Wexiödisk

FLIGHT-TYPE DISHWASHER
WD-B 500 - WD-B 900

(translation of the original documentation)

⚠ Read the manual before using the machine!

Installation and user manual

S/N: (En) (Mnr:29524) Valid from: 2017-05 Rev.: 5.3

1. General information

Read the instructions in this manual carefully as they contain important information regarding the correct, effective and safe installation, use and servicing of the dishwasher.

Keep this manual in a safe place so that it can be used by other operators of the dishwasher.

1.1 Symbols used in this manual

This symbol warns of situations where a safety risk may arise. The instructions given should be followed in order to prevent injury.

This symbol on a machine part warns of electrical equipment. The machine electronics may be sensitive to electrostatic discharge (ESD), which is why a static electricity wristband must be used when handling the electronics.

This symbol explains the correct way to perform a task in order to prevent poor results, damage to the dishwasher or hazardous situations.

This symbol gives recommendations and hints that help to get the best performance from the machine.

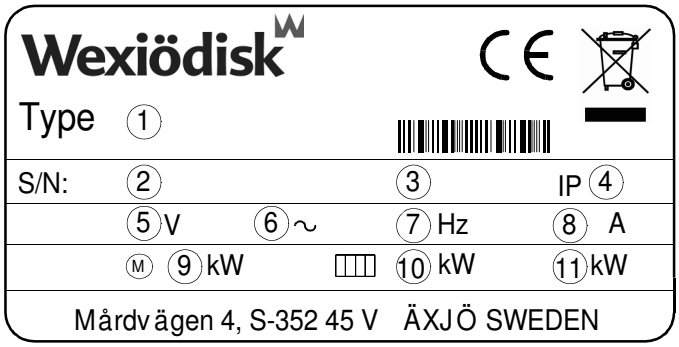
This symbol explains the importance of careful and regular cleaning of the machine to meet hygiene requirements.

1.2 Symbols on the dishwasher

This symbol on a machine part warns of electrical equipment. The component may only be removed by a qualified electrician. The machine electronics may be sensitive to electrostatic discharge (ESD), which is why a static electricity wrist-band must be used when handling the electronics.

1.2.1 Machine marking

The rating plates are located at the bottom of the outfeed side and in the electrical cabinet. The technical information on the plates is also included on the machine's wiring diagram. The various rating fields show:



1. Machine type
2. Machine serial number
3. Year of manufacture
4. Enclosure protection class
5. Voltage
6. Number of phases, with or without zero
7. Frequency
8. Main fuse
9. Motor output
10. Electrical heating output
11. Max. output

1.3 Checking that the dishwasher and manual correspond

Check that the type description on the rating plate matches the type description on the front of the installation and user manual. If there is no installation and user manual, a new one may be ordered from the manufacturer or its local representative. When ordering a new manual, it is important to quote the machine number found on the rating plates.

2. Safety instructions

2.1 General information

The machine is CE marked, which means that it complies with the requirements of the EU machinery directive with regard to product safety. Product safety means that the design of the machine will prevent personal injury or damage to property.

Modifying the equipment without the approval of the manufacturer will invalidate the manufacturer's product liability.

To further improve safety during installation, operation and servicing, the operator and the personnel responsible for installing and servicing the machine should read the safety instructions carefully.

Switch off the dishwasher immediately in the event of a fault or malfunction. The machine must only be serviced by trained engineers. The regular checks described in the manual must be carried out in accordance with the instructions. The machine must be serviced by a person authorised to do so by the manufacturer. Use original spare parts. Contact an authorised service company to draw up a programme of preventative maintenance. Hazardous situations may arise if the instructions above are not followed.

Before the machine enters service, ensure that the personnel are given the necessary training in handling and looking after the machine.

2.2 Transport

Handle the machine with care during unloading and transport; there is a risk of it tipping over. Never lift or move the machine without using the wooden packaging to support the stand.

2.3 Installation

The electrical cabinet may only be opened by a qualified electrician. The machine electronics may be sensitive to electrostatic discharge (ESD), which is why a static electricity wristband must be used when handling the electronics.

Water and steam pipes must only be connected by authorised personnel.

Water pipes must be connected in a way that complies with the regulations of the local water supply company. Check that the water and steam connections are tight before operating the machine.

Make sure that the mains voltage is the same as that indicated on the machine's rating plate.

2.4 Detergent and drying agent

Only detergent and drying agent intended for industrial dishwashers may be used. Washing-up liquid must not be used in the machine or for pre-treating items (soaking, pre-washing, etc.). Contact your detergent supplier regarding the choice of a suitable detergent.

Be aware of the risks involved in handling detergents and drying agents. Protective gloves and safety glasses should be used when handling dishwasher detergent. Read the warning text on the detergent and drying agent containers as well as the detergent supplier's instructions.

2.5 Operation

2.5.1 Risk of crushing

Avoid touching the washing conveyor during operation. The movement of the belt can cause crushing injuries at the inlet and outlet of the machine. When servicing the machine, avoid contact with the washing conveyor's drive system during use. Crushing injuries can occur between the drive motor's chain and the chainwheel.

2.5.2 Risk of slipping

Keep the floor dry to eliminate any risk of slipping. Mop up any water which has been spilled.

2.6 Directions in the event that the machine does not work or breaks down

If the machine breaks down, e.g. a pipe breaks or the tank leaks etc., turn off the power at the mains. Call a service engineer.

If anything happens to the machine, e.g. something sticks or the built-in safety functions do not work, stop the dishwasher using one of the emergency stop buttons (location, see "Machine layout" on page 32)

2.7 Cleaning

The water in the chemical wash tanks is at a temperature of approx. 60°C and contains detergent. Be careful when emptying and cleaning the tanks. Use protective gloves.

2.7.1 Pressure washing

The machine must not be cleaned with a pressure washer, either inside or out.

In order to satisfy current requirements, electrical components of approved enclosure classes are used. No enclosure class is designed to withstand high pressure.

2.7.2 The outside of the machine

Pressure washers and hoses must not be used to wash the outside of the machine. Water may penetrate the electrical cabinet and control panel and damage the equipment, thereby impacting on safety.

2.7.3 Cleaning the floor

When the floor is washed, water can splash up under the machine and damage the components. These have not been designed to withstand being washed with water. Do not wash the floor within 1 metre of the dishwasher. Pressure washers have special protective cases which can be fitted to prevent water splashing. Problems with splashing can also occur when using ordinary hoses.

2.8 Repairing and servicing the dishwasher

Make sure the machine is non-live before opening the electrical cabinet. Turn off the power at the mains switch. Avoid touching hot pipes and booster heaters.

2.9 Recycling the machine

When the dishwasher has reached the end of its service life, it must be recycled in accordance with current regulations. Contact professionals who specialise in recycling.

3. Installation

3.1 General information

The machine must only be installed by authorised personnel.

Read these instructions carefully, as they contain important information regarding the correct installation method.

The instructions should be used together with the machine drawing, wiring diagram and flow diagram.

The machine is CE marked. The CE mark is only valid for an unmodified machine. Any damage to the machine arising from failure to follow the instructions will invalidate the supplier's warranty and product liability.

3.2 Requirements for the installation site

3.2.1 Lighting

In order to ensure the best possible working conditions during installation, operation, servicing and maintenance, make sure that the machine is installed in a well-lit room.

3.2.2 Ventilation

The machine produces heat and steam when in operation. In order to ensure the best possible working conditions, a certain air change rate is required in the dish-washing room. The ventilation requirements for the room are to be dimensioned on the basis of the applicable standards.

3.2.3 Drain/waste pipe

There must be a waste pipe with an effective trap for the machine's waste water and for water used for cleaning. Information about the capacity required by the floor drain, see "Technical specifications" on page 68.

3.2.4 Space for servicing

The area above the machine must not contain any equipment which could prevent the fitting, servicing and replacement of parts. A free height of at least 2.8 metres is required in order to remove the inspection doors.

A 1-metre free space should be allowed in front of the machine and around the infeed and outfeed ends for service purposes.

3.3 Transport and storage

Check that there is sufficient height available to transport the machine to its installation site.

The machine is supplied in sections with a pallet under each section. Transport each section to the installation site using a handtruck.

The sections are transported transversely with the forks of the truck inserted from the long side. (The side marked “FRONT”). If the space available does not permit transverse transport, each section should be transported using two handtrucks, one at each short end. Do not lift the machine by its legs. These are indicated by labels on the outside of the packaging.

Label on the packaging that marks the position of the legs.

Take care during transport, as there is a risk of tipping.

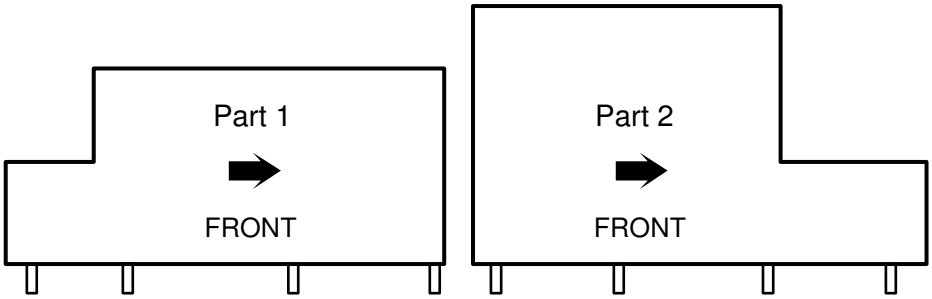
NOTE: The machine must not be transported without a pallet or other support, Some form of support beam must always be used along the sides of the machine during transport. otherwise the machine may become damaged. When transporting the machine without an ordinary pallet, always check that none of the components underneath the machine can be damaged.

If the machine is not being installed immediately, it must be stored in a frost-free area where the air is dry.

3.4 Marking of sections

The machine is normally divided into two sections. In some cases the machine can be delivered in more than two sections. The installation instructions describe the assembly of a machine that has been split into two sections. Regardless of the number of sections, the assembly of all sections is undertaken in the same way. The sections are marked on the outside of the packaging with the following information.

- Numbering
  - Part 1 – infeed section with washing zones
  - Part 2 – outfeed section with final rinse and drying zone
- Arrows which indicate the feed direction of the machine
- Marking of the front with the text FRONT



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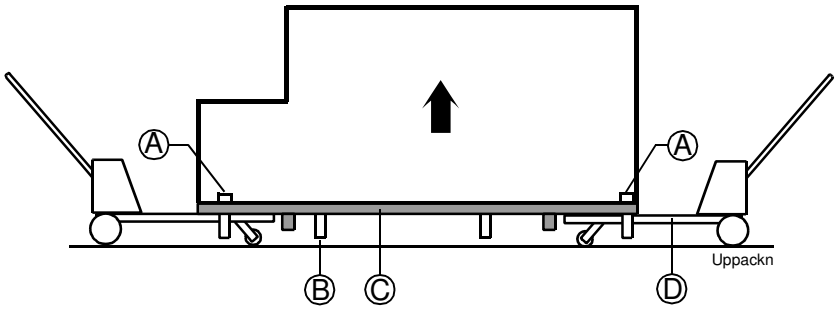
Section marking on the packaging

3.5 Unpacking

- Check against the delivery note that all the units have been delivered.
- Remove the packaging, but leave the pallet and any transport supports in place.
- Inspect the machine for any transport damage.
- Lift the section at both ends using a handtruck. Screw down the legs (B) so that they extend below the bottom of the pallet (C). Lower the section. Split the pallet and take it away.
- If the section should need to be lifted again from the short sides, a wooden runner should be placed under the cross-bar (A) on the section stand.



A. Stand cross-bars
B. Leg
C. Pallet
D. Handtruck

Packaging must be sent for destruction or recycling in accordance with local regulations.

3.6 Installation

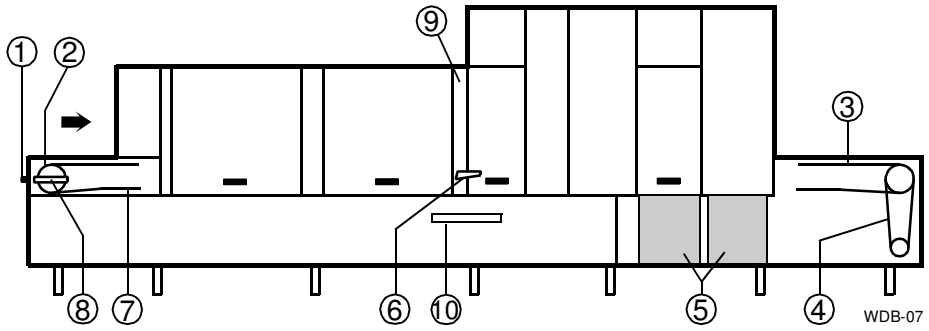
3.6.1 General information

Parts which must be assembled are prepacked inside each machine section together with the necessary bolts, nuts, etc.

Remove all lower cover plates (5).

The final position of the machine is either free-standing in the room or placed with the back against a wall. If the machine is to be placed against a wall, the assembly should be carried out with sufficient space behind the machine for access during the fitting of components on the back of the machine. The fully assembled machine is then pushed into position.

The picture below shows a machine with the feed direction from left to right. The picture shows parts which must be assembled during the installation and the adjusting device for tensioning the washing conveyor. The length of the infeed and outfeed section and the number of zones vary depending on the specific machine. For this reason, the illustration below shows the approximate position of the components in the machine.

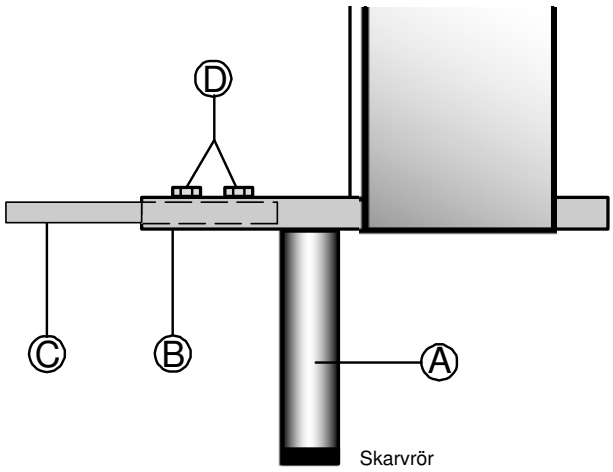


Overview of dishwasher

1. Adjusting screws for the washing conveyor
2. Tension wheel
3. Upper track
4. Chain
5. Cover plate
6. Drainage plate
7. Lower track
8. Belt tensioner
9. Cover plate
10. Overflow pipe

3.6.2 Assembly of sections

- Remove any transport supports.
- Position section 2 (see the figure on page 8) where you want it and adjust the height (see machine drawing). Check that the section is horizontal using a spirit level on the tank body. Adjust the machine using the legs.
- Fit the lengthening joints to the stand on section 2.

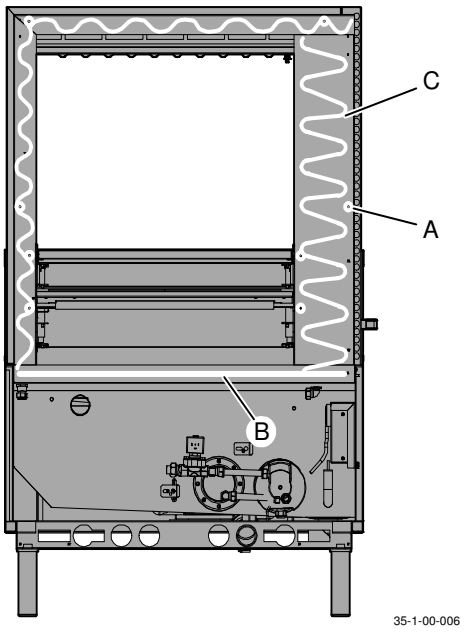


Fitting the joining tube

A. Leg
B. Stand
C. Lengthening joint
D. Screw M6x10

- Position section 1 next to section 2 so that the rectangular metal pieces on the stands of both sections are aligned. Check that section 1 is horizontal using a spirit level on the tank body. Adjust using the legs.
- Push section 1 against section 2 until the rectangular metal pieces on the stand are pushed close to each other, but do not push the sections completely together. There should still be a distance between them in order to apply the silicon around the openings.

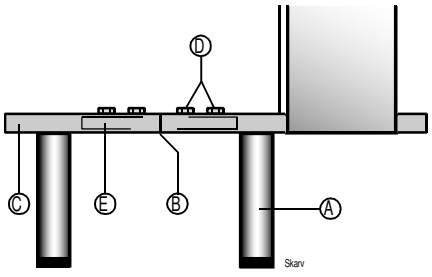
- Apply plenty of silicon around the openings of both sections and around all screw holes, see the figure below.



