Wexiödisk

HOOD DISHWASHER
WD-6

ESP 1.5

(original documentation)

⚠ Read the manual before using the machine!

Installation and user manual



WD67r1

S/N:(En) Valid from: 202504 Rev.: 0

1. General instructions 1
1.1 Symbols used 2
1.2 Machine rating 3
1.3 Checking that the machine and manual correspond 3
1.4 EU Declaration of Conformity 4

2. Safety instructions 5
2.1 General information 5
2.2 Transport 6
2.3 Installation 6
2.4 Detergent and drying agent 6
2.5 Operation 7
2.5.1 High temperatures 7
2.5.2 Risk of crushing 7
2.5.3 Risk of slipping 7
2.5.4 Sounds 7
2.6 Cleaning the machine 7

3. Installation instructions 8
3.1 General information 8
3.1.1 Rust on industrial dishwashers 9
3.2 Requirements for the installation site 10
3.2.1 Lighting 10
3.2.2 Ventilation and ambient temperature 10
3.2.3 Power supply 10
3.2.4 Water 10
3.2.5 Drain/waste pipe 10
3.2.6 Space for servicing 10
3.3 Transport and storage 11
3.3.1 Unpacking 11
3.4 Installation 12
3.4.1 Preparing for the installation 12
3.4.2 Positioning the machine 12

3.5 Connections 13
3.5.1 Electrical connection 14
3.5.2 Water connection, regardless of any options 14
3.5.3 Drain/waste pipe 15
3.5.4 Ventilation 16
3.5.5 Bleeding the hood lifting cylinder (option) 16
3.5.6 Detergent and drying agent (possible option) 16
3.5.7 Adjustment of hinged basket conveyor 21
3.5.8 Condensation unit with heat recovery through the heat recovery unit (option) 22
3.5.9 Heat exchanger, heat recovery through the wastewater (option) 24
3.5.10 Steam hood with extractor (option) 25
3.6 Installation and connection of auxiliary equipment and options 26
3.6.1 Sinks and conveyors 26
3.6.2 WD-RO150 28
3.7 Trial operation 29
3.7.1 Start-up schedule 29
3.8 Documentation 30

4. Operating instructions 31
4.1 Before washing 32
4.1.1 Machine design 32
4.1.2 Preparations before filling 34
4.1.3 Filling and heating the machine 34
4.2 Washing 35
4.2.1 Positioning of dishware in baskets 35
4.2.2 Selecting a programme 36
4.2.3 Changing the washing temperature and washing time 36
4.2.4 Washing 39
4.2.5 Checking the wash result 41
4.2.6 Changing the water 42
4.3 After use – Cleaning 43
4.3.1 Incorrect cleaning methods 43
4.3.2 Shutdown 44
4.3.3 Emptying, internal machine rinsing 45
4.3.4 Daily cleaning 46
4.3.5 Cleaning each week or as required 46
4.3.6 Cleaning in the event of an alarm or 1 time / year 47
4.3.7 Operating problems 47

5. Technical specifications 51

1. General instructions

Read the instructions in this manual carefully as they contain important information regarding the correct, effective and safe installation, use and servicing of the machine. Service personnel should have access to all documentation for the machine.

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

- The machine is intended to be used for washing dishware that is found in the general catering and restaurant trade. Other uses are NOT recommended!
- The machine can be equipped with a number of different options. Certain options may be standard in a number of countries. Check what your machine is equipped with.
- Use auxiliary equipment where possible to avoid heavy lifting.
- The machine's display indicates what the machine is doing. The machine's various temperatures and any alarms are also shown.
- The capacity requirements of the machine can be found in the TECHNICAL DATA chapter.
- The electronics in the machine are RoHS compatible.

Before the machine is started up and used, the following points should be observed:

- The SAFETY INSTRUCTIONS chapter must be studied carefully before commissioning the machine.
- Installation of the machine must be performed in accordance with the requirements and instructions indicated in the INSTALLATION INSTRUCTIONS and TECHNICAL SPECIFICATIONS chapters.
- Any personnel who may at some point use the machine must be trained in its operation, use and care.
- The machine should not be used by anyone suffering from a physical or mental illness.
- A close eye should be kept on any children in the vicinity of the machine to ensure they do not tamper with it.
- All cover plates must be fitted during use.

The machine and equipment requires an annual service. Contact one of our authorised and trained service companies for such a service.

1.1 Symbols used



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



This symbol on a machine part warns of electrical equipment. The machine must be entirely non-live during servicing, turn off the power at the power switch and if required, the switch should be locked to prevent unintentional operation. The component may only be removed by a qualified electrician. You must also remember to switch off the power supply to any external equipment which has a separate supply (e.g. detergent equipment).



This symbol warns that the machine's electronics are sensitive to electrostatic discharge (ESD), which is why a static electricity wristband must be used when handling the electronics at all times.



This symbol explains the right way to perform a task in order to prevent poor results and/or damage to the machine.



This symbol identifies recommendations and hints to help you get the best results when washing, to increase the machine's lifespan and reduce the risk of emergency shutdown.



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



This symbol warns of the importance to read the manual before using the machine.



This symbol warns that local regulations must be followed for recycling of packaging etc. as well as the destruction of the machine.



This symbol shows where any earth cable for potential equalisation can be connected. The earth bolt is placed on the machine's stand.

1.2 Machine rating

The machine has two rating plates, one of which is placed at the bottom of one side of the machine and the other in the electrical cabinet. The technical information on the plates is also included on the machine's wiring diagram. The various rating fields show:



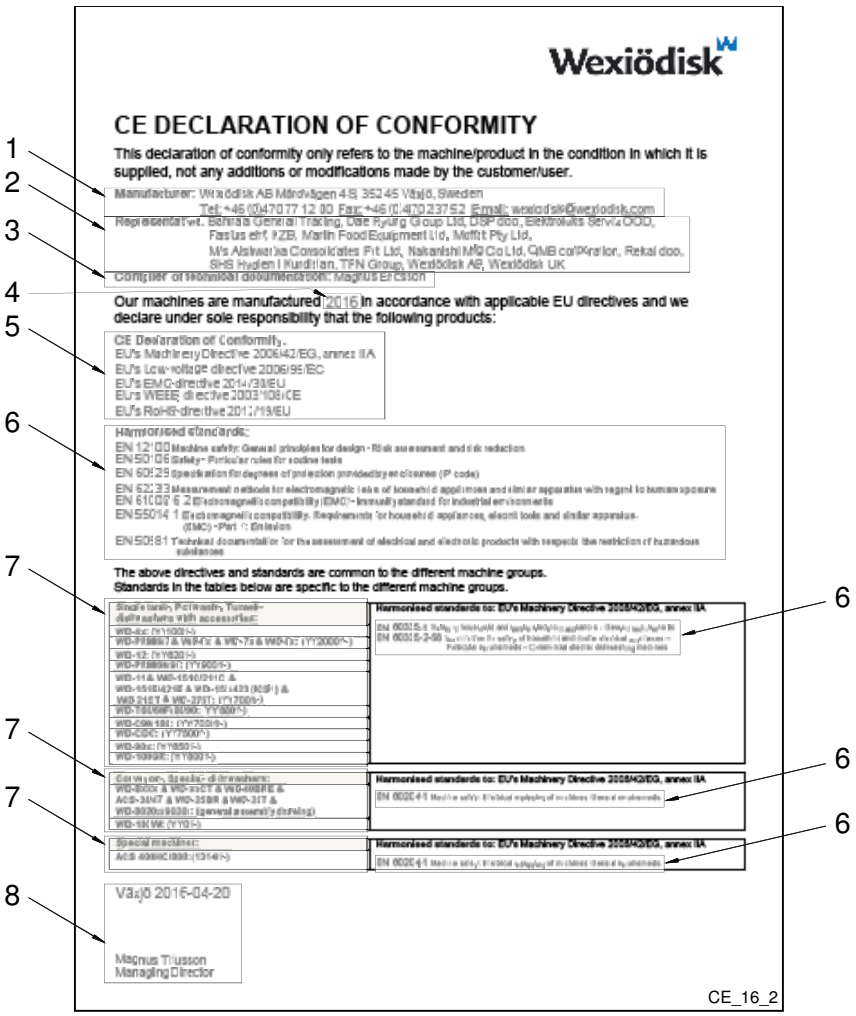
1. Machine type
2. Machine serial number
3. Year of manufacture
4. Enclosure protection class
5. Voltage
6. Number of phases with or without neutral
7. Frequency
8. Main fuse
9. Motor output
10. Electrical heating output
11. Max. output
12. QR code

1.3 Checking that the machine and manual correspond

Check that the type description on the rating plate corresponds with the type description on manual cover page. If manuals are missing, it is possible to order new ones from the manufacturer or the local distributor. When ordering new manuals, it is important to quote the machine number found on the rating plate.

1.4 EU Declaration of Conformity

A so-called EU Declaration of Conformity is provided on delivery of the machine.



1. Contact details of the manufacturer (Wexiödisk AB, Mårdvägen 4, SE-35245 Växjö, SWEDEN, Tel.: +46 470 771200, E-mail: wexiodisk@wexiodisk.com).
2. Representatives of Wexiödisk AB.
3. Person responsible for the product's documentation.
4. Year of manufacture of the product.
5. The EU Directives with applicable provisions to which all the machines, special machines and accessories comply.
6. Harmonised standards for the Directives specified, and which the machines, special machines and accessories meet, wherever relevant.
7. Model designation and serial number of the machines, special machines and accessories the document applies to.
8. Place and date with signature and name (in block letters) of the person responsible for ensuring compliance with legislation and regulations.

2. Safety instructions



Read the chapter GENERAL INSTRUCTIONS carefully before starting work.

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. 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.



Installation, repairs and servicing must be performed by an authorised engineer in accordance with local and national rules in effect for such work with water and drainage systems, electricity, ventilation and steam. To ensure electrical safety, components must only be tested when installed in their normal place in the machine. We recommend that the work is performed by the manufacturer or one of the manufacturer's authorised service companies.

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.



The machine's electronics are sensitive to electrostatic discharge (ESD), which is why a static electricity wristband must be used when handling the electronics at all times.

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

In order to avoid dangerous situations, the following must be followed:



- Switch off the machine immediately in the event of failure or malfunction.
- If the power cable is damaged, it must be replaced immediately with an equivalent type in accordance with the relevant specifications. The work must be performed by an authorised person. Make sure the machine is non-live before removing the cover plate. Turn off the power using the power switch. If required, the switch must be locked to prevent unintentional operation. You must also remember to switch off the power supply to any external equipment which has a separate supply (e.g. detergent equipment).
- Shut off the tap for incoming water and drain the machine's tank(s) before starting work. Let the machine cool down as pipes for water, washing pumps, booster heaters and valves become very hot when the machine is in operation.
- The machine and equipment requires an annual service. The machine should be serviced by a person authorised or trained to do so by us. Use original spare parts.
- Warranty repairs must be performed by an authorised company. Contact an authorised service company to draw up a programme of preventive care and maintenance. For authorised service companies, please see www.wexiodisk.com or contact Wexiödisk AB.
- The regular checks described in the manual must be carried out in accordance with the instructions.

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 machine is designed for quick electrical installation.
- The machine must be connected to a lockable power switch.
- Make sure that the mains voltage is the same as that indicated on the machine's rating plate.



For increased safety, it is recommended to equip the installation with a ground fault circuit breaker.

2.4 Detergent and drying agent



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

2.5 Operation



Be very careful around the machine when it is in operation.

2.5.1 High temperatures



- The temperature of the washing and rinsing water is 60°C and 85°C. Do not open the machine until the washing and rinsing phases have finished. The steam that comes out of the machine after the wash has been completed is hot.
- Avoid touching hot pipes and booster heaters. The machine's outer jacket can also become hot during operation.

2.5.2 Risk of crushing



The machine, and any equipment, has moving parts before, during and after washing. Be careful therefore to avoid crush injuries. In connection with service or repairs that require the hood to be open, it must be secured by means of a prop for example.

2.5.3 Risk of slipping



The floor should be kept clean and dry to eliminate any risk of slipping. Mop up any water and leftover food that has been spilt.

2.5.4 Sounds



The machine is not silent during operation, see TECHNICAL SPECIFICATIONS. Hearing protection may therefore need to be used.

2.6 Cleaning the machine



The water in the tank has a temperature of approximately 60°C and contains detergent. Be careful when draining and cleaning the wash tank. Wear protective gloves and safety glasses and have an eyebath within easy access.

