

Operating instructions



MTR



MTF

Operating instructions

For Winterhalter MTR series rack conveyor dishwashing machines and
for Winterhalter MTF series flight-type dishwashing machines

1 Table of contents

1	Table of contents	1
2	About these instructions	3
2.1	Explanation of terminology used.....	3
2.2	Explanation of symbols used.....	3
3	Product description	3
4	Safety notes	4
4.1	Designated use.....	4
4.2	Non-designated use	4
4.3	Handling chemicals (detergent, rinse aid, descaler, etc.)	4
4.4	General safety notes	4
4.5	Daily cleaning and care	5
5	Before working with the machine	5
5.1	Checking for completeness	5
5.2	Initial start-up	5
6	Controls	6
6.1	Switching on the screen	6
6.2	Menu levels.....	6
6.3	Screen saver.....	7
7	Operation	7
7.1	Making ready for operation.....	7
7.1.1	Before switching on the machine	7
7.1.2	Switching on.....	8
7.2	Washing with the standard programmes.....	8
7.2.1	Starting / stopping transport.....	9
7.2.2	Having the transport run backwards	9
7.2.3	Washing (MTF series machines)	9
7.2.4	Washing (MTR series machines).....	10
7.2.5	Container programme	10
7.2.6	Breaks in operation	11
7.3	Washing with the special programmes	11
7.3.1	Glasswashing programme.....	11
7.3.2	Rinsing with osmosis water (can be switched on)	11
7.3.3	Rinsing with softened water and osmosis water (cannot be changed)	11
7.3.4	Example: Washing in the glasswashing programme and rinsing with osmosis water (can be switched on)	12
7.4	Routine checks	13
7.5	Water change in zone 1	14
7.6	Switching off the machine.....	14
8	Maintenance and care	15
8.1	Every day.....	15
8.1.1	Cleaning the grease filter.....	15
8.1.2	Cleaning programme.....	15
8.1.3	Checking external water treatment	17
8.2	Every month.....	17
8.2.1	Cleaning the exhaust air system.....	17
8.2.2	Cleaning the dirt trap	17
8.2.3	Descaling.....	18
8.3	Maintenance by customer service	19
8.4	Changing the detergent product	19
9	Taking out of service for a long time	20
10	Organisation of the washing process	21
11	Malfunctions	22
11.1	Malfunctions; display by symbols on the screen.....	22
11.2	Malfunctions; display by fault code on the screen	23

Table of contents

11.3	Malfunctions; poor washing result	23
12	Info menu	24
13	PIN menu	24
13.1	The PIN menu.....	25
13.2	Hygiene logbook.....	25
13.3	Operating data.....	26
13.4	Automatic start-up.....	26
13.5	General settings.....	28
13.5.1	Date, time, ° Celsius / ° Fahrenheit.....	28
13.5.2	Setting the contrast	29
13.5.3	Setting the language	29
14	GSM module (option).....	30
15	Data transfer to PC (option).....	32
16	Disposal	32
17	Technical data.....	32
17.1	Technical data	32
17.2	Emissions	33
18	Connecting external dosing equipment (detergent, rinse aid)	34
18.1	Installing the conductivity electrode	34
18.2	Installing the dosing tube (detergent).....	34
18.3	Installing the dosing tube (rinse aid)	35
18.4	Electrical connection	35
18.5	Commissioning the dosing equipment.....	35

2 About these instructions

Chapters 4 to 11 tell you which safety notes should be complied with, how you operate the machine and how to respond to malfunctions.

Chapters 12 to 17 tell you more about the electronic control unit and which special equipment is possible. Chapter 18 describes how the dosing equipment for detergent and rinse aid must be connected. This chapter is intended for service technicians authorised by Winterhalter.

2.1 Explanation of terminology used

Multi-tank dishwasher:	Dishwashing machine with at least 2 tanks; only the terms “machine” or “dishwashing machine” are used subsequently in these instructions.
MTF:	Multi-tank dishwasher with flight-type transport system
MTR:	Multi-tank dishwasher with rack conveyor transport system
Dishes:	General term for plates, cups, cutlery, trays, etc.

2.2 Explanation of symbols used

The following symbols are used:



Danger

Warning against possible severe and even fatal injuries to people if the described precautionary measures are not complied with.



Warning

Warning against possible slight injuries to people or possible damage to property if the described precautionary measures are not complied with.



Caution

Warning against possible defects or irreparable damage to the product if the described precautionary measures are not complied with.

IMPORTANT This provides important information.

INFO This provides useful information.

- These arrows indicate procedural instructions.
- ⇒ This symbol indicates the results of your actions.
- This symbol identifies lists.
- ▶ This symbol refers to a chapter with further information.

3 Product description

In MTR and MTF series dishwashing machines, various kinds of dishes are automatically transported through various zones, washed and dried. Detergent, rinse aid and any additional chemicals are dosed using separate dosing equipment. There are prepared connection terminals for connection purposes (▶ 18).

The machines are operated using a touchscreen. Symbols and animations guide you through the menus, most of which are linguistically neutral.

4 Safety notes

Please read carefully through the safety notes listed here, to ensure safe handling of MTR and MTF series dishwashing machines.

4.1 Designated use

- MTR and MTF series dishwashing machines are exclusively to be used for washing crockery such as plates, cups, cutlery and trays in catering and similar companies.
- In MTF series dishwashing machines, the dishes are placed directly on the conveyor belt. Small items such as glasses or cutlery are sorted, put into washing racks and placed on the conveyor belt.
- In MTR series dishwashing machines, all of the dishes are sorted into racks and transported through the machine. Always wash using washing racks suitable for the dishes. Never wash without a washing rack.
- We recommend only washing glasses if the dishwashing machine is equipped with the special glasswashing programme. The reduced rinse temperature in this programme prevents premature glass corrosion.
- We recommend only washing containers such as catering containers if the dishwashing machine is equipped with the special container washing programme.
- MTR and MTF series dishwashing machines are technical implements for commercial use and are not intended for domestic applications.

4.2 Non-designated use

- Do not use the dishwashing machine for washing electrically heated cooking implements or items made from wood.
- Do not wash plastic items unless they are thermostable and will not be damaged by the detergent solution.
- Only use a suitable detergent to wash aluminium items such as pans, containers or trays, so as to prevent black discolouration.
- Winterhalter Gastronom GmbH will not accept liability for any damage caused by failure to use the dishwashing machine in accordance with the designated use.

4.3 Handling chemicals (detergent, rinse aid, descaler, etc.)

- When using chemicals, comply with the safety notes and dosage recommendations printed on the packaging.
- Wear protective clothing, protective gloves and protective goggles when handling chemicals.
- Only use products that are suitable for commercial dishwashing machines. Such products are identified accordingly. We recommend using products developed by Winterhalter. These are specially adapted for Winterhalter dishwashing machines.
- Do not mix different detergent products together because this could result in crystallisation and consequently cause irreparable damage to the detergents dosing equipment.
- Do not use any foaming products, e.g. handwashing soap, soft soap, handwashing products. These products are not allowed to enter the machine, even due to preliminary treatment of the crockery.

4.4 General safety notes

- Carefully read through the safety and operating notes contained in these instructions. Winterhalter Gastronom GmbH will not accept any liability or honour any product guarantees if the safety notes are not complied with.
- Keep the machine documents close to hand. The Winterhalter service technicians requires the circuit diagram for repairs.
- For your own safety, regularly test the residual-current circuit breaker (RCCB) installed in the building by pressing the test button.
- The equipment is not allowed to be installed in a potentially explosive atmosphere or in areas subject to frost.
- Load sharp, pointed utensils so that they do not represent an injury hazard.
- Keep children away from the machine. The interior of the machine holds a solution of detergent in hot water at about 60 – 85 °C.

