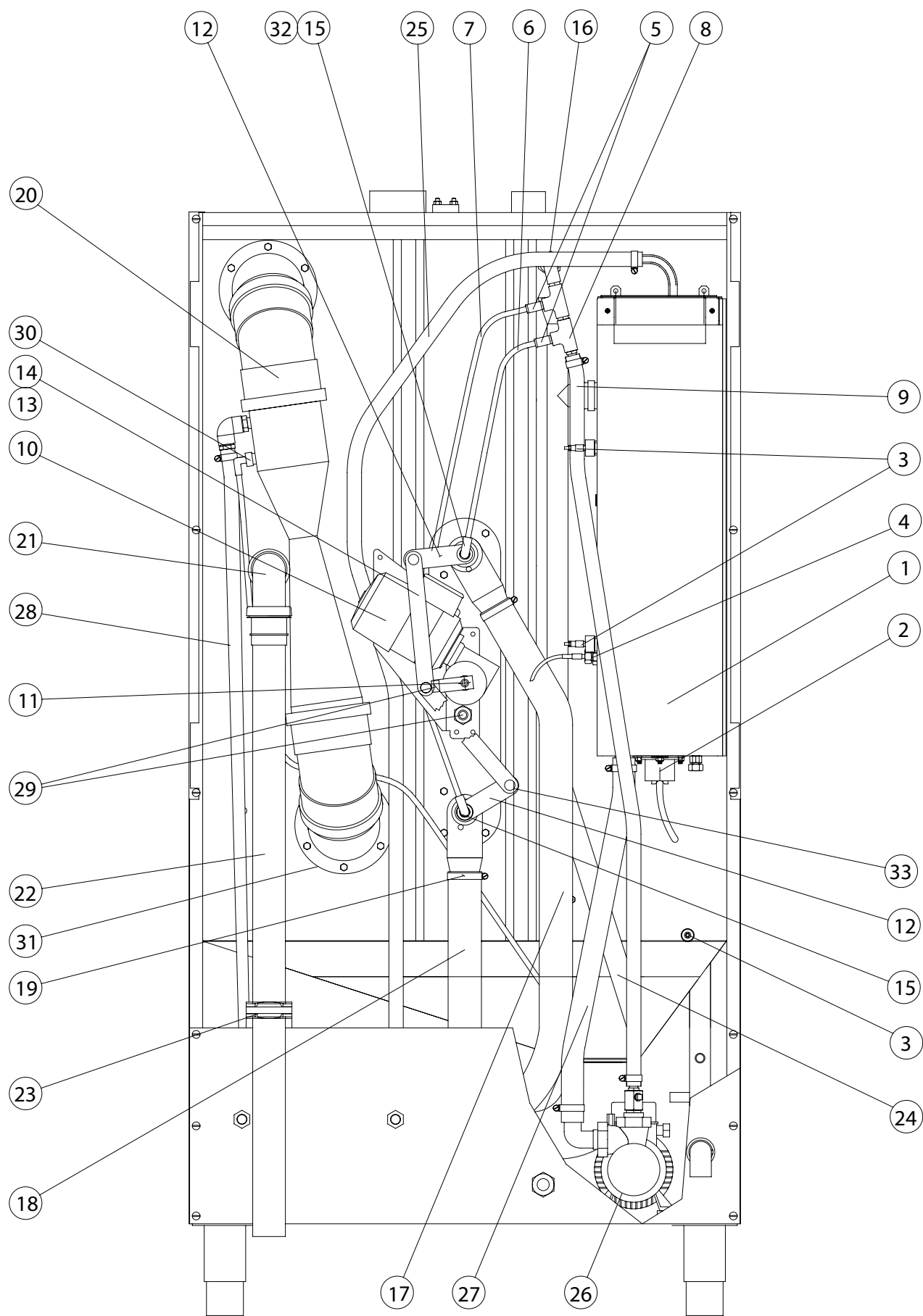
9.2 Front, open

Position	Part number	Description	Quantity
Nr. 1	14029	Lid, GD 600.....	1
Nr. 2	600 1140	Door mounting, long	2
Nr. 3	14478	Clip trim GD 600	1
Nr. 4	10905	Hose clip, 16 – 259mm	1
Nr. 5	13779	Pipe, Final rinse	1
Nr. 6	13928	Jets, final rinse, outer	4
Nr. 7	13929	Jets, final rinse, inner	4
Nr. 8	14655	Guide rail, lower	1
Nr. 9	14658	Guide rail, upper	1
Nr. 10	13552	Hinge complete	4
Nr. 11	600 1082	Seal, final rinse.....	1
Nr. 12	60477	O-ring 19.2 x 3.0	1
Nr. 13	600 1121	Central strip	1
Nr. 14	18336	Electrical cabinet, 400,415 V.....	1
Nr. 15	600 5158	Regulator, Detergent.....	1
Nr. 16	600 5049	Box, overheating.....	1
Nr. 17	14425	Overheating sensor	2