The figure shows the application of silicon to section 1 (section marking, see the figure on page 8)

A. Apply silicon around all screw holes
B. Apply a generous line of silicon along the centre of the lower contact surface
C. Apply silicon to all contact surfaces

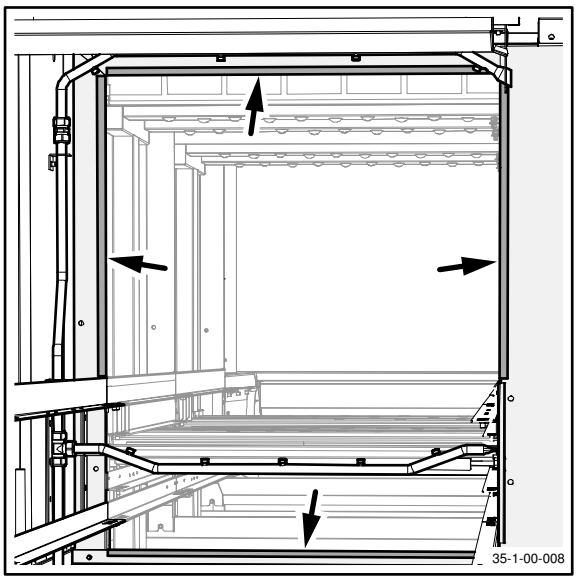
- Push the sections together. Hold them together with a screw clamp and fit the bolts that hold the hoods together.
  Wipe away any silicon that may have escaped when the sections were pushed together.
- Lock the stand on the front and rear sides of the machine using two screws, M6X10, on each side. Check that the section is horizontal using a spirit level against the tank body.



Locking the stand

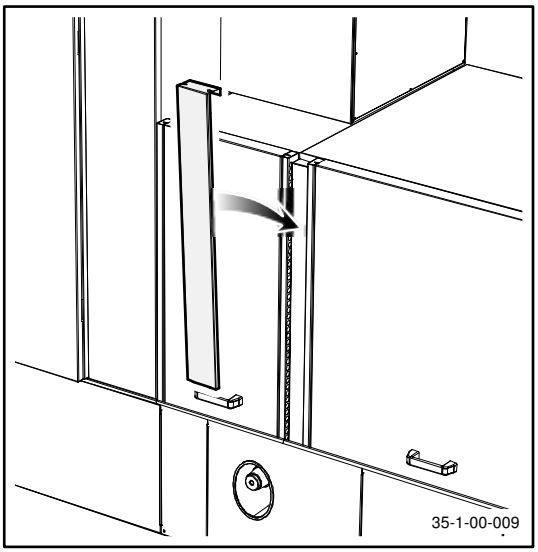
A. Leg
B. Joint in the stand
C. Stand
D. Screw M6x10
E. Joining tube

- Fit the stainless steel clamp strips inside the machine above the rim of the hood and tank, and above the joints between both sections (see the arrows in the figure below). Fit the upper clamp strip first. Apply a small amount of silicon to the strips before fitting them into place.

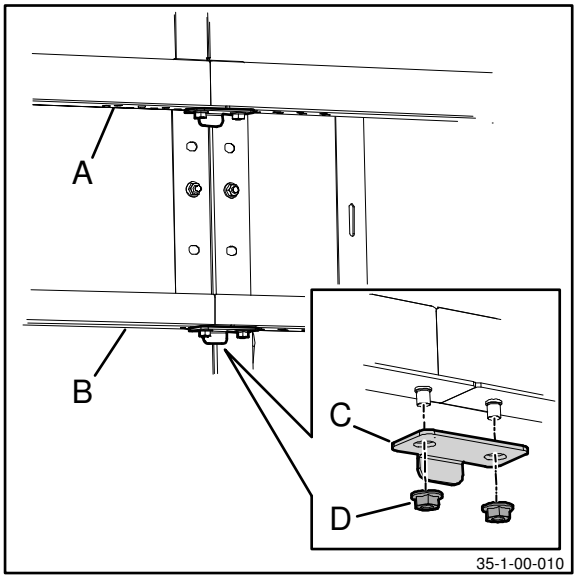


Positioning of clamp strips in the joints between both machine sections

- Seal the joint between the sections on the outside of the machine (back and top) using silicon. Attach masking tape to both sides of the joint and fill the joint with silicon.
- Fit the upper cover plate between the sections. The bottom section of the cover plate must sit inside the tank body and the upper section must be pushed down behind the door guides.



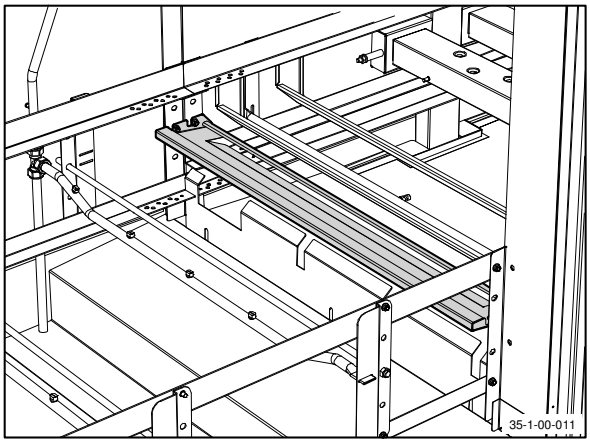
- Fit together all pipes for water, steam, condensation water and waste (pipe for steam and condensation water on steam-heated machines only). The pipes are split at the section join. The necessary parts for joining the pipes together are fitted to the pipes at the joint. The pipes should be lubricated with a sealant before joining.
- Screw together the washing conveyor's upper and lower tracks (see the figure on page 10, item no. 3, 7) at the join between the sections using the support plates and nuts supplied.



Conveyor belt track on the dishwasher's back panel at the join between section 1 and 2

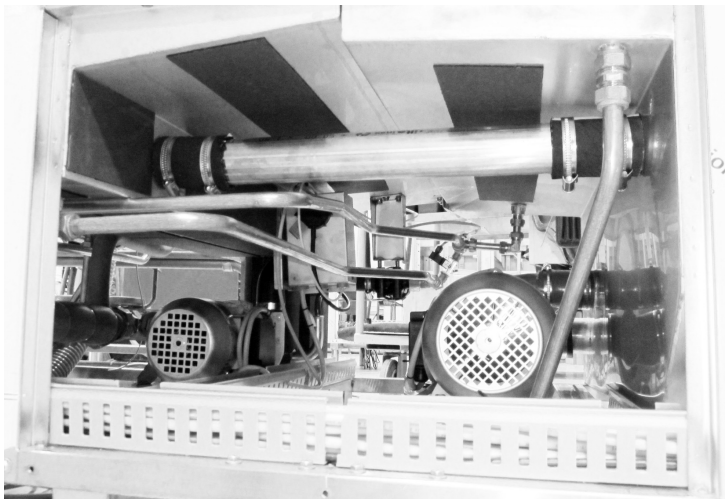
A. Upper conveyor belt track
B. Lower conveyor belt track
C. Support plate
D. Nut

- Fit the drainage plate.
  NOTE: The drainage plate must be turned so that it slopes down towards the chemical wash tank.



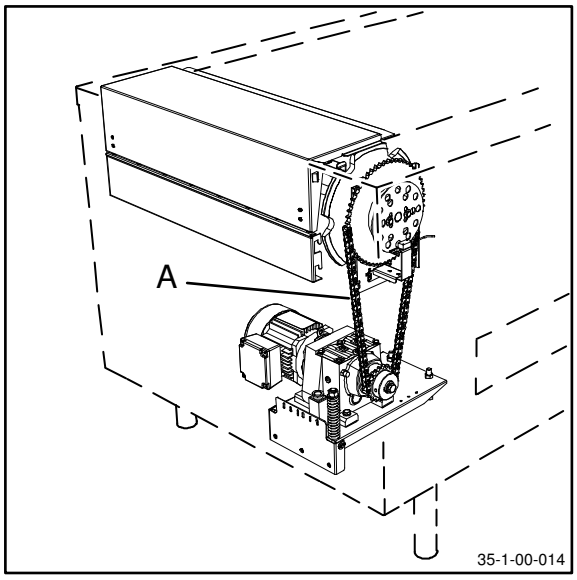
- Fit the overflow pipe between the chemical wash tank and final rinse tank.

The overflow pipe between the pre-wash tank and first chemical wash tank is kinked in the middle. This ensures that water in the dishwasher flows as intended. This is part of its design and not a fault.



Overflow pipe between the final rinse tank (on the left) and chemical wash tank

- Check that the chain for moving the belt goes around the lower drive wheel (the motor chain wheel).



Drive unit for the washing conveyor in the outfeed
A. Chain

- Join the ends of the conveyor belt if it is in position in the machine on delivery (see drawing of the conveyor belt supplied with the dishwasher documentation).

  If the conveyor belt is delivered separately, it is fitted in the machine as follows:

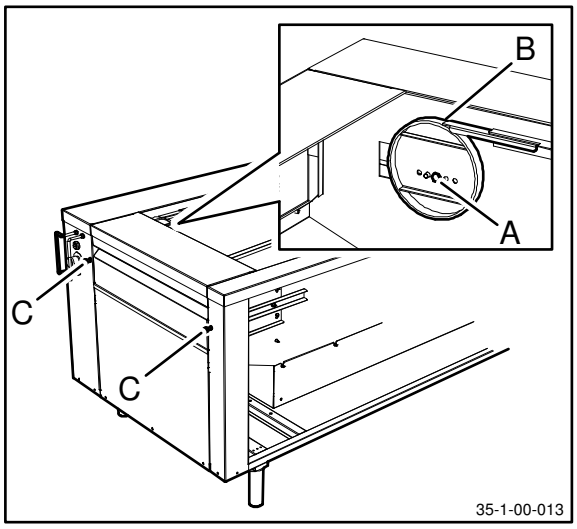
  – Push in the belt on the upper track through the machine's outfeed opening. Make sure that the belt is the right way up (see belt drawing)!

  – Pull the belt through the machine to the infeed opening and around the tension wheels (see the figure on page 10, item no. 2)

  – Tie a piece of rope to the end of the belt and pull the belt towards the outfeed opening

  – Pull the belt around the outfeed drive wheel.

  – Join the ends of the belt.
- Tension the washing conveyor. Proceed as follows:



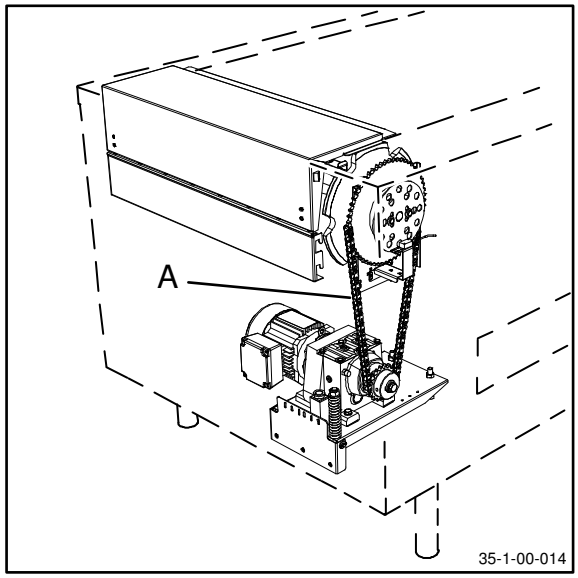
A. Screw that locks the belt tensioner
B. Tension wheel
C. Adjuster screw

– Undo the belt tensioner screws (A).

– Tension the belt using the adjusting screws (C).
When the belt is sufficiently taut, it should be possible to lift it by about 5 cm in the centre
of the infeed.

– Tighten belt tensioner screws (A).

- Fit the chain (A) to the drive motor.



Drive motor with drive axle in outfeed section
A. Chain

- Pull out and connect the electric cables for the pumps and other components.
  The cables are located at the section joint. Each cable is marked with the same designation as the component to which it must be connected. The marking for each component is on the component itself and on the machine's stand. The cables are positioned in existing cable runs.

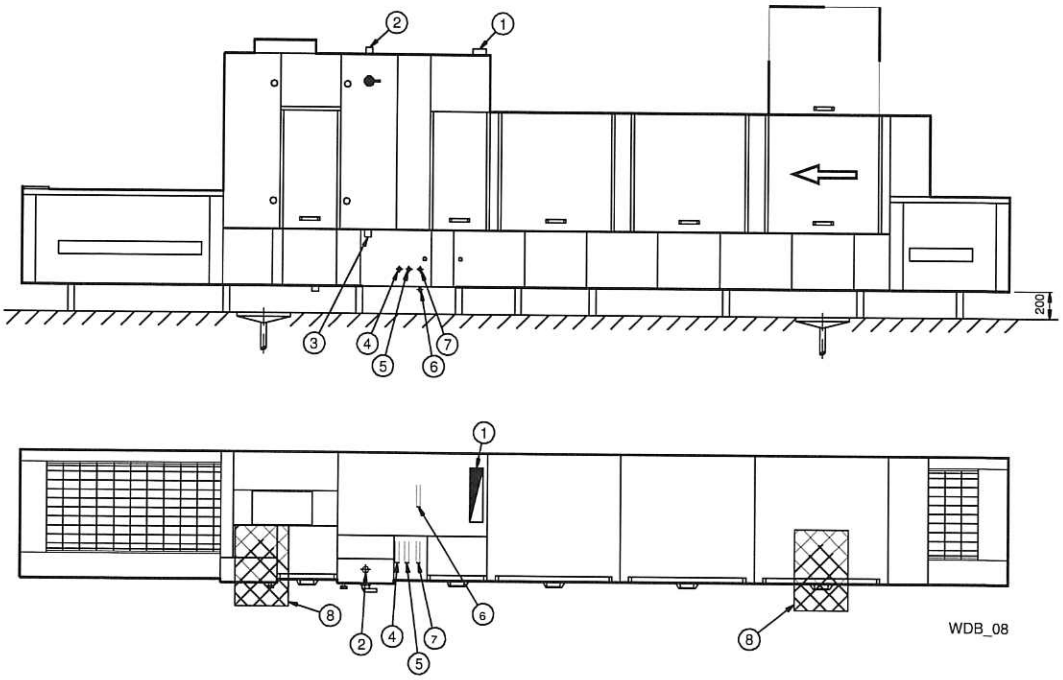
3.6.3 Placement against a wall

If after assembly the machine is to be moved and placed with the back against a wall, place wooden runners under the stand and push the machine into position with the aid of a handtruck.

Using a spirit level on the tank body, check that the machine is horizontal and adjust the legs of the machine if necessary.

3.7 Connections

The picture below shows a machine with the feed direction from right to left. The length of the infeed and outfeed and the number of washing and drying zones vary depending on the size of the machine. The machine can also operate in the opposite direction. For the exact location of the various connections, see the specific diagrams for each machine which are supplied by the manufacturer.



1. Extractor 400x100 mm without damper
2. Electrical connection from ceiling
3. Alternative electrical connection from floor
4. Hot water connection (connection from floor or ceiling)
5. Cold water connection (connection from floor or ceiling)
6. Condensation water connection (steam-heated machine)
7. Steam connection (steam-heated machine, connection from floor or ceiling)
8. Floor drain 400x600 mm

⚠ Check that the overheating protection on booster heaters and tank elements is set to zero.

3.7.1 Water connection

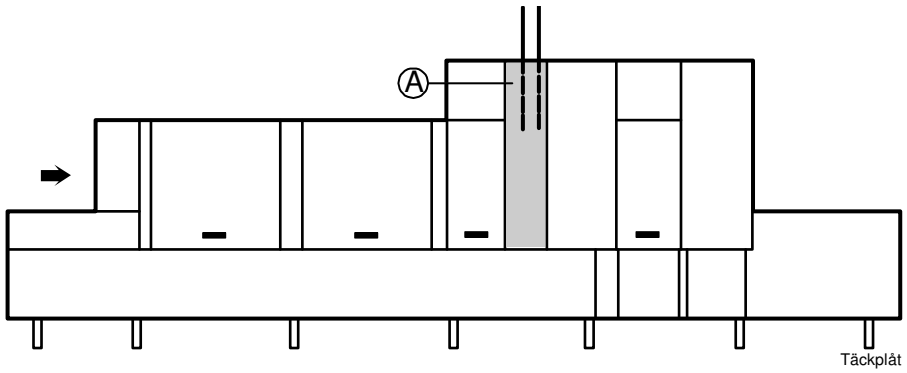
The machine is supplied as standard without stopcocks for the water supply. Stopcocks must be installed on incoming pipes.

It is important that the water supply has sufficient pressure to ensure the correct flow of water to the machine. Water pressure: 300-600 kPa.

The hot water connection is fitted with a filter. The cold water connection has a filter, non-return valve, safety valve and vacuum valve.

The cold water connection can be fitted with a break tank (option). In this case the connection has a filter and non-return valve.

When installing a connection from the ceiling, the pipes must be fed from above down through the cable duct behind the cover plate (A) next to the electrical cabinet. Remove the cover plate and break away the perforated plate on top of the cover plate.



Connection from ceiling
A. Cover plate

3.7.2 Steam connection (option)

The connection is fitted with a filter. The machines are supplied as standard without stopcocks for steam. A shut-off valve must be installed on the incoming pipe. When connecting a pipe from the ceiling, it is taken into the same area as the water pipes behind the cover plate next to the electrical cabinet.

