



**Henkelman**  
vacuum packaging



User Manual  
Diptank  
**DT 200A**

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Art No. 0895325

Version 03-'24

Original Instructions for Use



- The machine is not suitable for the packaging of toxic, corrosive, irritant or potentially explosive materials.
- All persons responsible for the operation of this machine must at least fully read and understand the chapters about the operation and safety provided in these operating instructions.
- All persons responsible for the assembly, installation, maintenance and/or repairs must fully read and understand these operating instructions.
- The user is at all times responsible for the interpretation and use of this manual. Contact the owner or the manager in case of questions or doubts about the correct interpretation.
- This manual should be kept near the machine and should be within reach for its users.
- All major maintenance work, modifications to the machine and observations must be kept in a logbook; see *Logbook* on page 41.
- Modifications to the installation/machine are not allowed without the prior written consent of the supplier.
- For specific maintenance work not included in this manual, please contact the supplier.
- Comply with the safety requirements as set out in *Safety* on page 9 at all times.
- The correct operation and safety of the system can only be guaranteed if the recommended maintenance is performed on time and properly.
- Illustrations shown may differ from your machine.

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Henkelman BV reserves the right to change specifications and/or spare parts without prior notice.

The content of this user manual may also be changed without prior notice.

For information about settings, maintenance and repairs not provided for in this user manual, please contact the technical department of your supplier.

Henkelman BV accepts no liability for damage and/or problems arising from the use of spare parts not supplied by Henkelman BV.

This user manual has been compiled with all possible care. Henkelman BV assumes no responsibility for any errors in this manual and/or the consequences of an erroneous interpretation of the instructions.

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# 1 Preamble

This is the manual for your Henkelman Diptank series: DT 200A.

This manual is intended for anyone who works with or services the machine.

This manual contains information and instructions for installation, operation and maintenance of the machine. We recommend that you carefully read this manual before use and follow the procedures and instructions strictly. This will ensure that you get the best out of the machine and prevents possible accidents and serious injury.

## 1.1 List of the Symbols Used in this Manual

For all operations in which the safety of the operator and/or technician is at stake and where caution should be exercised, the following symbols are used.



Indicates a hazardous situation that, if not avoided, could result in serious injury or death and possibly material damage if one does not follow the safety instructions.



Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury and possibly material damage if one does not follow the safety instructions.



Provides additional information that is helpful to do a task or to avoid problems.



This symbol warns for high voltage.

## 1.2 Qualified personnel

This document is intended for qualified personnel.



The term "qualified personnel" is defined here as individuals who thoroughly understand the equipment and its safe installation, operation or maintenance. Qualified personnel are physically capable of performing the required tasks, are familiar with all relevant and local safety rules and regulations and have been trained to safely install, operate or maintain the equipment. It is the responsibility of the company installing, operating or maintaining this equipment to ensure that its personnel meet these requirements.

## 1.3 Storing the manual

This manual is a part of your product. Store the manual in the immediate vicinity of the product. Always present a copy of the manual to operators and engineers working on the Diptank.

## 1.4 Regulatory information

The Henkelman DT 200A Diptank is designed to comply with the following directives:

- 2006/42/EC: Machinery Directive
- 2014/30/EG: EMC Directive



The EC declaration is included with the shipment of the machine. A copy is available upon request, please contact the manufacturer.

## 1.5 Terms of Warranty

The warranty is subject to the following limitations. The warranty period for products supplied by Henkelman BV is 3 years from the date indicated on the purchase document. This warranty is limited to manufacturing and machining defects and therefore does not cover breakdowns involving any part of the product that is exposed to any form of wear and tear. Normal wear and tear that may be expected with the use of this product is therefore hereby excluded.

- The responsibility of Henkelman BV is limited to replacing defective parts; we shall not acknowledge claims for any other kind of damage or costs.
- The warranty automatically expires in case of overdue or poor maintenance.
- If there are doubts about the maintenance activities or if the machine fails to work correctly, always contact the supplier.
- The warranty does not apply if the defect is the result of incorrect or negligent use, or maintenance that was conducted contrary to the instructions given in this manual.
- The warranty is void in the event of repairs or modifications to the product by third parties.
- Defects due to damage or accidents caused by external factors are excluded from the warranty.
- If we replace parts in compliance with the obligations of this warranty, then the replaced parts become our property.

The provisions regarding the warranty and liability are part of the general terms and conditions of sale, which can be sent to you upon request.

## 1.6 Liability

- We exclude all liability insofar as far as it is not required by law.
- Our liability shall never exceed the total amount of the machine value in question.
- With the exception of the applicable legal regulations of public order and good faith, we are not liable to pay for any damage of any sort whatsoever to the opposite party or to third parties, directly or indirectly, including lost profits, damage to movable or immovable property or personal injury.
- We are in no way liable for damages arising from or resulting from the use of the product used, or the unsuitability thereof for the purpose for which the other party decided to purchase the product.

## 1.7 Terms and abbreviations

Machine

Diptank



## 2 Safety

Your Diptank has been carefully designed and expertly built to be operated safely. This is corroborated by the CE-marking. However, there are always dangers and safety risks that cannot be eliminated. These dangers and risks are the result of the use functions of the machine and operation of the machine by the user. This section discusses safety instructions and precautions, how they will be pointed out to you and the requirements the user must meet. It is essential that you are well aware of these safety instructions and requirements and observe them at all times!

### 2.1 Pictograms on the Machine

Pictograms and warnings have been fitted on the machine to warn users of the possible risks.



Warning sign "High Voltage"

- Is located on the back of the machine.



Warning sign "Heat"

- Is located above the flaps on both sides of the lid.