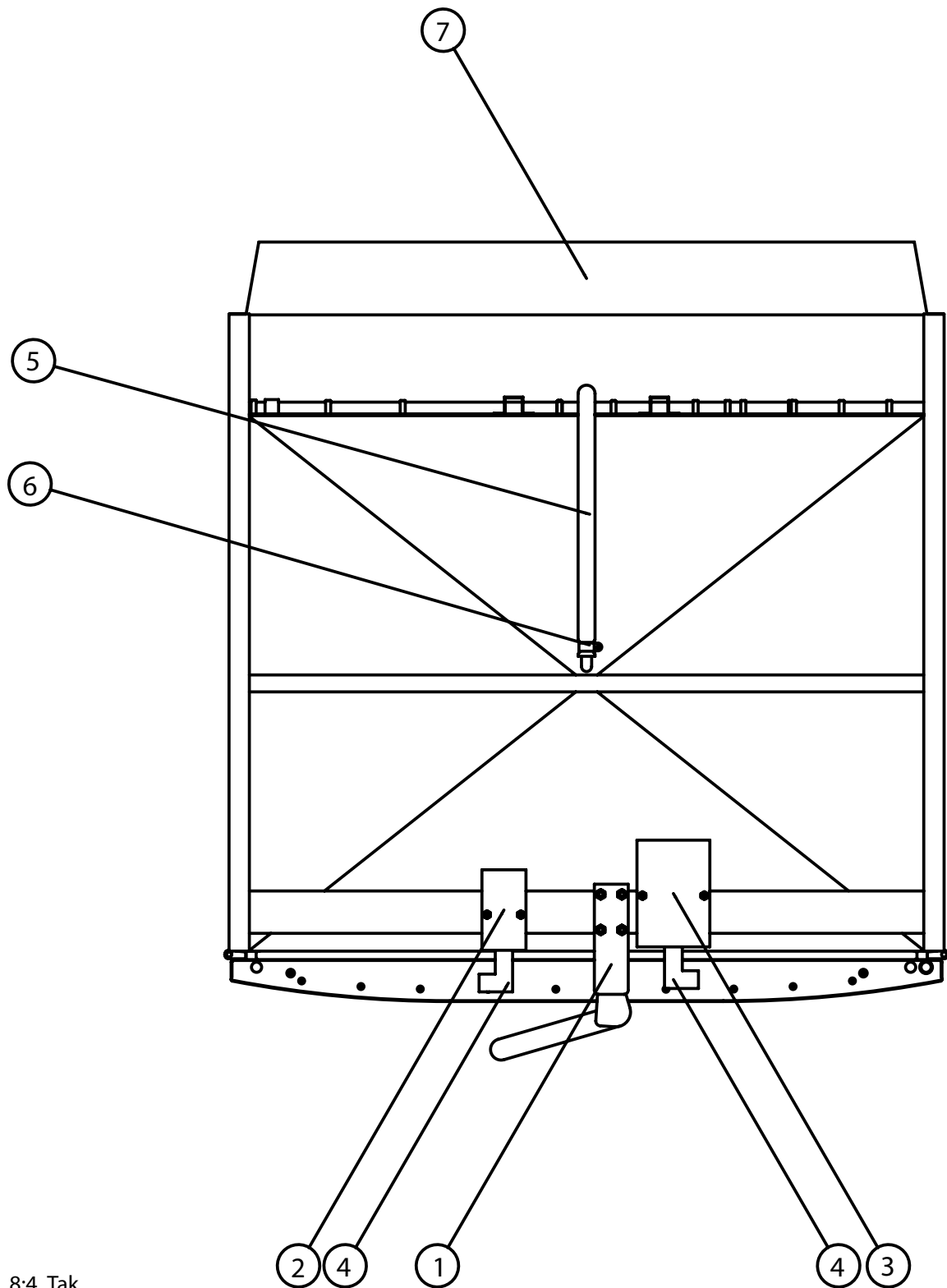
9.3 Rear

Position	Part no.	Description	Quantity
Nr. 1	18127	Rinse tank	1
Nr. 2	18572	Element, 400/415 V complete.....	1
Contents:			
•	13935	Element, 400/415 V	1
•	600 5136	O-ring.....	1
.....	14329	Element, complete: 400/415 V element + overheating sensor + o-ring	
Nr. 2	18574	Element, 440 V complete.....	1
Contents:			
•	13944	Element, 440 V	1
•	600 5136	O-ring.....	1
.....	14331	Element, complete: 440 V element + overheating sensor + o-ring	
Nr. 2	18576	Element, 230 V complete.....	1
Contents:			
•	13936	Element, 230 V	1
•	600 5136	O-ring.....	1
.....	14330	Element, complete: 230 V element + overheating sensor + o-ring	
Nr. 3	10529	Level sensor.....	2
Nr. 4	18097	Screw for level sensor.....	1
Nr. 4	18325	Temperature sensor with o-ring.....	1
Nr. 5	14543	Connector 90° - ¼ ext.....	1
Nr. 6	18452	Pipe, final rinse, lower	1
Nr. 7	18451	Pipe, final rinse, upper.....	1
Nr. 8	18490	Connector T ¼"	2
Nr. 9	18491	Pipe, rinse pump	2
Nr. 10	600 5098	Spray pipe motor	2
Nr. 11	600 0099	Crank arm.....	1
Nr. 12	600 0241	Rocker arm	2
Nr. 13	13542	Tow bar, complete	2
Contents:			
Nr. 14	13496	Towbar	1
Nr. 33	13509	Bearing.....	2
Nr. 15	14515	Swivel connector 1/8" 90° ext	2
Nr. 16	18530	Connector 1/4" 90° ext.....	1
Nr. 17	600 5021	Pipe, wash, long	1
Nr. 18	600 5159	Pipe, wash, short	1
Nr. 19	60415	Hose clip, pipe 40 – 60 9mm	4
Nr. 20	600 5149	Nozzle, ejector.....	1
Nr. 21	13352	Bend	3
Nr. 22	13353	Plastic pipe	1
Nr. 23	13442	Pipe holder.....	1
Nr. 24	18391	Drain pipe, rear	1
Nr. 25	18492	Pipe, rinse pump	1
Nr. 26	18051	Rinse pump	1
Nr. 27	18285	Pipe, rinse pump	1
Nr. 28	18585	Pipe, ejector	1
Nr. 29	18332	Sensor, sprayer guard.....	1
Contents:			
•	14783	Magnetic sensor	1
•	18542	Magnet.....	1
Nr. 30	10541	Connector 90°	1
Nr. 31	6001093	Condensation flange washer	2
Nr. 32	12306	Washer 10.5 x 22 x 2.....	2