3.7.3 Condensation water connection (option)

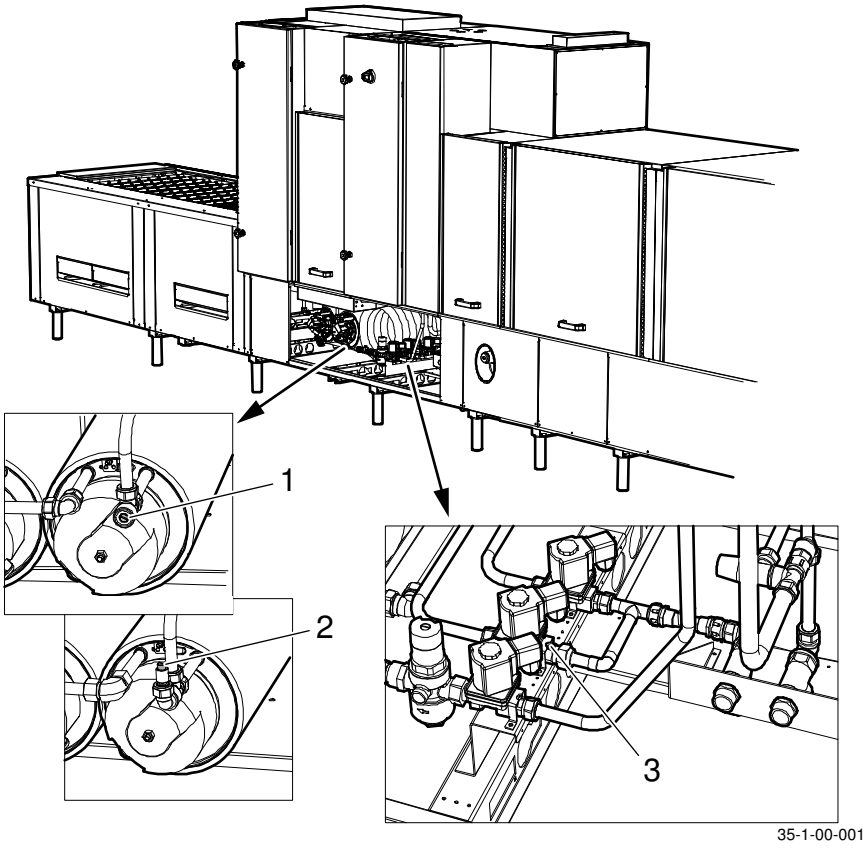
A condensation water connection is only provided on steam-heated machines. The pipe is connected to the system's steam boiler.

3.7.4 Drain/waste pipe connection

The dishwasher drain is connected to a floor drain by a corrosion-free metal pipe or PP pipe which can withstand mechanical influences. The external diameter of the pipe must be 50 mm. The pipe must rest above the water level of the floor drain.

3.7.5 Detergent and drying agent

The machine has a drying agent connection and a water outlet for a detergent device. The water outlet for detergent is located on the incoming hot water pipe. The drying agent connection is on the pipe leading to the booster heater for the final rinse water.



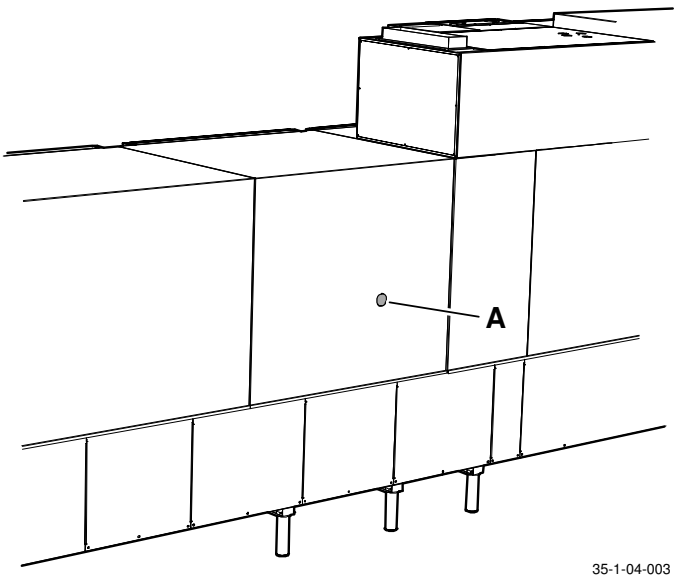
1. drying agent connection
2. drying agent connection for dishwasher equipped with demineralised water (option)
3. water outlet for detergent

Contact your detergent supplier to arrange for the equipment to be installed.

Avoid making unnecessary holes in the machine. If possible the equipment should be placed on a wall next to the machine.

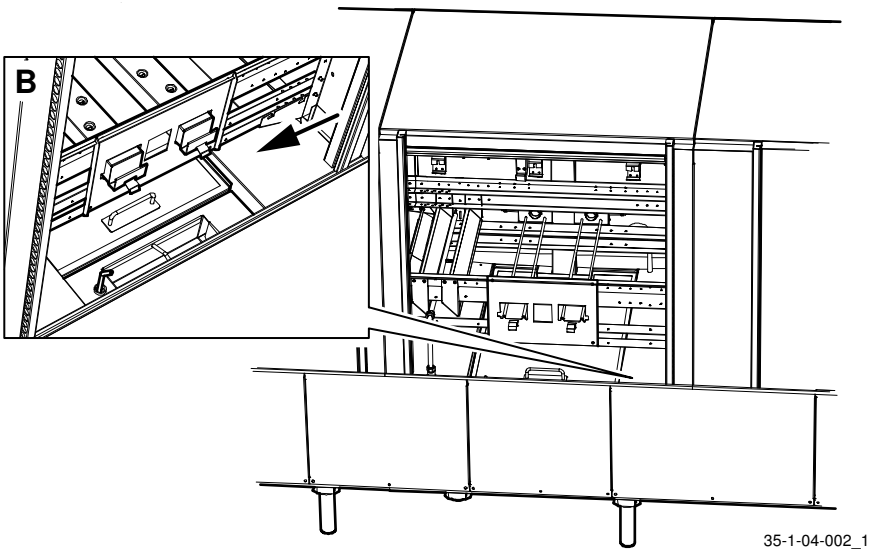
Electrical connections: see the wiring diagram.

Drilling holes to connect the detergent device



Back panel, chemical wash zone

Detergent paste:
Holes must be drilled through the back and rear hood panel of the chemical wash section for a detergent device for this type of detergent. The chemical wash sections are prepared for drilling by equipping the back panels with a breaker block (A). This block is removed and holes are drilled into the back panel in the inner hood. Seal suitably.

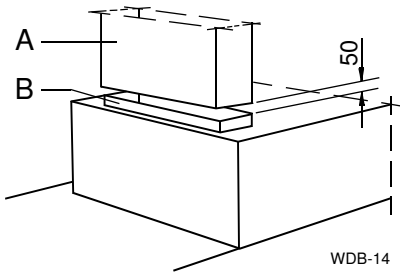


Liquid detergent:
Holes must be drilled for grommets in the sloping panel by the filters in the section for a detergent device for liquid detergent. Drill the hole as close to the belt track as possible (see B in the figure above).

3.7.6 Ventilation

Next to the machine's condensing battery is a connection for ventilation. If a sound trap is supplied, it is fitted directly to this connection. The connection to the ventilation system is made using a strain-relief grip.

The location and size of the connection are shown on the installation diagram.



Connection with pull-off connector

A. Ventilation duct 405x105 mm
B. Machine ventilation connection 400x100 mm

3.7.7 Electrical connection

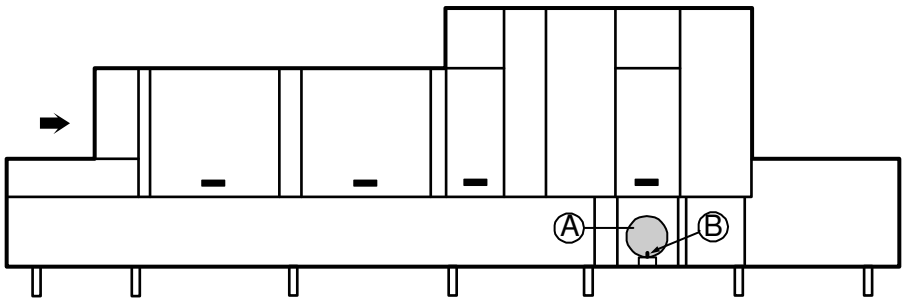
This symbol on a machine part warns of electrical equipment. The component may only be disconnected by a qualified electrician.

The machine electronics may be sensitive to electrostatic discharge (ESD), which is why a static electricity wristband must be used when handling the electronics.

Information about electrical connections can be found on the machine's wiring diagram.

The machine has a built-in main switch. Rating data is given on the rating plates, which are located on the end of the outfeed and in the electrical cabinet. Electrical data is also shown on the machine's wiring diagram. The installation diagram shows the location of the electrical connection.

An earth cable for potential equalisation is connected to the earth bolt (B) on the stand. The connection is located on the beam in front of the heat exchanger (A).



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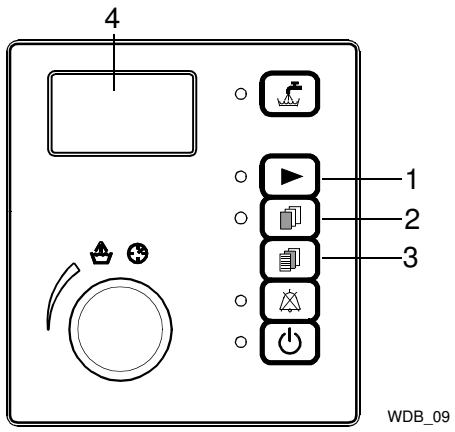
Position of the earth bolt

A. Heat exchanger
B. Earth bolt

After completing the electrical installation, switch on the main switch and all circuit breakers.

3.8 Checking and setting the final rinse flow



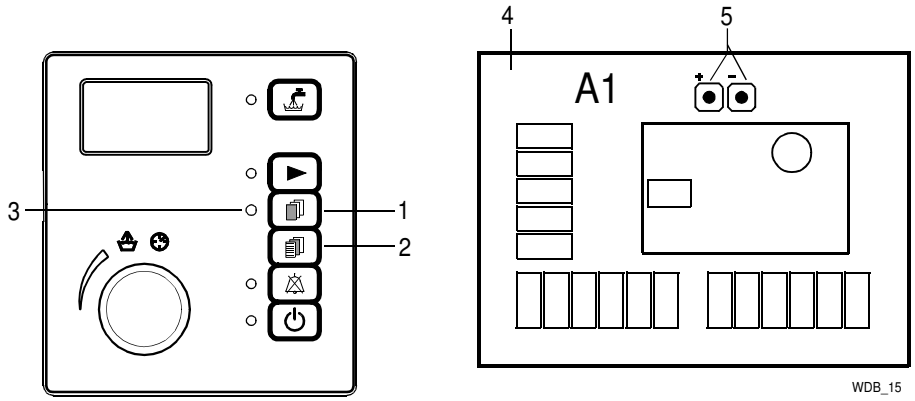
Control panel functions for checking the final rinse flow

1. Button for the feed
2. Button for the diagnostics function.
3. Button for switching between diagnostic messages
4. Display for showing texts

The final rinse flow is set in the factory, but should be checked after the machine has been installed.

- Prepare the machine for use in accordance with the INSTRUCTIONS FOR USE.
- Start the feed by pressing button (1).
- Tape over the photocell on the infeed and wait until the final rinse starts.
- Press and hold button (2) until the display (4) shows a menu with the following groups: SETPOINTS - DIAGNOSIS - RELAY TEST - STATISTICS - TIME & DATE - LANGUAGE - OTHER.
- Select DIAGNOSIS using button (2).
- Press button (3) to display the first message and use button (3) to scroll through the messages until DI16 CARD1 BV02 FLOW SENSOR is displayed. The final rinse flow is displayed in litres/min.
- Adjust the flow using the reducing valve which is located next to the water meter. The flow, which depends on the size of the machine, should be around 4–5 litres/min. The exact flow can be found on the machine's flow diagram which is in the electrical cabinet.
- Exit the diagnostics function by pressing button (2). Press and hold the button until the corresponding LED goes out. Remove the tape from the photocell.

3.9 Filling of booster heater with R/O water (option)



Functions on the control panel and circuit board for activating and using the diagnostics function.

1. Button for activating the diagnosis function
2. Button for switching between diagnostic messages
3. LED
4. Circuit board A1
5. Plus and minus buttons

- Prepare the machine for operation and fill it with water as described in the INSTRUCTIONS FOR USE.
- Turn the knob for R/O water to position 1 or affect the photocell. The knob and photocell are located by the infeed.
- Activate the diagnostics function by pressing and holding button (1) until a menu with the following groups appears on the display: SETPOINTS - DIAGNOSIS - RELAY TEST - STATISTICS.
- Select RELAY TEST by pressing button (1).
- Press button (2) to display the first message. Scroll down by pressing button (2) until the text RE13 CARD2 VALVE DEMI WATER appears on the display.
- Press the plus button (5) on the circuit board (4) to activate solenoid valve to the R/O water. Booster heater will now fill with water.
- Check that water flows into the final rinse nozzles. Booster heater is now filled with water.
- Close solenoid valve to R/O water by using the minus button (5).
- Exit the diagnostics function by pressing and holding button (1). The LED (3) must go out.
- Turn the knob for R/O water to position 0 or release the photocell.
- Turn on circuit breaker to heat the water in booster heater.

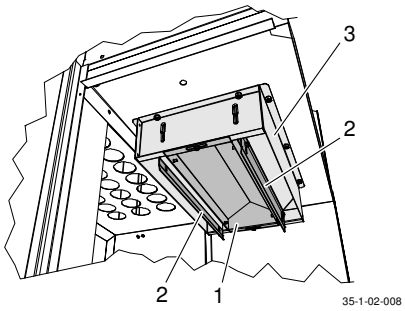
3.10 Adjusting the air flow in the drying zone

The air flow through the machine is dependent on a number of factors, e.g.:

— machine size
— type of heating in the dishwasher,
— conditions in the dishwashing room (ventilation, temperature, etc.),
— type of items being washed in the machine
— position of curtains etc.

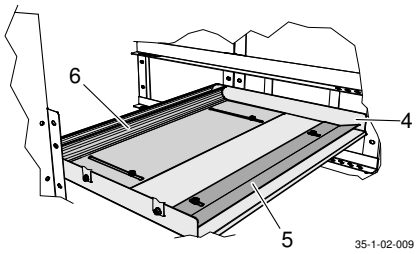
As many different factors affect the air flow through the machine, for best results each machine must be adjusted according to the conditions that apply in the case in question. When the machine is set so that the air flow is balanced, there will be no leakage of steam from the machine's infeed or outfeed. All steam will then be evacuated via the heat recovery unit, where the steam's energy will be used to heat the final rinse water.

The most important part of the machine for achieving this balanced air flow is the drying zone. Here it is possible to affect the air flow by adjusting the spreader plate, guide plates and the adjustable deflector plate.



Fan outlet, drying zone

1. Spreader plate
2. Guide plates (reversible)
3. Fan outlet



Drying zone; guide and deflector plates below washing conveyor

4. Deflector plate (non-adjustable)
5. Guide plate
6. Deflector plate (adjustable)

When adjusting the drying zone:

— the machine must be running
— all curtains in the machine must be in position,
— the spreader plates, guide plates and adjustable deflector plate must be loose but in position, i.e. the screws holding the plates must be tightened so that the plates are held in position but must not be torque-tightened. It must be possible to adjust the plates.

If the dishwasher has more than one drying zone, always adjust the drying zone closest to the rinse zone first. Also adjust the next drying zone if the desired result is not achieved after adjusting the first.

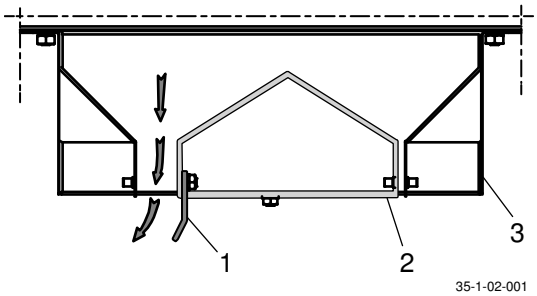
During the entire adjustment process, it is useful to check the temperature level and the change in temperature in the pre-wash zone (this can be read on the control panel display.) Strong fluctuations in temperature in the pre-wash zone (e.g. if the temperature falls from 50°C to 47°C in three minutes) indicate that the air flow through the machine is not in balance. If the machine is set correctly, the temperature in the pre-wash zone should be stable at 48–49°C. If the machine is equipped with an infeed with pre-rinse, the temperature in the pre-wash zone should be 5–7°C higher.

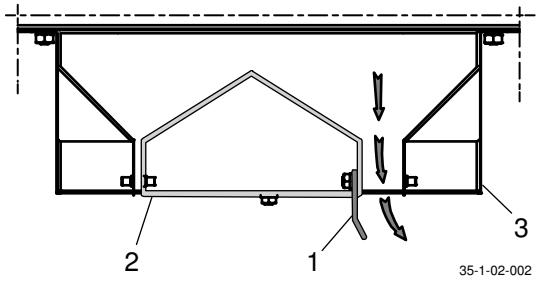
.