Indication sign "Water pressure"

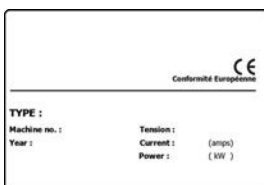
- Is located on the back of the machine.



Warning sign "Pneumatic Air Connection"

Minimum and maximum allowed pressure of the pneumatic air system

- Is located on the back of the machine.



Machine plate

- Is located on the back of the machine



Regularly check whether the pictograms and markings are still clearly recognisable and legible. Replace them if this is not the case.

## 2.2 General Warnings

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- All persons responsible for the operation of this machine must at least fully read and understand the chapters *Safety* on page 9 and *Operation* on page 23.
- Failure to follow or disregard of the safety instructions may result in serious injury.
- Warranty and/or liability is void if any damage is caused by repairs and/or modifications that are not authorised by the supplier or any of its distributors.
- In case of malfunction, contact the supplier.
- High pressure cleaning is not allowed. This may cause damage to the electronics and other components.
- The work space around the machine must be safe. The owner of the machine must take the necessary precautions to operate the machine safely.
- It is forbidden to start the machine in an explosive environment.
- The machine has been designed in such a way that production is safe under normal ambient conditions.
- The owner of the machine must ensure that the instructions in this manual are actually complied with.
- The available safety devices may not be removed.
- The correct operation and safety of the system can only be guaranteed if the recommended maintenance is performed on time and properly.
- If work must be carried out on the machine, it must be disconnected and blocked from the power, air and water supply.
- The machine contains hot fluids. Care must be taken to avoid both direct and indirect (steam) contact to avoid injury.
- The water drain connection must always be connected to sufficient water drainage.
- The fume extraction connection must be connected to a tube fan with enough capacity to prevent a buildup of condensation.



- Only a technical expert may perform work on the electrical installation.
- Internal procedures and monitoring must be in place to ensure that all relevant power supplies are disconnected.
- The machine may not be used during cleaning, inspection, repair or maintenance and must be disconnected from the power supply by disconnecting the plug and/or using the main switch.
- Never perform welding work on the machine without first disconnecting the cable connection to the electrical components.
- Never use the power supply of the control unit to connect other machines.
- All electrical connections must be connected to the terminal strips according to the wiring diagram.

## 2.3 Warnings During Use

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- Before starting the machine, make sure no work is being performed on the installation and that the machine is ready for use.
- The machine may not be operated by unauthorised persons. This should be monitored by the machine operator(s).
- Immediately contact the service technician of your technical department or dealer if something does not seem right, such as unusual vibrations or unusual noise.
- The fluid in the Diptank can become very hot. Contact with the fluid in the tank may cause injuries.

## 2.4 Warnings for Operating Personnel

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- Operating personnel must be 18 years or older.
- Only authorised persons are allowed to perform work on or with the machine.
- Personnel may only perform work for which it was trained. This applies to both maintenance and normal use.
- The machine may only be operated by trained personnel.
- The machine must never be unattended during operation.
- Operating personnel must be familiar with all circumstances, so quick and effective action can be taken in case of an emergency.
- If an operator notices errors or risks or disagrees with safety measures, he or she should report this to the owner or manager.
- Safety shoes are mandatory.
- Appropriate work clothing is mandatory.
- All personnel must obey the safety regulations to avoid danger to themselves and others. Always strictly follow the work instructions.

## 2.5 Safety features

Additional safety features are installed on the machine to prevent persons getting injured.

### 2.5.1 Emergency Stop Buttons

On the DT 200A there are red emergency stop buttons located on the corners of the machine. Pressing one of these emergency stop buttons stops all movement of the conveyor and the dip platform.

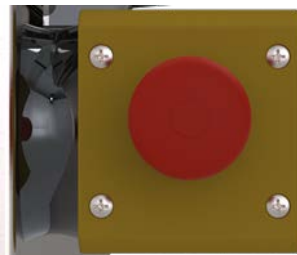


Figure 1: Emergency stop



An emergency stop button may normally only be operated in the event of an emergency. However, it is also recommended to check the correct operation of the emergency stop buttons on a daily basis.

To reset an emergency stop button, proceed as follow:

1. Check that the emergency situation has been resolved and that persons are no longer exposed to any risk.
2. Pull the emergency stop button back in its original position. This resets the emergency stop button.

## 2.5.2 Lid safety switch

The lid of the DT 200A is equipped with a safety switch. Opening the lid stops all movement of the conveyor and the dip platform. The machine resumes functioning after closing the lid.

### 3 Introduction

Henkelman BV is a supplier of ultra-modern Vacuum Packaging Machines. Our machines are developed and manufactured to meet the highest standards. They combine a sleekly build and functional design with optimal ease of use and a long service life. After mounting the plug, it is just a matter of "plug & pack". The clever design ensures compliance with the hygiene standards at all times.

The Diptank is applied in food packaging processes. Food products are usually packed in shrink bags closed by a sealing process. The food packaging can also include a vacuum process for food preservation. After the packaging process, food products are placed into the Diptank with warm water in which the shrink bag will smoothly shrink around the food product. The main objectives for the Diptank shrinking process is to shrink the plastic flaps from the packaging material around the food product in order to enhance the product packaging presentation and to make the product handling and distribution process easier.

## 4 Description of the Machine

This section provides an short introduction to the machine and an overview of it's main components and functions. If detailed information is available in this manual, you will be referred to the specific sections.

### 4.1 Overview of the main components

The figure below shows the main components of the DT 200A series.