9.4 Lid

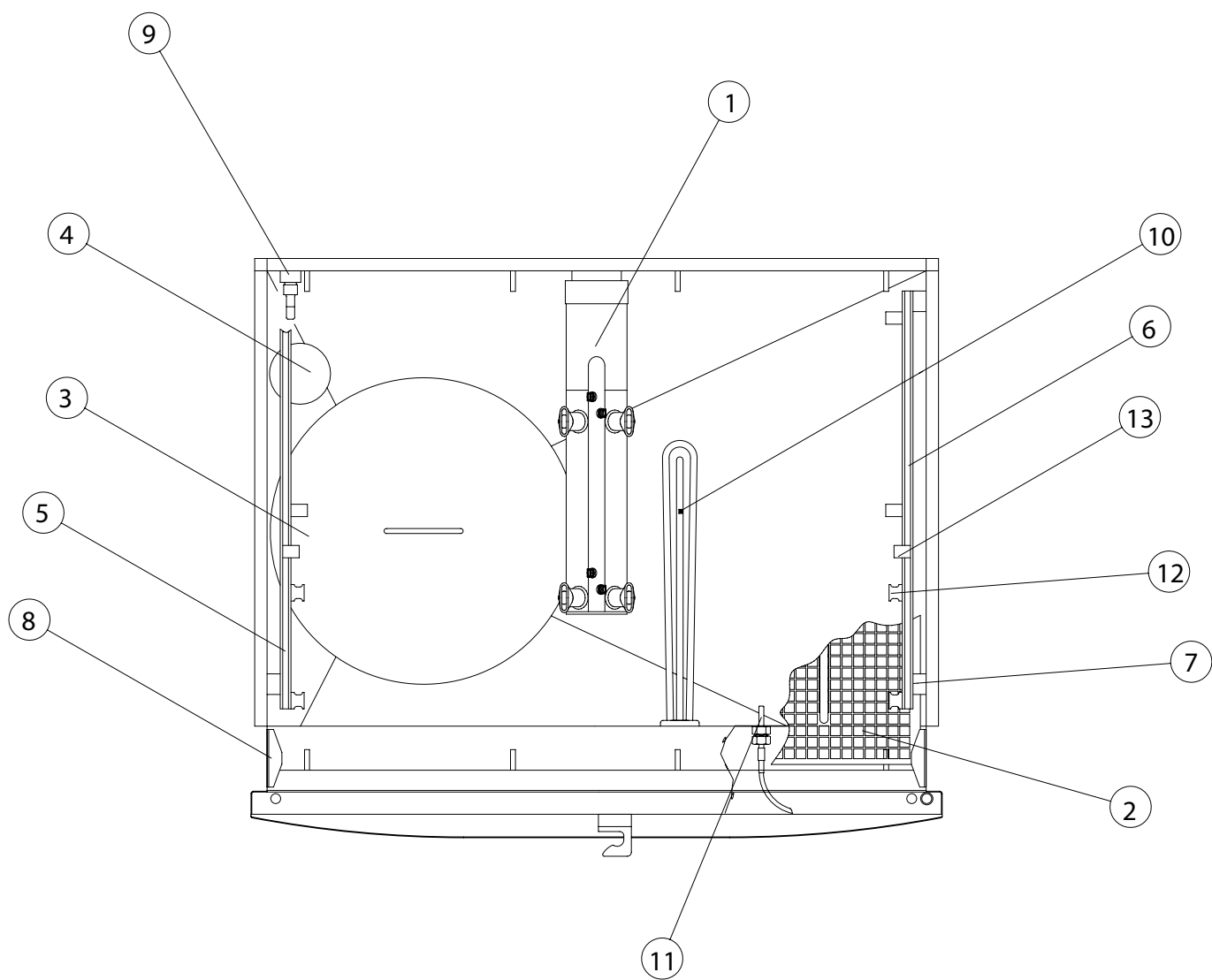
Position	Part no.	Description	Quantity
Nr. 1	14658	Guide rail, upper	1
Nr. 2	14058	Key breaker with lock	1
Nr. 3	14059	Key breaker with lock	1
Nr. 4	14060	Key	2
Nr. 5	600 5157	Pipe, wash, lid	1
Nr. 6	10905	Hose clip, 16 – 25 9mm	1
Nr. 7	600 1056	Back plate	1