- Begin by adjusting the spreader plate in the roof of the drying zone. The guide plates must be turned so that the straight part faces downwards (see the figure on page 28).
  - — Adjust the spreader plate so that it lies in the centre and there is an equal-sized air gap on both sides. Check the direction in which the steam is passing!
  - — Increase the gap between the spreader plate and the fan outlet on the side facing the outfeed if:
    - any steam is leaking from the infeed,
    - the visible curtain at the infeed is being drawn inward,
    - the air inside the drying zone is dry,
    - the temperature in the drying zone is low.

    Increasing the gap on this side will increase the air pressure against the outfeed.
  - — Increase the gap between the spreader plate and the fan outlet on the side facing the infeed if:
    - any steam is leaking from the outfeed,
    - the visible curtain at the infeed is being drawn inward.

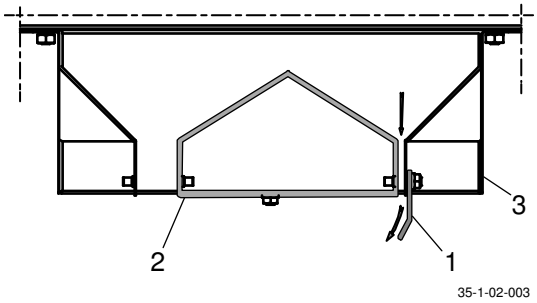
    Increasing the gap on this side will increase the air pressure against the infeed.
- Once the air flow has been optimally adjusted in accordance with the above, continue the adjustment using the guide plates at the fan outlet. Use the angled side of the guide plates to strengthen the air flow in one direction or the other as required. Attach the plates at the weld bolts, either on the fan outlet or on the spreader plate. A greater or lesser strengthening of the air flow in one direction or the other can be obtained by turning the guide plates in various directions and placing them either on the fan outlet or the spreader plate.
  - — The biggest strengthening of the air flow can be achieved by placing the guide plate on the side where the gap between the fan outlet and spreader plate is widest, with the angled side facing downwards and turned so that the tip points in the direction in which the increase in air flow is required, i.e. away from the centre of the fan outlet. The guide plate must be positioned so that the air flow blows onto the plate and is then angled in the direction required. In this case, place the guide plate on the spreader plate.

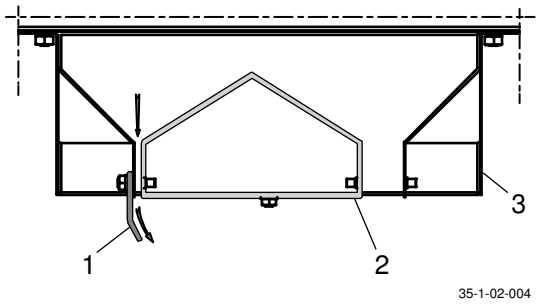




1. Guide plate (reversible)
2. Spreader plate
3. Fan outlet

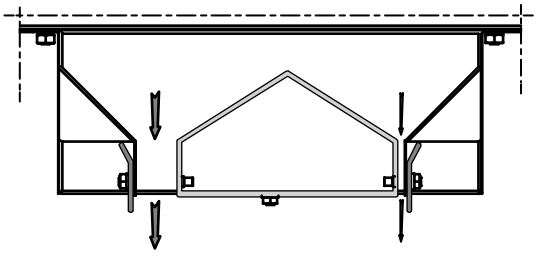
— A somewhat lesser strengthening effect on the air flow is achieved by placing the angled plate on the side where the gap between the fan outlet and the spreader plate is narrowest. For optimum effect, the plate must be placed on the fan outlet and “point” in the direction in which the air flow is to be strengthened (i.e. here it must point towards the centre of the fan outlet).



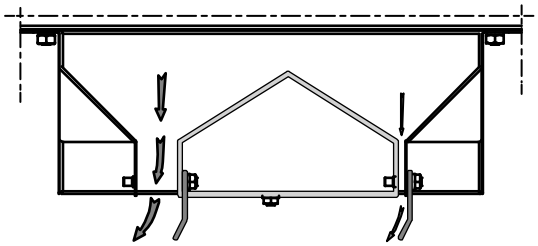


1. Guide plate (reversible)
2. Spreader plate
3. Fan outlet

— By combining the above in varying ways it is possible to strengthen the air flow to different degrees or leave it unchanged. See the examples below:

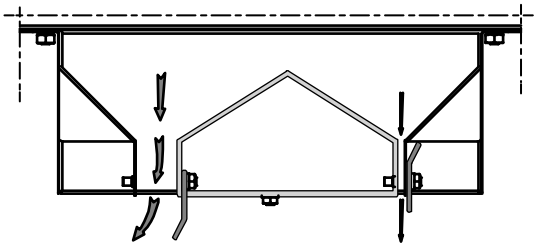


The straight side of the guide plates faces downwards. The effect on the air flow through the dishwasher is minimal



35-1-02-006

The angled side of the guide plates faces downwards and points in the direction in which a stronger air flow is required. This provides maximum strengthening of the air flow in the required direction



35-1-02-007

The strength of the air flow can be adjusted by turning the guide plates in various ways. In this example, the directed air flow will not be as strong as in the example above

- The air flow can be fine-tuned by adjusting the guide plate and adjustable deflector plate located below the machine's washing conveyor.
- The spreader plate, guide plates and adjustable deflector plate should be torque-tightened once everything has been set.

3.11 Cleaning the exterior

Remove the protective plastic from the machine and polish it with a suitable cleaning material for stainless steel plate.

Use a suitable solvent to remove any residual adhesive. Rub with a forwards and backwards movement in the polishing direction of the plate. Wire brushes or wire wool should not be used as they will damage the stainless steel plate.

3.12 Trial operation

Check that reference value 29 FILLED BOOSTER HEATER is set to NO (0) before the machine is started. (How this is done is described in the ADJUSTMENT INSTRUCTIONS in the documentation supplied with the dishwasher on delivery and in the service manual for the dishwasher.)

Prepare the machine for trial operation. Refer to chapter “Instructions for use” on page 32. This chapter describes the measures that must be taken to prepare the machine for operation.

3.12.1 Checklist, start-up

1. Check:

- water and drain connections,
- that the machine is evenly balanced,
- detergent and drying agent,
- that the pump filters, outlet seals and tank filter are in position,
- that the mini-switches are in the OFF position,
- the rotation direction of the pumps
  NOTE: If the direction of rotation is wrong, phase inversion of the relay is required
- so that the booster heater and tank element overheating protection is set to zero

2. Filling the machine:

- turn on the control switch,
- close the doors,
- fill the machine with water in accordance with the instructions for use, See “Preparations” on page 32.
- check and make a note of the temperature of incoming hot water during filling,
- when the filling check for the booster heaters has been completed and the heating of the machine begins, switch on the mini-switches.

3. Check the setting of the reference values:

- all the reference values are set to the recommended values on delivery.

4. Run a number of washes complete with loads and check that:

- there are no water leaks,
- the switch for the doors is working,
- the water temperature is maintained,
- the items are clean,
- the items are dried,
- the overload switch for the feed is working,
- there is adequate water flow to the machine (see flow diagram).

5. Final check: Empty the machine and turn off the power using the power switch.

- Re-tighten all the connections on the circuit breakers and relays,
- set all circuit breakers to the ON position,
- inform the customer if the water flow and the water pressure are too low and
- display the instructions on how to care for the machine that are supplied with it (quick-reference guide).

6. Train dishwashing staff

3.13 Technical documentation

It is important that the members of staff who are to use the machine read and understand the installation and user manual which comes with the dishwasher. Alternatively, the safety officer of the premises at which the machine is to be used can train the staff in the safe use, handling and operation of the dishwasher. The machine has to be handled correctly if it is to be used in a safe manner. Keep the installation and user manual near the machine where it will be easily accessible to users. If the installation and user manual is lost or destroyed, a new one must be ordered from the dishwasher manufacturer or its local representative.

4. Instructions for use

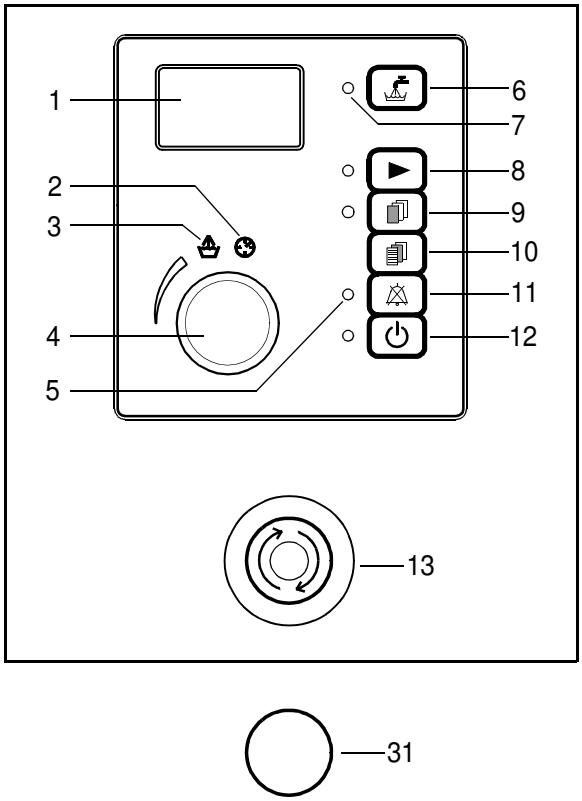
All personnel using the machine should be trained in how the machine works by the person responsible for staff safety.

The dishwasher should not be used by anyone suffering from a physical or mental illness.

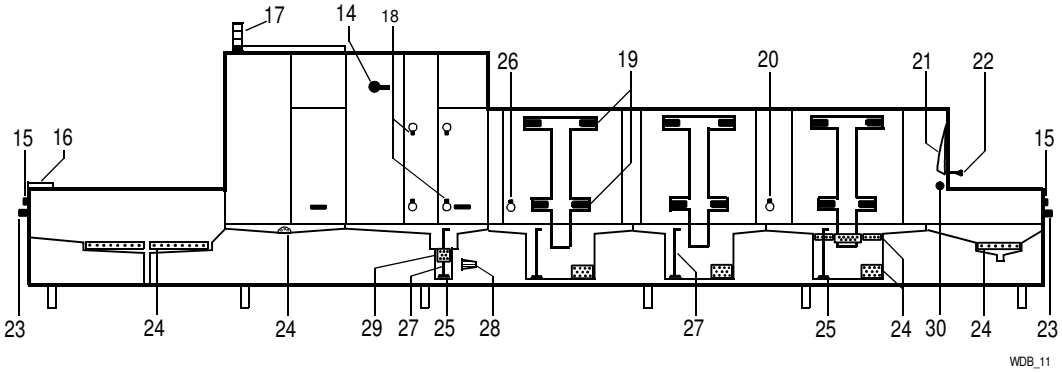
Children should be supervised to ensure that they do not play with or close to the machine.

4.1 Preparations

4.1.1 Machine layout



Control panel



The picture shows a machine with pre-wash, intermediate rinse (option) and two chemical wash tanks. The machines can be supplied with more or fewer washing zones and the reverse feed direction.

1. Display
2. Symbol for contact time (washing time)
3. Symbol for washing
4. Knob for selecting contact time (washing time)
5. LED for indication of alarms. If the LED flashes, the alarm can be reset by pressing button (11).
6. Button for filling the machine
7. LEDs (4) which indicate that a function is activated
8. Button to start the feed
9. Button for diagnostics function (only for service engineers)
10. Button for diagnostic messages (only for service engineers)
11. Button for resetting alarm
12. On/Off
13. Emergency stop
14. Main switch
15. Stop/Start the conveyor belt
16. Limit switch
17. Light bar for alarm signals (option)
18. Nozzle final rinse
19. Wash arm
20. Nozzle, intermediate rinse (option)
21. Curtain
22. Lever for switching between normal and heavily soiled loads (option)
23. Emergency stop
24. Filter
25. Rubber sleeve
26. Nozzle, intermediate rinse
27. Outlet seal
28. Filter
29. Filter for the final rinse
30. Photocell
31. Button for cleaning (option)

The following text specifies numbers in brackets, e.g. press button (12), to indicate which part is being referred to in the text. These numbers refer to figures and the list above.

4.1.2 Preparations before filling

Check:

- that the machine has been cleaned and that the stopcocks for the water are open.
- the amount of detergent and drying agent.

NOTE: Ordinary washing-up liquid must not be used in the machine or for soaking. It causes foam to form and produces poor wash results.

Fit:

- outlet seals (27) – the rubber sleeve on the outlet seals (25) must seal against the bottom plate
- strainers (24,29).
- curtains (21) – the curtains are marked with a number. Corresponding numbers are found in the machine by the mounting bracket for the curtain rod. Make sure that the number by the bracket and the number on the curtain correspond!

4.1.3 Filling and heating the machine

- The doors must be closed.
- Press button (12) to switch on the power supply.
- Press button (6). The filling and heating process will begin.
- Press button (8) to activate the washing conveyor feed when the following text is shown in the display:

MACHINE READY
FOR WASH
START THE FEEDING
WITH FEEDER BUTTON

4.1.4 Filling and heating TimerStart function (option)

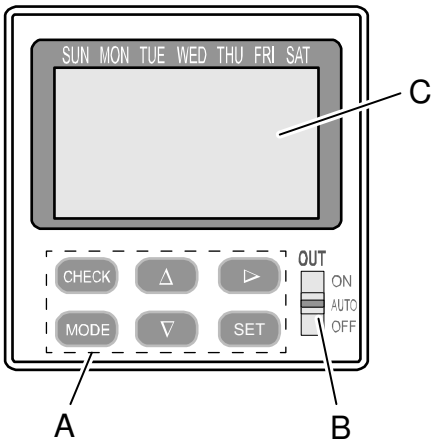
Numbers in brackets refer to the diagram in the chapter "The machine's design".

Using the TimerStart function, the dishwasher can start filling and heating water in the washing tank automatically at a set time. The dishwasher is then ready for washing when the next wash cycle starts and you don't have to wait for the machine to fill the tanks and heat the tank water before washing can start, which takes approx. 30 minutes.

For machines equipped with the TimerStart function, the machine must be in stand-by mode in order to start automatically, i.e. the TO/FROM BUTTON (12) is pressed and the following message is shown on the machine's display:

TIMER START
ACTIVATED

Once the wash and draining of the dishwasher has been completed, it must be switched off and set with the TO/FROM button for the dishwasher to enter stand-by mode. It is therefore not enough just to stop the wash cycle and/or to empty the washing tanks to put the machine into this mode.



90-9-05-002-a

Timer

A. Buttons for setting and checking
B. Switch
C. Display

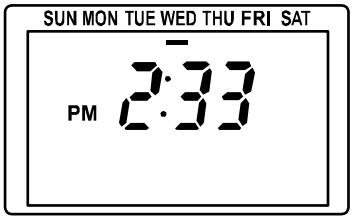
The switch (B) on the timer should be set to AUTO position.

Setting of the start time is described below.

If you want to bypass the TimerStart function and start manually, press the machine's TO/FROM button (12) once more when the message above is shown on the display. The filling of the machine then starts as normal, i.e. by pressing the button for filling the dishwasher (6).

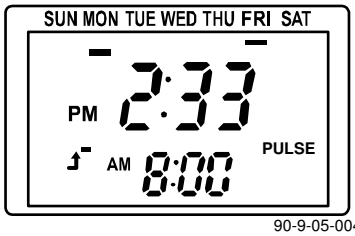
The display's appearance during operation (normal information)

When the machine is in operation, the timer's display looks different depending on whether the start time is set or not. The display depends on how the start time has been set.



90-9-05-003

When the start time is not set, or when the start time is set for a specific date (see "Setting start time, date"), the display appears as above.
The actual time (12-hour clock) is shown on the display. The present day of the week is shown as a thin line under the name of the day of the week. (If start time for date is set and this date has expired, the message YEAR is shown to the right of the time).



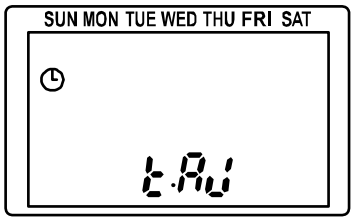
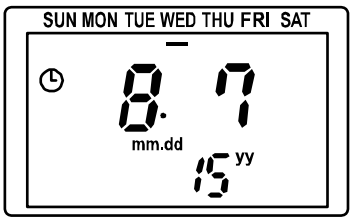
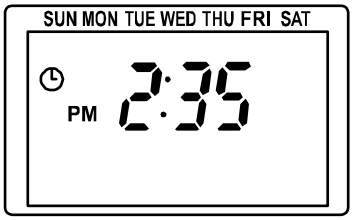
90-9-05-004

When the machine is set to start at a certain time on certain days of the week, (see "Setting start time, days of the week"), the display appears as above.
The time and day of the week are shown here in the same way as above. The next upcoming start time is shown too. The time for the next start time appears under the actual time, and day of the week for the next start time is indicated with a thicker line under the name of the day of the week.