- Train the operating personnel in how to use the machine, and inform them of the safety notes. Repeat the training at regular intervals in order to avoid accidents.
- Only use your fingers to operate the touchscreen, not sharp objects.
- Have the machine connected by authorised technicians in accordance with the locally applicable regulations (water, waste water, electricity, ventilation).
- Close the water stopcock in the building after completing work. There may be up to three stopcocks depending on the size of the machine and its level of equipment.
- Switch off the mains disconnecter in the building or the built-in mains disconnecter on the machine after completing work.
- Do not open any doors when the machine is washing. There is a risk that hot washing solution could spray out. Switch the machine off first.
- Do not place any towels or other objects on top of the machine, since suction openings are located there and they must not be covered up.
- Do not reach into the exhaust air pipe and do not cover the exhaust air pipe.
- Do not reach into the jet of the drying zone.
- During washing, do not reach inside the machine at either the infeed or outfeed end.
- Do not reach into the conveyor belt during washing.

4.5 Daily cleaning and care

- Comply with the instructions on maintenance and care given in these instructions (► 8).
- Put on protective clothing and protective gloves before holding parts that are covered with tank water (filters, washing arms, curtains, etc.).
- Do not use a pressure washer or water hose for cleaning the machine and its immediate vicinity.
- Use a water hose and a brush (not a pressure washer) for cleaning the interior of the machine.
- Do not use any scouring powder or abrasive cleaning agents.
- During daily cleaning, make sure that no foreign objects that could start to rust have been left in the interior of the machine; these could induce corrosion of the stainless steel material. Rust particles might be from non-stainless steel dishes, cleaning aids, damaged wire racks or water pipes that do not have corrosion protection.
- Clean the outside of the machine using a suitable stainless steel cleaner and a soft cloth. We recommend Winterhalter Gastronom stainless steel cleaner and stainless steel polish.

5 Before working with the machine

- Have the machine installed by your Winterhalter service technician or dealer. Comply with chapter 9 if the installation location is not frost-free.
- Have the machine connected by authorised technicians in accordance with the locally applicable standards and regulations (water, waste water, electricity, ventilation).
- In addition, have the machine connected to the steam and condensation pipes if it is heated by steam.
- Have the machine commissioned by a service technician authorised by Winterhalter. At the same time, have yourself and your operating personnel trained in how to operate the machine.

5.1 Checking for completeness

- Refer to the delivery note to check the delivery is complete and look for any transport damage.
- Immediately inform the transport company, the insurance company and the manufacturer in case of damage.

5.2 Initial start-up



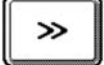
- After the machine has been correctly connected to the supply lines in the building, contact the Winterhalter branch that is responsible for the location in order to request initial start-up and instruction in how to operate the machine.

6 Controls

The machine is operated using a touchscreen with touch-sensitive buttons (keys).

When you touch the buttons, actions are triggered or information is displayed. Each time you press a button, this is confirmed by an acoustic signal.

The appearances of the buttons have the following meanings:

	Thin dotted frame; dark background	Button cannot be pressed (is not available / cannot be activated)
	Thick white frame; dark background	Button can be pressed (is available / can be activated)
	Thick white frame; white background	Button has been pressed / activated

6.1 Switching on the screen



Screen 01

- Touch the screen surface with your finger.
 - ⇒ The screen switches on (screen 01) and switches off after a short time (to prevent the machine being switched on inadvertently during cleaning).

INFO: The time before switching off can be changed by the Winterhalter service technician (► 17.1).

6.2 Menu levels

There are two menu levels, one of which is protected by a PIN. Each screen has a number at the bottom right to facilitate understanding if there are any queries.

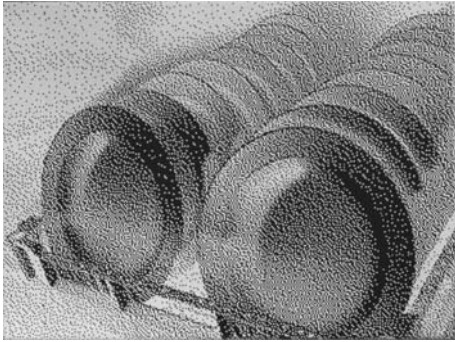
Menu level for the washing personnel

This menu level mostly has linguistically neutral symbols to make it as easy as possible to operate the machine and instruct the personnel.

Menu level for the kitchen manager

The menu level for the kitchen manager can be accessed after entering a PIN. There, it is possible to make settings and call up stored data.

6.3 Screen saver



A screen saver appears if you do not make any screen entries for a certain length of time when the machine is switched on. The screen goes dark if a further period of time elapses without any entries. Touching the screen switches it back on.

INFO: The screen saver does not appear unless the machine is filled. There is no screen saver in the PIN menu (► 13). The times for the screen saver can be changed by the Winterhalter service technician (► 17.1).

7 Operation

7.1 Making ready for operation

This explains how to make the machine ready for operation. You can also program the machine to switch on automatically at a certain time (► 13.4) and be ready to operate about 15 – 25 minutes later (depending on the water inlet temperature and the machine size).

7.1.1 Before switching on the machine

- Open the water stopcock in the building. There may be up to three stopcocks depending on the size of the machine and its level of equipment.
- Switch on the mains disconnecter in the building or the built-in mains disconnecter on the machine.
- For your own safety, test the residual-current circuit breaker (RCCB) installed in the building by pressing the test button.
- Open the doors and check that all filters (strainers, filter inserts), barrier curtains and washing arms are in place.
- Check that the grease filter at the machine infeed is in place.
- Close all doors.



Warning

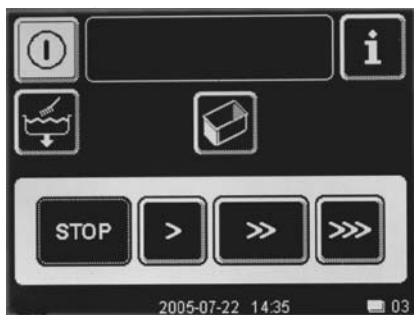
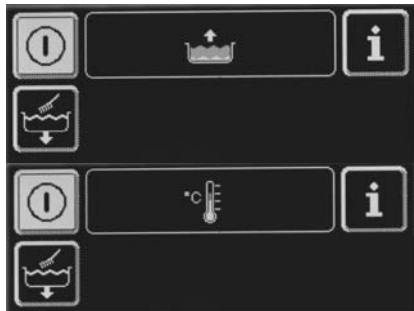
When using chemicals, comply with the safety notes and dosage recommendations printed on the packaging.
Wear protective clothing, protective gloves and protective goggles when handling chemicals.
Do not mix different detergent products together.

- Check whether there is detergent or rinse aid in the storage tanks (drum or container). Top them up in good time or renew the storage tanks so that the washing result will not be impaired. Depending on the machine equipment level, the screen may also display when the storage tanks are empty.
- If there are any swivelling table elements (e.g. roller conveyor) present, fix them in their working position.

7.1.2 Switching on



Screen 01



Screen 03

- Touch the screen surface with your fingertips.
 - ⇒ Screen 01 appears.
- Press the button (1) for about 2 seconds until the next screen menu appears.




- ⇒ The tanks of the machine are automatically filled and heated at the same time.
- ⇒ Detergent is dosed into the last washing tank (assuming dosing equipment is connected). Detergent is dosed into the washing tanks upstream of this one during ongoing operation.
- ⇒ Once the rated level has been reached in all tanks, the animated temperature symbol appears on the screen until the rated temperatures have been reached.

- ⇒ The temperature symbol disappears as soon as the rated temperatures have been reached. The machine is ready (screen 03).

INFO: The machine is supplied from the factory programmed so that it can be started as soon as the rated level in the tanks is reached. If you are working according to HACCP directives, the Winterhalter service technician can program the machine so the operating personnel cannot start it until the rated temperatures have also been reached.

7.2 Washing with the standard programmes

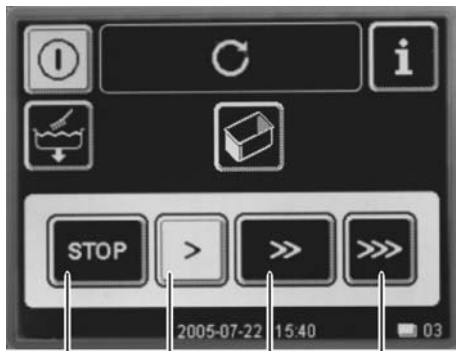
The machine can be operated with three different transport speeds.

