



Henkelman
vacuum packaging



User Manual

Diptank

DT 60, DT 100

Art No. 0894051

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Original Instructions for Use

www.henkelman.com



- 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 26.
- 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 60 and DT 100.

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 60 and DT 100 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!

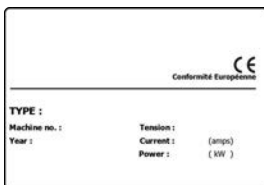
2.1 Pictograms on the Machine

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.



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



- 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 18.
- 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



- 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



- 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.

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 60 and DT 100 series.

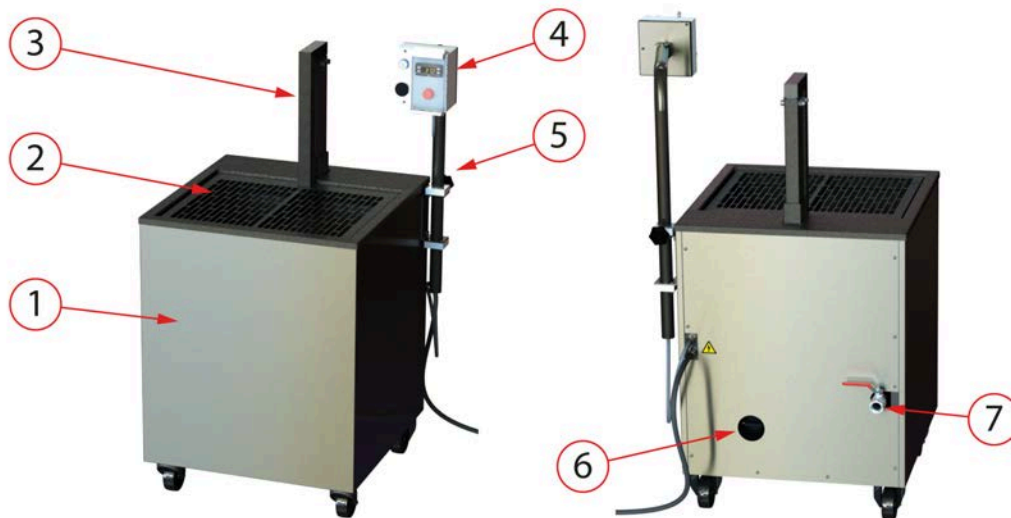


Figure 1: Overview of the main components

- 1. Tank**
The tank is filled with hot water. When lowered in the hot liquid, the package shrinks around the food product.
- 2. Platform**
The platform lowers the packaged food products in the tank and it prevents accidental contact with the hot water.
- 3. Arm**
The arm enables you to adjust the height of the control panel.
- 4. Control panel**
- 5. Sliding rod**
Lowers the platform into the tank.
- 6. Main switch**
- 7. Water discharge tap**
Used to empty the tank.

4.2 Description of the machine functions and shrinking process

The packaged food product is placed on the platform manually. At the start of the procedure, the platform descends into the tank and shortly afterwards rises again. This process takes approximately three seconds.

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.

4.3 Control panel

The control panel is used to operate the Diptank.



Figure 2: Overview of the control panel

- 1. On/Off button**
Serves to turn the control on or off.
- 2. Start button (S3)**
Starts the dipping cycle.
- 3. Temperature settings**
Used to adjust the water temperature setpoint. During normal operation the current water temperature is displayed.
- 4. Power indication light**
Indicates if the machine is switched on.

5 Installation

Consult *Technical data DT 60 and DT 100 series* on page 25 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.

Moving the machine on wheels on uneven surfaces may lead to loss of stability of the machine. Always move the machine slowly and carefully.

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. Ensure the brakes of the machine are activated.
3. Verify that the machine housing is present and correctly fitted.
4. Position the control panel to the desired working height.
The control panel arm is released and locked with a turning knob.



Do not place the control panel directly above the tank.

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.

Description	DT 60, 230 V 23 / fuse 40 C	DT 60, 400 V 13 / fuse 25 C	DT 100, 230 V 38 / fuse 50 C	DT 100, 400 V 22 / fuse 40 C
Nominal amperage	23 A	13 A	38 A	22 A
Minimum fuse value with the recommended type of fuse	40 A	25 A	50 A	40 A
Fuse characteristic	C	C	C	C

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. Close the water discharge tap.
4. Fill the tank with water.
Make sure the water level is at least 200 mm.



Use descaled water to prevent limescale build-up.

5. Turn the main switch to the on position.
6. Press the On/Off button on the control panel.
The power indication light switches on.
7. Make sure the electrical motor is turning in the right direction.
The platform moves down.
If the motor turns in the wrong direction, turn off the machine and interchange two phases in the mains plug (e.g. L1-L2).

Re-check *Placement* on page 16 if you moved the machine while making the connections.

6 Operation



- 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 water discharge tap is closed.
4. Fill the water tank.



- Use descaled water to prevent limescale build-up.
- The minimum water level is 200 mm.
- The maximum water is 200 mm below the edge of the tank. Take the volume of the dipped food products into account.

5. Press the **On/Off** button on the control panel to enable operation.
The red power indication light turns on.

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 On/Off** button or **FNC** button twice 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. Place a packaged food product on the platform.
2. Press the **Start** button.