8:4 Tak

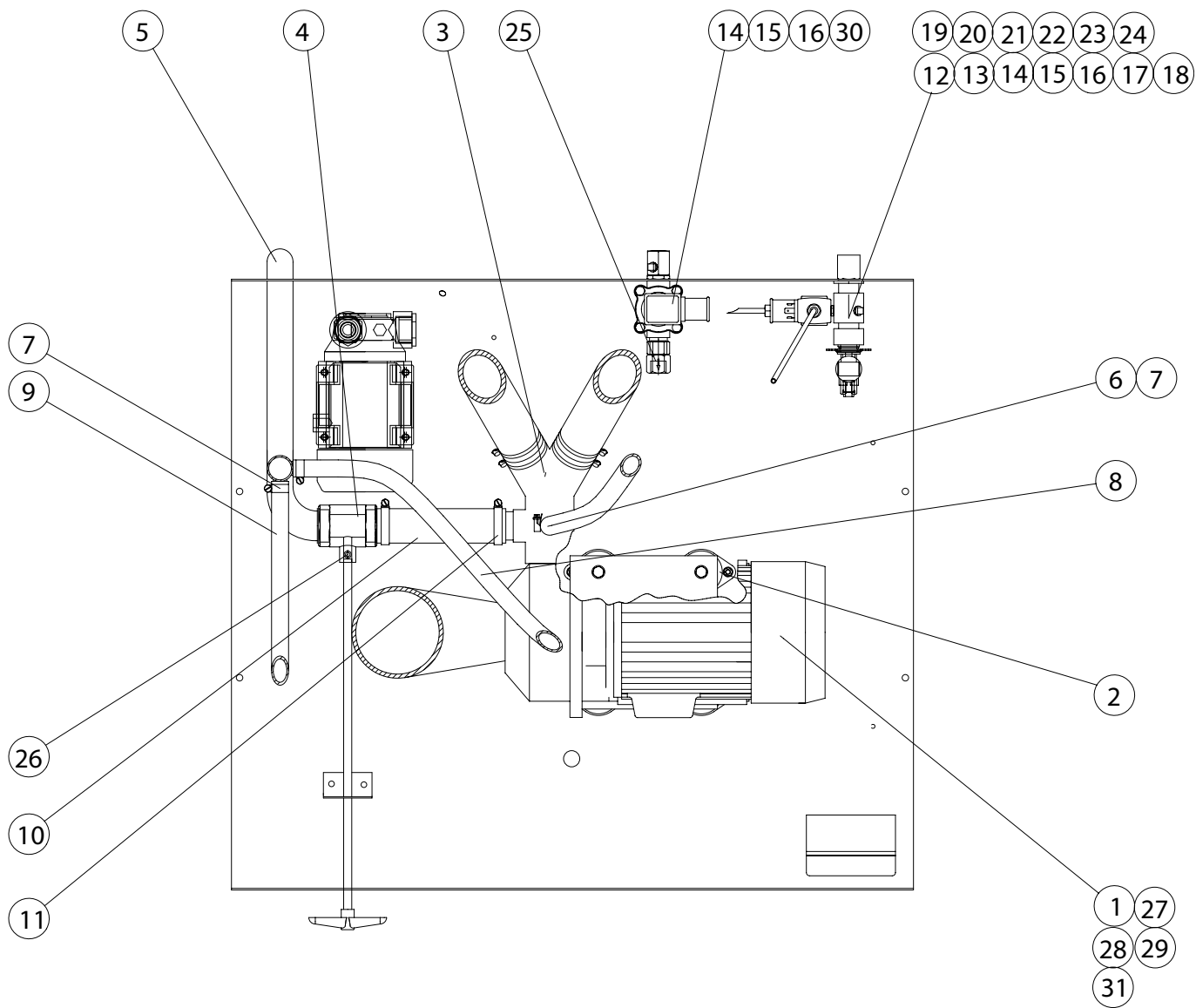
9.5 Wash tank

Position	Part no.	Description	Quantity
Nr. 1	13933	Spraypipe, complete (See separate diagram for information)	
Nr. 2	600 1028	Bottom grating	2
Nr. 3	600 0074	Seal	1
Nr. 4	13972	Wide drain seal	1
Nr. 5	600 1202	Runner, left complete	1
Nr. 6	600 1203	Runner, right complete	1
Nr. 7	600 1154	Distance fittings	8
Nr. 8	600 1131	Control block	4
Nr. 9	10529	Level sensor	1
Nr. 10	18572	Element, 400/415 V complete	
Contents:			
•	13935	Element, 400/415 V	
•	600 5136	O-ring	
.....	14329	Element, complete: 400/415V element + overheating sensor + o-ring	
Nr. 10	18574	Element, 440 V complete	
Contents:			
•	13944	Element, 440 V	
•	600 5136	O-ring	
.....	14331	Element, complete: 440 V element + overheating sensor + o-ring	
Nr. 10	18576	Element, 230 V complete	
Contents:			
•	13936	Element, 230 V	
•	600 5136	O-ring	
.....	14330	Element, complete: 230 V element + overheating sensor + o-ring	
Nr. 11	18097	Screw for level sensor	1
Nr. 11	18325	Temperature sensor with o-ring	1
Nr. 12	600 1011	Basket roller	8
Nr. 13	600 1013	Basket stop	12