	Intensive programme; Transport at slow speed	For heavily soiled dishes
	Normal programme; Transport at medium speed	For normally soiled dishes
	Rapid programme; Transport at high speed	For lightly soiled dishes

The normal programme and the intensive programme ensure the contact time between the dishes and the tank water of at least 2 minutes as required by DIN 10510.

The rack capacity or plate capacity per hour depends on the machine model.

7.2.1 Starting / stopping transport



- Touch one of the three buttons (3 / 4 / 5) for the transport speed.
 - ⇒ The drive system starts. This is indicated by the symbol.
- If you want to change the transport speed: Touch one of the other buttons (3 / 4 / 5).
- If you want to stop the drive system: Touch the “STOP” button (6).
- Touch the button if you want to wash containers such as catering containers (► 7.2.5)

7.2.2 Having the transport run backwards

In case any object gets jammed in the drive system, you can have the conveyor belt / push bar run backwards.

- Press the “STOP” button (6) for 5 seconds.
 - ⇒ The conveyor belt / push bar runs backwards for a defined distance and then stops again.
- Remove the object.

7.2.3 Washing (MTF series machines)

- Remove general debris (left-over food, serviettes, etc.) from the crockery.
- Place plates, trays and the like onto the conveyor belt with their hollow profile facing towards the machine.
- Place bowls on the conveyor belt with their hollow side downwards.
- Sort cups, glasses and cutlery into suitable washing racks and place them on the conveyor belt.

Examples



Plates



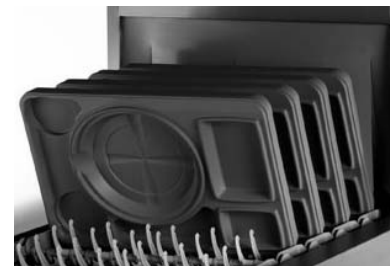
Cups



Cutlery



Small containers



Bases



Trays

INFO: Bars are available as accessories for placing between the fingers of the conveyor belt. The washing racks can then be placed on the bars.

INFO: The individual zones switch on automatically as soon as the crockery enters the zone.

- If possible, do not remove the washed crockery from the conveyor belt until it reaches the end of the unloading zone so that it has sufficient time to dry by itself. For continuous washing, you should remove the crockery before it actuates the stop switch and the transport is switched off.

IMPORTANT: See also point 10 "Organisation of the washing process" for information about optimum working sequences and about hygiene in the washing kitchen. The leaflets produced by the VGG (Verband der Hersteller von gewerblichen Geschirrspülmaschinen e.V. / Association of Manufacturers of Commercial Dishwashing Machines, based in Hagen, Germany) are helpful in this regard.

7.2.4 Washing (MTR series machines)

- Remove general debris (left-over food, serviettes, etc.) from the crockery.



- Place plates, trays and the like into the washing racks with their hollow profile facing forwards.
- Place bowls in the washing racks with their hollow side downwards.
- Sort cups, glasses and cutlery into suitable washing racks.
- Spray the crockery with cold water using a hand shower so that as little debris as possible is carried into the machine. (More debris equates to more detergent consumption).
- Push one washing rack after another into the machine.

INFO: The individual zones switch on as soon as a washing rack enters the zone.

- Leave the washing racks on the outfeed table for as long as possible until the crockery is dry. For continuous washing, however, you should remove the washing racks from the outfeed table before the stop switch is actuated and the transport is switched off.

IMPORTANT: See also section 10 "Organisation of the washing process" for information about optimum working sequences and about hygiene in the washing kitchen. The leaflets produced by the VGG (Verband der Hersteller von gewerblichen Geschirrspülmaschinen e.V. / Association of Manufacturers of Commercial Dishwashing Machines, based in Hagen, Germany) are helpful in this regard.

7.2.5 Container programme



Application:

- A programme for washing containers such as catering containers

Default settings:

- Washing with medium transport speed (>>)
- The other speeds (>; >>>) can also be selected after the start
- The pump in the rinse zone is switched off

7.2.6 Breaks in operation

- Do not switch the machine off during breaks, so as to maintain the rated temperatures. The drive system continues to run for about 5 minutes after the crockery has exited the rinse zone. The selected transport speed remains set. You can continue working straight away after the break.

After the break in operation:






- MTF series: Start the conveyor belt drive by pressing the round button on the end of the machine or by using the screen, in which case you must touch one of the buttons for the transport speed.
- MTR series: Push a washing rack past the transport pawls into the machine until the drive starts.

7.3 Washing with the special programmes

Various special programmes are available depending on the machine equipment level. The Winterhalter service technician can alter the default settings if required.

Available special programmes:

	Glasswashing programme
	Rinsing with osmosis water (can be switched on)
	Rinsing with softened water and osmosis water (cannot be changed, no screen display)
	Glasswashing programme and rinsing with osmosis water (can be switched on)

7.3.1 Glasswashing programme

Default settings:

- Washing with slow transport speed
- The other speeds can also be selected after the start
- Pre-rinse zone (if installed) switched off
- Rinsing with osmosis water (if connected)
- Reduced rinse temperature
- Heating of the drying zone (if installed) switched off; only with blower



INFO: Touch the  button if you do not want rinsing to be performed with osmosis water.

7.3.2 Rinsing with osmosis water (can be switched on)

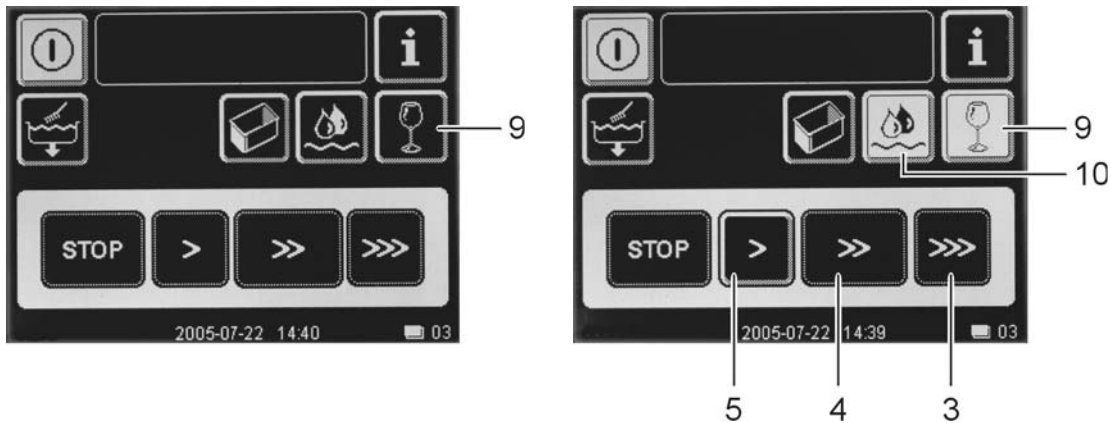
Default setting:

- Preselected in the glasswashing programme
- Can be switched on for all other programmes
- Both rinse lines are operated with osmosis water as soon as the softened water has been displaced by osmosis water in the pipes of the rinse system.

7.3.3 Rinsing with softened water and osmosis water (cannot be changed)

In all programmes, rinsing is performed half and half with softened water and osmosis water. This feature is not displayed on the screen.

7.3.4 Example: Washing in the glasswashing programme and rinsing with osmosis water (can be switched on)




➤ Touch button (9).

