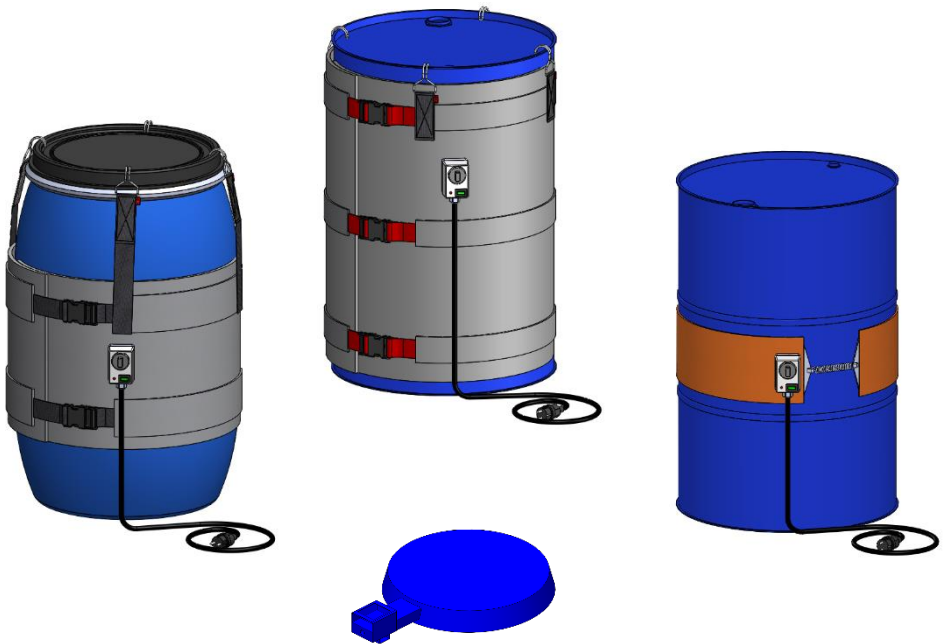


INSTRUCTION MANUAL

Drum Heaters WODL / WODH / WODS / WODB



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Disclaimer

All information - including the illustrations and graphical representations - correspond to our current state of knowledge and has been written to the best of our knowledge. Specifications are subject to change without prior notice. In addition, we reserve the right to make changes without notice to the structure, materials or workmanship, which serve the technical progress.



This operating manual contains all the important information for installation and commissioning. You will also receive important information for your safety as well as for help with problems.

The user of this product must decide at his own responsibility about the suitability for the intended application.

1. Introduction

Drum heaters and container heaters of the P series (hereinafter also referred to as "heaters") serve to heat drums and IBC containers made of plastic and metal in order to protect their contents from frost, to heat them to a certain processing temperature or to facilitate their removal and dosage by reducing their viscosity.

The heating element is inserted into pockets on the inside, which ensures a uniform heat distribution and gives the heaters a structure with which they optimally fit the surfaces of the containers to be heated. They are equipped with a manually adjustable thermostat to the desired temperature in the range of 0-90 ° C.

Through their low weight and integrated insulation, they minimize unwanted heat losses. Equipped with robust pull straps and snap fasteners, they can be quickly and easily attached to standard containers and removed again. Additional fastening straps or hooks prevent slipping on the container.

With their relatively low specific area heating power, they are less suitable for rapid heating of liquid or melting of solid contents. They are rather suited for frost protection and slow heating and maintaining of the temperature of already warmed containers directly at the sampling site. The optional insulation covers improve the efficiency and protect against burns on the hot surfaces of the containers.

Due to their high-quality materials and workmanship, Winkler heaters offer, when operated properly, a safe, efficient and durable solution for heating drums and containers in industrial applications.

Winkler AG has 40 years of experience as a developer and manufacturer of flexible electrical heating solutions for a wide variety of industrial applications. The high-quality materials and components, the elaborate workmanship and the many practically designed details show the promise of quality: Winkler products are convincing in their use with their consistently high benefits and intuitive operation.

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2. Applicable standards

This heater is designated for use in industrial applications.

For planning, construction, testing, operation, maintenance and repair, the requirements are:

- these operating instructions,
 - EN 60519-1 and EN 60519-2 "Safety in electrical heating systems",
Part 1: General requirements (= IEC 519-1 = VDE 0721 Part 911),
 - the applicable parts of VDE 0100,
- as well as other applicable standards and regulations (e.g. the professional associations) and regulations, depending on the application. The protective measures against dangerous body currents must be carried out in accordance with VDE 0100 part 410 and part 540 (grounding or plant earthing) as well as the specifications of the standards listed above.