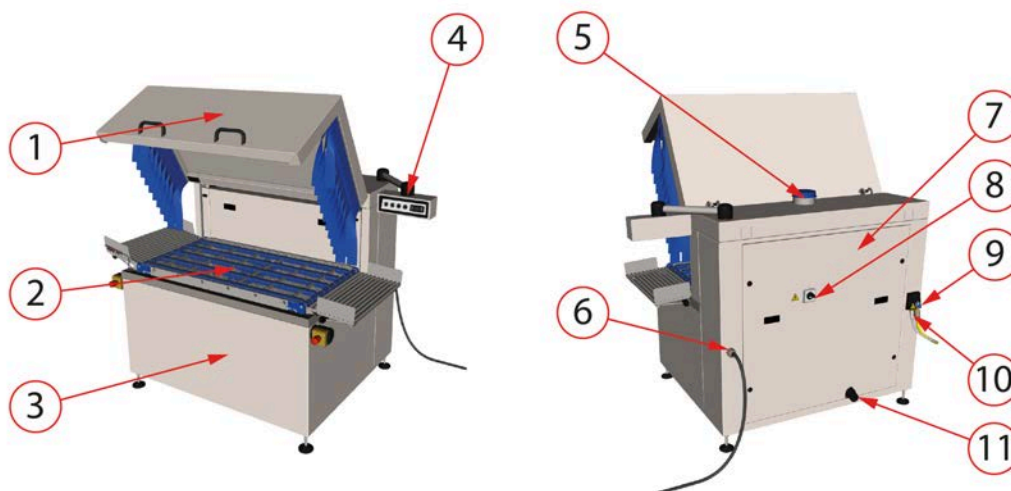


Figure 2: Overview of the main components

#### 1. Lid

The lid prevents accidental contact with the hot water and helps keeping the temperature stable. During normal operation the lid is locked. The food products can enter and leave the machine through the flaps in the sides of the lid.

#### 2. Conveyor

The conveyor automatically moves the products in and out of the machine.

#### 3. Tank

The tank is filled with hot water. When the conveyor with the packaged products is lowered in the hot liquid, the package shrinks around the food product.

#### 4. Control panel

#### 5. Fume extraction connection

Connects the machine to the central air and fume extraction system. The diameter of the connection is 125 mm. The DT 200A is shipped with a cover on this connection.

#### 6. Power connection and cable

This serves to connect the machine to the power supply. The machine is supplied without an electrical plug.

#### 7. Pneumatic air connection

This serves to connect the machine to external air pressure (6 to 10 bar) with a G1/4 coupling. This is used for the movement of the dip platform and for opening the water drain valve.

## 8. Water connection

Connects the machine to the water supply with a 12 mm hose coupling. The coupling can be replaced by any coupling with thread R1/2 or a G1/2.

## 9. Control box (behind rear panel)

The control box houses all electrical components, including the timer.

## 10. Main switch

## 11. Water drain connection

Connects the machine to the water drain with a 50 mm hose coupling or a coupling with thread G2.

## 4.2 Description of the machine functions and shrinking process

The packaged food product is supplied to the machine by an external conveyor. At the start of the cycle, the internal conveyor moves the products further in the machine. When all products are in the machine, the conveyor descends into the tank and shortly afterwards rises again. This process takes approximately four seconds. After completion of the process, the food products exit the machine automatically by conveyor.

The water temperature in the tank is maintained automatically. Heating stops when the water reaches the preset temperature. The default setting is 95 °C. Heating starts again after a drop in temperature of 2 °C.

The water level is maintained automatically. The water valve is closed when the water level reaches the maximum level. It is opened again when the water level falls below the minimum level.



The minimum and maximum water levels depend on the volume of the food products to be dipped.



To avoid wasting water and heating excess water it is recommended to configure the machine's maximum water levels according to the product's needs.

## 4.3 Control panel

The control panel is used to operate the Diptank.

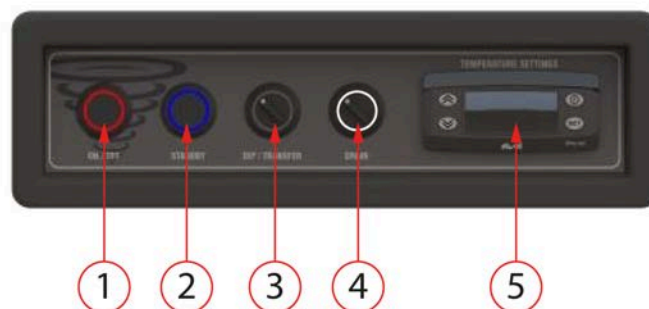


Figure 3: Overview of the control panel



### 1. On/Off button

Serves to turn the control on or off.

Power indication light: an illuminated red ring around the button indicates the machine is turned on.

### 2. Standby button

Serves to turn the standby state on or off.

Standby indication light: an illuminated blue ring around the button indicates the machine is on standby.

### 3. Dip / Transfer switch

Switches the machine between Dip and Transfer mode.

- **Dip mode:** When a product enters the machine, the product switch is triggered. The conveyor starts rotating for 7 seconds to place the packaged food products in the machine. Then the conveyor will submerge and dip the products for 4 seconds. Then the conveyor will rise out of the tank in 2 seconds. Finally the conveyor starts rotating for 9 seconds to discharge the products from the machine.
- **Transfer mode:** When a product enters the machine, the product switch is triggered. The conveyor starts moving for 16 seconds to transfer the product through the machine, without initiating a dip cycle. The temperature controller is off and the water is not heated.

### 4. Drain switch:

Opens the drain valve and drains the water from the tank.

Drain indication light: an illuminated white ring around the button indicates the water valve is opened. The temperature controller is off and the water is not heated.



Do not drain hot water! Let the water in the tank cool before opening the drain valve.