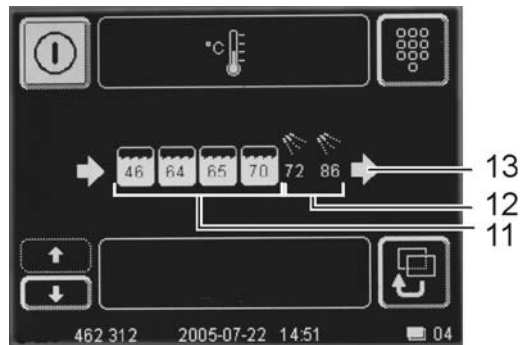
Result

- ⇒ Button (9) is active
- ⇒ Button (10) is active. Rinsing is done with osmosis water.
- ⇒ Button (5) is available; buttons (3) and (4) are blocked

- Touch button (10) if you do **not** want rinsing to be performed with osmosis water
 - ⇒ Button (10) is dark.
- Touch button (5).
 - ⇒ The conveyor belt or the rack conveyor transport runs at slow speed.
- Sort the glasses into suitable washing racks.
- Place the washing racks onto the conveyor belt or push the washing racks into the machine.
- Touch button (3) or (4) if you want to wash at a higher transport speed.
- Remove the washing racks at the end of the unloading zone or the outfeed table.

7.4 Routine checks

- Touch the  button to call up the INFO menu (▶ 12).



INFO: The display depends on the size of the actual machine

- ⇒ The screen shows the following information in symbolic form:
 - (11) The tanks with the current temperatures
 - (12) Rinsing with the current temperatures for lines 1 and 2
 - (13) Working direction of the machine
 - Fault messages (if installed)
 - Events (e.g. Machine ON, Machine OFF, Ready, Start >, Start >>, Start >>; STOP, etc.)
- Tell the Winterhalter service technician about the fault messages.
- Check the displayed values with the temperatures specified by DIN 10510. (▶ 17.1).



Warning

When using chemicals, comply with the safety notes and dosage recommendations printed on the packaging.
Wear protective clothing, protective gloves and protective goggles when handling chemicals.
Do not mix different detergent products together.

- Check whether there is detergent or rinse aid in the storage tanks (drum or container). Top them up in good time or renew the storage tanks so that the washing result will not be impaired.
- Check that the crockery is cleaned.



Warning

Put on protective clothing and protective gloves before holding parts that are covered with tank water (filters, washing arms, curtains, etc.).

- Open the doors and clean the strainers if they are excessively contaminated. There is no need to drain the water in order to do this.
- Reinsert the strainers.
- Clean the interior of the machine if it is excessively contaminated.
- Close the doors.
- Drain the tank in the first zone if it is excessively contaminated (▶ 7.5).

7.5 Water change in zone 1

If the tank in the first zone is very heavily contaminated, it can be drained separately from the other tanks and refilled.



Screen 03



Screen 05

- Touch button (7).
 - ⇒ This stops the drive.
 - ⇒ Screen 05 appears.
- Touch button (8).
- ⇒ The tank of the first zone is drained, refilled and heated up.
- Touch button (8) again if you want to interrupt the procedure.

INFO: For larger machines, the Winterhalter service technician can alter the programming if requested so that several tanks can be drained.

7.6 Switching off the machine

- Press the on/off button (1).
 - ⇒ The screen goes dark and the machine is switched off. The tanks remain filled, but they are no longer kept up to temperature.



Warning

The machine remains live until the built-in mains disconnect or the mains disconnect in the building is switched off.

- Proceed as described in point 8.1 if you want to drain the tanks and clean the machine at the end of a working day.

8 Maintenance and care



Warning

Do not use a pressure washer or water hose for cleaning the machine and its immediate vicinity.

8.1 Every day

8.1.1 Cleaning the grease filter



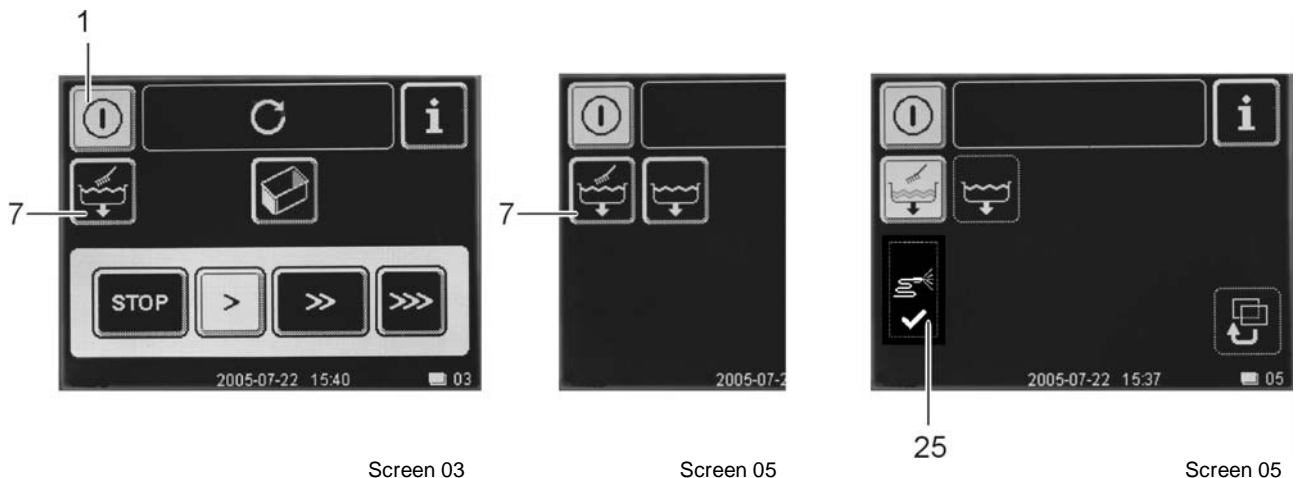
The grease filter protects the exhaust air system and the heat exchanger (if installed) against a buildup of grease. The grease filter must be cleaned daily in order to function properly.

- Remove the grease filter.
- Place the grease filter onto a washing rack or the conveyor belt and clean it in the machine at slow transport speed (>).
- Reinsert the grease filter.

8.1.2 Cleaning programme

The machine is equipped with a cleaning programme that assists you in cleaning the interior of the machine. The programme runs automatically. After its first part, you can clean the interior of the machine manually with a hose and brush if required. The interior is automatically rinsed and drained during the second part.

Starting the cleaning programme



- Touch button (7).
 - ⇒ This stops the drive.
 - ⇒ Screen 05 appears.
- Touch button (7). Touch button (7) again if you want to interrupt the procedure.
 - ⇒ The cleaning programme is started:
 - Button (25) “Clean interior” appears but cannot be pressed yet.
 - The circulating pumps are activated in order to rinse out the interior of the machine with tank water.
 - The heat exchanger is rinsed out with hot water (OPTION).
 - The drive system runs.
 - Roof cleaning jets clean the interior of the machine with hot water from the rinse zone.
 - All tanks are drained.



- The “Clean interior” button (25) flashes once all the tanks have been emptied. If required, you can now clean the interior manually with a hose and brush. The time shown on the button counts down from 15 minutes. The time displays when the cleaning programme will automatically finish, assuming you do not want to clean the interior manually.

Cleaning the interior



Put on protective clothing and protective gloves before holding parts that are covered with tank water (filters, washing arms, curtains, etc.).

- Open the doors and remove the curtains.
- Clean the curtains.



- Remove the washing arms (individually or in their cassette).
- Wash out the washing arms if the jets are blocked.

- Remove and clean the strainers and the filter inserts over the tank floor drains.
- If the interior of the machine is dirty: Clean the interior of the machine with a sponge and a brush. If necessary, you can spray the interior with a hose.
- Use a brush to clean the filters covering the pump inlet openings. The filters can be removed if necessary.
- Reinsert the filter inserts into the tank floor drains.
- Reinsert the strainers. 2 filters must be positioned one over the other in the scraping zone.
- MTF series machines: Reinsert the washing arms. The washing arms are all the same and cannot be mixed up.
MTR series machines: Reinsert the washing arms. The upper washing arms have 6 jets, the lower ones have 5.
- Reinsert the curtains. The curtains are designed (coded) so they cannot be inserted in the wrong position.
- Close the doors.

Finishing the cleaning programme



- If you have cleaned the interior and the time on the button has already counted down, then the cleaning programme continues after you close the doors.
 - ⇒ All tanks are drained, washed out with hot water and drained again.
 - ⇒ The machine switches itself off afterwards.