3. Installation instructions



Read the chapters GENERAL INSTRUCTIONS and SAFETY INSTRUCTIONS carefully before starting work.

3.1 General information



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

- The instructions should be used together with the machine's wiring diagram. These can be found in the machine's electrical cabinet.
- The machine can be equipped with a number of different options. Certain options may be standard in a number of countries. Check what your machine is equipped with.
- If holes need to be drilled in the machine, the holes must be fitted with an edge strip or similar protection.
- Software version 4.7 or later should be used to connect a WD-PRM 6 to a WD-6. If you are using an earlier software version this should be updated. The level pipe in the dishwasher has been replaced with a bottom filter.

3.1.1 Rust on industrial dishwashers

- Large-scale industrial dishwashers in general as well as our dishwashers are made of stainless materials, but despite this, there are still situations where rust can occur on “stainless” materials.
- We are going to describe a few reasons for this here, so that you, as a user, service engineer or other type of personnel, can avoid this.
- Rust usually occurs due to the fact that something that is not stainless finds its way onto the stainless surface. The non-stainless particles will soon start to rust, and then contaminate the stainless material, which also starts to rust. If no action is taken at this point, serious damage such as a hole in the material can occur.

RISK SITUATION	CAUSE	DECLARATION / ACTION
Drilling holes when installing a detergent device.	Using a drill or hole saw that has previously been used for ordinary non-stainless materials.	“Contaminated” hole-drilling tools can cause enormous damage in the form of pores in stainless plates. Never use a cutting tool that has previously been used on other materials or blackplate.
	Using blunt tools when drilling holes.	Stainless plate, which has overheated during hole drilling, may lose its “stainless” properties. This can show up as rust around the hole for the detergent cell.
	Shavings from hole drilling.	The shavings from drilling or hole sawing are usually heated so much that they lose their stainless properties. They must always be removed by hand! Washing after hole drilling is not enough!
Rust spots that occur during normal operation and use.	Minerals, e.g. ferrous gravel or earth, from dishware or food (vegetables and root vegetables) that has been lying in crates, find their way onto the stainless surface. Minerals (gravel) can also be found on the wheels of catering trolleys.	Daily cleaning is always important. Use a suitable brush for “mechanical” cleaning, e.g. in the wash tanks, on the wash trays and filters.
	Steel wool. Ordinary steel wool is not stainless, and can cause serious damage to stainless surfaces and plates.	Use stainless cleaning pads. Remove all ordinary steel wool from the catering facility / restaurant.

NOTE! If rust spots have developed, they must be dealt with immediately by a person authorised to do so!

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 and ambient temperature

The machine is intended to be used in an indoor environment at normal room temperature. The machine produces heat and steam when in operation. In order to ensure the best possible working conditions, a certain air renewal rate is required in the dishwashing room. The ventilation requirements for the dishwashing room are to be dimensioned on the basis of the applicable standards.



The machine may optionally have a heat recovery unit connected to an exhaust fan, a heat exchanger or a steam hood to reduce the amount of steam released.

3.2.3 Power supply

Power supply connections are made by qualified personnel in a way that complies with local and national regulations. The machine's capacity requirements are stipulated in TECHNICAL SPECIFICATIONS.

3.2.4 Water

Water connections are made by qualified personnel in a way that complies with local and national regulations. The machine's capacity requirements are stipulated in TECHNICAL SPECIFICATIONS.

3.2.5 Drain/waste pipe

There must be a waste pipe with an effective trap for the machine's waste water and for water used for rinse cleaning. The machine's capacity requirements for drainage are stipulated in TECHNICAL SPECIFICATIONS.

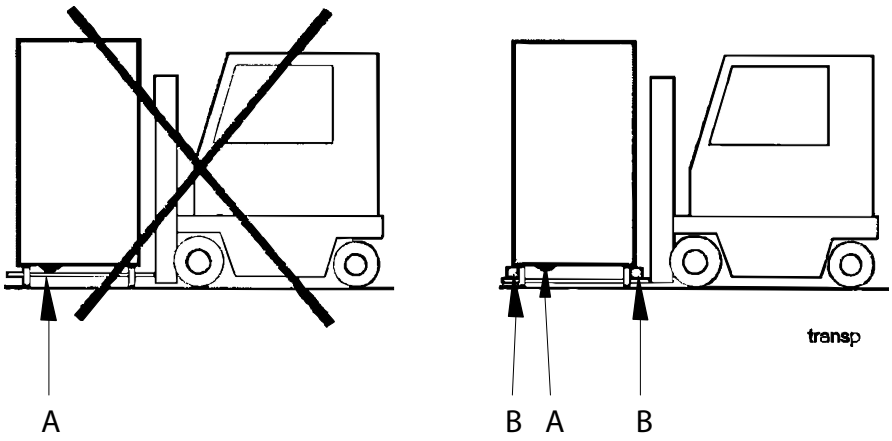
3.2.6 Space for servicing

A 1-metre area should be left clear in front of the machine for servicing purposes. Depending on if the machine has different accessories, there may also be such a requirement at the infeed and outfeed ends as well as above the machine.

3.3 Transport and storage

Always transport the machine in an upright position.

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 a normal wooden pallet, always check that none of the components underneath the machine can be damaged.



A=Pumps
B=Spacers

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

3.3.1 Unpacking

Check that all parts have been delivered by comparing them with the delivery note.

Remove the packing material. Inspect the machine for any transport damage.

Recycling

- The machine is manufactured from stainless steel plate, among other things, and also contains electronic components. Recycling of the appliance when its economic lifetime has been reached must be carried out in accordance with current rules and regulations.
- Packaging must be sent for destruction or recycling in accordance with local regulations.

3.4 Installation

3.4.1 Preparing for the installation

Check that there is sufficient room for the machine at the installation location.

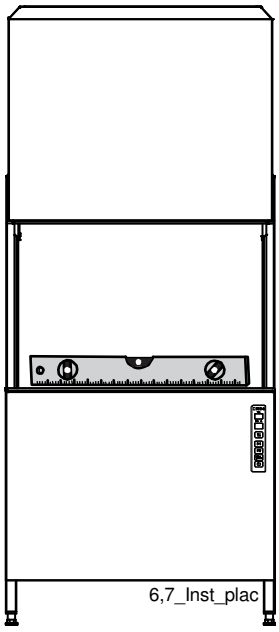
- Check that correct connections are available for water, electricity, drainage and possibly steam at the installation location. See TECHNICAL SPECIFICATIONS.
- Check that the overheating protection device is reset.

3.4.2 Positioning the machine

Check the following points before the machine is placed in position:

- Check that the fuse for the machine at the site is off, blocked and that outgoing electrical circuits from the machine are non-live.
- Remove the protective plastic on the sides which are to be stood against a wall.
- The distance between the wall and machine should be at least 20 mm.
- If the machine is to be corner-loaded, it must be positioned with the control panel furthest away from the wall.

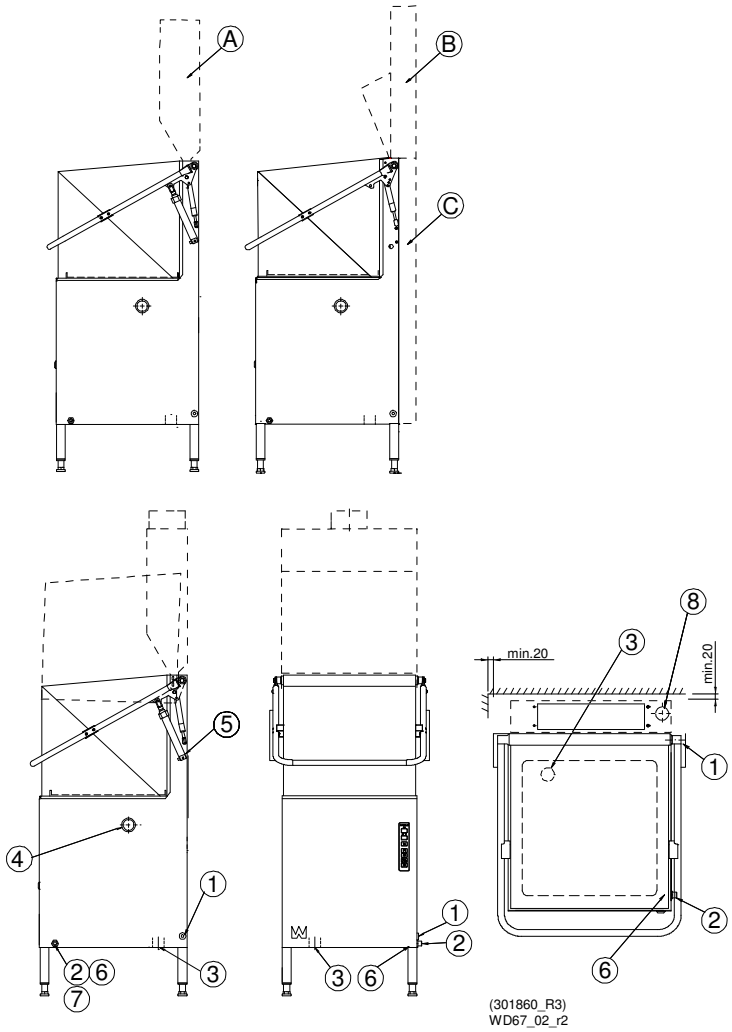
Put the machine in position and check that the machine and any accessories are horizontal using a spirit level. Place the spirit level on the join between the machine tank and the upper part. Adjust the height with the legs.



Check using a spirit level that the machine is standing level

Once the machine has been filled with water, do another check to make sure the machine is horizontal.

3.5 Connections



- A= Steam hood with extractor (optional)
- B= Condensation unit with heat recovery through the heat recovery unit (option)
- C= Heat exchanger, heat recovery through the wastewater (option)

1. Electrical connection
2. Water connection
3. Drain/waste pipe connection
4. Plugged hole for detergent hose
5. Bleed for lifting cylinder (on machines with an automatic hood)
6. Water pressure outlet for detergent dosage
7. Alternative water connection from below
8. Drain connection (option)

In the following chapter, figures are given in brackets to clarify what needs to be done. These numbers refer to image and list above.

3.5.1 Electrical connection

Information about electrical connections is available on the machine's wiring diagram which is provided on delivery. Store the diagrams in the plastic pocket, located in the electrical cabinet, even after installation.



- The machine is designed for quick electrical installation.
- The machine must be connected to a lockable power switch. This should be placed on a wall, well-protected from water and from the steam which escapes when the machine is opened. The machine is supplied with the electrical cable connected (1).

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

3.5.2 Water connection, regardless of any options



- A shut-off cock must be installed on the incoming pipe.
- It is important that the water supply has sufficient pressure to ensure the correct flow of water to the machine. The required water flow and pressure can be found in the TECHNICAL SPECIFICATIONS. If the water pressure is too low, a booster pump must be fitted.

The water pipe is connected at (2) or at (7).

The hot water connection on the machine is fitted with a filter.