In both cases, it is possible to see the current date by holding down the button ► for 3 seconds. The date is then shown for 3 seconds on the display before returning to its state as per the illustrations above.

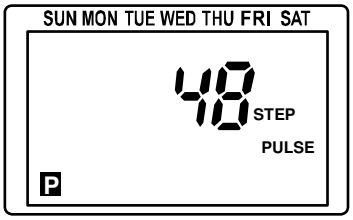
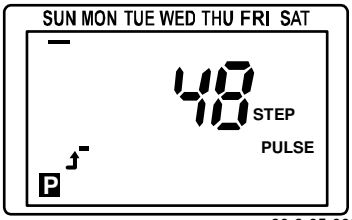
Setting the date and time

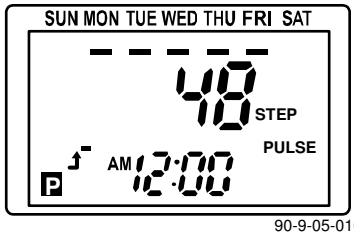
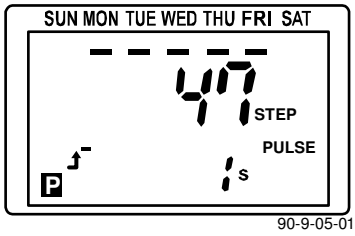
For the TimerStart function to work as expected, the date and timer clock must be set. This is normally done on delivery.

This is what you should do to set the time and date:	
Go into settings mode by holding down the MODE and SET buttons for 3 seconds.	
• Press the SET button.	 90-9-05-005 *The clock symbol in the upper left flashes*
Set the date.	
• The value that is currently set flashes. Increase or decrease the value with the buttons ▲ and ▼. • In order to move on to the next value, press the button ►. • When all the values in the illustration, (year (yy), month (mm) and day (dd)), are set - press the SET button.	 90-9-05-006
Set the clock. The clock has a 12-hour display so AM (before midday) and PM (after midday) must be set.	
• The one that is currently set flashes. Increase or decrease the value with the buttons ▲ and ▼. • In order to move on to the next value, press the button ►. • Once the clock has been set - press the SET button.	 90-9-05-007
Hold down the MODE button for 3 seconds in order to return to normal display information.	

Setting the start time, days of the week

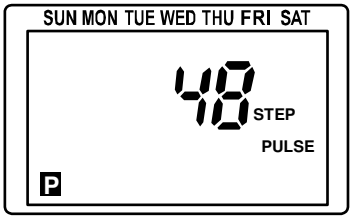
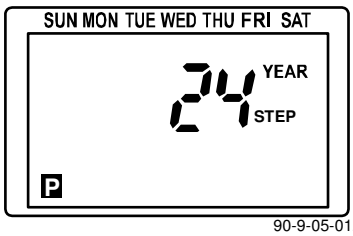
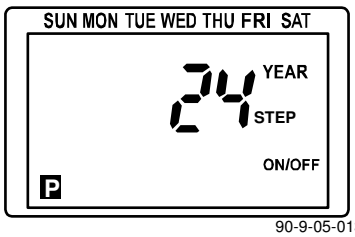
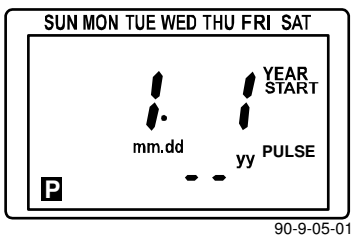
With this setting, you can set a time when the dishwasher begins to fill and heat the water in the tank, and which days of the week this start time applies to. If you want the dishwasher to start at another (additional) time, you must set it for this time too. All weekly settings are active at the same time.
For example: The machine should start filling with water and heating at 8.00 on Monday to Friday inclusive and at 8.45 on Saturday and Sunday. So it is set to 8.00 for Monday, Tuesday, Wednesday, Thursday and Friday, and is set to 8.45 for Saturday and Sunday.

This is what you should do to set the start time and which days of the week it should apply to:	
Access the start time settings mode by pressing the MODE button for 3 seconds.	
• Press the SET button.	 90-9-05-008 *P down to the left flashes*
If there are no previously stored start time settings, the points below must be followed. If start time settings are stored, the timer moves on directly to the next step (set days of the week):	
• Press on either of the buttons ▲ or ▼ so that the message ON/OFF changes to PULSE. • Press the SET button.	 90-9-05-026 *The message ON/OFF flashes*
Set which days of the week the start time should apply to.	
• To activate the day of the week that the pointer (the thin line under the day of the week) indicates, press either of the buttons ▲ or ▼. When a thicker line under the thin flashing line is shown, this day is activated. • By pressing the button ►, the pointer can be moved. • Continue to move and activate with the buttons until all the days of the week which the start time should apply to have a thicker line visible under them. • Once the setting is complete - press the SET button.	 90-9-05-009 *The arrow symbol and the line under the day of the week flashes*

This is what you should do to set the start time and which days of the week it should apply to:	
Set the start time. The value that is currently set flashes.	
• Change the flashing value with the buttons ▲ and ▼. • Move between the settings for the part of the day (AM / PM), hours and minutes with the button ►. • Once the setting of all the values for the start time are complete - press SET.	 90-9-05-010 *The arrow symbol and adjustable value flashes*
Set the pulse length.	
• The pulse length should always be set to 1 second. Change the value if necessary with the buttons ▲ and ▼. • Press SET when the setting is complete.	 90-9-05-011
Press SET once more.	
Hold down the MODE BUTTON for 3 seconds in order to return to normal display information.	

Setting the start time, date

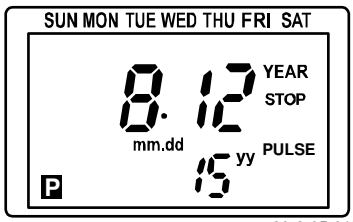
It is possible to set the start time for specific dates, either for an individual date or for a period between a start date and an end date. It is possible to set the timer for a date up to two years from the current date.

This is what you should do to set the start time and which dates it should apply to:	
Hold down the MODE button for 3 seconds in order to enter settings mode.	
• Press MODE again.	 90-9-05-008 *P down to the left flashes*
• Press the SET button.	 90-9-05-012 *The message YEAR and P down to the left flashes*
If there are no previously stored start time settings, the points below must be followed. If start time settings are stored, the timer moves on directly to the next step (set start date):	
• Change with the buttons ▲ and ▼ so that PULSE is indicated instead of ON/OFF. • Press SET.	 90-9-05-013 *The message ON/OFF flashes*
Set the start date (adjustable value flashes):	
• Change the flashing value with the buttons ▲ and ▼. • Scroll to the next value with the button ►. • When all the values (year, month and day) are set, press SET.	 90-9-05-014

This is what you should do to set the start time and which dates it should apply to:

Set the stop date (adjustable value flashes):

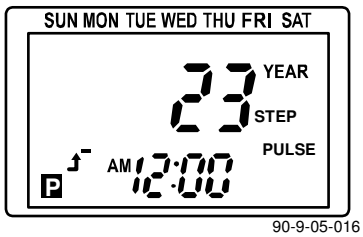
- Change the flashing value with the buttons ▲ and ▼.
- Scroll to the next value with the help of the button ►.
- When all the values (year, month and day) are set, press SET.



90-9-05-015

Set the start time (adjustable value flashes):

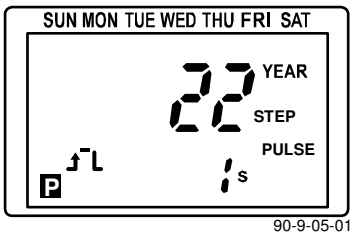
- Change the flashing value with the help of the buttons ▲ and ▼.
- Scroll to the next value with the help of the button ►.
- When all the values (before midday (AM)/after midday (PM), hours and minutes) are set, press SET.



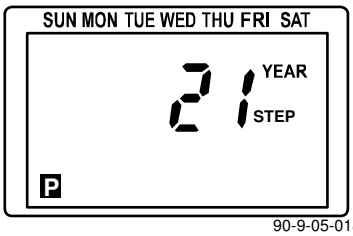
90-9-05-016

Set the pulse length:

- The pulse length should always be set to 1 second. Change with the help of the buttons ▲ and ▼ if necessary.
- Press SET.



90-9-05-017



90-9-05-018

Hold down the MODE button for 3 seconds in order to return to normal information mode.

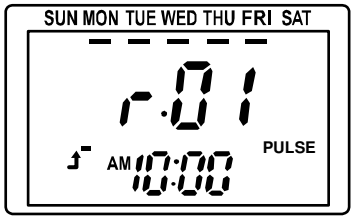
Checking, changing and removal of set start time

If the buttons have not been pressed for at least 60 seconds while in check information mode, the display returns automatically to normal display mode.

Checking of set start times, days of the week:

Hold down the CHECK button for approx. 1 second until the display changes state.

- By pressing repeatedly on CHECK, you can scroll through every set start time.
- If several start time settings are stored, they are numbered as r01, r02 and so on.
- Once you have scrolled past the last stored start time, the display returns to its normal state.

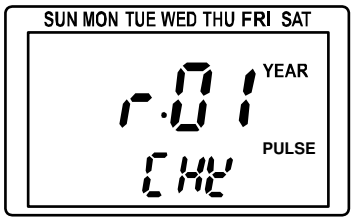


90-9-05-019

Checking of set start times, date:

Hold down the CHECK button for approx. 3 seconds.

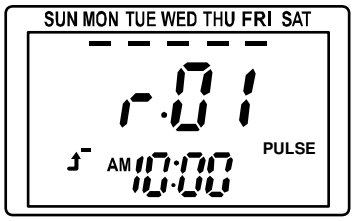
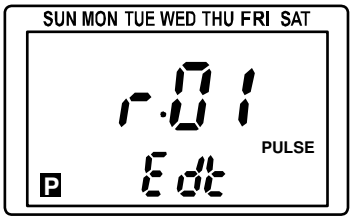
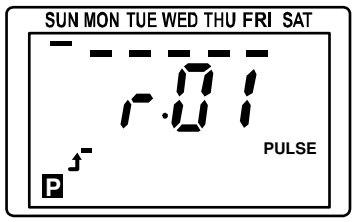
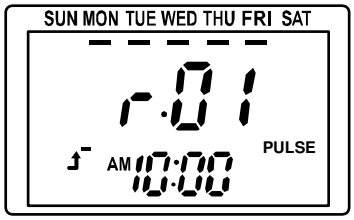
- By pressing repeatedly on CHECK, you can scroll through every set start time.
- If several start time settings are stored, they are numbered as r01, r02 and so on.
- Once you have scrolled past the last stored start time, the display returns to its normal state.



90-9-05-020

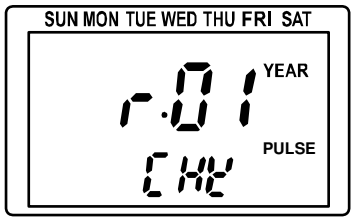
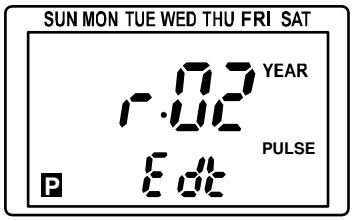
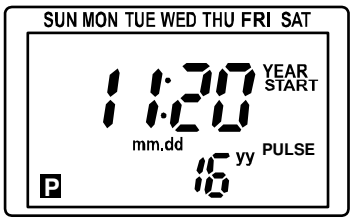
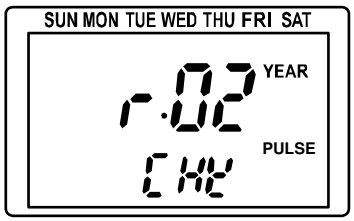
Changing set start times, days of the week:

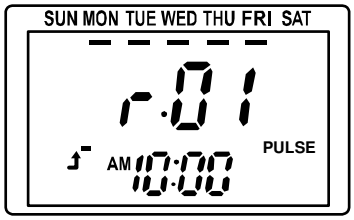
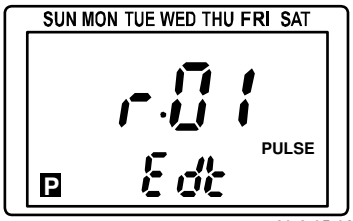
Hold down the CHECK button for approx. 1 second.

• Scroll forward to the start time setting that should be changed by pressing CHECK. • Hold down the SET button for approx. 3 seconds.	 90-9-05-019 *The arrow symbol flashes*
• Press the SET button.	 90-9-05-021 *Edt flashes*
• Set days of the week, start time and pulse length in the same way as described above under “Setting the start time, days of the week” • The display returns to check information mode when the SET button is pressed after the pulse length has been changed.	 90-9-05-022 *Arrow symbol and adjustable value flashes*
• You can choose here to scroll further to the next set start time by pressing the CHECK button or to exit the check information mode by holding down the MODE button for approx. 3 seconds (if the buttons have not been pressed for at least 60 seconds, the display returns automatically to normal display mode).	 90-9-05-019

Changing the set start times, date:

Hold down the CHECK button for approx. 3 seconds.

• Scroll forward to the start time setting that should be changed by pressing CHECK repeatedly. • Hold down the SET button for approx. 3 seconds.	 90-9-05-020
• Press the SET button.	 90-9-05-023 *Edt flashes*
• Set start date, stop date, start time and pulse length in the same way as described under “Setting the start time, date” • The display returns to check information mode when the SET button is pressed after the pulse length has been changed.	 90-9-05-024 *START and adjustable value flashes*
• You can choose here to scroll further to the next set start time by pressing the CHECK button or to exit the check information mode by holding down the MODE button for approx. 3 seconds (if the buttons have not been pressed for at least 60 seconds, the display returns automatically to normal display mode).	 90-9-05-025 *r02 flashes*

Removal of set start time:	
Start time, day of the week: Enter check mode by holding down the CHECK button for approx. 1 second.	
Start time, date: Enter check mode by holding down the CHECK button for approx. 3 second.	
• Scroll forward to the start time setting that should be removed by pressing the CHECK button.	 90-9-05-019
Hold down the SET button for approx. 3 seconds.	
• Change with the help of either of the buttons ▲ or ▼ so that Clr is indicated under the start time setting's number instead of Edt.	 90-9-05-021
Press SET.	
Hold down the SET button for 3 seconds in order to return to normal information mode.	

4.2 Using the machine

4.2.1 Washing

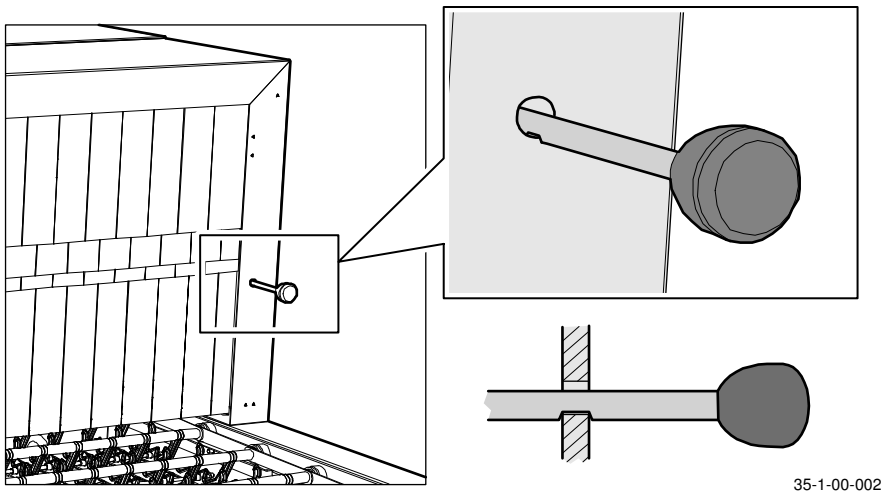
Proceed as follows:

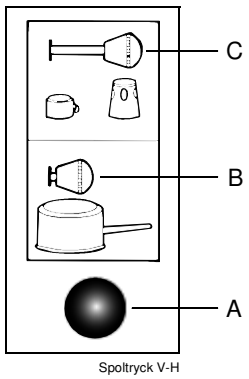
- When washing is to start, the dishwasher must be prepared, i.e. the washing tanks must be filled, the water in them heated and the conveyor belt started, see “Filling and heating the machine” on page 34 or if the dishwasher is equipped with the TimerStart function, “Automatic filling and heating using the TimerStart function (option)” on page 35
- If the dishwasher is equipped with rapid adjustment of rinse pressure (option):
  set the dishwasher for normal or heavily soiled loads, see “Rapid adjustment, rinse pressure (option)” on page 47
- Select contact time, see “Selecting the contact time/wash time” on page 48
- Scrape off food residue. Items with dried food residue may need to soak
- Position the item on the belt at the infeed, see “Feeding loads into the machine” on page 48
- If the belt has stopped, press button (15) to restart it (the belt will then continue to move as long as there are items in the machine)
- Remove the washed item from the belt at the outfeed side.
  If the item is not removed quickly before it reaches the limit switch (16), the item will press the limit switch panel and the belt will stop. (Certain machines are equipped with photocells at the outfeed (option) instead of limit switches. Both have the same function.) When the items have been removed, the belt will restart automatically
- Check the wash result when the item is removed from the belt, see “Checking the wash result” on page 49
- If anything goes wrong with the dishwasher during operation (machine fault or human error), an alarm will be shown in the display (1) on the dishwasher’s control panel. Under “Operating problems” on page 60, there is a list of alarms that may occur and what should be done if they do. Certain machines can be equipped with lights to indicate whether any alarms are active in the dishwasher, see “Lights to indicate alarms (option)” on page 60
- Before washing starts, you should make sure that you know where the dishwasher’s emergency stop is located (see item no. 13 and 23 under “Machine layout” on page 32 and under “Emergency stop” on page 49)

Rapid adjustment, rinse pressure (option)

The dishwasher can also be equipped with the option to adjust the rinse pressure depending on whether you are washing normally or heavily soiled items. This is done using a lever (22) next to the infeed. When the lever is pushed forward, the machine is set to wash heavily soiled items (high pressure). When the lever is pulled back, the machine is set to wash normally soiled items (low pressure). The position of the lever when washing normally or heavily soiled items is illustrated on a label on the machine next to the lever.