3. Designated Use

The heaters are only operated as designated if the following points are taken into account:

- The heater may only be operated at the specified nominal voltage.
- The heater may only be operated in the range 0-90 ° C.
- Only authorized persons may work on the heater.
- The safety and operating instructions must be observed.
- The operating instructions of the operator must be observed.
- The statutory accident prevention regulations must be adhered to.

Non-compliant operation:

- operation in potentially explosive atmospheres,
- operation by unauthorized persons,
- operation in violation of safety regulations,
- operation with deactivated, modified / defective safety devices.

4. Scope of supply

Check the packaging for intactness and complete scope of supply. Contact your supplier immediately should parts be missing or defective.

Scope of supply: 1 pc. Heater

1 pc. Accessory set fixing straps (only drum heater)

1 pc. Manual

5. Safety Instructions



Please read this operating manual before using the device!
Failure to observe these safety instructions may result in property damage or personal injury due to fire or electric shock!

Heaters are electrical equipment that may only be installed, connected and put into operation by trained personnel. Suitable electrical switching and protection devices are to be provided according to the respective statutory provisions by the operator. We recommend the use of a residual current device (RCD) with 30 mA.



All P-Series heaters are designed for indoor use only (IP54 rating) and must not be exposed to the weather.

Before operation

Remove the heater from the packaging and make sure it is not damaged.
Never lift the heater by the connection cable.

Check the conformity of the mains voltage with the rated voltage on the type label.
Always use the heater only for the designated container of the appropriate type and size. This is especially true for cambered barrels. Never use the heater without a suitable container!

When using on plastic containers, make sure to exceed the manufacturer's maximum temperature (70 ° C) and heat up time.



Find out which max. permissible temperature of the substance (→ safety data sheet) may not be exceeded and whether flammable gases or vapors may escape (risk of fire and explosion!)

Make sure that the container to be heated is clean and dry.
Do not use additional heating or heat sources and never expose the heater to temperatures above the nominal temperature.

Installation

Install the heater so that it rests flat and smooth against the container and so that the heated areas (indicated by the inner pockets) DO NOT overlap. The heater must be secured against slipping by means of the existing fixings.

Do not use fasteners other than those supplied and do not use tools that could overstress the material.

Always keep a safety distance of at least 50 cm between two heated containers. The same applies to the distance to radiators, warm surfaces etc.

Operation

Only connect the heater to the power supply after installation. Switch on the heater at the switch-on button and set the desired temperature on the knob of the thermostat. Note that the temperature set on the thermostat does not necessarily correspond to the temperature of the content.

The capillary-sensor of the thermostat is positioned so that it detects the temperature at the surface of the heating element. The temperature of the content, if necessary, must be determined by separate measurement.



Monitor at any time the heating phase and the operation of the heater to detect any overheating or irregularities in good time and to take appropriate measures.

If necessary, open the lid or bung holes of the container so that it does not expand inadmissibly due to pressure build-up during heating. Monitor the level inside the container while removing the contents. If any liquid spills over, immediately stop the heaters operation.



Caution: At temperatures above 60 ° C, there is a risk of burns on the surfaces of the containers. Protect yourself e.g. by using an insulation cover available as an accessory.

During initial operation, you may detect a smell due to technical reasons which does not represent a defect. Please pay attention to good ventilation. When the heater is not in operation, disconnect it from the power supply.

Removal and storage

Turn off the heater and allow it to cool down completely. Disconnect it from the power supply before removal. Then check for damage and contamination and the connecting cable for defects.

Do not use solvents or abrasives to clean the heater and never immerse the heater into liquids. For cleaning, gently wipe the surfaces and thermostat with a damp cloth. Keep the heater away from sharp edges and sharp objects.



If you notice any defects or damage of any kind, do not re-operate the heater again. Do not try to repair a damaged heater yourself.

When the heater is not in use, it should be stored in a dry and clean environment in its original packaging. To do this, gently roll it along the lines of the pockets without pressing or bending it.