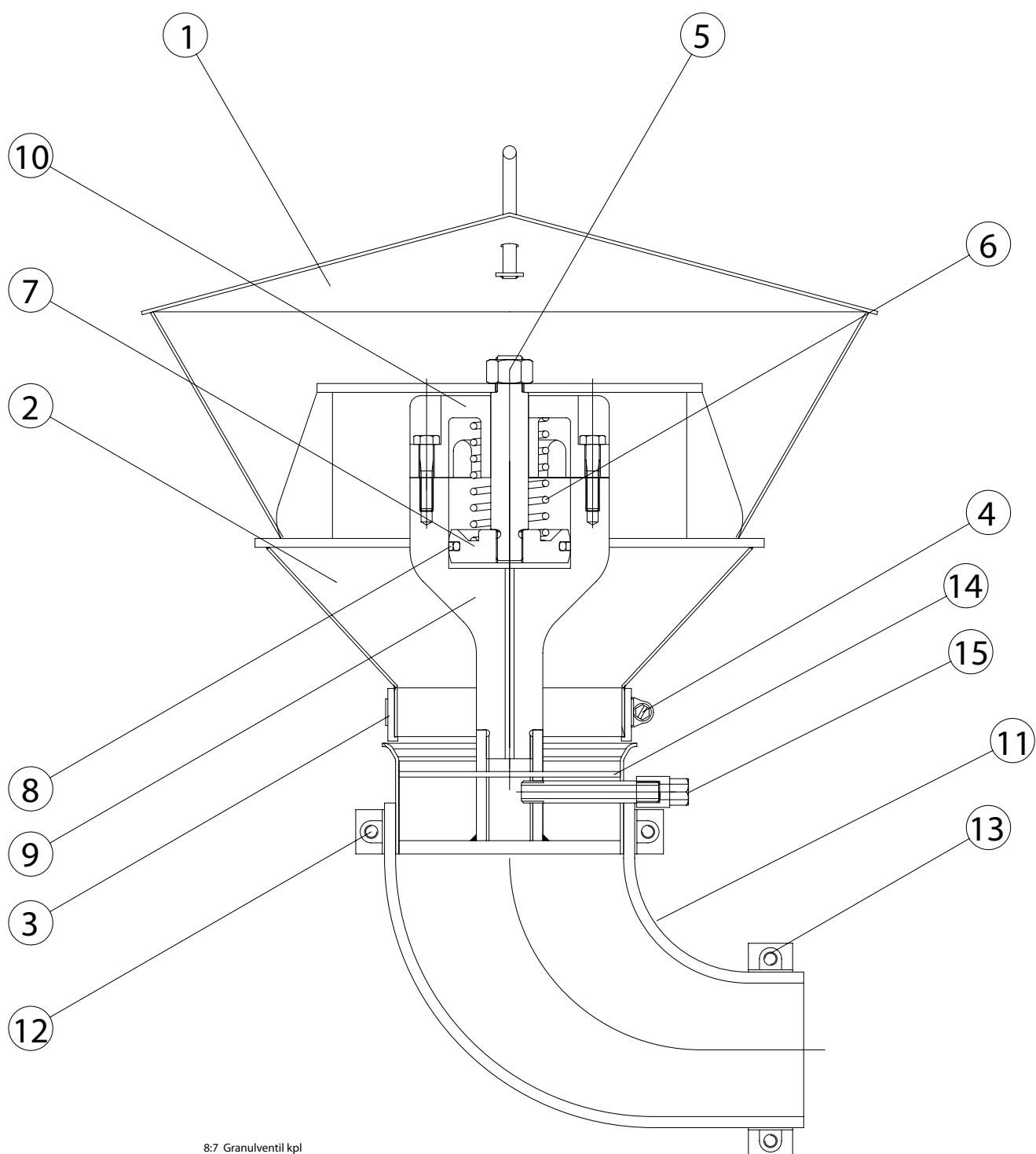
9.6 Base plate

Position	Part no.	Description	Quantity
Nr. 1	14371	Pump, 400V / 50Hz	1
.....	14378	Pump, 440V / 60Hz	1
Nr. 2	60433	Vibration absorber	4
Nr. 3	18650	Pipe divider, complete	1
Nr. 4	18401	Drain valve with handle	1
Nr. 5	18390	Drain pipe, lower	1
Nr. 6	18679	Pipe, wash	1
Nr. 7	10905	Hose clip, 16 – 25 9mm	5
Nr. 8	18677	Pipe, drip drain, 1000 mm.....	1
Nr. 9	18678	Pipe, drip drain, 700 mm.....	1
Nr. 10	18530	Pipe, drain	1
Nr. 11	6005092	Hose clip, 30 -45 9mm	6
Nr. 12	18191	Solenoid valve	1
Nr. 13	13619	Solenoid valve, 1/8"	1
Nr. 14	10068	Plug, 1/8	2
Nr. 15	60289	Sleeve, 1/2"	1
Nr. 16	60406	Nut, 1/2"	2
Nr. 17	10659	Connector, 1/8"	1
Nr. 18	600 5007	Nipple, 1/8 G6	2
Nr. 19	60289	Sleeve	1
Nr. 20	11549	Sleeve 1/8"	1
Nr. 21	10662	Filter	1
Nr. 22	10661	Washer	2
Nr. 23	18680	Pipe, 6/4	1
Nr. 24	18675	Pipe, 6/4	1
Nr. 25	13508	Flow valve, constant	1
Nr. 26	18332	Drain valve sensor	1
Contents:			
•.....	14783	Magnetic sensor	1
•.....	18542	Magnet	1
Nr. 27	14375	Shaft seal	1
Nr. 28	13693	Pump housing.....	1
Nr. 29	14374	Pump wheel 50 HZ	1
.....	14373	Pump wheel 60 HZ	1
Nr. 30	600 5145	Solenoid valve 1/2"	1
Nr. 31	600 5166	O-ring, pump housing	1



9.7 Granule valve

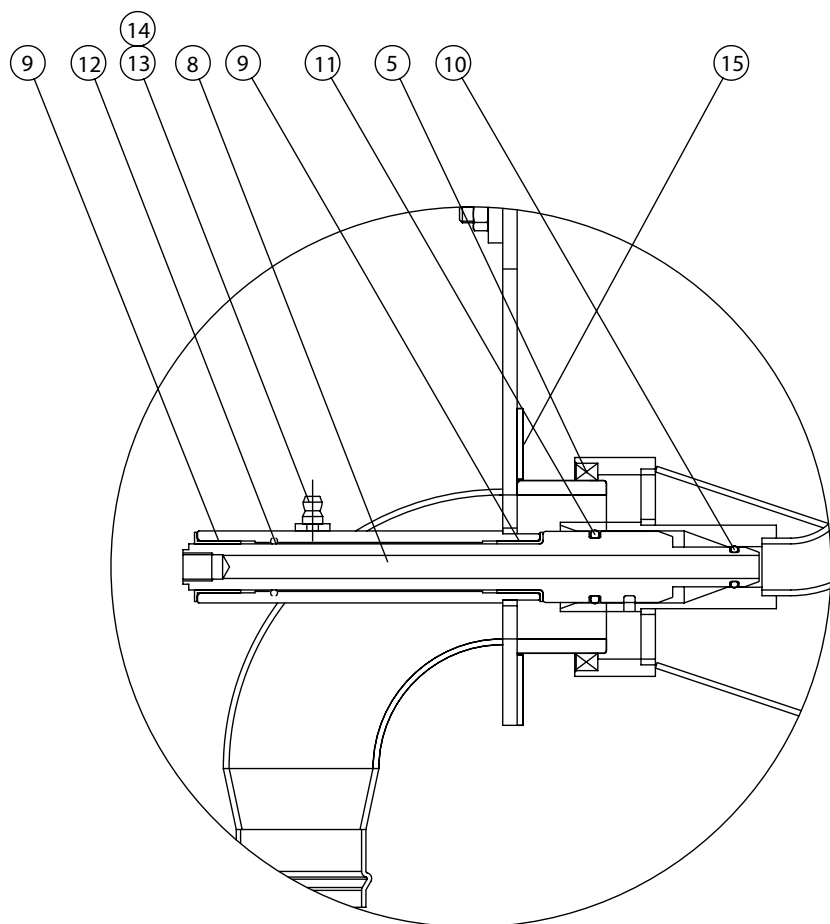
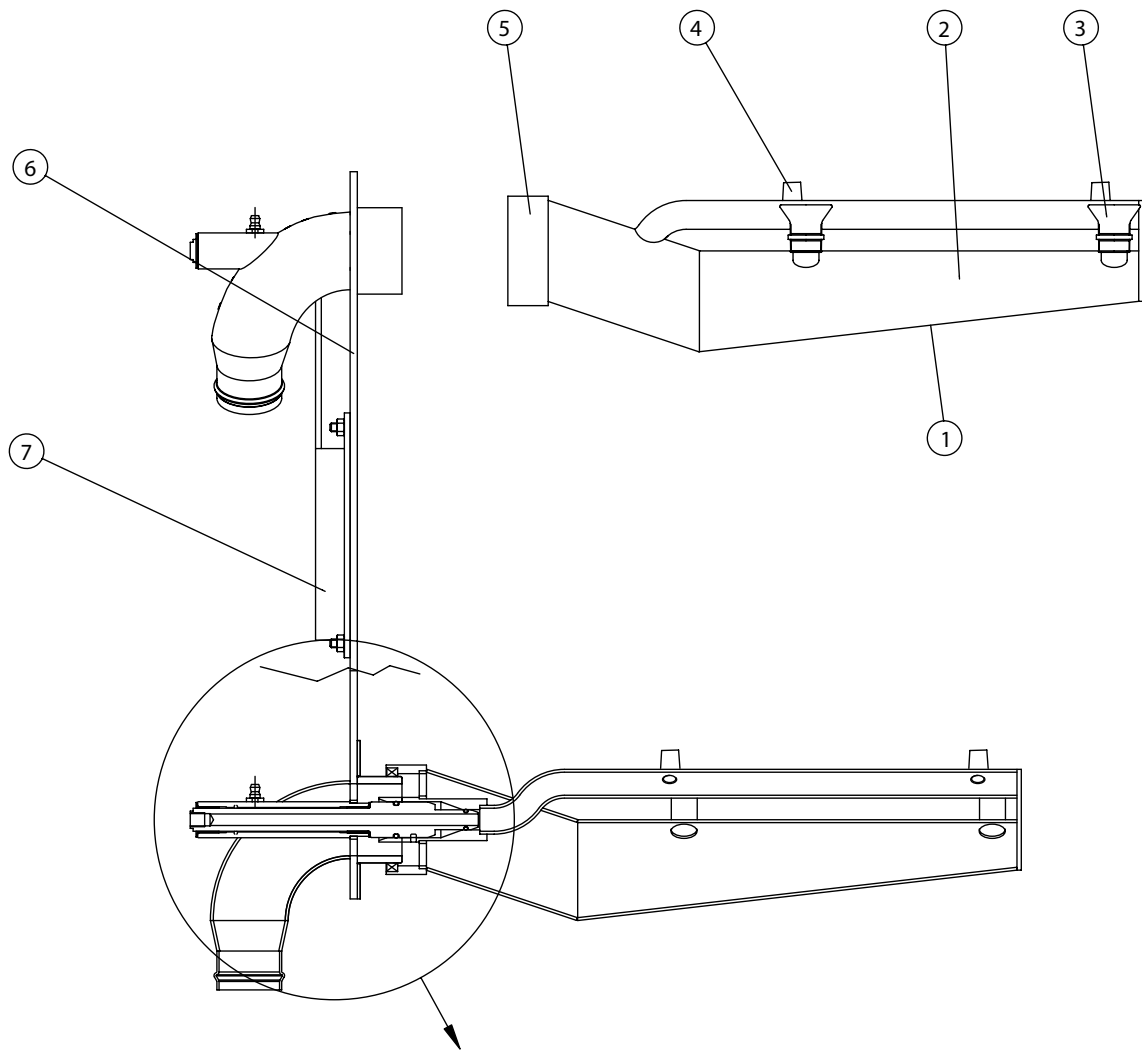
Position	Part no.	Description	Quantity
Nr. 1	600 0074	Seal	1
Nr. 2	600 0057	Strainer barrel	1
Nr. 3	600 0075	Main seal	1
Nr. 4	10064	Hose clip, 87 – 112	1
Nr. 5	12206	Nut, M12	1
Nr. 6	60463	Pressure spring	1
Nr. 7	600 0054	Piston with piston rod	1
Nr. 8	60462	Piston seal	1
Nr. 9	600 0055	Cylinder	1
Nr. 10	600 0056	Cylinder cover	1
Nr. 11	600 1034	Drainage pipe	1
Nr. 12	11406	Hose clip, 100 -120	1
Nr. 13	11405	Hose clip, 60 -80	1
Nr. 14	13934	Warning sensor for pump	1
Nr. 15	10711	Connector, rak 1/8 int	1