### 5. Temperature settings



Figure 4: Temperature settings panel

Used to adjust the water temperature setpoint. During normal operation the current water temperature is displayed. The temperature settings panel has the following buttons:

- **Temperature ▲ and ▼ cursor buttons**
- **Temperature controller on / off button**  
This button is not used during normal operation.
- **Temperature set button**

## 4.4 Timer

The Diptank is provided with a timer. The timer can be used to switch the machine on and off on predefined moments. In this way the machine can heat the water before the production starts.

The timer is located in the machine control box, behind the rear panel.



Figure 5: Overview of the timer

- 1. Timer menu button**  
Shows the timer main menu on the timer screen.
- 2. Timer ◀ and ▶ cursor buttons**  
Serves to operate the timer screen menu and to set the timer mode.
- 3. Timer OK button**  
Serves to confirm settings in the timer screen menu.

There are 3 timer modes:

- **Permanent on**  
The machine is on. All timing programmes are ignored. The machine can be controlled with the buttons and switches on the operating panel.
- **Auto mode**  
The machine is on during the predefined periods. The machine switches on or off according to the active timer programme. While the machine is in auto mode, it is possible to manually switch the machine on or off. This has no effect on the running programme.  
While the machine is on, it can be controlled with the buttons and switches on the operating panel.
- **Permanent off**  
The machine is off. All timing programmes are ignored. The machine can only be controlled after the timer is switched back to “Permanent on” or “Auto mode”.

## 5 Installation

Consult *Technical data DT 200A series* on page 40 for the specifications of the machine.



Before installing the machine, carefully read the safety instructions in *Safety* on page 9. Failure to follow or disregard of the safety instructions may result in serious injury.

### 5.1 Transport

The machine must be moved and transported in an upright position.

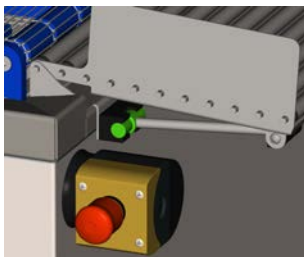
The machine may not be transported using a crane. The machine may be transported with a forklift provided it is still on the pallet packaging.

### 5.2 Placement

1. Place the machine on a flat, level surface. This is essential to ensure a trouble-free operation of the machine.
2. Verify that the machine's rear panel is present and correctly fitted.
3. Adjust the height of the machine by turning the retractable feet.  
The feet can be adjusted between 100 and 160 mm, measured from the bottom of the machine.
4. Position the control panel to the desired position.



5. Mount the input and output conveyor to the machine by inserting the journals into the sockets. Make sure that the hexagon nuts are snapped into place and are not protruding.



6. Use a 10 mm Allen key to make final adjustments to the input and output conveyors.

Make small adjustments, alternating between the front and back of the conveyor. A too large one-sided adjustment can cause the journal to pop out of its socket.

## 5.3 Connecting the machine



Only a technical expert may perform work on the electrical installation.

Make sure the power supply for this machine matches to the voltage and amperage stated on the machine plate. The following specification is an example, and is valid for 400 V, 3~, 50 Hz.

Specified amperage: 32 /fuse 40 C	Description
32	Nominal amperage
Fuse 32A	Minimum fuse value with the recommended type of fuse
C	C characteristic

1. Fit the correct plug on the cable in accordance with local legislation and connection data. See the machine plate for the correct electrical connection.
2. Connect the machine to a wall outlet.



- Always use an outlet with protected earth to avoid fire or electrical shock.
- The power cable must be free at all times, and nothing may be placed on it.
- Immediately replace the power cable if damaged.

3. Connect the hose for compressed air to the pneumatic air connection (8 mm) at the back of the machine. The compressed air is used for the movement of the dip platform and for opening the water drain valve.


Pressure	$\geq 6 \text{ bar} - \leq 10 \text{ bar}$
Flow	$\geq 50 \text{ l/min}$



Figure 6: Hose connections for water and compressed air


4. Connect the water connection to a water supply.

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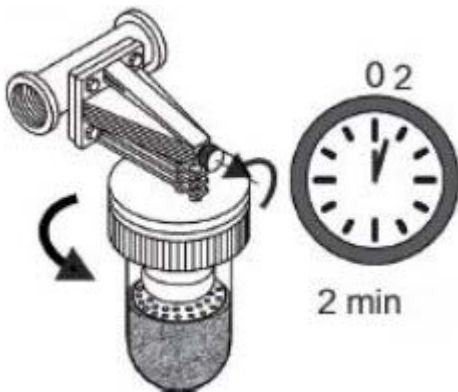
 Use descaled water to prevent limescale build-up.

5. Connect the water drain connection to a discharge point.
6. Connect the fume extraction connection to the central extraction system.

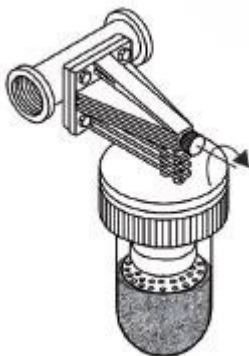
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 Remove the transport cover on the fume extraction connection.

7. Open the back hatch by turning the 4 locks.
8. Turn the main switch to the on position.
9. Close the lid.
10. Press the On/Off button on the control panel.  
The power indication light switches on. The tank fills itself with water.  
Make sure only the power indication light is on. See *Starting the machine* on page 23 if the standby indication light or the drain indication light also turn on.
11. Deaerate the descaling unit by opening the venting screw.




12. Close the venting screw when the unit is completely deaerated and only water flows out.



This process takes approximately two minutes.

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 The descaling unit only works properly if it is deaerated completely.

**13.** Make sure the electrical motor is turning in the right direction.

The conveyor moves in the right direction.