- If you do not want to clean the interior or have finished before the time has counted down, touch the "Clean interior" button.
 - ⇒ All tanks are drained, washed out with hot water and drained again.
 - ⇒ The machine switches itself off afterwards.

Cleaning the outside of the machine

- MTF series machines:
 - Clean the filters in the loading zone.
 - Clean the floor filter in the loading zone.
 - Clean the loading and unloading zones.
- MTR series machines:
 - Clean the connected table system.
- Clean the exterior surfaces with a stainless steel cleaner and stainless steel polish.
- Close the stopcock in the water pipe in the building. There may be up to three stopcocks depending on the size of the machine and its level of equipment.
- Switch off the mains disconnecter in the building or the built-in mains disconnecter on the machine.

8.1.3 Checking external water treatment

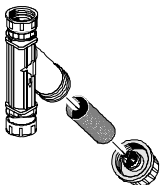
- Check whether sufficient regeneration salt has been added.

8.2 Every month

8.2.1 Cleaning the exhaust air system

- Remove the grease filter.
- Clean the exhaust air pipes with a water hose and hot water. The water flows back into the tank in the last zone. If necessary, use a degreasing agent and a long brush.

8.2.2 Cleaning the dirt trap



- Clean the debris filter in the dirt trap

8.2.3 Descaling

If the machine is operated with very hard water and without corresponding water treatment, limescale can build up in the boilers, the interior of the machine and in all pipes that carry water.

Limescale deposits and the incorporated dirt and grease residues represent a hygiene risk and the limescale can cause the heating elements to fail. Therefore, it is essential to remove these deposits at regular intervals.

The job of correctly descaling the boilers and all pipes that carry water should be entrusted to a Winterhalter service technician.

However, you can descale parts of the interior of the machine yourself by following the instructions below.



Caution

If the machine is equipped with a heat pump, it is essential for the machine to be connected to softened water so as to prevent any limescale buildup in the heat exchanger.

- Drain the machine (► 8.1.2).
- Interrupt the detergents dosing (e.g. pull out the suction tube or switch off the dosing equipment) in order to prevent chlorine gas from being formed if the detergent containing active chlorine comes into contact with descaler.
- Fill the machine (► 7.1.2).



Warning

When using chemicals, comply with the safety notes and dosage recommendations printed on the packaging.

Wear protective clothing, protective gloves and protective goggles when handling chemicals.

- Add the descaler to each of the tanks of the machine in accordance with the recommended dosage.
- MTR series machines: Run the machine with empty washing racks until all the limescale deposits have been removed.
- MTF series machines: Put plates onto the conveyor belt and run the machine until all the limescale deposits have been removed.
- It may be necessary to dose additional descaler after an operating time of about 10 minutes.
- Drain the machine (► 8.1.2).



Caution

The descaler is not allowed to remain in the machine for several hours.

- Fill the machine (► 7.1.2).
- MTR series machines: Run the machine with empty washing racks in order to remove descaler residue from the washing system.
- MTF series machines: Put plates onto the conveyor belt and run the machine in order to remove descaler residue from the washing system.
- Drain the machine (► 8.1.2) again.
- Restore the detergents dosing to operational status.

8.3 Maintenance by customer service



We recommend having the machine serviced at least twice a year by a Winterhalter service technician. This service should also include having components subject to wear or ageing being checked and renewed if necessary.

Examples of such components:

- Water supply hoses
- Dosing tubes
- Splash curtains
- Door seals

Winterhalter offers a service contract that includes this work, amongst other jobs.

In the electronic control unit, it is possible to program the maintenance interval in operating hours and at what number of remaining operating hours the symbol for maintenance/service should be displayed. (► 17.1) Contact your Winterhalter service technician.

8.4 Changing the detergent product

If you want to use a different detergent product, you will have to rinse out the suction and pressure hose with fresh water. This is the case even if the new detergent product is from the same manufacturer.

Mixing different detergent products together can result in crystallisation and cause the dosing equipment to malfunction.

Winterhalter Gastronom GmbH will not accept any liability or honour any product guarantees if this instruction is not complied with.

As a rule, a new detergent product means it is also necessary to re-adjust the dosing equipment. The Winterhalter service technician can assist you in this.

Procedure:



When using chemicals, comply with the safety notes and dosage recommendations printed on the packaging.

Wear protective clothing, protective gloves and protective goggles when handling chemicals. Do not mix different detergent products together.

- Remove the suction tube from the detergent drum and insert it in a container filled with fresh water.
- Drain the dishwashing machine (► 8.1.2) and refill it again (► 7.1.2). The suction and pressure hose is rinsed out with water.
- Insert the suction tube into the container with the new detergent product.
 - ⇒ Detergent is dosed into the washing tanks as soon as you start operating the machine again.

9 Taking out of service for a long time

Comply with these instructions if you need to take the machine out of service for a long time (company holidays, seasonal working).

- Drain the machine using the self-cleaning programme (► 8.1.2).
- Clean the machine as described in point 8.1.
- Leave the machine doors open.
- Close the water stopcock in the building. There may be up to three stopcocks depending on the size of the machine and its level of equipment.
- Switch off the mains disconnecter in the building or the built-in mains disconnecter on the machine.

If the machine is installed in a room that is not protected against frost:

- Contact a Winterhalter service technician and request frostproofing of the machine:
 - The technician must drain the water from the boilers and blow out the entire rinse system with compressed air.

Taking back into service

- Open the water stopcock in the building. There may be up to three stopcocks depending on the size of the machine and its level of equipment.
- Switch on the mains disconnecter in the building or the built-in mains disconnecter on the machine.
- Switch on the machine.
 - ⇒ The boilers and the rinse system fill automatically. The heating elements in the boilers do not start heating until the minimum level has been reached in the rinse zone tank, in order to protect against burning through.

10 Organisation of the washing process

MTR and MTF series machines fulfil the requirements of DIN 10510 ("Food hygiene – Commercial dishwashing with multitank-transport dishwashers – Hygiene requirements, procedure testing").

You should observe some organisational aspects to enable these machines to achieve hygienically correct results. Additional information is also contained in the leaflets produced by the VGG (Verband der Hersteller von gewerblichen Geschirrspülmaschinen e.V. / Association of Manufacturers of Commercial Dishwashing Machines, based in Hagen, Germany; www.vgg-online.de).

Structural requirements

- The washing area must be separate from the food preparation areas.
- The "clean" side must be separated from the "dirty" side, to prevent the cleaned crockery from becoming soiled again.
- The transport paths for dirty and clean crockery must not intersect.
- The air admission system must be designed to avoid unduly inconveniencing the personnel.
- The air for drying the dishes must have a low germ load.

Organisation

- The time during which food residue can dry onto the dishes should be kept as short as possible so as to prevent bacteria buildup and to facilitate cleaning.
- Remove left-over food and waste from the crockery before you wash it.
- Pre-sort the crockery.
- Load the washing racks so that the crockery does not overlap. It must be possible for the water jets to reach all surfaces. Covered surfaces cannot be cleaned.
- Soak the cutlery before you wash it.
- Different people must be used for loading dirty dishes into the machine and removing the cleaned crockery from the machine.
- Wait until the cleaned dishes have air dried.
- Do not use tea towels.
- Do not stack wet crockery.
- People removing the cleaned crockery must have clean hands or wear clean gloves.
- Clean and disinfect hands with soap and hand disinfectants. Use disposable hand towels.

Requirements on the dishwashing machine


- The temperatures in the individual zones must be within the rated values (► 17.1). Regularly check the temperatures (► 7.4).
Deviations are logged in the hygiene logbook (► 13.2).
- The detergent concentration must be stable and sufficiently high. Follow the information provided by the manufacturer. Regularly check the fill levels of the containers (detergent, rinse aid, disinfectant component).
Deviations are logged in the hygiene logbook (► 13.2).
- Deposits and coatings in the machine must be removed by thorough cleaning. Deposits represent a hygiene risk, because bacteria can build up there. Eliminate the cause of the deposits.