8:7 Granulventil kpl

9.8 Spray pipe

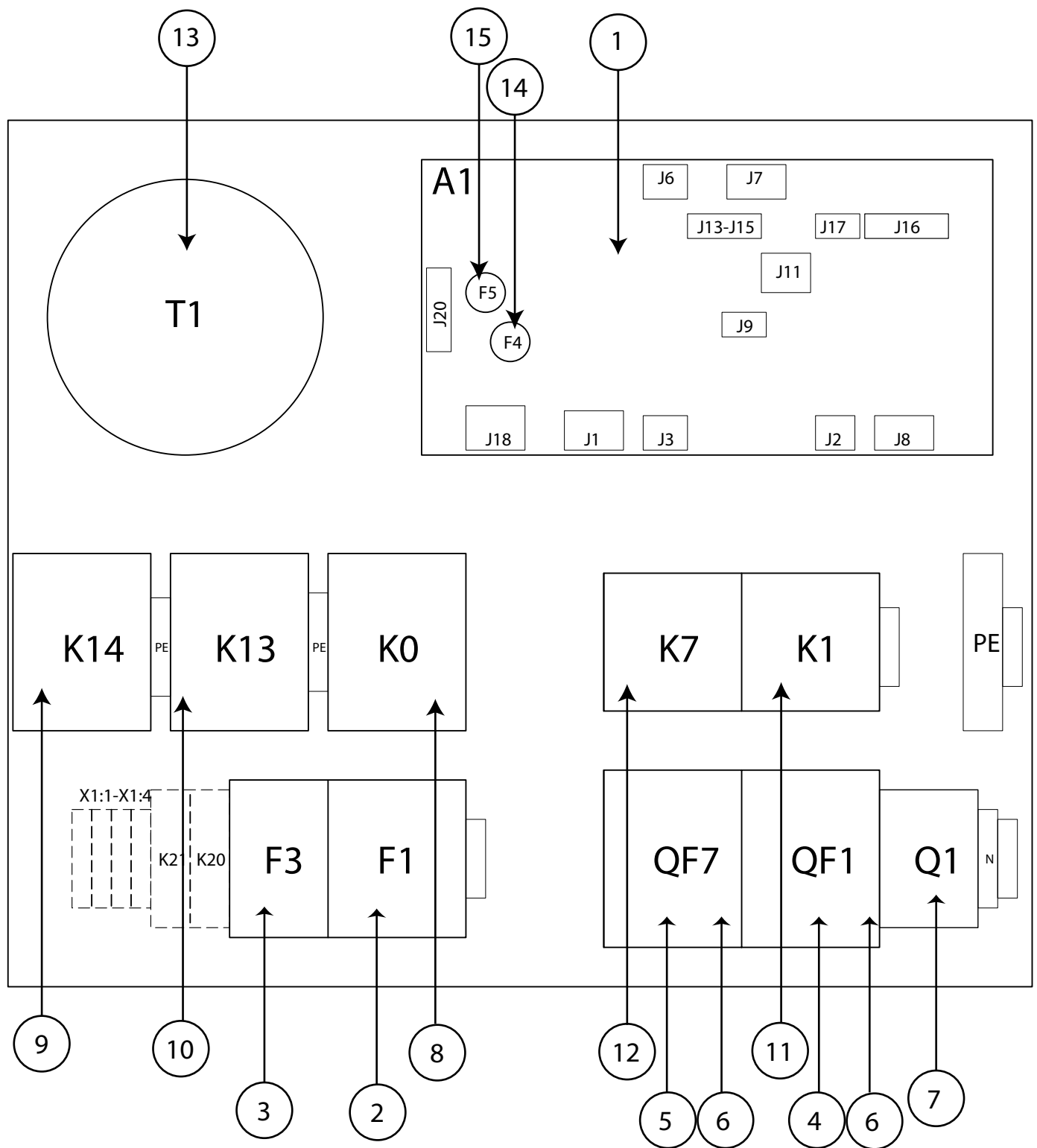
Position	Part no.	Description	Quantity
Nr. 1	13933	Spraypipe, complete	1
Contents:			
Nr. 2	600 1141	Spray pipe	1
Nr. 3	600 1122	Nozzle, wash, complete	4
Nr. 4	13930	Nozzle, final rinse	4
Nr. 5	600 5035	Radial seal	1
Nr. 6	600 1111	Spray pipe console	1
Nr. 7	600 1094	Console	1
Nr. 8	600 0083	Rocker spindle	2
Nr. 9	600 5010	Slide bearing, spray pipe	4
Nr. 10	600 5012	O-ring 9.3 x 2.4	2
Nr. 11	60477	O-ring 19.2 x 3.0	2
Nr. 12	60460	O-ring 15.3 x 2.4	2
Nr. 13	14596	Grease nipple	2
Nr. 14	12303	Washer	2
Nr. 15	600 0079	Seal	2