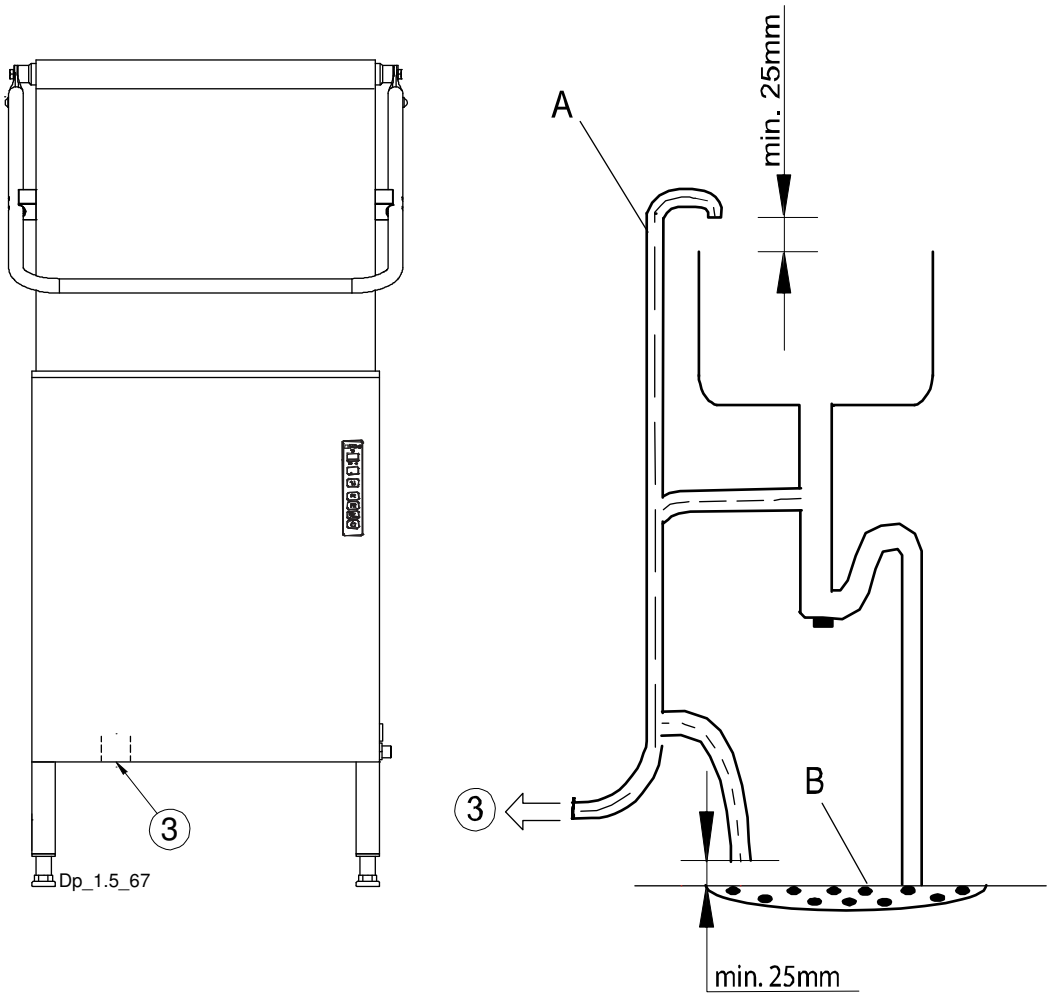
As the machine is fitted with a "Break Tank", the connection is fitted with a filter and non-return valve.

3.5.3 Drain/waste pipe

The waste water system connected to (3) should consist of a 50 mm metal pipe that will withstand mechanical impacts. The waste pipe must run to a floor drain, where its opening must be above the water level.

Ensure that the drain connection is kept in place by using e.g. cable ties in the designated areas.

Machines with a drain pump (option)



Drain hose (A) consists of a spiral hose and is connected to the machine at (3) and to the floor drain (B) as per one of the alternatives in the illustration.

Machines connected to WD-PRM6/7 (option)

See also “Installation and user manual” for WD-PRM6/7.

3.5.4 Ventilation

The machine's heat load for the room is stipulated in TECHNICAL SPECIFICATIONS.

As an option, the machine can also be equipped with a steam hood with an extractor, a condensing unit with heat recovery through a heat recovery unit, or a heat exchanger with heat recovery through the wastewater.

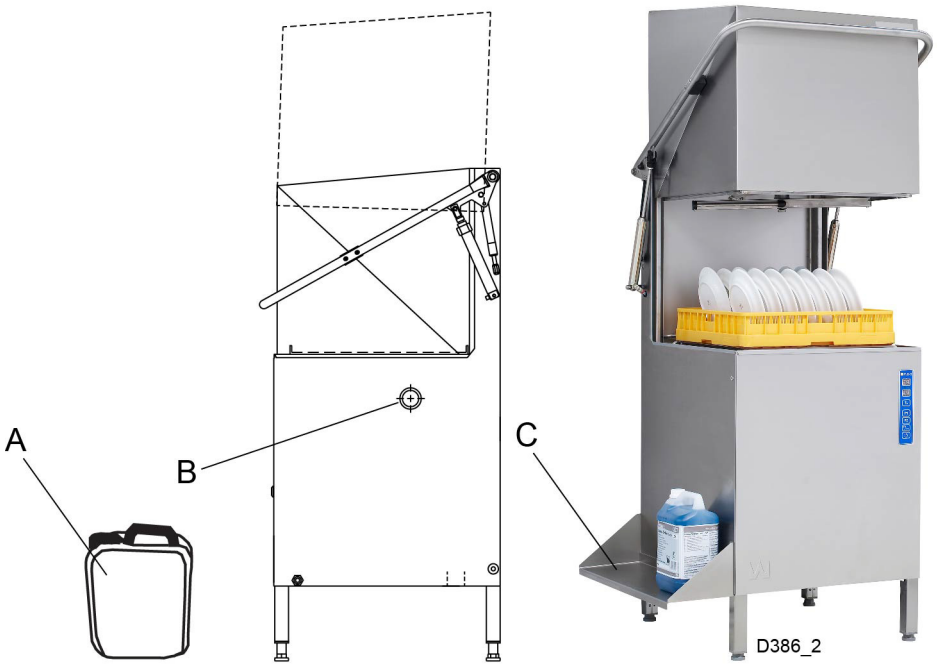
3.5.5 Bleeding the hood lifting cylinder (option)

1. Close the hood.
2. Loosen the hose connection of the first air cylinder approx. 2-3 turns using a 13 mm box wrench.
3. Keep the hood in the closed position. Press the up button. Check that only water and no air comes out of the hose connection. Otherwise repeat the procedure.
4. Tighten the hose connection with the hood still in the lower position.
5. Repeat the same procedure with the second cylinder.

3.5.6 Detergent and drying agent (possible option)

NOTE! For the potential-free outputs KA9-KA15, the spark-guard sits on the electronic card to protect the relay contactors in case of inductive loads. This spark-guard can generate a small leakage current even if the relay is not activated. If you connect equipment to a high impedance input on any of the contactors J71-J74, this current can affect the operation of the equipment. See also the wiring diagram for the machine.

- Check what your machine is equipped with, which depends on the model, machine type and country. The equipment will be roughly set at the factory if the machine is equipped with any of these alternatives. Contact your chemical supplier for a more precise setting.
- Use the same make and type of detergent and drying agent.
- With machines connected to cold water, the water pipe temperature may be too low for use of powder or paste type detergents.
- If liquid detergent is used together with Wexiödisk's detergent pump, the detergent must be placed under the machine's tank level.
- The positioning of the drying agent is not as critical, but it should be placed in the same way as the detergent.

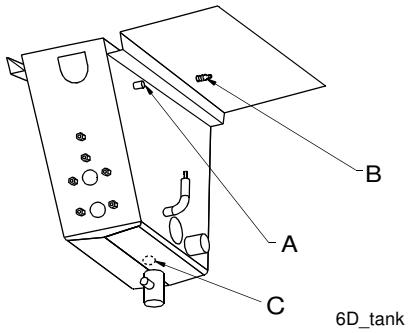


The detergent (A) is positioned below the plugged connection for the detergent hose (B).
Our shelf (C) WD203.0663, or alternatively our lockable cabinet WD203.0666, is suitable for use.

- There are plugged holes (4) for the detergent hose both at the back and on the side of the machine. Alternatively, the lower punch mark on “the back” can be used.
- The detergent hose is connected to the pipe (A) at the top of the chemical washing tank on the right-hand side (see the figure below). There is a connection nipple in the pipe (B).
- If detergent paste is being used, the connection nipple must be removed and the hose connected directly to the pipe (A).
- If liquid detergent is used, the nipple must be left in the pipe. Drill a hole through the nipple and connect the hose to the nipple.
- The measuring cell for measuring the concentration of detergent in the washing water must be put in the bottom of the tank. On the inside bottom of the tank next to the heating element, the letter “C” is stamped into the metal to mark where the hole should be drilled.
- The water outlet for detergent (6) is on the incoming water pipe (2).

When drilling holes, it is important that the following points should be observed:

- Use sharp tools so that panels do not become unnecessary hot. Red-hot panels can rust in the future.
- Always drill from inside the machine.
- Remove all metal shavings carefully both from the machine and tank before refilling with water. Shavings left in the tank can cause corrosion.



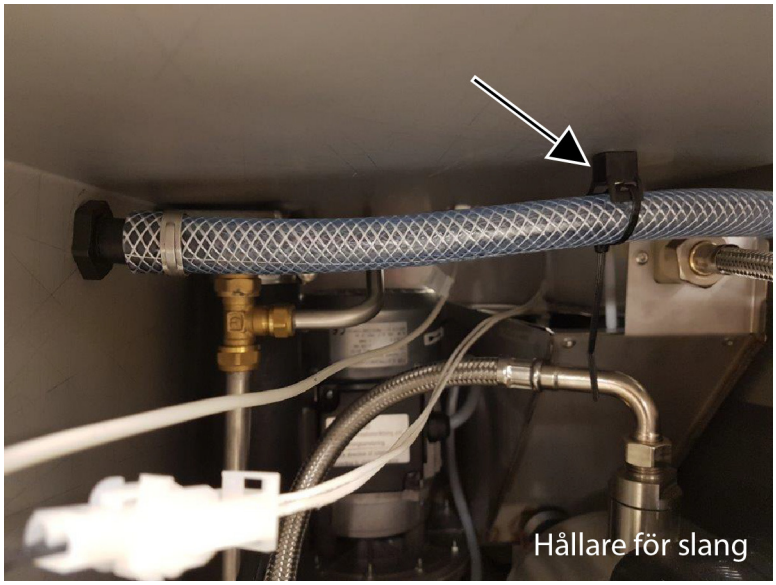
Connecting the detergent hose
Marking for measuring cell

A=Connection in the tank
B=Connection nipple
C=Marking in bottom of tank for measuring cell

For information about electrical connections, see the wiring diagram.

If equipment for a different type of detergent is used, it should preferably be put on the wall behind the machine to avoid holes being drilled unnecessarily in the machine.

The machine can also be equipped with detergent and drying agent equipment via external connections. See the wiring diagram for the correct connection.



Holder for connections for detergent and drying agent

The process of setting the detergent and drying agent dispenser is described in the ADJUSTMENT INSTRUCTIONS.

24V AC or 230V AC power supply for detergent and drying agent dosing via relay 9/J71 and relay 11/J73

The machine is supplied with a 230V closing function between J71-101 and J71-102.

The detergent and drying agent dosage system can take its power from two relays on the data card. The relays can be dead, with no power supply, or they can be connected to a 24V AC or 230V AC supply to power the dosage system. Each relay has a contact for connecting the equipment. Relay 9 for detergent is connected via a 3-pin J71 contact. Relay 11 for drying agent is connected via a 2-pin J73 contact.

- For correct connection at X10, see the machine's wiring diagram.
- 230V AC equipment should not draw more than 1.5A.
- 24V AC equipment should not draw more than 1.5A.

The ADJUSTMENT INSTRUCTIONS chapter in the service manual describes when and how the relays must be switched on (see section “setting options for relay 9/J71 and relay 11/J73”).

Relay 9/J71. Dead closing function (230V/400V machine)

To use the closing function without a power supply, follow these instructions:

- Disconnect the blue 0.75mm² wire from connector N1 or N2 in the electrical cabinet to contact J71-102.
- Disconnect the black 0.75mm² wire from connector X10 to contact J71-105.
- Contact the equipment to be controlled to contacts J71-101 and J71-105.

Relay 9/J71. Relay 9. 24V AC version (230V/400V 3-phase machine)

To connect a 24V AC power supply to the contact, follow these instructions:

- Disconnect the blue 0.75mm² wire from connector N1 or N2 in the electrical cabinet to contact J71-102.
- Disconnect the black 0.75mm² wire from connector X10 to contact J71-105.
- Contact the equipment to be controlled to contacts J71-101 and J71-102. There will then be two connectors on contact J71-102.

Relay 11/J73. Dead closing function (230V/400V 3-phase machine)

To use the closing function without a power supply, follow these instructions:

- Contact the equipment to be controlled to contacts J73-103 and J73-104.

Relay 11/J73. 230V AC version (400V 3-phase machine)

To connect a 230V AC power supply to the contact, follow these instructions:

- If a 230V AC version of J71 is fitted:
  Connect J71-105 to J73-104 using a black 0.75mm² wire.
- If J71 is not fitted or is not a 230V AC version:
  Connect a black 0.75mm² wire from connector X10 to contact J73-104.
- Connect the equipment to be controlled between contact J73-103 and connector N1, N2 or N3 in the electrical cabinet.