Requirements on the dishes











- Remove damaged crockery from the washing cycle.
- Use crockery that has smooth surfaces.
- Use crockery that does not have deep recesses, to allow the water to reach the whole of the surface area.
- Plastic crockery must be heat resistant, resistant to deformation and free from hairline cracks.
- Water should be able to run off easily, so that the crockery can quickly dry by itself.
- Dishes with deposits must be thoroughly cleaned because deposits can serve as a breeding ground for bacteria. The cause of deposits must be ascertained and eliminated.

11 Malfunctions

This explains what action to take in case of malfunctions. The tables provide information about possible causes and notes on remedial action. Contact the Winterhalter service technician if you are unable to rectify the fault yourself.

 Danger	<p>DANGER! Risk of fatal injury due to live components!</p> <p>Disconnect the machine from the mains and check for the absence of voltage before starting any electrical work on the machine.</p> <p>Do not open any machine covers or machine components if you would require a tool to do so. Electric shock hazard.</p> <p>Have all work on the electrical system performed by a Winterhalter service technician.</p> <p>The machine must be disconnected from the electrical mains first.</p>
--	--

11.1 Malfunctions; display by symbols on the screen

Symbol	Meaning	Possible cause	Remedy
	Door is open		Close all doors MTF: Insert the panels at the end of the loading/unloading zones.
	Detergent drum is empty ¹		Renew the container.
	Rinse aid drum is empty ¹		Renew the container.
	Detergent under dosage ²	Detergent drum is empty	Renew the container.
	Stop switch blocked	Crockery / washing racks are backing up at the end of the conveyor belt or the outfeed table	Release the stop switch (remove the crockery, washing rack)
	Lack of water	Water stopcock(s) closed	Open the stopcock(s)
		Debris filter in dirt trap is blocked	Remove the debris filter and clean it (► 8.2)
		Solenoid valve defective or blocked; feed pump defective	Call customer service
	Water drain blocked	Drain blocked	Clean the drain
	External water treatment ³ exhausted	Lack of salt	Regenerate the external water treatment
	EMERGENCY OFF switch pressed		Release the EMERGENCY OFF switch
	Energy optimisation ⁴	Energy optimisation system in the building switches individual electrical loads (heating elements) off.	Wait until the energy optimisation system in the building switches itself off

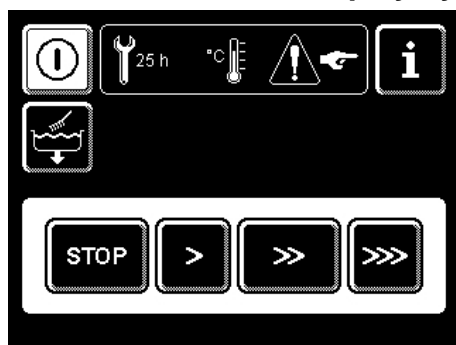
¹ This is only displayed if the container has a container empty indicator that is connected to the machine.


² This is only displayed if the dosing equipment has a conductivity detection function. The fault must be transferred from this dosing equipment to the machine electronic control unit.


³ This is only displayed if the external water treatment system has a water meter that is connected to the machine.


⁴ This is only displayed if the machine is connected to an energy optimisation system.

11.2 Malfunctions; display by fault code on the screen



 appears when malfunctions are not shown by a symbol (► 11.1) on the screen.

- Touch the  button.
 - ⇒ Fault messages appear with a fault code.
- Inform the Winterhalter service technician about faults that occur.

The  symbol reminds you when the next service is due (► 8.3).

11.3 Malfunctions; poor washing result


Crockery is not cleaned	No or insufficient detergent dosed	Set the dosing according to the information provided by the manufacturer Check dosing lines (kinks, break, etc.) Renew container Check the dosing equipment
	Crockery not sorted correctly	Do not stack crockery items on top of one another
	Washing arm jets blocked	Remove washing arms and clean jets
	Transport speed too fast	Set a slower speed
	Temperatures too low	Check the temperatures (► 12), call customer service if the rated values (► 17.1) are not achieved
Deposits form on the crockery	Limescale deposits: Water too hard	Check external water treatment / set correctly Perform thorough cleaning
	Starch deposits: Excessively high temperatures in manual precleaning (shower)	Temperature should be 30 °C at most
Crockery does not dry by itself	No or insufficient rinse aid dosed	Set the dosing according to the information provided by the manufacturer Check dosing lines (kinks, break, etc.) Renew container Check the dosing equipment
	Dry zone does not function or temperature set too low	Call customer service
MTR series: Washing racks are not transported	Table limit switch blocked	Remove washing rack
	Slip clutch not set correctly	Call customer service
MTF series: Conveyor belt does not start	Conveyor belt limit switch blocked	Remove crockery
	Conveyor belt blocked	Inspect conveyor belt If something is jammed, activate conveyor belt reversal: Press the "STOP" button for 5 seconds. The conveyor belt moves backwards through a short distance.

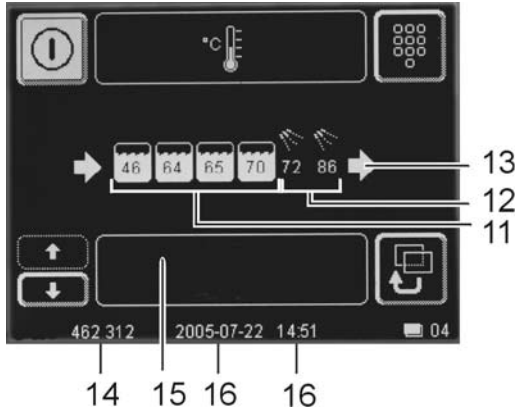
12 Info menu

In the Info menu, you can:

- Read off the current tank and rinse temperatures
- Read off fault messages and events
- Read off the machine type and machine number

How to call up the Info menu:

- If the machine is switched off or the screen is dark: Touch the screen.
- Touch the  button.



Screen 04

- ⇒ The screen (screen 04) shows the following:
- (11) - The tanks with the current temperatures
- (12) - Rinsing with the current temperatures for lines 1 and 2
- (13) - Working direction of the machine
- (14) - Machine type (MTR / MTF) and machine number
- (15) - A list of fault messages and events. You can scroll up and down the list with the ↑ and ↓ buttons.
- (16) - Date, time

From the Info menu, it is possible to access the PIN menu.



13 PIN menu

In the PIN menu, you can:

- Display data (hygiene logbook) ▶ 13.2
- Display operating data ▶ 13.3
- Program automatic start-up ▶ 13.4
- Make general settings (date, time, contrast, language) ▶ 13.5
- Enter addresses for transmission via GSM module (OPTION) ▶ 14

INFO: You cannot operate the machine whilst the PIN menu is active.

How to call up the PIN menu:

- If the machine is switched off or the screen is dark: Touch the screen.
- Touch the  button.
- Touch the  button.



Screen 06

- ⇒ Screen 06 appears.
- Enter the PIN 1575.
 - ⇒ Every digit you enter is displayed as *.
 - You can delete any incorrect digits by pressing the ← button.
- Confirm with the ✓ button.
 - ⇒ The PIN menu appears (▶ 13.1)
 - The "!" symbol appears on the screen if you enter the wrong PIN.
 - Entries are prevented for 2 minutes if an incorrect PIN is entered five times in succession.

13.1 The PIN menu



Hygiene logbook ► 13.2



Operating data ► 13.3



Automatic start-up ► 13.4



Date, time, contrast, language ► 13.5

13.2 Hygiene logbook

In the hygiene logbook, you can:

- Call up all operating statuses and actions during a day in chronological sequence.
- Call up all HACCP and hygiene-relevant data.

The list starts with the current date and the first event on this day. After this, the subsequent events of this day are displayed and then the events of the days before.

Together with your Winterhalter service technician, you can define which data should be stored. On request, you can have deviations from the rated values displayed on the screen so you can respond to malfunctions in good time.

A table with the factory settings can be found in point 17.1 Technical data.