⚠ Make sure that the edge of the hole ends up in the lever rod indent when the lever is reset. Otherwise, there is a risk of the lever moving out of position.





The position of the level when washing normally and heavily soiled items

A. Lever to select normal or heavily soiled loads
B. Lever pushed forward – heavily soiled load
C. Lever pulled back – normally soiled load

Selecting the contact time/wash time

When the machine's feed has started, a text message appears on the display indicating that the machine is ready to wash and giving a contact time in seconds.

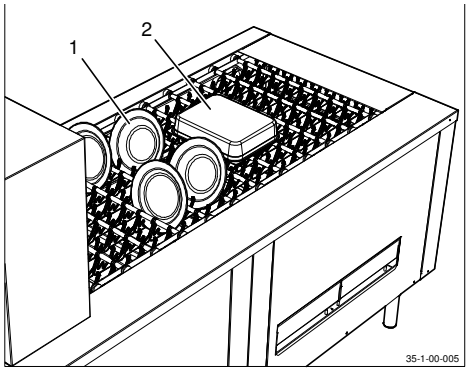
READY
CONTACT TIME 110 S

The contact time is the total period during which the load is washed while being transported through the various washing zones. There are six different times that can be selected.

- Select the contact time using knob (4) on the panel.
- You should select a contact time on the basis of how heavily soiled the load is:
  – if the load is very heavily soiled, choose the longest contact time
  – if the load is lightly or normally soiled, choose a shorter contact time.

Feeding loads into the machine

- Before feeding the item into the machine, soak dried-on food and remove large food particles. The item must not be soaked or pre-washed using ordinary washing-up liquid.
- The item must be placed on the belt such that there is space for the washing and rinsing water to move in and around the item. The item should not be placed such that the washing water remains within it.



Infeed – placing items on the washing conveyor

1 Plates, trays and pans should be placed upright with as much space as possible between them so that the washing and rinsing water can move around the item

2 Canteens, bowls and similar should be placed upside down so that the washing water can drain out of them. Make sure that the canteens are placed so that there is space between them. Otherwise, the washing water may overflow between the canteens, which may impair the wash result.

Cutlery and smaller items should be laid in a basket placed directly on the belt. Cutlery should then be stood in special cutlery baskets which are placed in a normal basket and run through the dishwasher once more.
Certain machines are equipped with washing conveyors that have cutlery baskets beside the washing conveyor. If these are available, the cutlery should be placed in these

- Check that large bowls can pass freely through the machine.
  The machine is equipped with a height limiter located on the infeed hood, which prevents items taller than approx. 450 mm (approx. 550 mm in elevated machines) to pass through.

4.2.2 Emergency stop

The machine has three emergency stop buttons. One of the emergency stop buttons (13) is located beneath the control panel. The other emergency stops (23) are located at the infeed and outfeed.

If an emergency stop button is pressed during operation, the reason for the emergency stop must be rectified. The emergency stop is then reset by turning the emergency stop button in the direction indicated by the arrows on the emergency stop button. Reset the alarm using the reset button (11) and then press button (8) or (15) to restart the feed.

4.2.3 Checking the wash result

When removing the clean item from the belt, the wash result should be checked. Check the following:

- that there is no discolouration, spots, misting, food residue or deposits visible on the items,
- that no deposits at all are visible on the washed items.

The table below contains suggestions as to what you should check and, if the problems listed are present on checking of the washed items, what action you should take to deal with them.

Problem:	Check:												
	Scraping	Detergent dosage	Drying agent dosage	Water change/water circulation	Temperature: Washing	Temperature: Final rinse	Temperature: Pre-rinse	Time/water quantity for final rinse	Time, washing	Water hardness	Cleaning of wash arms	Stacking of items	Soaking
Starch spots Visible as small spots, most often on glass	X	X	X	X	X	X	X	X					X
Misting		X	X			X	X	X	X	X			
Food residues	X	X		X					X		X	X	
Protein residues Visible as discolouration or marks on canteens used to fry e.g. meatballs, hamburgers or fish		X					X		X				X
Detergent residues Not visible on the washed items but identifiable by chemical means (phenolphthalein)		X		X				X				X	

Scraping – It is important that as much food residue as possible is scraped off the items before putting them in the machine. Proper scraping will mean the water in the washer tank will not need changing as often.

Detergent and drying agent dosage – The dosage of the detergent and drying agent will affect the wash result. If too high or too low a dosage is suspected, the detergent supplier should be contacted.

Water change – How often the water needs to be changed depends on several factors such as the number of items being washed, how well food residue is scraped off the item, how much detergent there is in the washing water etc. It is therefore important to continuously check the wash result, which may indicate when it is time to change the water (see “Changing the water” on page 51).

Water circulation – If water circulation in the machine is not good enough, this can lead to problems such as starch spots on glass and on the undersides of plates. Contact the service company for help in dealing with the problem.

Temperature – If the temperature during washing and the final rinse is too low, the items in the wash will not emerge clean. If you suspect this is the case, contact the service company.
If normal wash items are pre-rinsed before being put in the dishwasher, the temperature of the water must not exceed 40°C. If the temperature of the rinse water is higher, there is a risk of proteins and starch burning onto the item, with a poor wash result as a consequence.

Time/water quantity for final rinse – If starch spots or misting can be seen, or if there is still detergent residue on the item after washing, this may mean that the flow through the wash arms during the final rinse is too low. The final rinse flow can be checked and adjusted by a service technician.
The duration of the final rinse may also play a part. Increase the contact time, see “Selecting the contact time/wash time” on page 48.

Time, washing – if you suspect that the washing time is too short, you can increase the contact time, see “Selecting the contact time/wash time” on page 48.

Water hardness – If the water used for washing is hard (>10°dH), a higher concentration of detergent may be needed to ensure the washed items emerge clean. Contact your detergent supplier.

Cleaning, rinse pipes – Cleaning of the machine is important for achieving a good wash result, see “After use” on page 51.

Stacking of items – The placement of the item on the washing conveyor is crucial for the wash result, see “Feeding loads into the machine” on page 48.

Soaking – In certain cases, the item may need to be soaked before it is washed to ensure that it is properly cleaned. In such cases the items are soaked e.g. overnight in water with a soaking agent. Follow the instructions of the detergent supplier.

Ordinary washing-up liquid must **NOT** be used in the machine or for soaking. It causes foam to form and produces poor wash results.

4.3 After use

4.3.1 Changing the water

To maintain a good wash result, it is important that the water in the tanks is changed when the wash result starts to decline, such as when starch spots and food residue etc. start to appear on the item (see “Checking the wash result” on page 49). The water should always be changed if foam begins to form in the washing tanks.

- Switch the machine off by pressing button (12).
- Remove the filter from the pre-wash tank and empty the machine by turning the outlet seals (27) a quarter of a turn.
- When the tanks are empty, refit the outlet seals and filters.
- Refill the machine. See “Filling and heating the machine” on page 34.

4.3.2 End of wash, cleaning

When cleaning the dishwasher, the following should be considered:

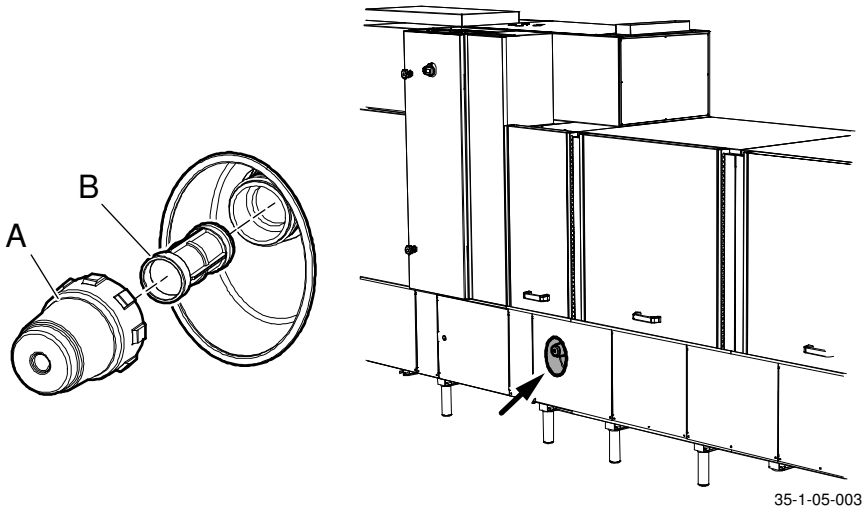
- Do NOT use steel wool as this can cause rust to form on the dishwasher.
- Pressure washers can damage the dishwasher and must NOT be used for cleaning purposes. Never use a pressure washer on the floor without positioning a protective cover to prevent splashing closer than a metre from the dishwasher. The supplier cannot be held liable for any faults caused by the use of pressure washers on the dishwasher and any such use will invalidate the warranty.

HACCP is a preventive inspection system to ensure hygiene requirements are met during the washing process and cleaning of the machine. As a result of its design, the machine meets strict hygiene requirements. Regular, thorough cleaning is also important from a hygiene perspective. Cleaning the machine carefully helps to ensure good washing results and reduces the risk of dirt accumulating inside the machine.

4.3.3 Daily cleaning

Cleaning the inside

- Switch the machine off by pressing button (12).
- Empty the machine by turning the outlet seals (27) a quarter of a turn.
- Clean the filters (24), all curtains (21), outlet seals (27) and the rinse nozzles (18, 20, 26). Never leave the outlet seals so that the rubber sleeve rests on a surface. The sleeve can become deformed leading to the risk of water leakage in the tanks.
- Clean the washer arm nozzles (19).
- Clean the doors. Wipe the rubber strips on the doors which are fitted at the top of the back of the doors.
- Rinse all the inside surfaces of the machine and clean the tanks.
- Clean the filter (29).
- Clean the final rinse filter.
  Unscrew the cover (A) and remove the filter (B).
  Rinse and clean the cover and filter.
  Replace the filter and cover.
  NOTE: The filter must be turned so that the filter's O-ring (B) is in cover (A).



- Refit all removable parts and leave the doors open.
  Be careful when replacing the curtains in the dishwasher. Next to every curtain hanger inside the dishwasher, there is a small sign with a number on it. This number must correspond with the number on the curtain that is to be positioned on the hanger in question.

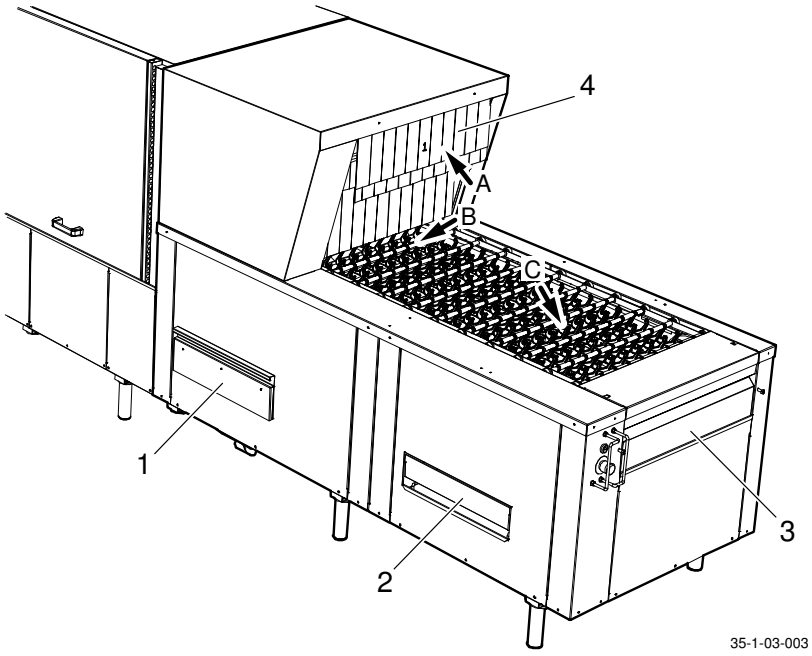
Cleaning the exterior

Wipe the outside of the machine with a soft, damp cloth.

If detergent is used, it must not contain abrasives. Detergents containing abrasives will damage the stainless steel panels.

The machine's electrical cabinet must not be hosed down externally. Water can enter the machine and damage the control panel and electrical equipment.

4.3.4 Daily cleaning, infeed section with pre-rinse (PRM) (Option)

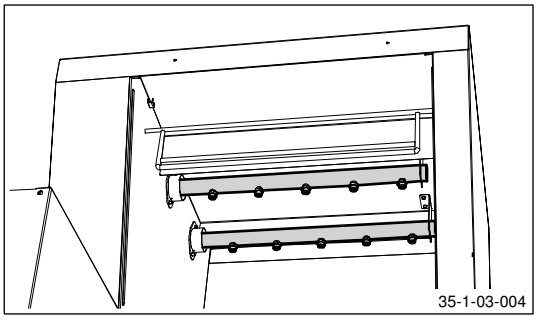


Infeed section with pre-rinse (PRM)

1. Filter cover – inside this, there is a coarse filter with scraper and a fine filter
2. Coarse filter (only on infeed sections with pre-rinse that are more than 2,025 mm long)
3. Inspection door
4. Curtains

Pos. A–C, see below.

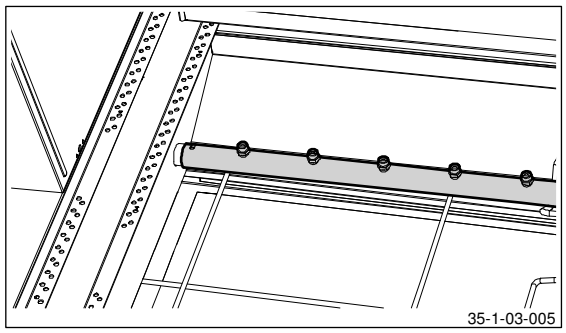
Position A:



Upper rinse pipes (2) in the pre-rinse

The rinse pipes can be accessed via the machine opening (remove the curtains) or via the door in the pre-wash. The rinse pipes can be removed by turning the pipe, pushing it towards the rear of the machine and removing it from the holes.

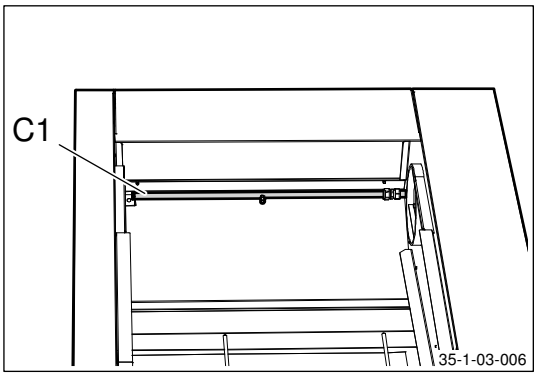
Position B:



Lower rinse pipe in the pre-rinse

This rinse pipe sits under the dishwasher's washing conveyor, next to the filters, inside the filter cover (see the figure on page 53, item no. 1). The rinse pipe can be accessed through the opening inside the filter cover. Remove the filters! The rinse pipe is removed by turning it, pushing it towards the rear of the machine and removing it from its holder.