Relay 11/J73. 230V AC version (230V 3-phase machine)

To connect a 230V AC power supply to the contact, follow these instructions:

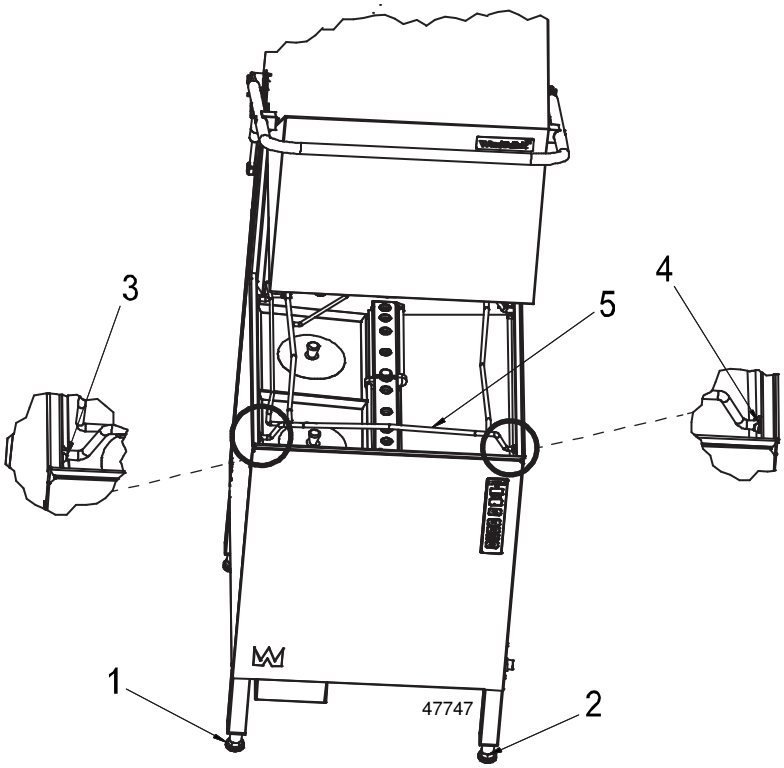
- If a 230V AC version of J71 is fitted:
  Connect J71-105 to J73-104 using a black 0.75mm² wire.
- If J71 is not fitted or is not a 230V AC version:
  Connect a black 0.75mm² wire from connector X10 to contact J73-104.
- Connect the equipment to be controlled between contact J73-103 and connector X10 in the electrical cabinet.

Relay 11/J73. Relay 11. 24V AC version (230V/400V 3-phase machine)

To connect a 24V AC power supply to the contact, follow these instructions:

- If a 24V AC version of J71 is fitted:
  Connect J71-105 to J73-104 using a red 0.75mm² wire.
- If J71 is not fitted or is not a 24V AC version:
  Connect a red 0.75mm² wire from the 8-pin contact on the data card labelled J69-8 to contact J73-104.
- Connect the equipment to be controlled between contact J73-103 and connector X10 in the electrical cabinet.

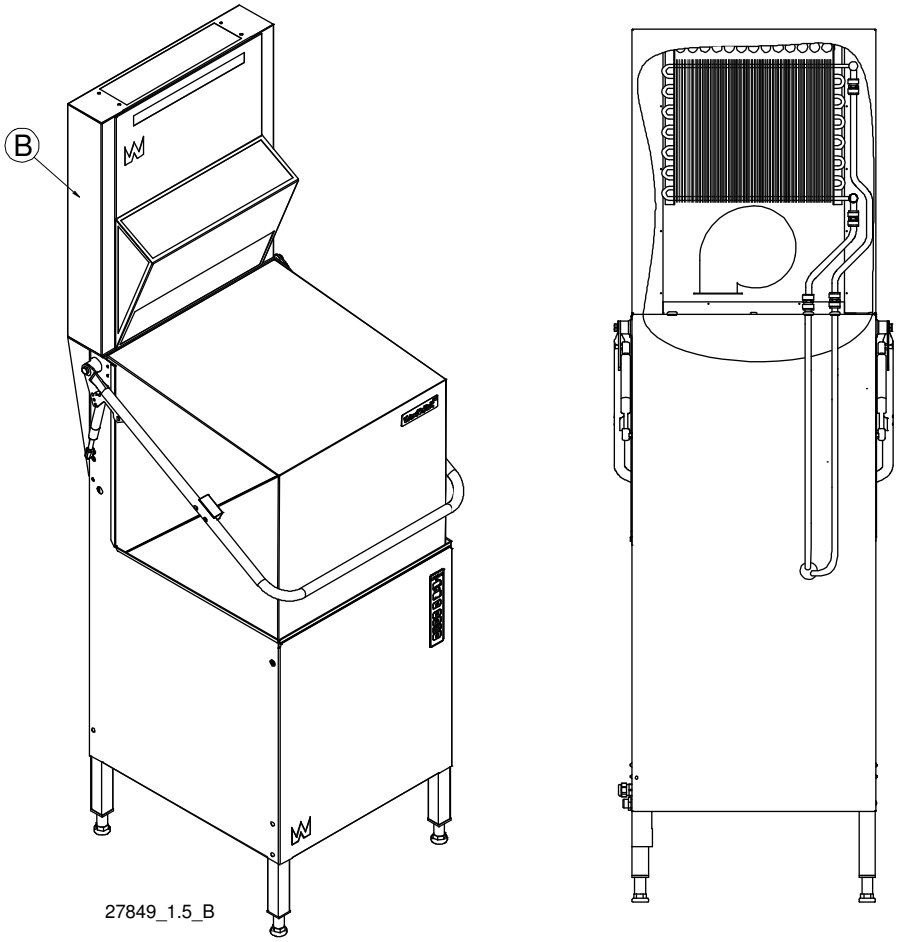
3.5.7 Adjustment of hinged basket conveyor



- Adjust the machine so that it is level by adjusting all four feet so that they are in full contact with the floor. Use a spirit level.
- Fill the machine.
- Lift the basket conveyor (5) up and down and adjust leg 1 and leg 2 until the basket conveyor is in the middle of both supports 3 and 4.
- The legs must be adjusted in pairs if any further adjustment is required (to the side, forwards or backwards).

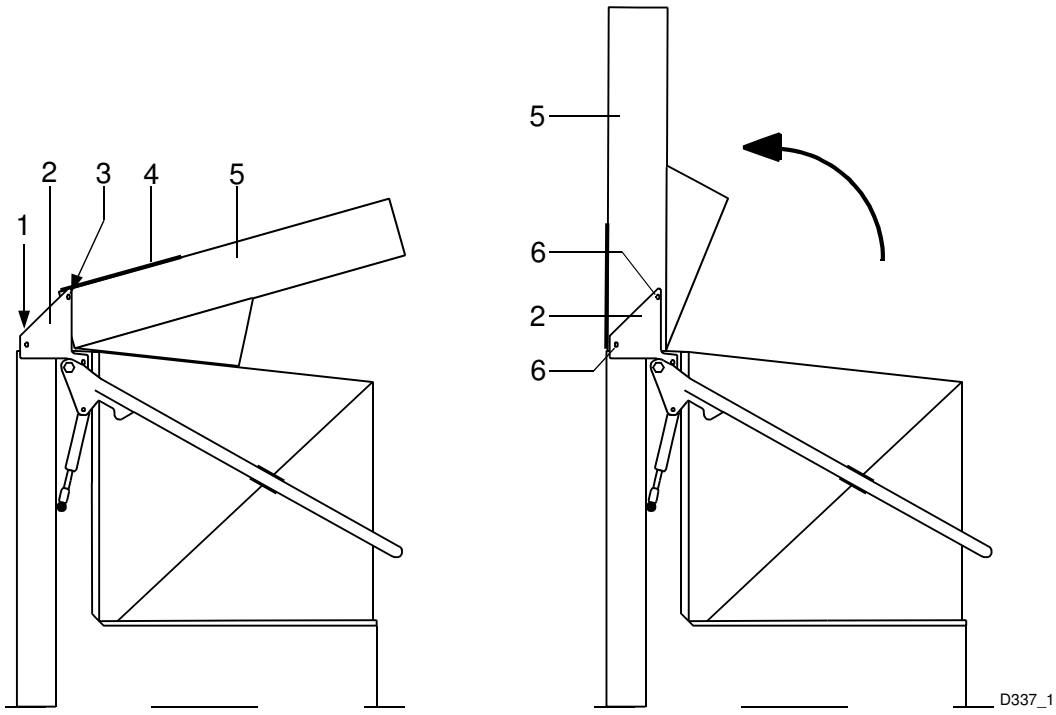
3.5.8 Condensation unit with heat recovery through the heat recovery unit (option)

- Should be combined with an automatic hood.
- Always use cold water connection if the machine has a condensing unit.



B= Condensing battery

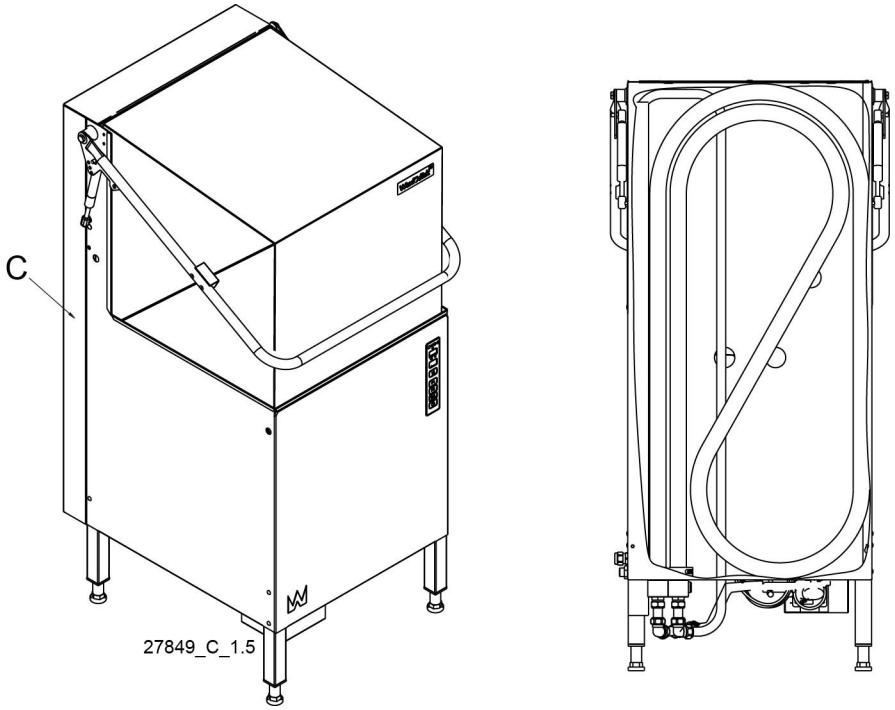
Fitting the condensation unit



1. Position of the mounting points for the condensation unit
2. Bracket
3. Screw
4. Cover plate
5. Condensing unit
6. Screw and washer

- When the machine is delivered, the condensation unit (5) is folded down on top of the machine. It is fastened to the bracket (2) with screws (3) during transport. Remove the screws.
- The screws used to fit the condensation unit on the machine are screwed into the mounting points on top of the machine (1). Remove the 5 screws.
- Remove the cover plate (4).
- Lift up the condensation unit (5) and fasten it to the machine at (1) using the five screws and the flange provided.
- Fasten the condensation unit to both brackets (2) with the screws and washers at (6).
- Fit the cover plate (4). The screws for the cover plate are supplied in a plastic bag.

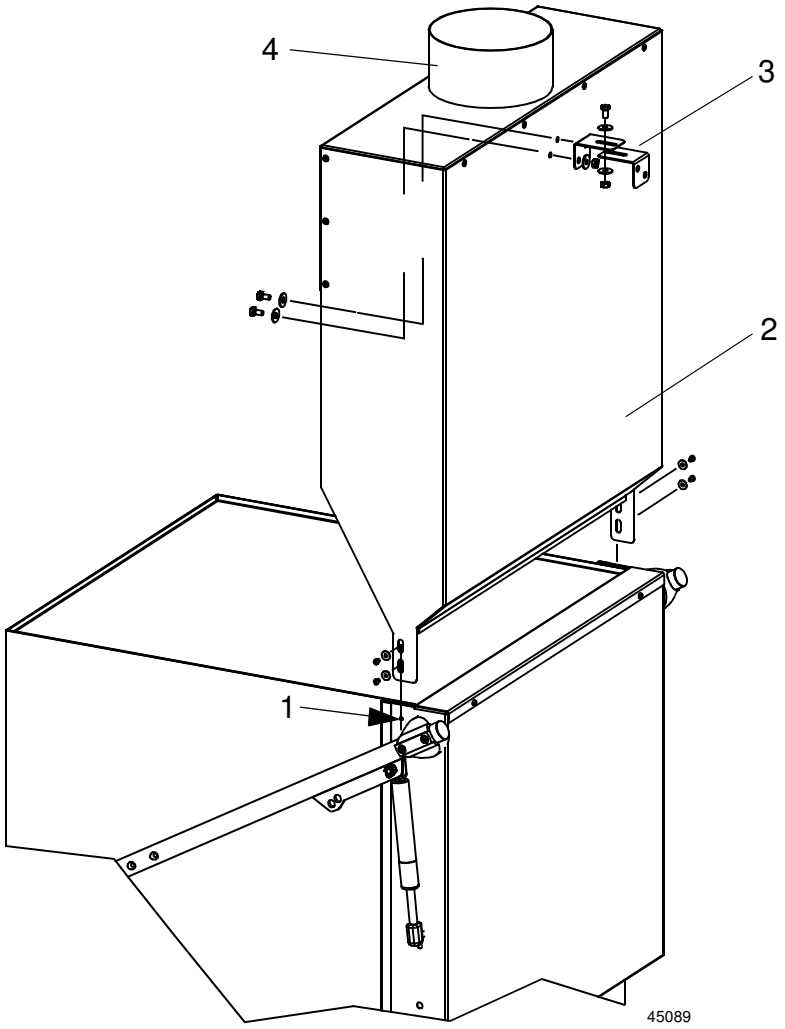
3.5.9 Heat exchanger, heat recovery through the wastewater (option)



C= Heat exchanger

- Always use cold water connection if the machine has a heat exchanger.
- Machines equipped with a heat exchanger are also equipped with a drain pump.
- Not in combination with a separate water connection or WD-PRM6.