If the motor turns in the wrong direction, turn off the machine and interchange two phases in the mains plug (e.g. L1-L2).

**14.** Close the back hatch and lock it with the 4 locks.

Re-check *Placement* on page 19 if you moved the machine while making the connections.

## 6 Operation

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- All persons responsible for the operation of this machine must at least fully read and understand this chapter and the chapter *Safety* on page 9.
- Failure to follow or disregard of the safety instructions may result in serious injury.

### 6.1 Starting the machine

1. Plug in the machine.
2. Turn the main switch to the on position.
3. Make sure that the lid is closed.
4. Press the **On/Off** button on the control panel to enable operation.  
Only the red power indication light turns on. The temperature display shows “E1” while the tank fills with water.
  - If also the blue standby indication light turns on: press the standby button to end the standby state. The blue indication light turns off.
  - If also both the blue standby indication light and the white drain indication light turn on: turn the drain switch off (to the left). The drain closes and both the blue and white indication lights turn off.

When the water reaches the minimum water level, the heating elements turn on and the temperature display shows the current water temperature.

### 6.2 Setting the water temperature

The default water temperature is set to 95 °C. Use the temperature settings controller to change this value.

1. Press the **Temperature set** button 2 times.  
The temperature setting is displayed for 10 seconds.
2. While the temperature setting is displayed, press the **Temperature ▲ or ▼** button to adjust the temperature.
3. Press the **Temperature set** button to save the new temperature setting.  
If the **Temperature set** button is not pressed within 10 seconds, the new setting will not be saved and the temperature controller will revert to the previously stored setting.

### 6.3 Starting the dipping cycle

Make sure that the machine is started, the correct temperature is set and that the water in the tank has reached the set temperature.

1. Set the **Dip / Transfer** switch to Dip.
2. Place a packaged food product on the input conveyor.  
The product triggers the product switch in the input conveyor.

When the product switch is triggered, the product will be transported onto the platform and the dipping cycle will start automatically. At the end of the cycle, the product is transported out of the Diptank.

## 6.4 Bypassing the Diptank

With this setting products pass through the Diptank without triggering a dip cycle. The temperature controller will be switched off.

Switch the **Dip / Transfer** switch to Transfer.

When the product switch in the input conveyor is triggered, the conveyor will activate and the product will be transferred through the Diptank.

## 6.5 Placing the machine in standby

The standby function is used to temporary stop production.



If the **Drain** switch is turned on during operation, the machine is automatically switched to standby. It is recommended to let the water cool before draining!

Press the **Standby** button.

The blue standby indicator switches on.

The temperature controller is switched off. It is not possible to initiate a dip cycle. Products will not be transferred through the Diptank.

## 6.6 Draining the water from the machine

1. Push the **On/Off** button to switch the machine Off.  
The red power indication light turns off. The temperature controller switches off. The conveyor switches off.
2. Open the lid. Wait and let the water in the tank cool.
3. Turn the **Drain** switch on.  
The white drain indicator will turn on.

The cooled water drains from the tank.

After draining the water from the tank, always clean the water tank. See *Cleaning the tank* on page 31.

## 6.7 Stopping the machine

Stop the machine before maintenance, when production is stopped for a longer period or before relocating the machine. When the machine is stopped, the timer is also switched off.

1. Make sure that the red power indication light is switched off.



2. Make sure that the water is drained from the machine.
3. Turn the main switch to the Off position.

## 6.8 Timer

### 6.8.1 Changing timer settings

These settings define how the timer shows information on its screen.

To change the screen language:

1. Press the **Menu** button.  
The main menu is shown on the timer screen.
2. Press the ► button until **OPTIONS** appears.
3. Press the **OK** button.  
The options menu is shown on the timer screen.
4. Press the ► button until **LANGUAGE** appears.
5. Press the **OK** button.  
The language menu is shown on the timer screen.
6. Press the ► button until the desired language appears.
7. Press the **OK** button.  
The language menu is shown in the selected language.

To change the date format:

8. Press the **Menu** button.  
The main menu is shown on the timer screen.
9. Press the ► button until **TIME/DATE** appears.
10. Press the **OK** button.  
The time and date menu is shown on the timer screen.
11. Press the ► button until **FORM DATE** appears.
12. Press the **OK** button.  
The date format menu is shown on the timer screen.
13. Press the ◀ and ► buttons until the preferred date format appears.  
There are three date formats available:
  - 31 12 00
  - 12/31/00
  - 00-12-31
14. Press the **OK** button.  
The date format is saved and the time and date menu is shown on the timer screen.

To change the time format:

15. Press the **Menu** button.  
The main menu is shown on the timer screen.
16. Press the ► button until **TIME/DATE** appears.
17. Press the **OK** button.  
The time and date menu is shown on the timer screen.

18. Press the ► button until FORM TIME appears.
19. Press the **OK** button.  
The time format menu is shown on the timer screen.
20. Press the ◀ and ► buttons until the preferred time format appears.  
There are two time formats available 12 h and 24 h.
21. Press the **OK** button.  
The time format is saved and the time and date menu is shown on the timer screen.

## 6.8.2 Changing the current date and time

In order for the timer to switch on the appropriate moments, it is important to set the date and time correctly.