INFO: Once the memory capacity has been exhausted, the oldest data is deleted as soon as new data is added.

How to call up the hygiene logbook:

- Access the PIN menu:   PIN 1575 

- Touch the  button.

- Touch the  button.



13

Screen 09

⇒ The screen (screen 09) with the hygiene logbook appears:

- The list starts with the current date and the first event on this day.
- This is followed by the events of the day before.
- You can scroll up and down the list with the ↑ and ↓ buttons.
- Touch the back button (13) to exit the hygiene logbook.

INFO: The texts are displayed in the language selected as described in point 13.5.3.

13.3 Operating data

Here, you can:

- Read off all operating data.

How to call up the operating data:

- Access the PIN menu:   PIN 1575 

- Touch the  button.



13
Screen 21

⇒ The screen (screen 21) with the operating data appears.

- Initial start-up Date
- Next service in x hours
- Op. hours total x hours
- Op. hours drive x hours
- Water consump.total x litres
- Water consump.demin. x litres
- Op.hours/day x hours
- Op.hours/day drive x hours
- Water consump./day x litres
- Wtr cons./day demin. x litres
- Water reg. capacity x litres

You can scroll up and down the list with the ↑ and ↓ buttons.

- Touch the back button (13) to exit the operating data.

INFO: The texts are displayed in the language selected as described in point 13.5.3.

13.4 Automatic start-up

Here, you can:

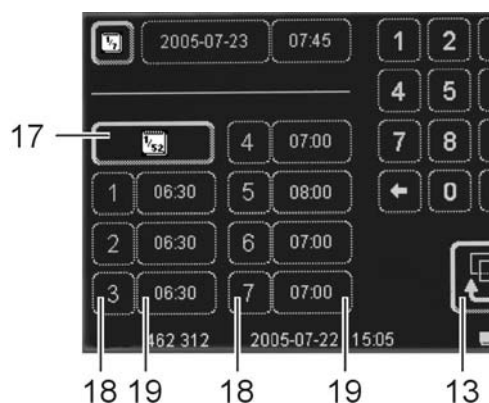
- Enter when the machine should start filling itself and heating up automatically.
 - Enter a different time for each day of the week.
 - Enter a time for a certain date that is different from the weekly programme. This date takes precedence over the weekly programme.
- Make sure that the machine doors are closed at the time when automatic start-up should occur.

How to program automatic start-up:

➤ Access the PIN menu:   PIN 1575 

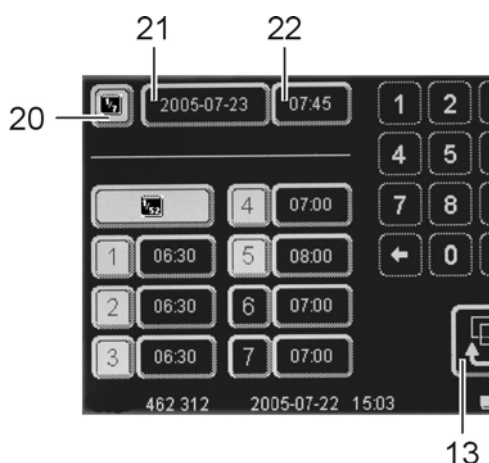
➤ Touch the  button.

Weekly programme



- Touch button (17).
 - ⇒ The buttons for the days of the week (18) can be activated.
- Touch one of the buttons 1 – 7 corresponding to the day of the week that you want to program. (1 = Monday, 2 = Tuesday, etc.)
 - ⇒ The pressed button becomes active (white background).
- Touch the button for the time (19).
- Use the numeric keypad to enter the time when the automatic start-up should start.
- Enter the times for the remaining days.
 - ⇒ The selected buttons (18) become active (white background).

Special day



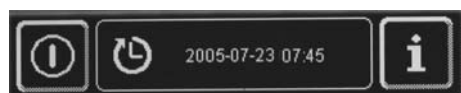
- Touch button (20).
 - ⇒ The buttons for the date (21) and the time (22) can be activated.
 - ⇒ The day after the current day is suggested automatically.

Use the numeric keypad to enter the date and time when the automatic start-up should start.

INFO: The programmed date takes precedence over the weekly programme.

In this example, automatic start-up has been programmed for 5 days of the week

- Monday, Tuesday, Wednesday: Start at 06:30 h
- Thursday: Start at 07:00 h
- Friday: Start at 08:00 h
- Saturday, Sunday: No automatic start-up
- As a deviation from the weekly programme, the machine will start operating at 07:45 h on a certain date (2005-07-23).



INFO: The date and time of the next automatic start-up are displayed when the machine is switched on. However, the machine can also be started up from this moment on.

13.5 General settings

13.5.1 Date, time, °Celsius / °Fahrenheit

INFO: The time must be changed in response to the summertime / wintertime time changes.

Here, you can:

- Enter the current date.
- Enter the current time.
- Change the time format.
- Change the unit of measurement for the temperature display.

How to call up the settings:

- Access the PIN menu:   PIN 1575 

- Touch the  button.

- Touch the  button.



Setting the date:

- Touch button (23).
- Enter the current date using the numeric keypad.
Format: YYYY-MM-DD (year-month-day)
The system checks to make sure you have entered a valid date.
Your entry will not be accepted if it is implausible.

Enter the time format:

- Select whether the time should be displayed in 24-hour or AM/PM mode.
- Touch the “24h” or “AM/PM” button.

Setting the time:

- Touch button (24).
- Enter the current time using the numeric keypad.

Defining the unit of measurement for temperature:

- Touch the “°C” or “°F” button depending on which unit of measurement you want to use for displaying temperatures.






- Touch the back button (13) to exit this area.

13.5.2 Setting the contrast

Here, you can:

- Change the contrast to adapt the screen display to the lighting conditions in your kitchen.

How to call up the settings:






- Access the PIN menu:   PIN 1575 
- Touch the  button.
- Touch the  button.
- Use the ◀ or ▶ button to change the setting until you can see all the data clearly on the screen.
- Confirm with the ✓ button.
- Touch the back button (13) to exit this area.

13.5.3 Setting the language

Here, you can:

- Set the language used for displaying texts on the screen.

How to call up the settings:

- Access the PIN menu:   PIN 1575 
- Touch the  button.
- Touch the  button.
- Select the required language.
- Touch the back button (13) to exit this area.

14 GSM module (option)

Together with your Winterhalter service technician, you can define which fault messages should be forwarded via text message or e-mail using the GSM module.

This involves the Winterhalter service technician making the following settings (P9928):

- Data transfer via text message, or
- data transfer via e-mail, or
- data transfer via text message and e-mail

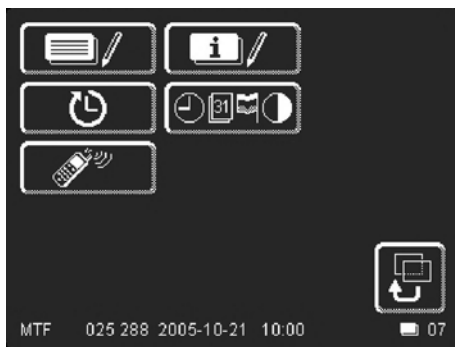
Examples:

- An empty detergent or rinse aid drum causes a fault message to be generated, and the message is automatically forwarded to your company technician.
- As soon as the next service is due, your company technician receives a message and can contact the Winterhalter service technician.
- ...

This system offers you the security of knowing that faults with a critical effect on hygiene can be quickly detected and rectified.




How to define the mobile phone number for data transfer via text message:

- Access the PIN menu:   PIN 1575 



Screen 07

⇒ Screen 07 appears.

- Touch the  button.
- Touch the  button.
- Touch the  button.
- Enter a mobile phone number using the numeric keypad.