3.5.10 Steam hood with extractor (option)



Steam hood with extractor

1. Existing screws
2. Steam hood
3. Bracket
4. Connection for ventilation ø 160 mm

- Undo the existing M4 screws at (1).
- Replace the existing screws and washers with the longer M4 screws and the larger washers provided. The steam hood (2) is fastened to (1) using these screws.
- Screw one bracket (3) firmly to the wall behind the machine. The other bracket must be put in the corresponding position on the back of the steam hood. Two holes 7 mm in diameter must be drilled through the plate.
- Screw both the brackets (3) together with the screws, washers and nuts provided.
- The ventilation duct is connected to (4).

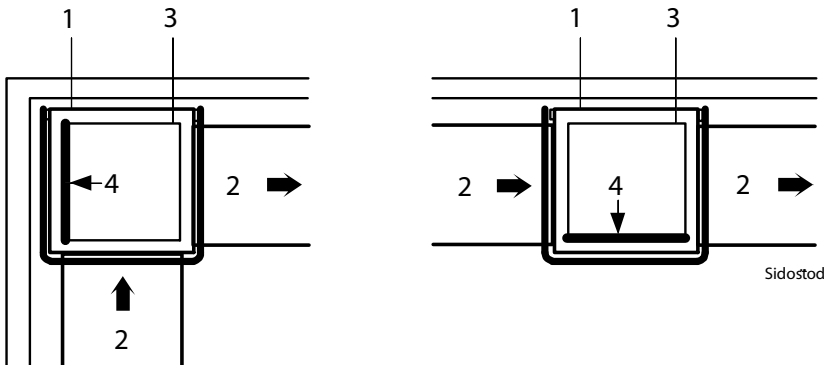
3.6 Installation and connection of auxiliary equipment and options

- Once the machine is in place and has been adjusted horizontally and vertically, the auxiliary equipment can be fitted.
- The machine can be equipped with a number of options. Check what your machine is equipped with, which depends on the model, machine type and country.

The various options normally place no specific requirement on the installation.

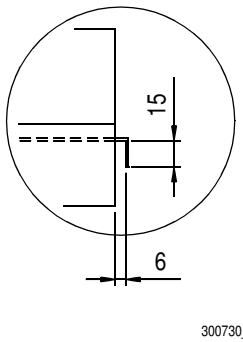
3.6.1 Sinks and conveyors

The machine can be positioned so that it can be straight-loaded or corner-loaded. Depending on the position chosen, the removable side support (4) on the basket conveyor must be positioned as shown in the figures below.



Position of the side support

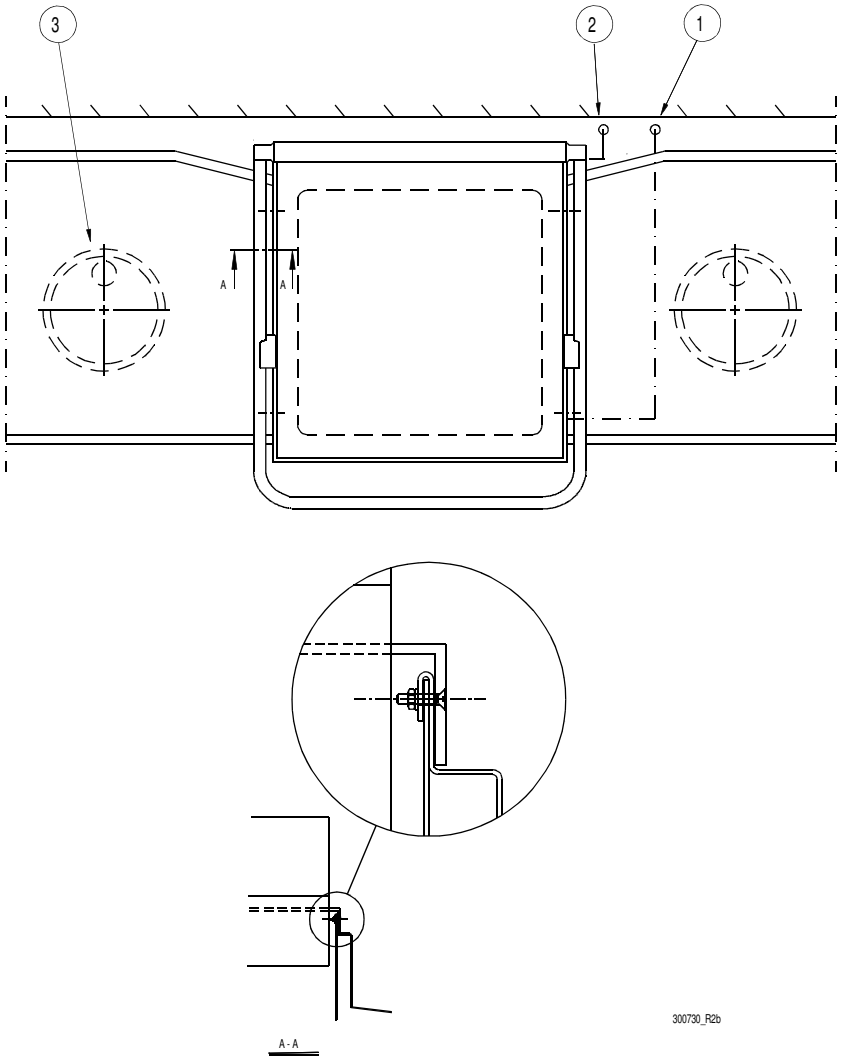
1. Dishwasher
2. Sink
3. Basket conveyor
4. Side support



Detail of sink cover

The connection profile must look like the one shown in the drawing. The distance of 6 mm may be reduced, but must not be less than 3 mm.

Connection to the left- or right-hand side of the machine



1. Water connection
2. Electrical connection
3. Floor drain

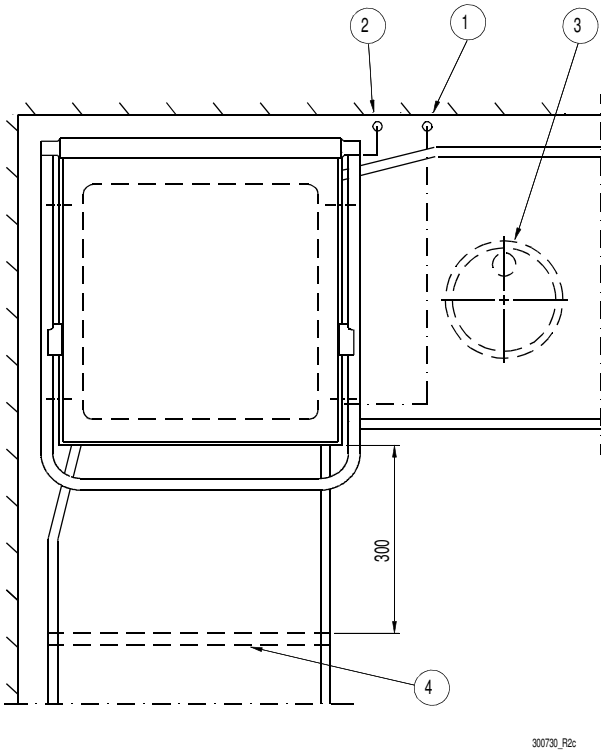
- Attach the sink connection to the machine and then adjust.
- Drill two ø 4.5 mm holes through the sink connection and the machine, approx. 100 mm from each outer edge.
- Countersink the holes.
- Seal with silicone between the connection and the machine.
- Secure the sink with countersunk M4 screws, grommets on the outside surface and nuts. Alternatively, you can secure the sink to the wall with wall brackets.

Use a spirit level to check that the sinks are horizontal and adjust the height, if necessary.

Connection to the front of the machine

If the machine is to be corner-loaded, there must be at least 300 mm of free space in front of the machine to allow the electrical cabinet and the door of the storage cabinet for detergent and drying agent (option) to be opened. It can be helpful to use WD240.4517.

The legs on the sink connected to the front of the machine must be at least 300 mm away from the machine to allow the machine to be accessed for servicing.



1. Water connection
2. Electrical connection
3. Floor drain
4. Legs

- Attach the sink connection to the machine and then adjust.
- Seal with silicone between the connection and the machine.
- Secure the sink to the wall with wall brackets.

Use a spirit level to check that the sinks are horizontal and adjust the height, if necessary.

3.6.2 WD-RO150

Our water treatment unit WD-RO150 can be connected to the machine. Certain adjustments to the reference values may however be necessary.

3.7 Trial operation

Prepare the machine for trial operation with the help of OPERATING INSTRUCTIONS. The instructions describe the measures that must be taken to prepare the machine for operation.

3.7.1 Start-up schedule

This should be completed when the machine is started up and used.

Machine type:
Machine serial number:
Installation date:

Read the installation and user manuals carefully. Then check the following points:

1. Check:

- Water and waste pipe connections
- That the machine is evenly balanced
- Detergent and drying agent
- That the filters and level pipe are in place
- That the overheating protection device is reset

2. Filling the machine:

- Turn on the power switch and any circuit breakers
- Close the hood
- Fill the machine with water in accordance with the INSTRUCTIONS FOR USE
- Bleed the hood lifting cylinder (option) as per the manual.

3. Start the machine:

- Check the direction of rotation of all pumps
  NB! If the direction of rotation is wrong, the phase must be inverted on the lockable power switch
- Empty the machine and refill it
- Check the final rinse flow during filling
  N.B.: The machine will fill in two minutes and 15 seconds at the correct flow. (machine with standard equipment). The flow is regulated by the built-in ball valve.

4. Check the setting of the reference values:

- All the reference values have been set to the recommended values on delivery
- Check the temperatures

5. Run a number of washes complete with dishware and check:

- There are no water leaks
- The hood switch functions
- The automatic hood functions (option)
- Autostart function (option)
- The water temperatures are maintained
- The washed items are clean
- The dishware dries
  N.B.: The equipment for detergent and drying agent is roughly set at the factory; contact your detergent supplier for a more precise setting.

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

- Re-tighten all the connections on the contactors and any circuit breakers
- Set all the circuit breakers to the ON position
- Display the maintenance instructions supplied with the machine.

7. Train and inform personnel concerning:

- Washing
- Care (daily, weekly and other frequencies)
- Recommendation for annual service

3.8 Documentation



For correct use and servicing, it is essential that the documentation accompanying the machine is made available to personnel who will be using the machine. The installation and user manual, which describes handling and care among other things, should be stored near the machine.

4. Operating instructions

Read the chapters GENERAL INSTRUCTIONS and SAFETY INSTRUCTIONS carefully before starting work.

This chapter describes what must be done with the machine:

- Before washing
- How washing should be performed
- After completed washing
- In the event of error messages and troubleshooting

The use of the machine is dependent on how the machine is equipped.

If the machine will not be used for a longer period, the power to the machine should be turned off using the power switch, the water supply turned off and machine should be left open.