1. Press the **Menu** button.  
The main menu is shown on the timer screen.
2. Press the ► button until TIME/DATE appears.
3. Press the **OK** button.  
The time and date menu is shown on the timer screen with the option TIME already selected.
4. Press the **OK** button.  
The current hour is shown on the timer screen.
5. Press the ◀ and ► buttons to set the hour.
6. Press the **OK** button.  
The current minute is shown on the timer screen.
7. Press the ◀ and ► buttons to set the minute.
8. Press the **OK** button.  
The time and date menu is shown on the timer screen.
9. Press the ► button until SET DATE appears.
10. Press the **OK** button.  
The current year is shown on the timer screen.
11. Press the ◀ and ► buttons to set the year.
12. Press the **OK** button.  
The current month is shown on the timer screen.
13. Press the ◀ and ► buttons to set the month.
14. Press the **OK** button.  
The current day is shown on the timer screen.
15. Press the ◀ and ► buttons to set the day.
16. Press the **OK** button.  
The time and date menu is shown on the timer screen.
17. Press the ► button until WEEK DAY appears.
18. Press the **OK** button.  
The current date and week day number is shown on the timer screen, with 1 being the first working day of the week.
19. Press the ◀ and ► buttons to set the day number.
20. Press the **OK** button.

The time and date menu is shown on the timer screen.

### 6.8.3 Setting the timer mode

When the machine is supplied, the timer is set to “permanent on”. See *Timer* on page 18 for more information on the timer modes.

To select auto mode:

1. Press the ◀ and ▶ buttons at the same time.  
The machine is in auto mode. Depending on the programme, the timer screen will show ON or OFF.

During auto mode, the machine can be manually switched on or off:

2. Press the ◀ and ▶ buttons at the same time.  
The machine is manually switched on or off. The timer screen will show MANUAL and ON or OFF. The programme is still running and the next switching moment will occur as planned.

To select the permanent on or permanent off mode:

3. Press and hold the ◀ and ▶ buttons for a few seconds.  
The timer screen will show PERM ON or PERM OFF. This setting overrules all timer programmes.

### 6.8.4 Making a timer programme

When the timer is set to auto mode, the timer switches the machine on or off according to a timer programme. To set a timer programme:

1. Press the **Menu** button.  
The main menu is shown on the timer screen with the option PROGRAM already selected.
2. Press the **OK** button.  
The programme menu is shown on the timer screen with the option NEW already selected.
3. Press the **OK** button.  
The number of available programming moments appears on the screen for a few seconds. Then the program option ON starts flashing on the screen.
4. Press the ◀ and ▶ buttons to select whether you want to program a switch ON or switch OFF action.



Remember that after every ON action, an OFF action needs to be programmed.

5. Press the **OK** button.  
HOUR is shown on the timer screen.
6. Press the ◀ and ▶ buttons to set the hour.
7. Press the **OK** button.  
MINUTE is shown on the timer screen.
8. Press the ◀ and ▶ buttons to set the minute.
9. Press the **OK** button.  
The week day number is shown. In the default setting, Monday is number 1. See *Changing the current date and time* on page 26 for changing the week day.

10. Press the ◀ and ▶ buttons to set the first day the programme has to run.
11. Press the **OK** button.  
COPY is shown on the timer screen.
12. It is now possible to copy the new programme to the other days of the week.
  - Press the **OK** button to confirm the copy action. Use the ▶ button to select another week day and press the **OK** button to add this day to the programme. The timer screen shows COPY.
  - When all the desired days are added, press the ▶ button to select SAVE.NEW is shown on the timer screen. Repeat the steps to add other switching moments to the programme.

## 7 Maintenance

When carrying out maintenance work, always observe the following safety rules.



- Always drain the tank, see *Draining the water from the machine* on page 24.
- Always make sure the machine is stopped completely, see *Stopping the machine* on page 24.
- Always disconnect the air supply.



- Only trained technicians are authorised to perform the described maintenance activities.
- Test the machine after carrying out maintenance work or repairs to make sure the machine can be used safely.

### 7.1 Maintenance Schedule

The diagram below shows the maintenance activities that must be performed and the interval with which these activities must be performed.

For specific descriptions for performing maintenance activities, consult the appropriate section.

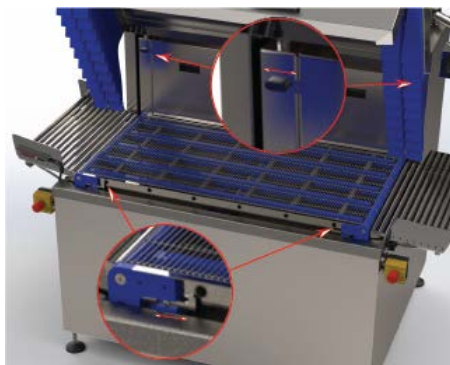
Activity	Daily	Monthly	Quarterly
Draining the water and cleaning the tank	×		
Checking the float and the descaling unit		×	
Refilling the descaling unit			×

### 7.2 Removing the conveyor

To reach the water tank, the conveyor needs to be removed.

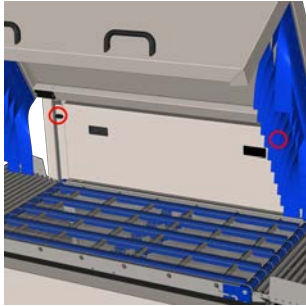


The following locking mechanisms are present in the machine:

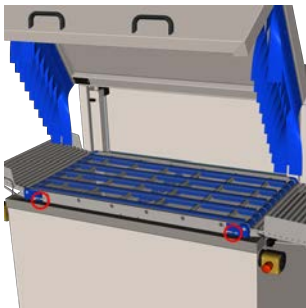


1. Open the lid.

2. Move the locking buttons on both sides outwards and remove the rear panel by lifting it up and tilting it forwards.



3. Move the locking buttons on both sides of the conveyor inwards.



4. Lift the conveyor frame out of the machine.  
Lift the back of the conveyor frame first, then lift the front. Use diagonally opposed corners of the conveyor as handholds.



## 7.3 Cleaning the machine



Never clean the machine with a high pressure washer. Do not use caustic or toxic cleaning products. Do not use cleaning products that contain solvents.