Format:

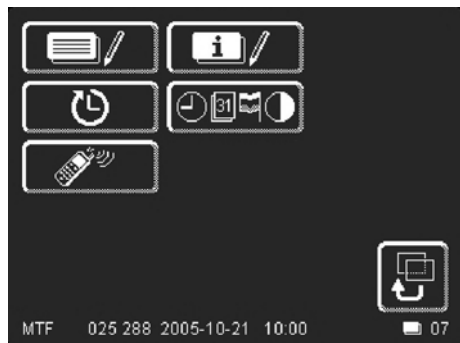
- International dialling code, omitting the “00” e.g. 44 for UK
- Network prefix, omitting the “0” e.g. 170
- Phone number of the mobile phone e.g. 787700

⇒ Result: 44170787700

- Confirm with the ✓ button.
- Touch the back button (13) to exit the menu.
- ⇒ The entered mobile phone number appears in full on the screen.




How to define the e-mail address for data transfer via e-mail:

- Access the PIN menu:   PIN 1575 



Screen 07

⇒ Screen 07 appears.

- Touch the  button.
- Touch the  button.
- Touch the  button.
- Enter an e-mail address using the keypad.

Format:

- Shortcode number of your network operator e.g. 80239 for Orange
80239 for Vodafone
80239 for T-Mobile
80239 for O2
- A colon :
- E-mail address e.g. firstname.lastname@winterhalter.co.uk
(max. 50 characters)

⇒ Result: 80239:firstname.lastname@winterhalter.co.uk

- Confirm with the ✓ button.
- Touch the back button (13) to exit the menu.
- ⇒ The entered e-mail address appears on the screen.

The following data is transferred in the text message or e-mail

- Machine number
- Error code
- Date / time
- GSM phone number of the machine
- Commissioning date
- Total operating hours

15 Data transfer to PC (option)

The hygiene logbook can only hold a limited number of entries. Therefore, it is also possible to transfer the entries to a PC and archive them there.

Refer to the corresponding documents for further information.

16 Disposal

Contact your dealer so that the materials contained in the machine can be recycled as far as possible.

17 Technical data

17.1 Technical data

Factory settings for temperature


Area	Temperatures acc. to DIN 10510		Factory setting
	Detergent without disinfectant component	Cleaner with a sufficient proportion of a disinfectant component	
Pre-wash zone	40 to 50 °C	40 to 50 °C	45 °C
Main wash zone	60 to 65 °C	55 to 65 °C	62 °C
Pump rinsing	60 to 70 °C	60 to 70 °C	67 °C
Fresh water rinsing	80 to 85 °C	80 to 85 °C	Boiler 1: 70 °C Boiler 2: 82 °C

Factory settings for hygiene logbook

Event	Screen display	Stored in hygiene logbook
Rinse aid container empty	Yes	Yes
Detergent container empty	Yes	Yes
Detergent under dosage	Yes	Yes
Service interval expired	Yes	Yes
Temperature zone 1 – 6 below requirement	Yes, in Info menu	Yes
Boiler 1 temperature violation (too high or too low)	Yes, in Info menu	Yes
Boiler 2 temperature violation (too high or too low)	Yes, in Info menu	Yes

Other events are possible on request

Screen factory settings

Event	Possible selections	Factory setting
Time during which screen 01 (► page 6) is displayed	0 – 31 seconds	10 seconds
Screen saver	Yes/no	Yes
Screen saver appears after	0 – 63 minutes	5 minutes
Screen goes dark	Yes/no	Yes
Screen goes dark after	0 – 63 minutes	15 minutes
Maintenance interval (calculated in operating hours): Remaining time is displayed in PIN menu (► 13.3)	0 – 8191 hours	4095 hours
 Display of how many hours until next maintenance is required (► 8.3)	0 – 127 hours	50 hours
Acoustic signal when buttons touched	Yes/no	Yes
Machine is ready before rated temperatures have been reached	Yes/no	Yes

17.2 Emissions

Noise

The emission sound pressure level at the work station L_{pAeq} acc. to DIN EN ISO 11204 is < 70 dB(A)

Exhaust air

800 – 1000 m³/h Machine without heat pump
 500 – 600 m³/h Machine with heat pump

The air admission and evacuation system must be configured acc. to VDI Directive 2052.

18 Connecting external dosing equipment (detergent, rinse aid)

The machine must be equipped with external dosing equipment for the purpose of dosing detergent and rinse aid.

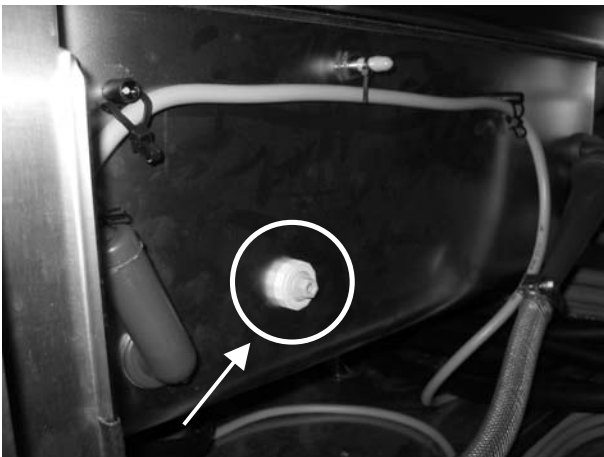


DANGER! Risk of fatal injury due to live components!
Have the dosing equipment installed and commissioned by a service technician authorised by Winterhalter.
Disconnect the machine from the mains and check for the absence of voltage before starting any electrical work on the machine.

The Winterhalter service technician is obliged to:

- Install the dosing equipment according to the documents supplied with the equipment.

18.1 Installing the conductivity electrode



- Remove the front cover from the last main wash zone and the rinse zone.
- Remove the dummy plug (see arrow) and install the conductivity electrode supplied with the dosing equipment.

Make a new hole if the hole diameter does not match.

- Line the interior of the tank with cloths or paper to catch the drilling swarf.
- After drilling, remove all drilling swarf from the washing tank, otherwise rust could form.
- Pass the main power cable through the side cover to the dosing equipment using a suitable cable gland.

Fig.: Last main wash zone with dummy plug for conductivity electrode

18.2 Installing the dosing tube (detergent)



- Remove the protective cap (see arrow) and secure the dosing tube with a cable tie.
- Route the dosing tube to the side cover taking a short route and avoiding kinks. The hose must not contact any hot surfaces or sharp edges.
- Pass the dosing tube through the side cover to the dosing equipment using a suitable cable gland.

Fig.: Last main wash zone with dosing nipple for detergent

18.3 Installing the dosing tube (rinse aid)



Fig.: Last main wash zone with dosing nipple for rinse aid

- Remove the cap (see arrow) and secure the dosing tube with a cable tie.
- Install a non-return valve in the dosing tube close to the dosing point, because dosing takes place against counterpressure.
- Route the dosing tube to the side cover taking a short route and avoiding kinks. The hose must not contact any hot surfaces or sharp edges.
- Pass the dosing tube through the side cover to the dosing equipment using a suitable cable gland.

18.4 Electrical connection

- Connect the dosing equipment to the terminals as described in the corresponding equipment documents. Terminal strip X7 for the electrical connection of the dosing equipment is located in the plinth of the rinse zone. Refer to the machine circuit diagram for more information.

Terminal strip X7

Terminal	1	2	3	4	5	6	7	8	9	10	11	12
Beschriftung	Rinse	Fill	Wash	Gebinde Klar-spüler	Gebinde Klar-spüler	Gebinde Reiniger	Gebinde Reiniger	Signal HACCP	Signal HACCP	L1	N	PE
Text	Rinse	Fill	Wash	Rinse aid con-tainer	Rinse aid con-tainer	Deter-gent con-tainer	Deter-gent con-tainer	HACCP signal	HACCP signal	L1	N	PE

Liquid detergent:

Pre dosage and additional dosage: Terminal 2 / FILL: Continuous signal when filling the machine (after the dry running protection is reached) or when the circulating pumps are active. Parameter P9915 = 1 (factory setting).

Powder detergent:

Pre dosage and additional dosage: Terminal 3 / WASH: Continuous signal when the 1st circulating pump is active.

18.5 Commissioning the dosing equipment

Commission the dosing equipment as described in the corresponding equipment documents. First, however, the machine itself must have been commissioned.