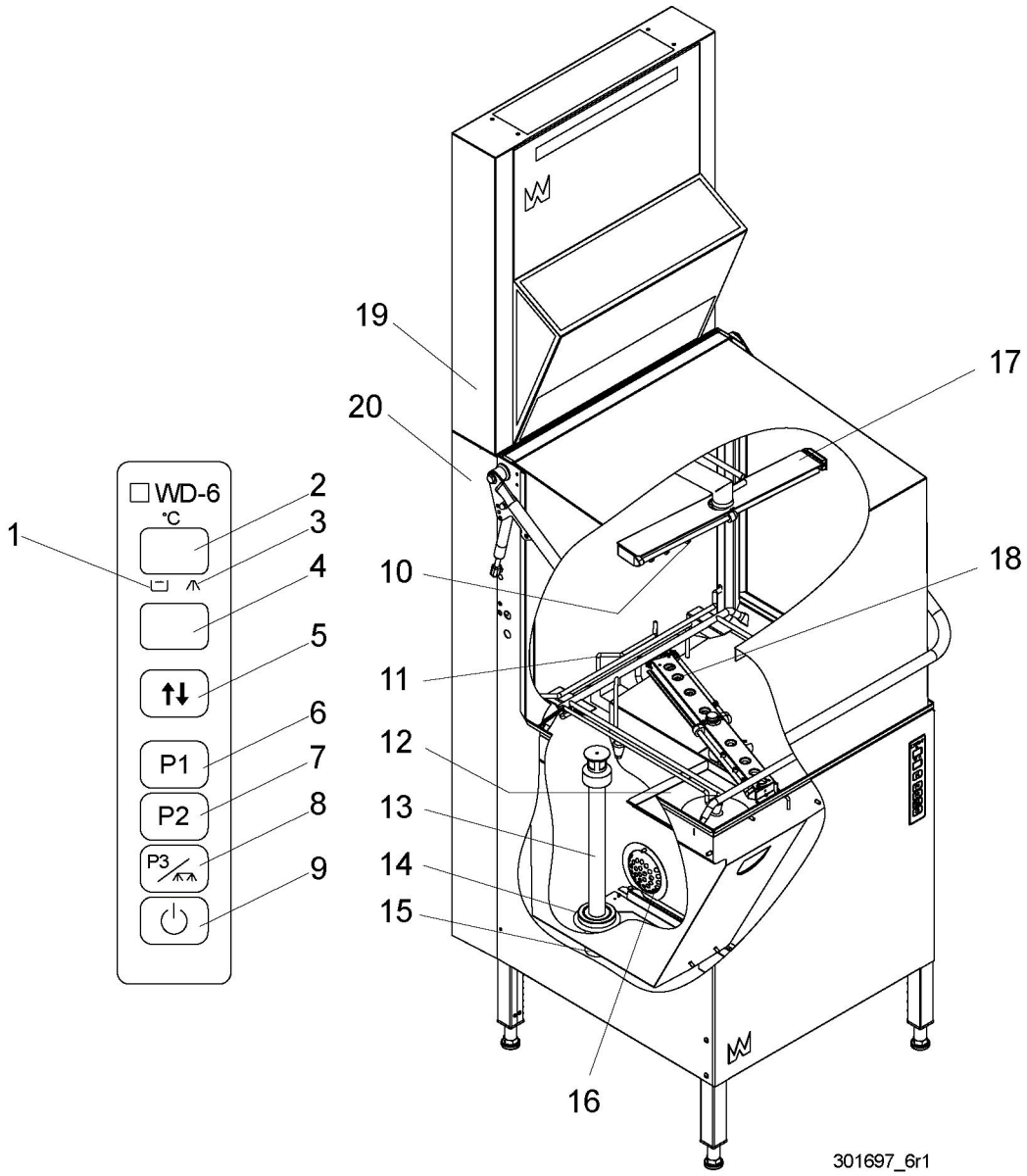
- The machine can also be connected to a WD-PRM6/7.
- The procedure for start-up, washing, etc. is described in the manual for the WD-PRM6/7.

As an option, the machine can also be equipped with a USB socket for downloading reports. When the machine is equipped with this socket, it will be located close to the panel.

- The user can download a customer report by connecting a USB memory stick (with an LED which should face “upwards”) to the socket, which is located close to the panel.
- The USB stick (which is supplied with the machine upon delivery) must contain the file “ESP_1_5_On.cfg” and a folder named "Protocol”.
- The report contains “Current machine model”, “Operating information” and "HACCP” if this function is activated.
- When the machine is switched on and ready to use, the USB stick is connected. The report is then downloaded. The LED on the USB stick flashes during downloading and switches to a steady light when the download is complete. Wait a few more seconds before removing the USB stick.

4.1 Before washing

4.1.1 Machine design



1. Symbol for washing function. After the machine is started, the symbol lights up when the tank is full. The symbol flashes if the water level in the tank is too low.
2. Display for temperature during operation. When checking and setting reference values, the display shows the number for the relevant reference value, e.g. 01, 02, 03, etc. Together with display (4), it shows error messages.
3. Final rinse indicator. The symbol is lit while the machine is filling up, during the final rinse phase and when the cleaning programme is run after a completed washing cycle. The symbol flashes if the hood is opened during the washing cycle or if the final rinse water has not reached the correct rinse temperature when the rinsing phase is due to start. The machine continues washing until the correct rinse temperature has been reached.
4. Display showing the programme during operation, which counts down the remaining washing time.
5. Button for closing or opening the hood. (On machines equipped with automatic hood lift.)
6. Button for washing programme 1. When the machine is in service mode, P1 is used to show the different reference values and to reset the reference values to the last saved values. If the machine has a drain pump, P1 is used to start the drain pump and empty the tank after washing.
7. Button for washing programme 2. P2 is used in service mode to increase a reference value or jump between tables. In shut-off mode the software version number can be displayed by holding down P2.
8. Button for washing programme 3. P3 is used in service mode to reduce a reference value or jump between tables. P3 is used in shut-off mode to start internal rinsing when the cleaning programme is used to clean the machine.
9. Button to switch the power on or off. This button is also used to reset alarms, display the water flow to the machine and to move to service mode.
10. Rinse nozzle
11. “Autostart” (if the machine has this option, the hood is closed automatically when a basket is loaded in the machine.)
12. Tank filter
13. Level pipe (has been replaced by a bottom filter if the machine is connected to a WD-PRM 6)
14. Rubber sleeve
15. Drain filter (on machines with a drain pump)
16. Pump filter
17. Washing and rinsing arm
18. Wash nozzle
19. Heat recovery unit (option)
20. Heat exchanger (option)

In the following chapter, figures are given in brackets to clarify what needs to be done. These numbers refer to image and list above.

4.1.2 Preparations before filling

Check and fit:

- That the machine and removable parts have been cleaned. If not – clean them!
- that no dirt is in the washer arms' (18) or in the rinse pipes' (10) nozzles
- That the rubber sleeve (14) is undamaged
- That removable parts are correctly in place
- The amount of detergent and drying agent
- That the stopcock for the water to the machine is open
- That the power switch is in the ON position

Remember:

- Ordinary washing-up liquid must not be used in the machine or for soaking. Contact your detergent supplier regarding the choice of a suitable detergent. Washing-up liquid causes a build-up of foam, produces poor wash results and can damage the machine.
- Steel wool must not be used for pre-treating the dishware.
- Only detergent and drying agent intended for industrial machines may be used.
- If using liquid detergent and drying agent, the same make and type of detergent and drying agent should be used.
- If the machine is designed for glass washing and equipped with a condensing unit, detergent intended for aluminium should be used.
- If the machine is equipped with a condensing unit, dishware should be removed from the machine as soon as the wash cycle is complete so that recondensation does not occur.

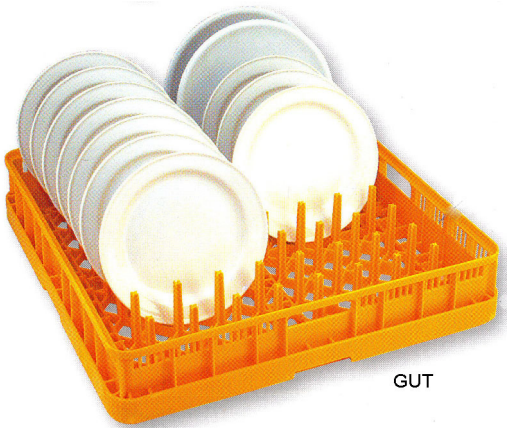
4.1.3 Filling and heating the machine

- Switch on the power using the 0/1 button (9) on the panel. The display (3) shows the temperature of the rinsing water. The display (4) shows "P0". P0 is a pause mode which indicates that no washing programme has been selected. The symbol (3) is lit.
- Close the hood and the machine will start to fill. Filling and heating for a standard machine takes approx. 6 minutes at an incoming water temperature of 55°C. The heating time is dependent on the incoming water temperature.
- Once the machine is full, the symbol (1) lights up and the display (2) shows the temperature of the washing water. If the washing temperature falls below the set value by more than 5°C, the temperature shown on the display (2) flashes.
- The machine cannot start washing until the set temperature minus 5°C for the washing water has been reached, if this function is selected. The normal operating temperature for the washing phase is 60°C. When the washing temperature falls below 50°C, the temperature display flashes.

4.2 Washing

4.2.1 Positioning of dishware in baskets

The machine is supplied with washing baskets depending on the equipment level. The washing baskets are used according to the following:



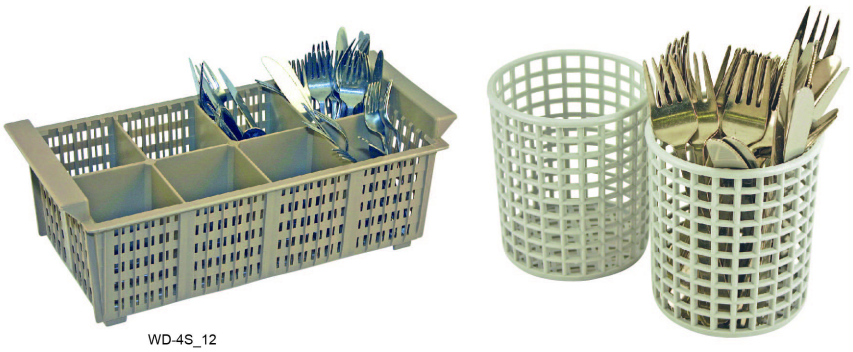
The yellow basket is used for side plates, trays, plates, etc.



The blue basket is used for glasses, cups and canteens



The brown basket is used for cutlery during the first wash



WD-4S_12

Cutlery must therefore be placed in designated baskets before the second wash, the baskets above are placed in the blue basket

There are also various special baskets, racks and accessories (option) for use in the machine.

4.2.2 Selecting a programme

The control panel has three programme buttons: P1, P2 and P3.

- P1=Lightly soiled items (e.g. trays and glassware)
- P2=Normal load
- P3=Heavily soiled items

The washing temperature and chemical washing time for each programme is set on delivery. The operator can change these values if required.

4.2.3 Changing the washing temperature and washing time

The factory setting for the washing temperature is 60°C. The operator can adjust the temperature to between 55 and 70°C.

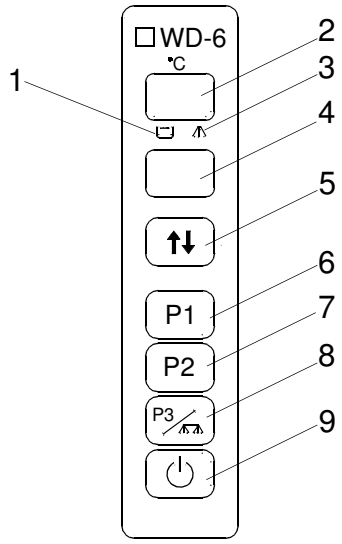
The chemical washing times for each programme are set on delivery to:

- 1.0 min. (programme P1)
- 1.5 min. (programme P2)
- 3.0 min. (programme P3)

The washing times can be adjusted between 1.0 and 6.0 minutes.

Changing the values. Selecting service mode

The machine must be set to service mode when the operator needs to change a value. This is done using the control panel. The values that can be changed flash. The displays and buttons have different functions than when the machine is in normal operating mode.



301060_6

The panel's functions in service mode

1. Symbol for washing function.
2. Display for the table numbers and the row numbers of each table.
3. Symbol for final rinse.
4. Display of values and other information for all the row numbers in the tables.
5. Button for opening/closing the hood. (On machines with an automatic hood.)
6. Use the P1 button to move between the table rows or to reset the values to those last saved.
7. Use the P2 button to increase a value or move forwards between the tables.
8. Use the P3 button to reduce a value or move backwards between the tables.
9. Use the 0/1 button to enter or exit service mode.