Clean the machine's surfaces with a soft, clean cloth. You can also apply a cleaning agent to the machine and wash it with clean water.

## 7.4 Cleaning the tank

Remove the conveyor frame to access the water tank.



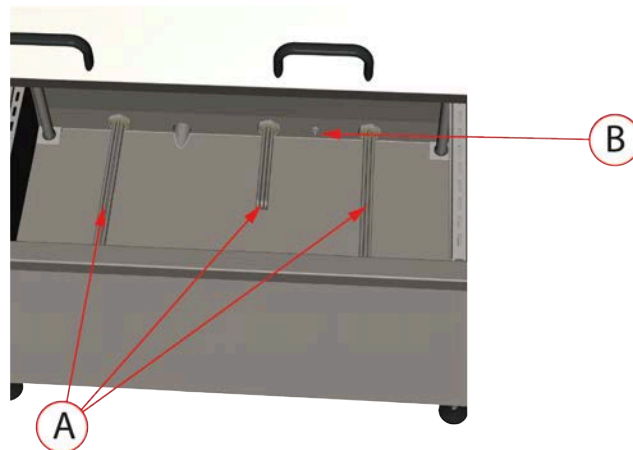
Use a descaling solution for cleaning the inside of the water tank.



It is recommended to use essential personal protection equipment with a CE marking.



Clean the inside of the water tank.



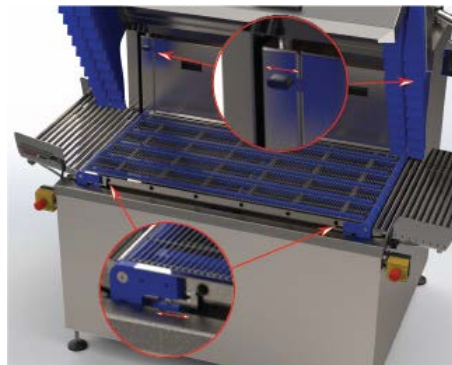
Pay special attention to the cleaning of:

- the heating elements (A);
- the water temperature sensor (B).

## 7.5 Reassembling the conveyor



The following locking mechanisms are present in the machine:



1. Make sure that the locking slide on each corner of the conveyor frame is open.
2. Place the conveyor on the supporting arms, front side first.

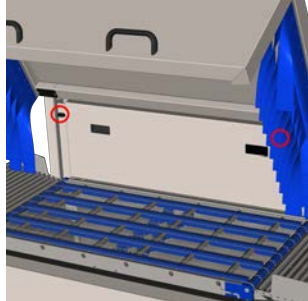
Make sure that the protruding lips of the support arms slide into the slots on the conveyor.



3. Press the rear side of the conveyor into place.



4. Close the locking slide on each corner of the conveyor by moving it outwards.
5. Put the rear panel into the machine and slide the locking buttons on both sides inwards.

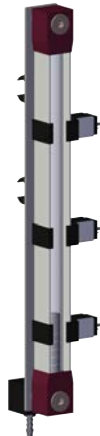


6. Close the lid.

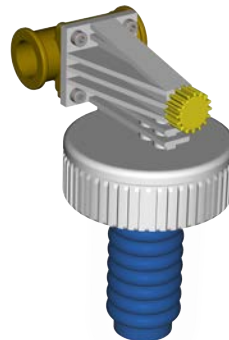


## 7.6 Checking the float and descaling unit

A



B



1. Open the back hatch by turning the 4 locks.
2. Make sure that the float (A) can move freely within the transparent tube.  
Remove any material that may obstruct the free movement of the float.
3. Check the cup of the descaling unit (B).  
The cup contains a layer of descaling agent.  
If the descaling agent is depleted, see *Refill the descaling unit* on page 33.
4. Close the back hatch and lock it with the 4 locks.

## 7.7 Refill the descaling unit

Refill the descaling unit when no more descaling agent remains in the cup.

1. Close the water valve.
2. Loosen the vent screw.
3. Unscrew the ring nut and remove the cup.



4. Wash all parts (cup, bellows and solubilizer disc) thoroughly with clean water.

5. Pour a glass of water (approximately 60 ml) in the cup.

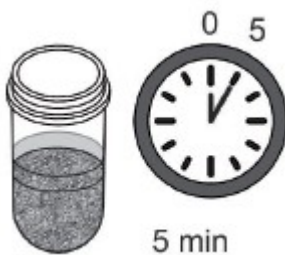


6. Put 80 gramme descaling agent in the cup with water.



Use Cillit<sup>®</sup>-55 M-H Universal, Henkelman article number 0760802 (12 bags).

7. Place the cup vertically and wait.



The descaling agent solidifies in the cup. This takes approximately 5 minutes.

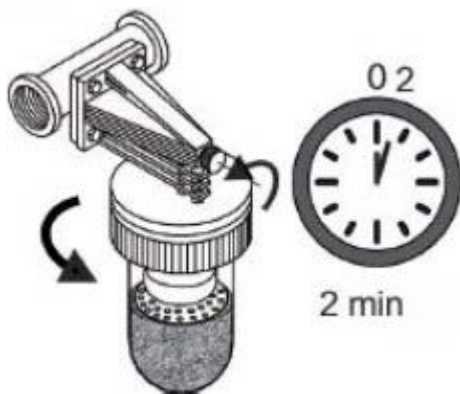
8. Pour the excess water out of the cup.