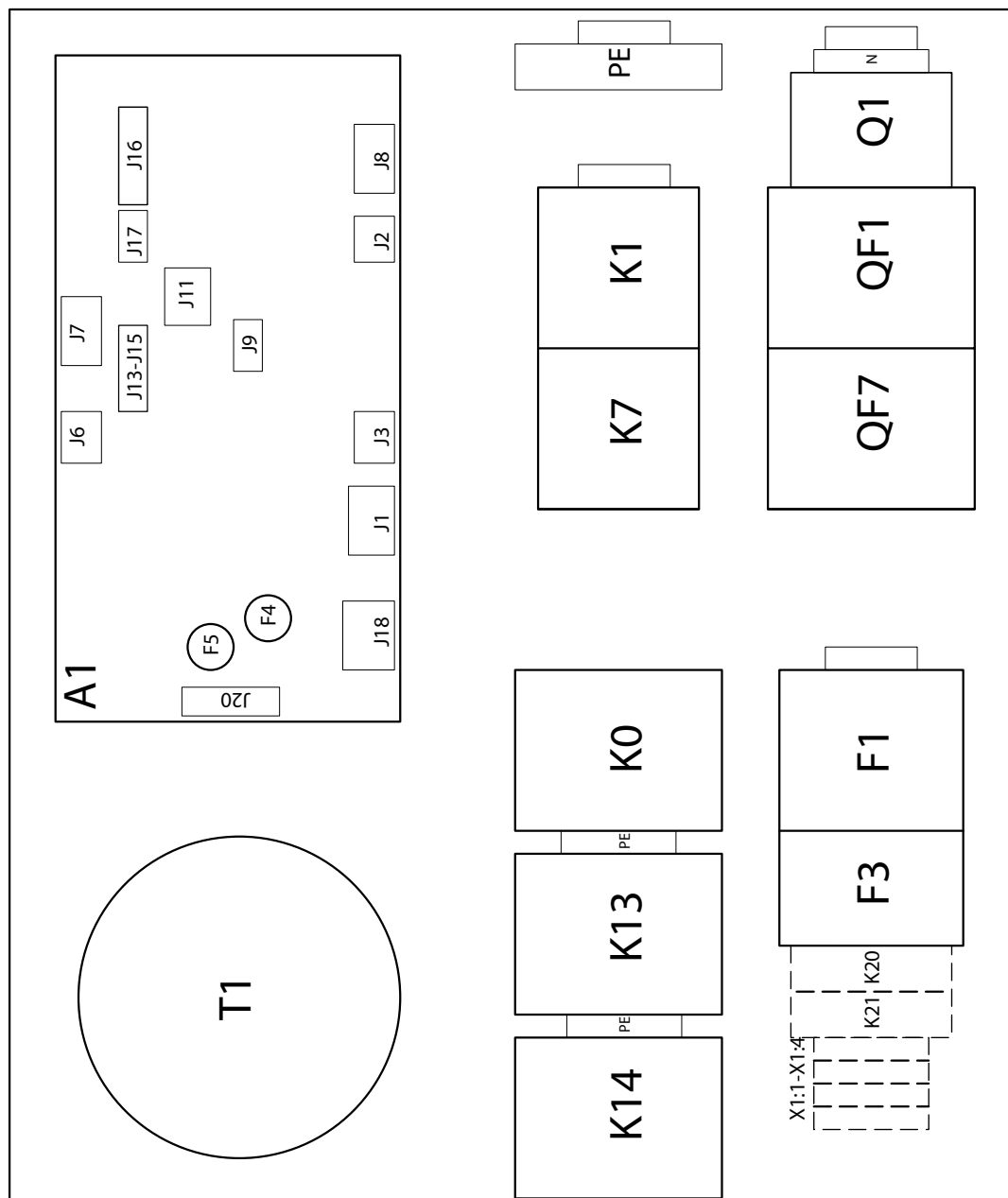
9.9. Distribution box

Position	Part no.	Description	Quantity
Nr. 1	18329	Control card, complete	1
Nr. 2	18360	Automatic protection, 16 A.....	1
Nr. 3	18362	Automatic protection, 6 A.....	1
Nr. 4	18545	Motor sensor, wash pump 6-10 A complete	1
Contents:			
Nr. 4	18354	Motor sensor, wash pump 6-10 A	1
Nr. 6	18356	Help contact	1
Nr. 5	18543	Motor sensor, rinsepump 1-1,6 A Complete	1
Contents:			
Nr. 5	18355	Motor sensor, rinsepump 6-10 A	1
Nr. 6	18356	Help contact	1
Nr. 7	18352	Mains breaker	1
Nr. 8	18366	Sensor contacts for the element.....	1
Nr. 9	18366	Relay, element rinse tank.....	1
Nr. 10	18366	Relay, element wash tank	1
Nr. 11	18365	Relay, wash pump	1
Nr. 12	18365	Relay, rinsepump.....	1
Nr. 13	18373	Transformer 230/400/415 V	1
.....	18546	Transformer 440 V.....	1
Nr. 14	18404	Fuse 230 V / 1 A.....	1
Nr. 15	18405	Fuse 24 V / 2.5 A.....	1