Position C:



Cleaning pipe

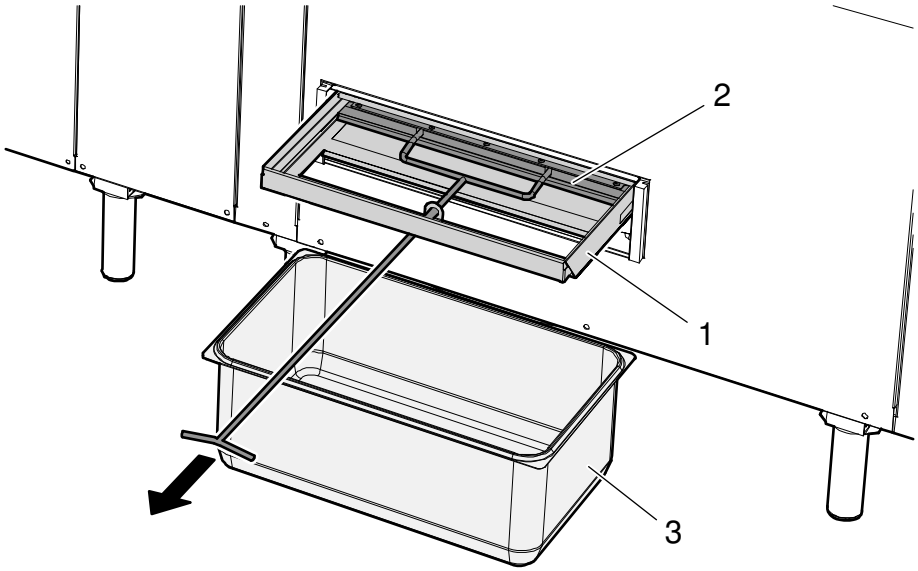
The cleaning pipe is located under the dishwasher's washing conveyor, where it removes dirt from the sloped surface next to the filters in the infeed. The cleaning pipe can be accessed via the inspection door (see the figure on page 53, item no. 3) on the infeed's short side. It is not possible to remove the cleaning pipe without tools. It should therefore be cleaned by a service engineer when the dishwasher is serviced.

The following must be cleaned and checked every day:

- Remove and clean the curtains (see the figure on page 53, item no. 4)
- Rinse the infeed section inside
- Check that the rinse pipes (A and B) are not damaged and that the nozzles are not clogged. Rinse their exterior
- Remove, empty and clean the coarse and fine filters at least once a day and whenever you change the water.
  The coarse filter inside the filter cover may need to be emptied more frequently than once a day. It is possible to empty this during operation (see below under “Rapid emptying of the pre-rinse’s coarse filter” on page 56)
- Remove the door on the infeed’s short side (lift up and out) and rinse the sloped surface and cleaning pipe (C1) inside. Check that the cleaning pipe is not damaged and that the nozzles are not clogged.

You will receive a cleaning gun with the infeed section that can be used for cleaning areas that are difficult to reach.

Rapid emptying of the pre-rinse’s coarse filter

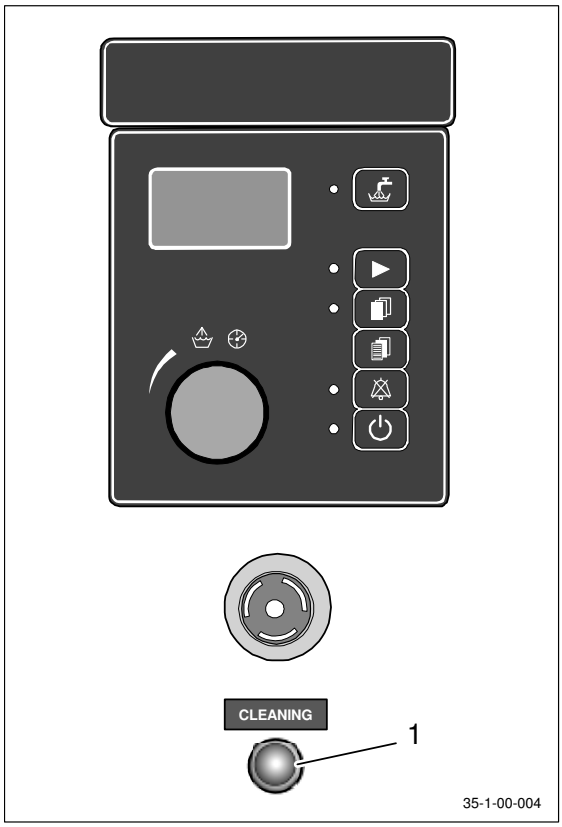


35-1-03-002

- Remove the filter cover
- Pull out the coarse filter (1) until the hole at the bottom of the filter’s front edge ends up a little outside the infeed
- Position an empty container (3) underneath the hole in the filter
- Pull out the scraper (2) so that the detritus in the filter falls into the container
- Push in the scraper handle
- Push in the coarse filter and close the door

4.3.5 Cleaning function (Option)

The cleaning function exists to facilitate the daily maintenance of the dishwasher. In the pre-wash zone, chemical wash zone and heat recovery unit (in certain machines only in the pre-wash and chemical wash zones), there are rotating wash arms in the ceiling that rinse the dishwasher of dirt when the cleaning function is started. The function is a supplement to manual cleaning.



Control panel, emergency stop and button to start automatic cleaning (1) on electrical cabinet door

Cleaning using the cleaning function is done every day as follows:

- Start by removing all filters and curtains apart from those that are outermost on the infeed and outfeed sections of the dishwasher. Clean these.
- Empty the dishwasher tanks by turning the outlet seals one quarter turn (see “Daily cleaning” on page 52).
- Close the doors of the pre-wash tank and chemical wash tank(s). Start the automatic cleaning function by pressing button (1), see the figure above. Wait until the cleaning function has completed its cycle, which takes approx. two minutes.
- Clean the filter in the final rinse tank.
- Clean the final rinse filter as described under “Daily cleaning” on page 52.
- Replace all loose parts and leave the tank doors open while the dishwasher is not being used.

4.3.6 Cleaning and checking each week or as required

Weekly cleaning should be more thorough than daily cleaning. In addition to the daily cleaning measures, follow these instructions:

- Clean the washer arms (see the figure on page 33, item no. 19). Remove the lower washer arms by pushing the lock on the front of the washer arm down and pulling the washer arm out. Remove the upper washer arms by turning the knob beneath the front of the washer arms a half turn. Pull the washer arm down slightly and out. Brush and rinse the inside of the washer arms and clean the nozzles.
- Check and clean the rinse nozzles (see the figure on page 33, item no. 18, 20, 26).
- Check that the overload switch for the feed is working by attempting to hold the belt still for a few seconds. If the switch does not activate (the belt should stop), it must be adjusted as soon as possible (contact the service engineer).
- Refit all cleaned components.
  Be careful when replacing the curtains in the dishwasher. Next to every curtain hanger inside the dishwasher, there is a small sign with a number on it. This number must correspond with the number on the curtain that is to be positioned on the hanger in question.

Weekly cleaning of infeed section with pre-rinse (PRM) (Option)

The following must be cleaned and checked at least once a week:

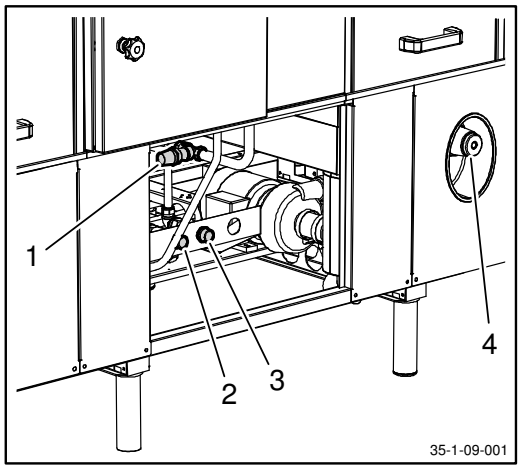
- Remove the rinse pipes in the pre-rinse (for location, see under “Daily cleaning, infeed section with pre-rinse (PRM) (Option)” on page 53) and clean these on the inside and outside. Check that the rinse pipes are not damaged and that the rinse pipe nozzles are not clogged.

Weekly cleaning of dishwasher with automatic cleaning (option)

The machine must be thoroughly cleaned at least once a week. In addition to the points above, a more thorough check of the inside of the pre-wash and chemical wash tanks should be performed. Check that there is no dirt on upper surface or sides. Make sure that you check the tank doors and corners. If necessary, clean!

4.3.7 Annual check

Safety valve for heat recovery unit

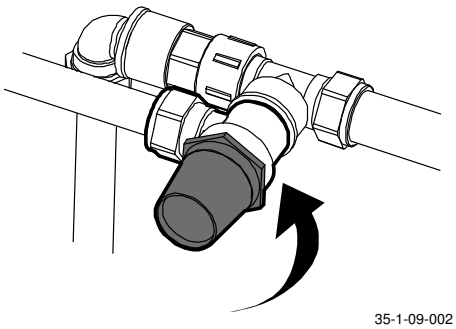


Safety valve for heat recovery unit (the figure shows a dishwasher with the feed direction right to left)

1. Safety valve
2. Connection for hot water
3. Connection for cold water
4. Filter for re-circulating final rinse

There is a safety valve on the pipe upstream of the dishwasher's cold water connection (see figure above). The opening function for this valve must be checked 2–3 times a year. Proceed as follows:

— Loosen the screws that hold the cover plate over the water connections to the dishwasher (to the left of the filter for recirculating final rinse in dishwashers with feed direction right to left)
— Remove the cover plate
— Turn the plastic wheel on the valve anti-clockwise for approx. a quarter turn until a faint click is heard



— Let the water flow through for a short while
— Turn another approx. quarter turn until a louder click is heard and the valve closes.

4.3.8 Operating problems

Lights to indicate alarms (option)

The light bar (17) shows the following:

- Green light – machine in operation
- Yellow light – alarm
  Check the text in the control panel display and rectify the reason for the alarm, see “Operating problems” on page 60.
- Red light – serious fault
  Check the message on the control panel display. See chapter “Operating problems” on page 60 for actions.

Error messages

In the event of machine or human error, an alarm will appear in the form of a message on the control panel’s display (see the figure on page 33, item no. 1). The activation of an alarm will also be indicated by the LED (5) next to the reset button for the alarm (11), which will light up or flash. If the LED flashes, the alarm can be reset by pressing button (11). If the LED lights up and does not flash, the alarm cannot be reset.

As an add-on to the alarm on the control panel display, the dishwasher may also be equipped with a light to indicate an alarm on the light bar (17) (option), also refer to “Lights to indicate alarms (option)” on page 60.

In the table below, alarms are displayed in order of priority, i.e. if several alarms are activated at the same time, the one that is highest in the list is displayed first.

For all alarms in the table below, if the actions proposed do not solve the problem or if the alarm returns repeatedly in succession, you should contact the service company for them to deal with the fault.

Alarm texts	
Alarm text	Action
(0) PLATFORM ERROR	Switch off the machine and restart it.
(63) POWER SUPPLY FAILURE CHECK THE EMERGENCY SWITCH	Check whether any of the emergency stop buttons have been activated, see “Emergency stop” on page 49. Switch off and restart the machine.
(98) HARDWARE ERROR POWER ON FUNCTION DEFECT CALL SERVICE	Switch off the machine and restart it. Contact service personnel if the alarm will not go out.
(1) EMERGENCY STOP ACTIVATED	See “Emergency stop” on page 49.
(3) NOMINAL VALUES CORRUPTED IN MEMORY CALL SERVICE	Call service!

Alarm texts	
Alarm text	Action
(99) THE MACHINE TYPE IS CHANGED. VERIFY THE CHANGE.	This alarm should not occur on normal operation. If it does, contact service personnel.
(100) NOMINAL VALUES RESTORED FROM UI	This is an information text. Reset the alarm using reset button (11).
(2) INPUT FAILURE ON DIGITAL INPUTS CALL SERVICE	Call service.
(4) COMMUNICATION ERROR BETWEEN CPU AND I/O 1 CALL SERVICE	Restart the machine.
(5) COMMUNICATION ERROR BETWEEN CPU AND I/O 2 CALL SERVICE	Restart the machine.
(6) COMMUNICATION ERROR BETWEEN CPU AND EXTRA CARD CALL SERVICE	Restart the machine.
(7) COMMUNICATION ERROR BETWEEN CPU AND DISPLAY CARD CALL SERVICE	Restart the machine.
(9) COMMUNICATION ERROR FREQUENCY CONVERTER CALL SERVICE	Restart the machine. Contact service personnel if the alarm recurs.
(10) FREQ. CONVERTER ERROR CHECK POWER SUPPLY CALL SERVICE	Restart the machine. Contact service personnel if the alarm recurs.
(11) OVERTEMPERATURE FREQUENCY CONVERTER CALL SERVICE	Restart the machine. Contact service personnel if the alarm recurs.
(12) DC BUS OVERVOLTAGE FREQUENCY CONVERTER CALL SERVICE	Restart the machine. Contact service personnel if the alarm recurs.
(14) WEAK SIGNAL FROM PHOTOCELL START WASH CLEAN PHOTOCELL	Clean the photocells in the infeed hood. When the signal strength from the photocells returns to normal, reset the alarm.
(15) WEAK SIGNAL FROM PHOTOCELL END LIMIT CLEAN PHOTOCELL	(Only on dishwashers with photocells for end limit indication (option)) Clean the photocell at the end limit on the dishwasher outfeed (this photocell is optional). When the signal strength from the photocell returns to normal, reset the alarm.
(47) HACCP ALARM PUMP FUNCTIONALITY DEFECT PRESS RESET	Check that the outlet seals in the wash and rinse tanks are in position and that these are flush against the tank bottom. Reset the alarm using reset button (11). Contact service personnel if the alarm cannot be reset or if it recurs

Alarm texts	
Alarm text	Action
(48) HACCP ALARM PUMP DEFECT MACHINE LOCKED CALL SERVICE	The same as alarm no. 47, but washing will stop when this alarm is activated.
(64) HACCP ALARM WRONG TEMPERAURE IN TANK PRESS RESET	Reset the alarm using reset button (11). Contact service personnel if the alarm will not go out.
(65) HACCP ALARM WRONG TEMPERATURE IN TANK. MACHINE LOCKED. CALL SERVICE	The same as alarm no. 64, but washing will stop when this alarm is activated and it is not possible to reset the alarm using the reset button (11). Contact service personnel.
(67) HACCP ALARM WRONG TEMPERATURE IN BOILER PRESS RESET	Reset the alarm using reset button (11). Contact service personnel if the alarm recurs.
(68) HACCP ALARM WRONG TEMPERATURE IN BOILER. MACHINE LOCKED. CALL SERVICE	The same as alarm no. 67, but washing will stop when this alarm is activated and it is not possible to reset the alarm using the reset button (11). Contact service personnel.
(72) HACCP ALARM WASHING DETERGENT FUNCTIONALITY DEFECT PRESS RESET	Check whether the machine is out of detergent. Reset the alarm using reset button (11). Contact service personnel or the supplier of the detergent device if the alarm will not go out.
(73) HACCP ALARM WASHING DETERGENT DEFECT. MACHINE LOCKED. CALL SERVICE	The same as alarm no. 72, but washing will stop when this alarm is activated and it is not possible to reset the alarm using the reset button (11). Call service or the detergent device supplier!
(78) HACCP ALARM FINAL RINSE DEFECT PRESS RESET	Check that the valve on the incoming water connection is open. Check that the nozzles on the rinse pipes in the dishwasher's final rinse section are not clogged. Reset the alarm using reset button (11).
(79) HACCP ALARM FINAL RINSE DEFECT MACHINE LOCKED CALL SERVICE	The same as alarm no. 78, but washing will stop when this alarm is activated and it is not possible to reset the alarm using the reset button (11). Contact service personnel.
(16) TEMPERATURE SENSOR ERROR TANK 1 B21 CALL SERVICE	Contact service personnel if the alarm will not go out.
(17) TEMPERATURE SENSOR ERROR TANK 2 B22 CALL SERVICE	Contact service personnel if the alarm will not go out.
(18) TEMPERATURE SENSOR ERROR TANK 3 B23 CALL SERVICE	Contact service personnel if the alarm will not go out.
(19) TEMPERATURE SENSOR ERROR TANK 4 B24 CALL SERVICE	Contact service personnel if the alarm will not go out.