All the values are laid out in tables, with each table containing a certain number of rows, one for each value. The table containing the values for the washing temperature and washing times for the different programmes is "0.0".

The values for washing temperature and washing times are on rows 01 to 04.

Table 0.0		
Row number	Relates to	Range of settings
01	Washing temperature	55 - 70℃
02	Washing time programme P1	1.0 - 6.0 min.
03	Washing time programme P2	1.0 - 6.0 min.
04	Washing time programme P3	1.0 - 6.0 min.

To select service mode and change the washing temperature and washing time, follow these instructions:

- When moving to service mode, the washing programme must be finished.
- Press the 0/1 button (9). Both the displays will now show two horizontal dashes "--" and the machine will be in shut-off mode.
- Hold the 0/1 button (9) down for approx. 3 seconds until the top display (2) shows "0.0". When "0.0" appears on the display (2), the machine is in service mode.
- Press P1 (6). The top display (2) will now show 01, the first row number in the table. The bottom display (4) shows the set washing temperature flashing; only values that flash when they appear can be changed. If the temperature is to be changed, press P2 (7) to increase the value or P3 (8) to reduce the value.
- If the washing time for a programme is to be changed, use P1 (6) to move to the next row number in the table. For explanations of row numbers 01, 02, 03 and 04, see table "0.0" above.
- When the settings have been changed, exit service mode by holding down the 0/1 button (9) for approx. 3 seconds until the displays (2, 4) show two horizontal dashes “--”. The changed values are now saved.
- Return to normal operating mode by then quickly pressing the 0/1 button (9).

4.2.4 Washing



Make sure that the items are in a position where they cannot move out of the washing basket during the washing and rinsing phases.

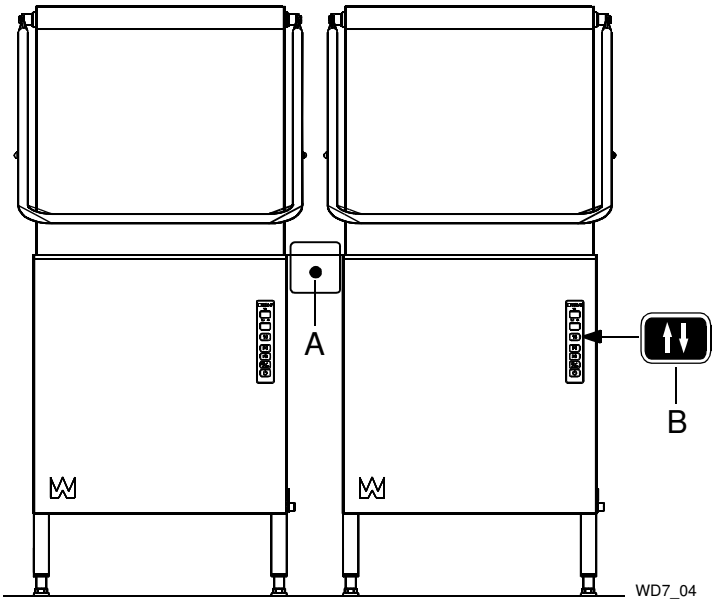
- Remove large pieces of food by rinsing the dishes with a hand shower. The water in the hand shower must not exceed 40°C. Place the items to be washed in the basket.
- Open the hood. On machines with automatic hood lift, the hood is opened and closed using the button (5)
- Select the programme. Slide the basket into the machine. If the machine is fitted with “autostart”, the hood closes automatically and washing starts.
- Close the hood. The machine starts washing using the selected programme. The display (4) now shows the remaining washing time for the programme.
- The symbol (1) is lit during the washing phase.
- Once the rinsing phase starts, the symbol (3) lights up. If the final rinse water has not reached the correct rinse temperature once rinsing starts, the symbol (3) flashes and the machine continues washing until the rinsing water has reached the correct temperature.
- Do not open the hood until the programme has finished.
- If the hood is opened during the washing cycle, the machine will stop. If the hood is closed again, the programme will start from the beginning.
- When the machine has stopped, the selected programme appears on the display (4) and the hood opens automatically if the machine has an automatic hood. Remove the washed items and allow them to dry.



P0 is a pause mode and is used in the case of prolonged intervals between washes in order to maintain the tank temperature. The hood must be closed. The machine does not start in P0 mode.

- Press the programme button for the current programme once. "P0" appears on the display (4).
- Press the button again to return to the current programme.
- The hood must be opened and closed between each washing cycle.

Washing with dual machines (option)



- A = Button for dual-controlled hood lift
- B = Button for controlling the hood lift on each machine

The procedure upon start-up, washing, etc. is the same as when washing with only one machine, except that the hood lift can be operated in different ways.

When using dual machines, the washing capacity is larger. For the maximum possible capacity, the same type of items should be washed at the same time in both machines.

Put the baskets with the same type of items in the machines. Select the same washing programme on the control panels of both machines. Press the button (A) to close the hoods and start the programme.

If the items are of different types, it is possible to use a different programme on each machine, e.g. programme P1 on one machine and P3 on the other. In this case the hoods must be closed using the button (B) on each machine's control panel.

When returning to the same type of item and the same programme, both the hoods must be open in order to be able to use the button (A) at the start of the wash cycle. This may be relevant, if, for example, one machine has been temporarily paused in pause mode P0 with the hood closed.

NOTE! If the washing temperature and washing time are changed in one of the programmes, this setting must be changed on both machines.

4.2.5 Checking the wash result

The dishware should be checked after each wash for:

PROBLEM	CAUSES & MEASURES
Starch spots Misting Protein residues Detergent residues	• **Scraping:** Important to remove as much food particles as possible before washing. This also means that the water in the machine does not need to be changed as often. Scrape better. • **Detergent and drying agent dosage:** If using liquid detergent and drying agent, the same make and type should be used. A service technician should be contacted to rinse the equipment with water when replacing the detergent and drying agent. The dosing affects both detergent and drying results of the dishware. The hardness level of the water affects the consumption of detergent. Contact the detergent supplier. • **Temperatures:** At incorrect temperatures the dishes will not be clean. Contact a service technician if you need to change the set values. • **Programme selection:** Programme with too short a washing time selected. Choose a programme with a longer washing time. • **Cleaning the machine:** Insufficient cleaning of the machine affects the results of the washing. Ensure better cleaning of the machine. • **Placing dishes in baskets:** Incorrectly placed items can mean that the washing water does not reach the items during washing and rinsing. • **Soaking:** Items with hard dried food. Soak the dishes in water. Do NOT use washing-up liquid.

4.2.6 Changing the water

To achieve the best possible washing results, it is important that the water is changed frequently. For normally soiled dishware, the water should be changed after around 50 washes. However, always change the water in the event of foam problems in the tank.

If IF09 appears on the display, this indicates that the water should be changed.

Machines without a drain pump

- Check that the machine is in P0 mode.
- Open the hood. On machines with automatic hood lift, the hood is opened/closed with the button (5).
- Remove the tank filter (12) and clean it.
- Empty the machine by turning the level pipe (13) anticlockwise.
- When the tank is empty, turn the level pipe (13) clockwise and refit the tank filters (12).
- Close the hood (on machines with automatic hood lift, the hood is opened/closed with the button (5)) and the machine is refilled.
- Check that the final rinse symbol (3) is lit.

Machines with a drain pump (option)

NOTE! The hood/door must be open when the drain pump is running.

- Check that the machine is in P0 mode.
- Open the hood. On machines with automatic hood lift, the hood is opened/closed with the button (5).
- Remove the tank filter (12), level pipe (13) and drain filter (15), and clean them.
- Press the 0/1 button (9).
- Press P1 (6) to start the drain pump. "dP" appears on the display (2).
- When the tank is empty, refit the level pipe (13), tank filters (12) and drain filter (15).
- Press the 0/1 button (9).
- Close the hood (on machines with automatic hood lift, the hood is opened/closed with the button (5)) and the machine is refilled.
- Check that the final rinse symbol (3) is lit.

4.3 After use – Cleaning

HACCP

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. A machine that is properly cleaned helps produce a good wash result, reduces the risk of dirt accumulating, increases the service life of the machine and reduces the risk of emergency shutdown.

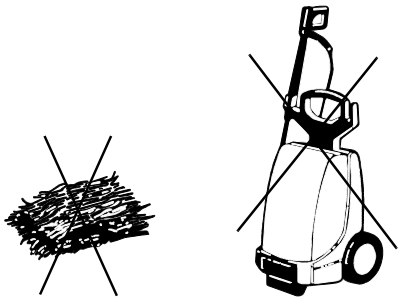
See the WebTool 1.5 manual for the HACCP option.

4.3.1 Incorrect cleaning methods

⚠

NOTE! An incorrect cleaning method may damage the machine. The following points must be observed:

- Do NOT use steel wool as it will cause corrosion to form on the machine.
- If detergent is used, it must not contain abrasives. Detergents containing abrasives will damage the stainless steel panels.
- The exterior of the machine must not be hosed. Water can enter the machine and damage the control panel and electrical equipment.
- Pressure washers and steam can damage the machine and must NOT be used for cleaning purposes. Never use a pressure washer to clean the floor within 1 metre of the machine. The supplier cannot be held liable for any faults caused by the use of pressure washers on the machine and any such use may invalidate the warranty. There is a risk of splashing even if the floor is hosed down.



WD9_07

Steel wool and pressure washers must not be used for cleaning

4.3.2 Shutdown

When the machine's ON/OFF button is pressed and held down, the calculated water flow to the machine will be shown in both displays in litres (to 4 digits). The water flow will however NOT be shown in cases where the machine is equipped with a breaktank.

When the machine's ON/OFF button is released after being pressed and held down, the following will be shown for 5 seconds:

- Number of washes since last start (pcs.).
- Total water consumption since the last start, displayed to one decimal and in l/min when the machine is equipped with a flow meter (option).
- Calculated water consumption since the last start, displayed to one (1) decimal and in l/min when the machine is equipped with this option (option).
- Calculated electricity consumption since the last start and when E41 has been set according to the WebTool 1.5 manual, displayed to two (2) decimals and in kW (option).

Two horizontal dashes "--" are then shown in the display for 3 minutes. At this point the machine is still live and emptying and internal rinse cleaning must take place within this period. The machine then switches off automatically.

4.3.3 Emptying, internal machine rinsing



Position of cleaned components after washing

Machines without a drain pump

- Open the hood. Press button 0/1 (9). Take out the filters (12). Drain the washing tank by removing the level pipe (13).
- Close the hood. Press P3 (8). The display (2) shows "SC" and the internal cleaning process starts. The display (4) shows the remaining cleaning time. When the cleaning process is finished, both the displays show two horizontal dashes "--".
- Open the hood. Check that the washing and rinsing nozzles (10, 18) are clean and that no objects have fallen and lodged in the machine.
- Remove and clean the pump filter (16), the chemical washing filters (12) and the level pipe (13).
- Store the cleaned parts in a washing basket. Make sure that the rubber sleeve (14) on the level pipe does not become deformed, by allowing it to hang free.

Machines with a drain pump (option)

- Open the hood. Press button 0/1 (9). Remove the filters (12) and level pipe (13).
- Press P1 (6). "dP" appears on the display (2) and the drain pump starts. It stops automatically after a set period.
- Once the machine has been emptied, close the hood. Press P3 (8). The display (2) shows "SC" and the internal cleaning process starts. The display (4) shows the remaining cleaning time. After the cleaning process has finished and the water has been emptied out, both the displays show two horizontal dashes "--".
- Open the hood. Check that the washing and rinsing nozzles (10, 18) are clean and that no objects have fallen and lodged in the machine.
- Remove and clean the pump filter (16), the chemical washing filters (12), the level pipe (13) and the drain filter (15).
- Store the cleaned parts in a washing basket. Make sure that the rubber sleeve (14) on the level pipe does not become deformed, by allowing it to hang free.

4.3.4 Daily cleaning

Internally

The interior of the machine will be rinsed clean when the machine is switched off in accordance with the manual.

Externally

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

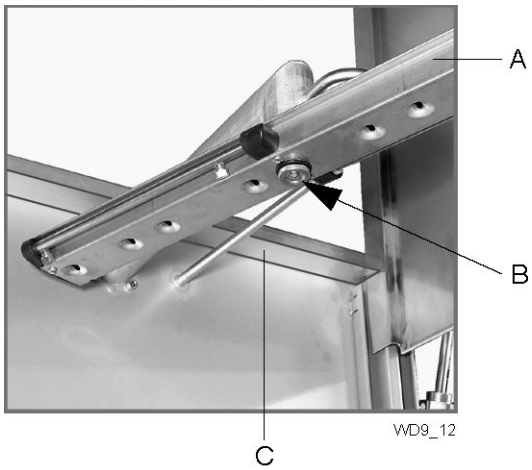
- If detergent is used, it must not contain abrasives. Detergents containing abrasives will damage the stainless steel panels.
- The exterior of the machine must not be hosed. Water can enter the machine and damage the control panel and electrical equipment.