9. Put the solubilizer disc in the cup.

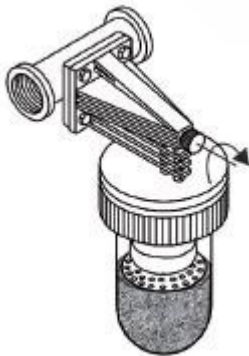


10. Put the cup in the ring nut.  
11. Screw the cup with the ring nut into the descaling unit.  
12. With the venting screw still loose, open the water valve and wait until only water comes out of the vent screw.



The descaling unit vents the air through the vent screw. This takes approximately 2 minutes.

13. Close the vent screw and let water flow through the unit for approximately 2 minutes.



14. Repeat the air venting process (steps 12 and 13).  
15. Close the venting screw.

The descaling unit is ready for operation.

## 8 Troubleshooting

Malfunction	Activity	More information
Control panel does not illuminate.	<ul style="list-style-type: none"> <li>• Connect the machine to the power supply.</li> <li>• Check the machine/circuit breaker.</li> </ul>	<i>Connecting the machine</i> on page 20.
	Check the main switch on the back of the machine.	<i>Starting the machine</i> on page 23.
	Check that the timer: <ul style="list-style-type: none"> <li>• has not switched the machine off;</li> <li>• is not in permanent off mode.</li> </ul>	See <i>Setting the timer mode</i> on page 27 and <i>Making a timer programme</i> on page 27.
The power indication light is on, but the machine does not heat up.	Check the temperature set-point.	Set a higher temperature, see <i>Setting the water temperature</i> on page 23.
The conveyor moves in the wrong direction.	Check the rotating direction of the electrical motor.	Interchange two phases in the mains plug, see <i>Connecting the machine</i> on page 20.
The dip cycle does not start.	Check the emergency stop buttons.	Make sure that all emergency stop buttons are released, see <i>Emergency Stop Buttons</i> on page 12.
	Check the lid and the lid safety switch.	Make sure that the lid is fully closed and that the lid safety switch is functioning properly, see <i>Lid safety switch</i> on page 13.
	Check the Dip/Transfer button.	Make sure that the Dip/Transfer switch is set to dip, see <i>Starting the dipping cycle</i> on page 23.
	Check the product switch on the input conveyor.	Check the proper position and functioning of the switch.

Malfunction	Activity	More information
The platform does not rise.	Check the total weight of the packaged food products.	<ol style="list-style-type: none"> <li>1. Switch the machine off.</li> <li>2. Let the water cool down.</li> <li>3. Take the product out of the tank.</li> </ol>
	Check the timer.	Make sure that the timer has not switched off the machine, see <i>Timer</i> on page 25.
	Check the air pressure.	Make sure that the machine is supplied with the needed minimum of 6 bar compressed air pressure.
The heating elements heat up when there is no water in the tank.	Check if the float is stuck in the high position.	See <i>Cleaning the tank</i> on page 31.
The tank does not fill with water. The display shows “E1”.	Follow the troubleshooting procedure.	There could be several causes for this. Follow the troubleshooting procedure: <i>Tank does not fill with water</i> on page 37.
The display shows “E1”. There is water in the machine.	Check the water level sensors.	Replace the lower water level sensor or its cable when necessary.
	Check the temperature sensor (P1), float (S5) and the connecting cables.	Check the proper functioning of the sensors and switches. Replace the sensor, switches and cable when necessary.

## 8.1 Tank does not fill with water

Under normal operating conditions, the tank should fill itself with water automatically when the water level drops below the set minimum. If this is not the case, follow these steps to determine the cause of the problem.

### 1. Make sure that the machine is switched on.

The power indication light (a red ring around the On/Off switch) is on.

If the power indication light is off, check:

- the main switch (on the back of the machine, see *Overview of the main components* on page 15);

- the power supply;
- the timer (see *Timer* on page 25).

Close the lid and switch the machine on with the On/Off switch.

2. Check that the water pressure is on by opening the venting screw on the descaling unit for a few seconds.

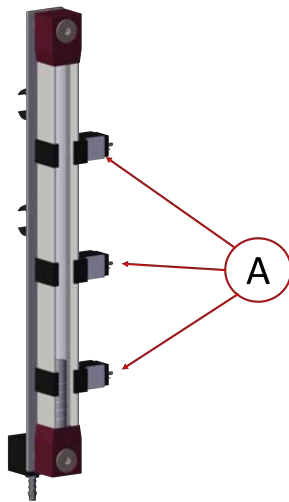


Water is flowing out of the venting opening.

If there is no water flowing from the venting screw, check:

- the water supply tap;
- the water supply hose (no leakage or obstructions).

3. Re-calibrate the water level sensors (A) behind the rear panel of the machine.



It is possible for the level sensors to lose calibration if the float passes while the machine is turned off, for example during transport.

To recalibrate the sensors:

- a. Switch the machine on.
- b. Move a magnet past the top two sensors in a downwards motion (along the direction of the arrow).
- c. Move a magnet past the bottom sensor in a upwards motion (along the direction of the arrow).

## 9 Disposal



Do not dispose of oil and components as household waste. When replacing oil or components at the end of the service life, ensure that all materials are collected and disposed or reused in a legal and environmentally sound manner.

# 10 Appendices

## 10.1 Technical data DT 200A series

	DT 200A
<b>General</b>	
Sound emission	< 70 dB(A)
Dip cycle time	3 - 5 s
<b>Dimensions, weight and capacity</b>	
Width	1700 mm
Length	1170 mm
Height	1350 mm
Weight (machine)	310 kg
Weight (conveyor)	15 kg
Water capacity	300 L
<b>Maximum packaged food product dimensions</b>	
Width	575 mm
Length	1098 mm
Height	200 mm
Weight	50 kg
<b>Power supply</b>	
Voltage	3 × 400 V ± 10 %
Frequency	50 Hz
Connected load	20 kW











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