Alarm texts	
Alarm text	Action
(20) TEMPERATURE SENSOR ERROR BOILER 1 B41 CALL SERVICE	Contact service personnel if the alarm will not go out.
(21) TEMPERATURE SENSOR ERROR BOILER 2 B42 CALL SERVICE	Contact service personnel if the alarm will not go out.
(22) TEMPERATURE SENSOR ERROR BOILER 3 B43 CALL SERVICE	Contact service personnel if the alarm will not go out.
(23) TEMPERATURE SENSOR ERROR BOILER 4 B44 CALL SERVICE	Contact service personnel if the alarm will not go out.
(24) TEMPERATURE SENSOR ERROR HEAT RECOVERY UNIT B05 CALL SERVICE	Contact service personnel if the alarm will not go out.
(25) TEMPERATURE SENSOR ERROR WARM WATER B71	Contact service personnel if the alarm will not go out.
(27) SENSOR ERROR PULSE SENSOR B17 MAN MODE CALL SERVICE	If this alarm is activated, the dishwasher will switch to so-called MAN mode, i.e. the washing conveyor will run continuously and the washing and rinse water will also keep washing. It is therefore possible to keep washing, but a service engineer should be called as soon as possible to rectify the fault.
(29) EXTERNAL ALARM INPUT ACTIVATED	Alarm from connected equipment, e.g. detergent and drying agent equipment. Reset the alarm by pressing button (11). If the alarm persists, call service.
(30) TIMEOUT FILLING OF TANKS PRESS RESET	Check that taps connected to the machine are open. Check that the outlet seals in the wash and rinse tanks are in position and that these are flush against the tank bottom. Reset the alarm by pressing button (11).
(31) TIMEOUT HEATING TANKS AND BOILERS PRESS RESET	Reset the alarm using reset button (11). Washing will start. If the alarm is activates several times in a row, call service.
(33) DOOR IS OPEN CLOSE DOOR	One of the doors is open (when this alarm is activated, the machine is only set to indicate that a door is open, not to specify which door. This setting can be changed by a service engineer). Close the door and start the feed by pressing button (8) or (15).
(34) DOOR 1 IS OPEN CLOSE THE DOOR	The door to tank 1 (pre-wash tank) is open (when this alarm is activated, the machine is set to indicate that a door is open, not to specify which door. This setting can be changed by a service engineer). Close the door and start the feed by pressing button (8) or (15).
(35) DOOR 2 IS OPEN CLOSE THE DOOR	The door to tank 2 (first chemical wash tank) is open (when this alarm is activated, the machine is set to indicate that a door is open, not to specify which door. This setting can be changed by a service engineer). Close the door and start the feed by pressing button (8) or (15).
(36) DOOR 3 IS OPEN CLOSE THE DOOR	The door to tank 3 (second chemical wash tank) is open (when this alarm is activated, the machine is set to indicate that a door is open, not to specify which door. This setting can be changed by a service engineer). Close the door and start the feed by pressing button (8) or (15).

Alarm texts	
Alarm text	Action
(37) DOOR 4 IS OPEN CLOSE THE DOOR	The door to tank 4 (third chemical wash tank) is open (when this alarm is activated, the machine is set to indicate that a door is open, not to specify which door. This setting can be changed by a service engineer). Close the door and start the feed by pressing button (8) or (15).
(38) DOOR FOR RINSE IS OPEN CLOSE THE DOOR	The door to the final rinse tank is open (when this alarm is activated, the machine is set to indicate that a door is open, not to specify which door. This setting can be changed by a service engineer). Close the door and start the feed by pressing button (8) or (15).
(39) OVER FLOW PIPE NOT IN POSITION CONTROL THE OVER FLOW PIPE	(This alarm will only activate if the machine is equipped with automatic overflow pipe position control (option)) Check that the overflow pipe in the pre-wash tank is in position and that its rubber sleeve achieves a good seal against the tank. Reset the alarm by pressing button (11).
(101) LOW TANK LEVEL SUPPLEMENTARY FILLING ONGOING	The water level in one of the pre-wash or chemical wash tanks is low, so the dishwasher has started supplementary filling of water. When supplementary filling is complete, the machine can be operated as normal.
(40) LOW LEVEL IN TANK 1 (PRE RINSE TANK)	Check that the outlet seal in the pre-wash tank is closed and that the rubber sleeve has achieved a good seal against the bottom of the tank. When the level in the tank returns to normal, reset the alarm. Call service if this does not help.
(41) LOW LEVEL IN TANK 2 (CHEM WASH TANK 1)	Check that the outlet seal in chemical wash tank 1 is closed and that the rubber sleeve has achieved a good seal against the bottom of the tank. When the level in the tank returns to normal, reset the alarm. Call service if this does not help.
(42) LOW LEVEL IN TANK 3 (CHEM WASH TANK 2)	Check that the outlet seal in chemical wash tank 2 is closed and that the rubber sleeve has achieved a good seal against the bottom of the tank. When the level in the tank returns to normal, reset the alarm. Call service if this does not help.
(44) LOW LEVEL IN TANK 4 (CHEM WASH TANK 3)	Check that the outlet seal in chemical wash tank 3 is closed and that the rubber sleeve has achieved a good seal against the bottom of the tank. When the level in the tank returns to normal, reset the alarm. Call service if this does not help.
(45) LOW LEVEL IN FINAL RINSE TANK	Check that the outlet seal in the final rinse tank is closed and that the rubber sleeve has achieved a good seal. When the level in the tank returns to normal, reset the alarm. Call service if this does not help.
(46) MOTOR PROTECTION PUMPS ACTIVATED CALL SERVICE	Call service.
(49) MOTOR PROT. FEEDER ACTIVATED CALL SERVICE RESTART FEEDING	Check that the washing conveyor is not overloaded. Remove some items and restart the washing conveyor using button (8) or any of the buttons marked (15). If this does not help, call service.
(50) MOTOR PROTECTION FANS ACTIVATED CALL SERVICE	Call service.
(51) OVERLOAD FEEDING ACTIVATED REMOVE OBJECT RESTART FEEDING	Something has become stuck in the belt and is preventing it from moving. Remove the object that has caused the stop. Restart the feed using button (8) or (15).
(85) OVERLOAD FEEDING ACTIVATED PRESS RESET	The belt has become temporarily stuck, e.g. something became stuck, but was then freed, allowing the belt to start moving again. Reset the alarm using reset button (11). Restart the feed using button (8) or (15).

Alarm texts	
Alarm text	Action
(52) FEEDER LIMIT SWITCH ACTIVATED. REMOVE OBJECT FROM THE FEEDER LIMIT	Item has reached the end of the feed (limit switch (16)) and stopped the machine. Remove the object. The conveyor will start automatically.
(56) OVERLOAD CUTTLERY TRACK ACTIVATED. CHECK AND RESTART FEEDING	(The alarm only activates on dishwashers that have washing conveyors with cutlery baskets (option)). When the overload switch is activated, the belt will reverse for two seconds and then stop. Open the door above the belt's cutlery baskets at the end of the outfeed and check whether any items of cutlery have become stuck in the cutlery baskets. Remove the obstruction and close the door. Reset the alarm using reset button (11) and restart the belt using button (8) or one of the buttons marked (15).
(57) END LIMIT CUTLERY TRACK ACTIVATED. CHECK CUTLERY TRACK	(The alarm only activates on dishwashers that have washing conveyors with cutlery baskets (option)). Check whether the outfeed door above the cutlery belt is open. The machine will start automatically when the door is closed.
(59) STOP FROM EXTERNAL EQUIPMENT CHECK EXTERNAL EQUIPMENT	Check external equipment connected to the dishwasher in accordance with the manufacturer's recommendations. The dishwasher will restart when the connected equipment fault is rectified.
(60) THE FEEDING HAS BEEN STOPPED RESTART FEEDING	Restart the feed using button (8) or (15).
(61) LOW TEMPERATURE IN TANK 2 (CHEM WASH TANK 1)	The alarm is reset using reset button (11) or when the temperature in chemical wash tank 1 reaches 63 °C.
(62) LOW TEMPERATURE IN TANK 3 (CHEM WASH TANK 2)	The alarm is reset using button (11) or when the temperature in chemical wash tank 2 reaches 63 °C.
(81) LOW TEMPERATURE IN TANK 4 (CHEM WASH TANK 3)	The alarm is reset using button (11) or when the temperature in chemical wash tank 3 reaches 63 °C.
(66) LOW TEMPERATURE IN THE FINAL RINSE BOILER	The alarm is reset using reset button (11) or when the temperature in booster heater reaches 75 °C. Check the wash result! If the wash result is not acceptable, call service.
(71) WASHING DETERGENT ALARM ACTIVE CHECK DETERGENT DEVICE	Check whether the machine is out of detergent. Whether a detergent refill is required. Reset the alarm using the reset button (11). Contact service personnel if the alarm recurs.
(74) POWER GUARD ACTIVATED PART OF EQUIPMENT IS TURNED OFF	(Only for dishwashers equipped with power guard (option)). Information that the power guard has engaged. The text will go out once power consumption is back within normal limits.
(77) FINAL RINSE ERROR SENSOR ERROR FLOW METER BV02	Reset the alarm using reset button (11). Check the wash result. If the wash result is not acceptable or the alarm recurs, call service.

Alarm texts	
Alarm text	Action
(76) FINAL RINSE ERROR NO FLOW IN THE MACHINE	Check the water flow in the machine: – that water tap(s) are open, – that there are no problems with the water supply etc. The alarm can be reset by pressing the reset button (11). If the wash result is unsatisfactory or the alarm recurs, call service.
(75) FINAL RINSE ERROR LOW FLOW IN THE MACHINE	Check the water flow in the machine: – that water tap(s) are open, – that there are no problems with the water supply etc. Check and clean the nozzles on the rinse pipes in the final rinse section The alarm can be reset using reset button (11).
(83) TIME FOR MAINTANANCE CONTACT:	Time to service the dishwasher! The alarm will be displayed on start-up. The alarm can be reset using reset button (11), after which it is possible to wash as normal. However, a service engineer should always be called as soon as possible to service the dishwasher.

Troubleshooting

In addition to the faults shown on the control panel, other faults can occur. The table below shows some faults which can be rectified by the operator. If the problem persists, contact authorised service personnel.

Troubleshooting		
Problem	Cause	Action
No indication on the control panel display when the power is switched on by pressing button (12).	The main switch (14) is off.	Turn on the mains switch.
The machine does not fill with water.	The shut-off tap on the incoming water supply is closed.	Open the tap.
The machine does not stop filling.	The outlet seals are not in place.	Fit the level pipe or outlet seal.
	The rubber sleeve on one of the outlet seals is not sealing against the bottom plate.	Check that the outlet seals are closed. Replace the rubber sleeves, if they are damaged.
Noise from the wash pump.	Foam in the tank.	Change the water.
The machine is not cleaning properly.	For causes and actions, see “Checking the wash result” on page 49	
The item tips over.	The items are too light.	Put the items in baskets. Use a mesh grid to hold the items in place.
	Rinsing pressure is too high.	If the machine is equipped with rapid adjustment of rinse pressure: Check that the level is positioned for “Normal load” (see “Rapid adjustment, rinse pressure (option)” on page 47).
	The upper wash arms in the chemical, pre-wash or final rinse sections are clogged.	Clean the wash arms!
Items do not dry.	The rinse nozzles are blocked.	Check and clean the nozzles.
	Too little drying agent.	Check the quantity of drying agent.

When you contact service personnel, you will need to provide the following information:

- Machine model
- Machine serial number and installation date
- A brief description of the problem
- What happened immediately before the fault occurred

5. Technical specifications

The manufacturer reserves the right to make changes to the technical data.

The correct technical data which is specific to each machine can be found in the machine's flow, machine and wiring diagrams. These are supplied with each machine and are on the inside of the electrical cabinet door.

TECHNICAL DATA					
	WD-B 500	WD-B 600	WD-B 700	WD-B 800	WD-B 900
Pump motor, pre-rinse zone (kW)	0.74	-	-	-	-
Pump motor, pre-wash (kW)	-	2.35	2.35	2.35	2.35
Pump motor, chemical wash 1 (kW)	2.35	2.35	2.35	2.35	2.35
Pump motor, chemical wash 2 (kW)	-	-	2.35	2.35	2.35
Pump motor, chemical wash 3 (kW)	-	-	-	-	2.35
Pump motor, recirculating rinse (kW)	0.74	0.74	0.74	0.74	0.74
Heat recovery fan (kW)	0.19	0.19	0.19	0.19	0.19
Fan, drying zone 1 (kW)	0.65	0.65	0.65	0.65	0.65
Fan, drying zone 2 (kW)	-	-	-	0.65	0.65
Drive motor, belt (kW)	0.15	0.15	0.15	0.15	0.15
Booster heater 1, final rinse (kW)	9	9	9	9	9
Booster heater 2, final rinse (kW)	6	6	6	6	6
Tank heater, chemical wash 1 (kW)	2x9	2x9	12	12	12
Tank heater, chemical wash 2 (kW)	-	-	12	12	12
Tank heater, chemical wash 3 (kW)	-	-	-	-	9
Drying zone 1, heater (kW)	6	6	6	6	6
Drying zone 2, heater (kW)	-	-	-	-	6
Heat recovery, cooling surface (m^2)	52	52	52	52	52
Tank volume, pre-rinse tank (litres)	70	-	-	-	-
Tank volume, pre-wash tank (litres)	-	104	104	104	104
Tank volume, chemical wash tank 1 (litres)	120	120	120	120	120
Tank volume, chemical wash tank 2 (litres)	-	-	120	120	120
Tank volume, chemical wash tank 3 (litres)	-	-	-	-	120
Tank volume, final rinse tank (litres)	21	21	21	21	21
Weight, machine in operation (kg)	1250	1480	1770	1930	2280
Enclosure protection class	IP55	IP55	IP55	IP55	IP55

CAPACITY AND OPERATING DATA					
	WD-B 500	WD-B 600	WD-B 700	WD-B 800	WD-B 900
Capacity, HC conveyor, normal wash (plates/h)	3190	3750	5140	5140	6525
Capacity, HC conveyor, as per DIN 1050 (plates/h)	2550	3000	4110	4110	5220
Capacity, standard conveyor, normal wash (plates/h)	2304	2907	4000	4000	5102
Capacity, standard conveyor, as per DIN 1050 (plates/h)	2016	2535	3504	3504	4464
Cold water consumption, normal final rinse (litres/h)	160–210	170–220	190–240	190–240	210–260
Steam consumption at 150–250 kPa (kg/h) *	63	63	71	71	92
Steam consumption at 50-140 kPa (kg/h) *	52	52	59	59	72
Surface temperature at a room temperature of 20℃ (℃)	35	35	35	35	35
A-weighted emission sound pressure level, LpA (dB(A)) **	71 **	71	71 **	71 **	71 **
A-weighted sound power level, LWA (dB(A)) **	87 **	87	87 **	87 **	87 **

* When the machine is steam-heated.

** the sound measurements were carried out using a WD-B 600 (electrically-heated).

CONNECTION, ELECTRICALLY HEATED MACHINE					
	WD-B 500	WD-B 600	WD-B 700	WD-B 800	WD-B 900
Total connected power (kW)	44	46	54	54	72
Main fuse 400 V 3N~(A) *	80	80	100	100	125
Max. connection area 400 V 3N~ Cu (mm2)	70	70	70	70	70

* Other connection voltages on request.

CONNECTION, STEAM-HEATED MACHINE 50–140 kPa*					
	WD-B 500	WD-B 600	WD-B 700	WD-B 800	WD-B 900
Total connected power (kW)	10.8	12.4	14.8	15.4	23.8
Main fuse 400 V 3N~ (A) **	35	35	50	50	63
Max. connection area 400 V 3N~ Cu (mm^2)	35	35	35	35	70
Steam connection (external thread)	R 1”	R 1”	R 1 ¼"	R 1 ¼"	R 1 ½"
Condensing water connection (internal thread)	R¾"	R¾"	R¾"	R¾"	R¾"

* Electrically heated drying zone.

** Other connection voltages on request.

CONNECTION, STEAM-HEATED MACHINE 150–250 kPa					
	WD-B 500	WD-B 600	WD-B 700	WD-B 800	WD-B 900
Total connected power (kW)	4.8	6.4	8.8	9.4	11.8
Main fuse 400 V 3N~ (A)	20	20	25	35	35
Max. connection area 400 V 3N~ Cu (mm²)	35	35	35	35	35
Steam connection (external thread)	R¾"	R¾"	R1"	R1"	R1¼"
Condensing water connection (internal thread)	R¾"	R¾"	R¾"	R¾"	R¾"

* Other connection voltages on request.

WATER, DRAIN AND VENTILATION CONNECTIONS					
	WD-B 500	WD-B 600	WD-B 700	WD-B 800	WD-B 900
Water quality, hardness (°dH)	2–7	2–7	2–7	2–7	2–7
Hot water connection 50-65°C (external thread)	R¾"	R¾"	R¾"	R¾"	R¾"
Cold water connection, 5–12°C (external thread)	R¾"	R¾"	R¾"	R¾"	R¾"
Drain connection, PP pipe (ø mm)	50	50	50	50	50
Water capacity, pressure (kPa)	300–600	300–600	300–600	300–600	300–600
Water capacity, flow (litres/min.)	18	18	18	18	18
Floor drain, capacity (litres/sec.)	3	3	3	3	3
Heat load room, sensitive (kW)	6	6	7	7	9
Heat load room, latent (kW)	4	4	4.5	4.5	6
Heat load room, total (kW)	10	10	11.5	11.5	15
Capacity heat recovery fan (m³/h)	600	600	800	800	1000

SIZE AND WEIGHT FOR TRANSPORT *					
	WD-B 500	WD-B 600	WD-B 700	WD-B 800	WD-B 900
Size part 1 L x B x H (m) **	3.4 x 1.1 x 2.0	3.2 x 1.1 x 1.5	4.2 x 1.1 x 1.5	4.2 x 1.1 x 1.5	5.2 x 1.1 x 1.5
Size part 2 L x B x H (m) **	2.35 x 1.1 x 1.55	3.3 x 1.1 x 2.1	3.7 x 1.1 x 2.1	4.3 x 1.1 x 2.1	4.3 x 1.1 x 2.1
Weight part 1 (kg) **	780	550	750	770	1000
Weight part 2 (kg) **	440	700	700	820	820

* Normal delivery in two parts; delivery in more parts available as option.

** Including packaging.