4.3.5 Cleaning each week or as required

If the information message "IF10" is shown in the display, weekly cleaning needs to be performed.

In addition to the daily cleaning measures, clean the machine as per these instructions:

- Remove the wash arms. Loosen the lock nut (B) in the centre of the washing arm and remove the washing arm. Check and clean the nozzles if necessary. Rinse the wash arms and refit them.
- Clean the top of the splash strip (C). The strip is inside the top of the machine at the back.



A=Upper wash arm
B=Lock nut
C=Splash strip

4.3.6 Cleaning in the event of an alarm or 1 time / year

The machine's heat recovery unit should be cleaned at least once a year.

Remove the panel and rinse clean the heat recovery unit.



NOTE! When rinse cleaning the heat recovery unit and the base of the battery box, do not use more water than the drain under the battery can remove from the machine. The battery must be cleaned with hot water at normal pressure. Do not aim the water directly at the fan motor. The electric motor may be damaged if it is rinsed with high-pressure water.

4.3.7 Operating problems



Check:

- Has the appliance been used according to the instructions?
- Are all the removable parts in their correct place?
- Is the main switch in the ON position?
- Are there any error messages on the display?
- Are the fuses in the electrical cabinet still intact? Ask service personnel to check the fuses.

Error messages

During operation, various alarms or information messages can appear on the panel's display. There is a distinction between IF and Er alarms. IF alarms can normally be dealt with by the operator. If there is an Er alarm, the service personnel must be called. Some IF alarms that have been dealt with by the operator a few times will eventually change to Er alarms, meaning that the service personnel must be contacted.

Each alarm has a number: 01, 02, 03 etc. The top display shows either IF or Er. The bottom display shows the alarm number.

CODE	CAUSE	ACTION
IF01 / Er01	The time needed to fill the tank has been exceeded.	The alarm can be reset by pressing 0/1 on the panel.
	The level pipe is not in place.	Fit the level pipe.
	The level pipe's rubber sleeve is not sealing against the bottom plate.	Adjust the level pipe. Check that the rubber sleeve has not been damaged. Replace the sleeve, if it is damaged.
	The water stopcock is closed.	Open the stopcock.
Er02	It has taken too long for the machine to heat up, compared with the previous time.	The alarm can be reset by pressing 0/1 on the panel. Contact service personnel if the alarm recurs.
Er04	Faulty temperature sensor.	Call service.
Er05	Faulty temperature sensor.	Call service.
IF06 / Er06	The booster heater is not cooled during the final rinse phase.	The alarm can be reset by pressing 0/1 on the panel.
	The water stopcock is closed.	Open the stopcock. Close the hood.

CODE	CAUSE	ACTION
Er08	No temperature change in the booster heater despite the fact that the element is active.	The alarm can be reset by pressing 0/1 on the panel. Contact service personnel if the alarm recurs.
IF09	Alarm for changing the water.	Change the water. The alarm can be reset by pressing 0/1 on the panel. If the alarm is not set to stop the machine, the washing programme can continue.
IF10	Alarm for weekly cleaning.	The machine must be cleaned more thoroughly than during daily cleaning. The alarm can be reset by pressing 0/1 on the panel.
Er12	The break tank has not been filled with water within the set time.	The alarm can be reset by pressing 0/1 on the panel.
	The water stopcock is closed.	Open the stopcock.
	Low water pressure and/or flow to the machine.	Check the water connection.
	Error on the sensor which causes the break tank to overflow.	Call service.
Er13	The level sensor in the break tank indicates an incorrect signal.	The alarm can be reset by pressing 0/1 on the panel. Call service.
Er16	The temperature in the booster heater is too low.	The alarm can be reset by pressing 0/1 on the panel. Call service.
	Low level in the break tank.	The alarm can be reset by pressing 0/1 on the panel. Call service.
Er23	The hood does not open when the automatic hood opener is used.	The alarm can be reset by pressing 0/1 on the panel. Contact service personnel if the fault recurs.
Er27	The machine has lost all its set values.	Call service.
IF30	Low water level in the washing tank before washing.	Check that the level pipe is closed. The alarm can be reset by pressing 0/1 on the panel.
	The level pipe's rubber sleeve is leaking.	Check that the level pipe's rubber sleeve has not been damaged.
IF34	Detergent alarm.	The alarm can be reset by pressing 0/1 on the panel.
	The machine has run out of detergent.	Check the amount of detergent and refill, if necessary.
IF35	The washing tank does not fill with water.	Open and close the hood to start the filling process. The alarm can be reset by pressing 0/1 on the panel.
Er94	Fuse F1 is defective.	The machine is switched off by pressing 0/1 on the panel. Call service.
Er96	The motor safety cut-out for the pump has tripped.	Call service.
Er97	One digital input is shorted to ground.	Call service.
Er99	Communication fault between the computer and panel cards.	The alarm can be reset by pressing 0/1 on the panel. Contact service personnel if the alarm recurs.

Troubleshooting

The following errors can be dealt with by the operator. If the problem persists, contact authorised service personnel.

PROBLEM	CAUSE	ACTION
No indication on the control panel display when the control button is pressed.	Power switch off.	Switch on the power switch.
The machine does not fill with water.	The incoming water stopcock is closed.	Open the tap.
	The door/hood is open.	Close the door/hood.
	The level pipe is not in place.	Fit the level pipe.
	The level pipe's rubber sleeve is not sealing against the bottom plate.	Adjust the level pipe. Check that the rubber sleeve has not been damaged. Change the rubber sleeve if it is damaged.
	The final rinse pipe nozzles are blocked.	Clean the wash nozzles.
The machine fills slowly.	The final rinse pipe nozzles are blocked.	Clean the wash nozzles.
The machine does not stop filling.	The level pipe is not in place.	Fit the level pipe.
	The level pipe's rubber sleeve is not sealing against the bottom plate.	Adjust the level pipe. Check that the rubber sleeve has not been damaged. Change the rubber sleeve if it is damaged.
The hood is not opened/closed properly.	Air has got into the system.	Bleed the hood lifting cylinder as per the manual.
The machine does not start washing.	The door/hood is open.	Close the door/hood.
	Dishware is blocking the magnet in the door.	Remove the dishware in question.
Noise from the washing pump.	Low water level. Foam in the tank.	Check the level. Change the water.
The machine stops in the middle of the wash cycle and starts taking in water.	The level pipe's rubber sleeve is not sealing against the bottom plate.	Adjust the level pipe. Check that the rubber sleeve has not been damaged. Change the rubber sleeve if it is damaged.

PROBLEM	CAUSE	ACTION
The machine is not cleaning properly.	The rinse and wash nozzles are clogged with dirt.	Check and clean the nozzles.
	There is too little detergent.	Check the amount of detergent. The hose (“thick”) must be submerged in liquid and the filter in the hose must be clean.
	The water in the tank is too dirty.	Change the water.
	Foam forming in the tank.	Check that the washing temperature is not too low and that the correct detergent is being used.
	Programme with too short a wash time selected.	Choose a wash programme with a longer wash cycle.
	Dirt has dried on the dishware to be washed.	Soak the dishware before washing.
	The dishware is incorrectly positioned in the baskets.	Use the correct type of washing basket and accessories to ensure that the dishware is correctly positioned.
	Detergent and drying agent of another make than usual are used.	Use the same make and type as before. Rinse the hoses and pumps with water if necessary.
The dishware has tipped over in the baskets.	The dishware is incorrectly positioned in the baskets.	Put the dishware in the correct position.
	Light dishware need washing.	Use a net grid to hold the items.
Dishware does not dry.	The rinse nozzles are blocked.	Check and clean the nozzles.
	Too little rinsing agent.	Check the amount of rinsing agent. The hose (“thin”) must be submerged in liquid and the filter in the hose must be clean.
	The washed items have been left in the machine.	Remove the washed items once the programme has ended.

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

- Machine type and model.
- Machine serial number and date when the machine was installed.
- A brief description of the problem. Are any fault codes shown in the display?
- What happened/was being done immediately before the fault occurred?

5. Technical specifications

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

TECHNICAL DATA	
Washing pump (kW)	0.9
Booster heater (kW)	9 / 12 *
Tank heater (kW)	1.8
Booster pump (kW) *	0.6
Drain pump (kW) *	0.04
Drain pump for heat recovery (kW) *	0.17
Heat recovery fan (kW) *	0.12
Heat recovery fan, flow (m^3/hour) *	250
Heat recovery, cooling surface (m^2) *	12
Tank volume (l)	50
Weight, machine in operation (kg)	160 / 185 *
Maximum temperature of the surroundings for machines in operation (°C)	35
Enclosure protection class (IP)	45

* option

CAPACITY AND OPERATING DATA	
Total washing time P1 (min.) **	1.3
Total washing time P2 (min.) **	1.8
Total washing time P3 (min.) **	3.3
Max. capacity, baskets/hour (no.)	50 / 36 *
Water consumption rinsing/programme (l) ***	2.5–4
Sound pressure level, LPA (dBA) ****	60
Sound power level LWA (dBA) ****	72

* option

** Factory setting. The wash time is adjustable.

*** Applies under ideal conditions. The water consumption depends on local conditions. Fine adjustments can be made during installation.

**** in accordance with EN 60 335-2-58, §ZAA.2.8 with instruments that satisfy class 1.
Measurements of the sound pressure level on site are performed in three places 20 cm from the edges of the front at a height of 1.55 m using a microphone.
When measuring sound power level, create an imaginary measurement area consisting of five sides at a distance of 1 m from all edges of the machine.

CONNECTION, MACHINE	
Total connected load (kW)	9.9 / 12.9 **
Main fuse (A) * (400-415V 3N~ 50Hz) & (400V 3N~ 50Hz) & (400-415V 3N 50Hz) & (400V 3~ 50Hz) & (400-415V 3~ 60Hz)	16 / 25 **
Main fuse (A) * (460V 3~ 60Hz)	16 / 20 **
Main fuse (A) * (400V 3~ 50/60Hz)	20 / 25 **
Main fuse (A) * (400V 3~ 50Hz)	16
Main fuse (A) * (200V 3~ 50/60Hz) & (440V 3~ 60Hz) & (480V 3~ 60Hz)	20
Main fuse (A) * (400V 3N~ 50Hz) & (230V 3~ 50/60Hz) & (230V 3~)	25
Main fuse (A) * (208-240V 3~ 60Hz)	25-28
Main fuse (A) * (230V 1N~ 50Hz) & (200V 3~ 50/60Hz)	32
Main fuse (A) * (230V 3~ 50Hz)	35
Main fuse (A) * (200V 3~ 50/60Hz)	50
Max. connectable conductor cross-sectional area Cu (mm²) *** (400-415V 3N~), (400-415V 3N~), (400V 3N~), (440V 3N~) (L1-L3, N, PE) & (400V 3~), (440V 3~), (460V 3~), (480V 3~) (L1-L3, PE) & (230V 1N~) (L1, N, PE)	2.5
Max. connectable conductor cross-sectional area Cu (mm²) *** (230V 3~), (230V 3~) (L1-L3, PE) & (400V 3N~) (L1-L3, N, PE)	4.0
Max. connectable conductor cross-sectional area Cu (mm²) *** (200V 3~), (208-240V 3~), (230V 3~), (L1-L3, PE)	6.0

* Other voltages on request

** Option

*** 2-metre-long cable included

WATER, DRAIN AND VENTILATION CONNECTIONS	
Water quality, hardness (°dH)	2–7
Water connection 5-65°C (exterior thread) **	R½"
Waste pipe connection, PP pipe (ø mm)	50
Water capacity, pressure (kPa) ***	180
Water capacity, flow (litres/min.)	18
Water capacity, hood lift, pressure (kPa) *, ***	300
Floor drain, capacity (litres/sec.)	3
Heat load to room, latent / sensible / total (kW)	0.6 / 1.7 / 2.3

* option

** With water colder than 55°C, we recommend a 12kW booster heater

*** At lower pressures, the machine should be supplemented with a break tank

SIZE AND WEIGHT FOR TRANSPORT	
Size, LxWxH (mm) **	765 x 710 x 1560
Weight (kg) **	115 / 140 *

* option

** Including packaging