The dipping cycle starts.

6.4 Draining the water from the machine



The water in the tank is very hot and can cause serious injury. Let the water cool sufficiently before draining it from the tank.

1. Push the **On/Off** button to switch the machine Off.
The red power indication light turns off. The temperature controller switches off.
2. Wait and let the water in the tank cool.
3. Place a container under the water draining valve to collect the draining water.
4. Open the water draining valve.

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 21.

6.5 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.

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 19.
- Always make sure the machine is stopped completely, see *Stopping the machine* on page 19.



- 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.

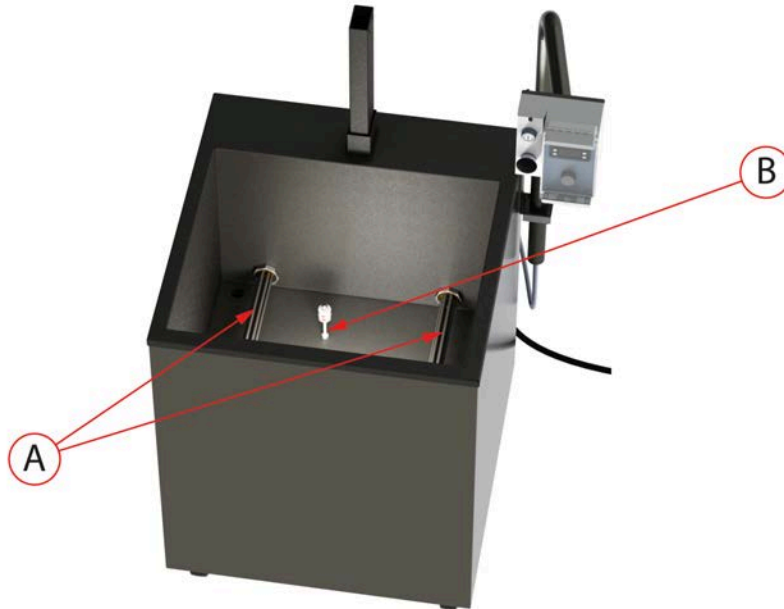
Activity	Daily	Monthly	Quarterly
Draining the water and cleaning the tank	×		
Checking the float		×	
Checking the hydraulic oil (level / quality)		×	

7.2 Cleaning the tank



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

Clean the inside of the water tank.



Pay special attention to the cleaning of:

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

7.3 Checking the float

1. Remove the platform from the tank to access the float.
2. Make sure that the float can move up and down freely along its axis.
Remove any material that may obstruct the free movement of the float.
3. Put the platform back into position.
4. If cleaning requires disassembly of the float ensure the side marked NC is mounted upwards during reassembly.

8 Troubleshooting

Malfunction	Activity	More information
Control panel does not illuminate.	<ul style="list-style-type: none"> Connect the machine to the power supply. Check the machine/circuit breaker. 	<i>Connecting the machine</i> on page 17.
	Check the main switch on the back of the machine.	<i>Starting the machine</i> on page 18.
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 18.
The pump keeps running after completing a dip cycle.	Check the start button (S3) or microswitch (S4) for short circuits.	Check the proper position and functioning of the buttons.
The platform is not going down.	Check the rotating direction of the pump.	Interchange two phases in the mains plug, see <i>Connecting the machine</i> on page 17.
	Check the start button (S3).	Check the proper position and functioning of the buttons.
	Check the pump for possible thermal overload.	Check the thermal overload setting and let the pump cool down. Reset the thermal overload by pressing the blue reset button.

Malfunction	Activity	More information
The platform does not rise.	Check the total weight of the packaged food products.	<ol style="list-style-type: none"> 1. Switch the machine off. 2. Let the water cool down. 3. Take the product out of the tank.
	Check the pump for possible thermal overload.	Check the thermal overload setting and let the pump cool down. Reset the thermal overload by pressing the blue reset button.
	Check the time relay.	Adjust the time relay to make the platform rise sooner. Replace the time relay if necessary.
	Check the oil level.	Check for leaks or damages. If necessary, loosen the oil filler cap on top of the oil tank and refill the oil level.
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 21.
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.

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 60 and DT 100 series

	DT 60	DT 100
General		
Sound emission	< 70 dB(A)	< 70 dB(A)
Dip cycle time	3 - 5 s	3 - 5 s
Amount of isolation balls	240	380
Dimensions of the machine		
Width	740 mm	955 mm
Length	790 mm	880 mm
Height	1320 / 1530 mm	1320 / 1530 mm
Weight	120 kg	150 kg
Water capacity	95 L	150 L
Maximum packaged food product dimensions		
Width	500 mm	600 mm
Length	600 mm	800 mm
Height	200 mm	200 mm
Weight	120 kg	150 kg
Power supply		
Voltage, frequency ¹	3 × 220 V, 60 Hz 3 × 230 V, 50 Hz 3 × 400 V, 50 Hz	3 × 220 V, 60 Hz 3 × 230 V, 50 Hz 3 × 400 V, 50 Hz
Connected load	9.0 kW	15.0 kW
Oil		
Oil contents	5 l	5 l
Type of synthetic oil	ISO VG 32	ISO VG 32

¹ Refer to the machine type plate to determine the voltage and frequency for the machine.



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