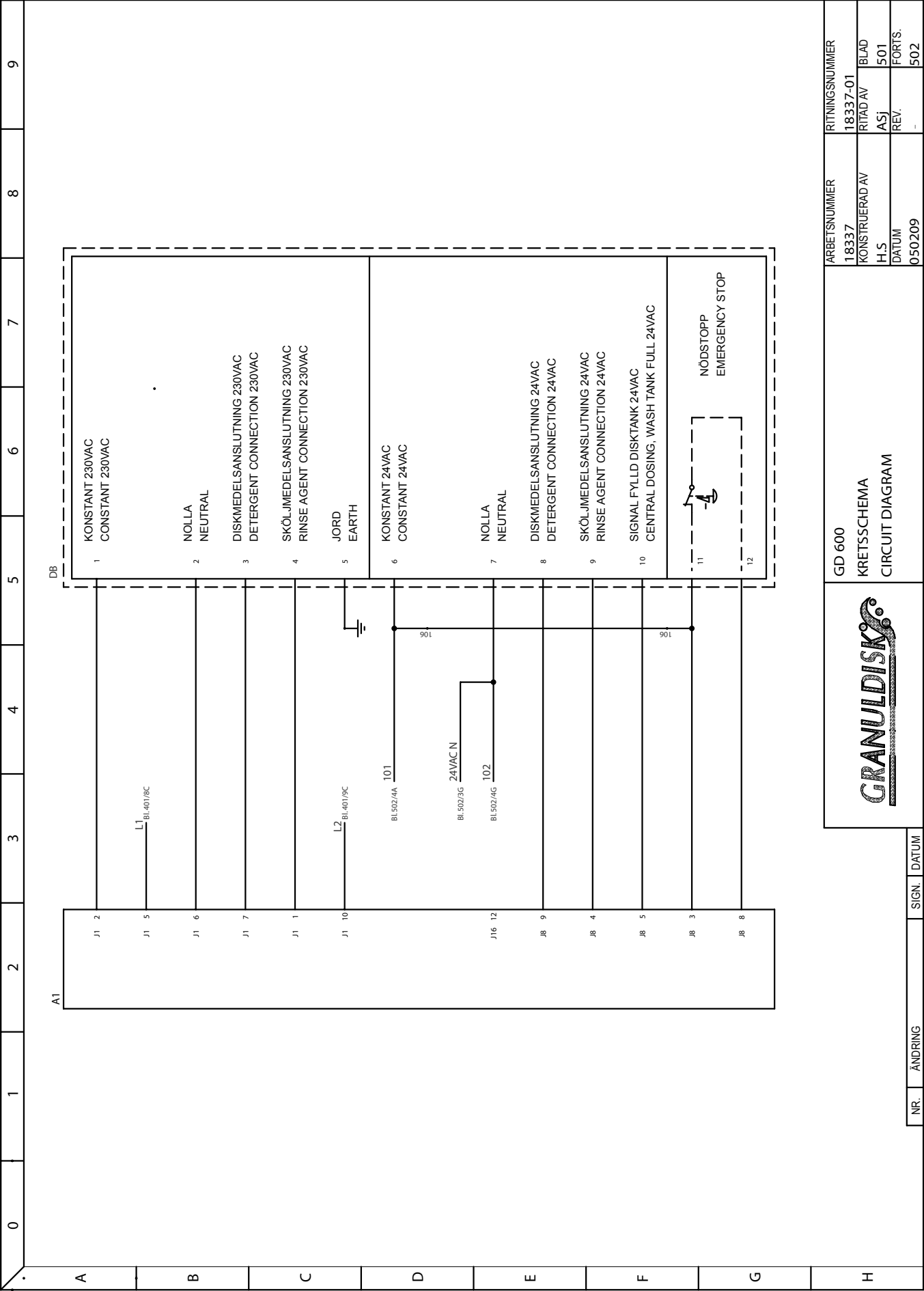
Note: When replacing the control card, ensure that strap J18 is positioned for the voltage to which the machine is connected. The card may be destroyed if this strap is set incorrectly!



13. Wiring diagram



GD 600 400,415,440VAC	ARBETSNUMMER	RITTINGSNUMMER
MEKANISK RITNING	18337	18337-01
ASSEMBLY DRAWING	KONSTRUERAD AV	RITAD AV
	H.S	ASJ
	DATUM	301
	REV.	FORTS.
	050209	



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	0	1	2	3	4	5	6	7	8	9
A	WT Wh LRT URT GND NIVÄ TE1 TE2 401/2B 61 401/3B 61 502/5A 13 108 62 108 62 109 14 J2 1 J2 3 J2 2 J2 4 J13 3 J13 2 J13 1 J14 3 J14 2 J14 1 J17 2 J17 4 J17 1 J17 6 NIVÅGIVARE DISKTANK LEVEL SENSOR, WASH TANK NIVÅGIVARE NEDRE SKÖLJTANK LEVEL SENSOR, RINSE TANK LOWER NIVÅGIVARE ÖVRE SKÖLJTANK LEVEL SENSOR, RINSE TANK UPPER TEMPERATURGIVARE DISKTANK TEMPERATURE SENSOR WASH TANK TEMPERATURGIVARE SKÖLJTANK TEMPERATURE SENSOR RINSE TANK MOTORSKYDD DISKPUMP HÖGER PROTECTIVE MOTOR SWITCH WASH PUMP RIGHT MOTORSKYDDSBRYTARE SKÖLJPUMP PROTECTIVE MOTOR SWITCH RINSE PUMP DRIFT ELEMENT OPERATION HEATER									
B										
C										
D										
E										
F										
G										
H	GD 600 KRETSSCHEMA CIRCUIT DIAGRAM GRANULDISK ARBETSNUMMER RITINGSNUMMER 18337 18337-01 KONSTRUERAD AV RITAD AV JLS ASj DATUM REV. 05/02/09 - FORTS. 504									

	0	1	2	3	4	5	6	7	8	9
A	105 Bl. 502/JAG LÅSBAR NYCKELBRYTARE DOOR CONTACT BREAKER WITH LOCK NYCKELBRYTARE DOOR CONTACT BREAKER SPRUTRÖRS MOTORVAKT WASH ARM MOTOR PROTECTING SENSOR TÖMNINGSVENTILVAKT EMPTYING VALVE CONTACT IDENTIFIERING AV MASKINTYP IDENTIFY TYPE OF MACHINE MANÖVERPANEL CONTROL PANEL									
B										
C										
D										
E	A2									
F										
G										
H	GD 600 KRETSSCHEMA CIRCUIT DIAGRAM									
								ARBETSNUMMER	RITINGSNUMMER	
								18337	18337-01	
								KONSTRUERAD AV	RITAD AV	BLAD
								H.S.	ASj	504
								DATUM	REV.	FORTS.
										-

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