6. Drum Heater WODL

6.1 Designated use and applications

Fassheizer der WODL-Serie sind zur Erwärmung bis max. 70 °C von Metall- und Kunststoffbehältern **in NICHT explosionsgefährdeten Bereichen** bestimmt:

Typ WODLX___: for cylindrical metal and plastic barrels of 200-220 L

Typ WODLO___: for cambered plastic barrels 200 L

6.2 Technical Data

Outer cover:	PTFE-beschichtetes Glasfasergewebe
Thermal Insulation:	Glasnadelmatte
Heating Element:	Widerstandsheizleiter mit Schutzleiterumflechtung
Operating Voltage:	230 VAC (+/- 10%)
Operating Temperature:	0-70 °C
Protection class:	SK I (protective earth)
Protection class:	IP 54
Ambient temperature	-20 ... 50°C
Length connecting cable:	3,0 m

Type	Drum	Prot. Cl.	Power	Dimensions	Weight
WODLX200-230XC071	200-220 L	I	580 W	2.100 x 800 mm	8,5 kg
WODLO200-230XC071	200-220 L	I	330 W	2.100 x 460 mm	4,9 kg
WODLO120-230XC071	120	I	220 W	1.800 x 370 mm	3,2 kg
WODLO060-230XC071	60 L	I	200 W	1.400 x 460 mm	3,1 kg
WODLO030-230XC071	30 L	I	115 W	1.170 x 400 mm	2,3 kg

6.3 Structure (see also illustration 1.1)

The outer jacket (1) of the barrel heater of the WODL series consists of a PTFE-coated glass fiber fabric, which is water-repellent) The fluoropolymer insulated heating conductor (with protective braiding) is sewn to the back of the heater. On the outside is a thermal insulation consisting of glass needle mat and polyester fleece. Robust tension belts (2) and snap fasteners made of polyamide are used for fastening. Four additional fastening hooks with Velcro fasteners prevent slipping. Four additional fastening hooks with Velcro fasteners prevent slipping.

The drum heaters have a safety capillary tube thermostat (3) with a rotary knob, an on/off switch and 2 indicator lights. In addition, a bimetallic limiter is installed which prevents uncontrolled heating in the event of a thermostat failure. The drum heaters are designed in protection class I (protective grounding). They are connected to the power supply over a 3.0 m long connecting cable (4).

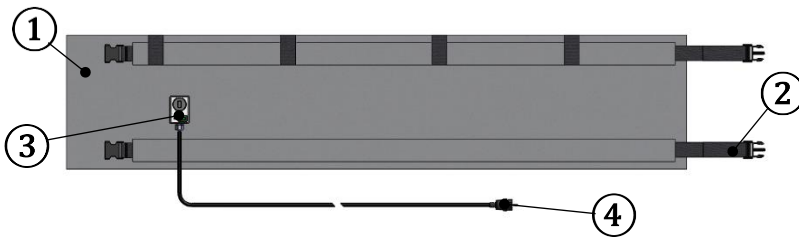


Illustration 1.1: Drum Heater WODL0200 (Exterior)

6.4 Assembly

Place the drum heater around the drum and fasten it with the fastening hooks to the fleece patches to prevent it from slipping off (Figure 1.2). Close the snaps and tighten the pull straps evenly.



Illustration 1.2

6.5 Commissioning (Illustration 1.3)

Connect the drum heater to the power supply via the connecting cable (1) and switch it on at the toggle switch (2) of the thermostat. The green indicator light (3) in the switch will now light up. Set the desired temperature in the range 0 to 70 °C at the rotary knob (4) of the thermostat. The red control lamp (5) now indicates that the drum heater is heating. When the set temperature is reached, the thermostat automatically switches off the heating element. The red control lamp (5) goes out again. As soon as the temperature falls below the set temperature again, the thermostat automatically switches the heating element back on.

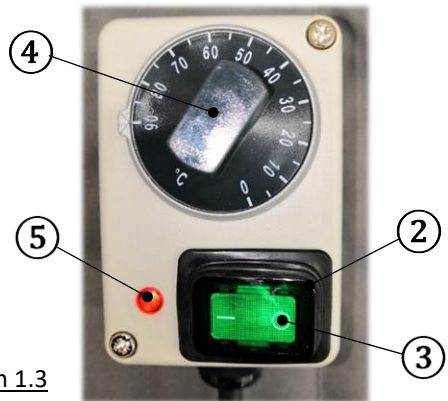


Illustration 1.3

Example: Thermostat combination

Monitor the heating process and the behaviour of the ingredient. If necessary, open the lid or bung holes of the drum to prevent it from expanding inadmissibly due to pressure build-up during heating. If liquid escapes, shut down the barrel heater immediately.

7. Drum Heater WODH

7.1 Designated use and applications

WODH series drum heaters are designed for heating up to max. 200 °C of metal drums **in non-explosive areas:**

7.2 Technical Data

Outer cover:	PTFE-beschichtetes Glasfasergewebe
Thermal Insulation:	Glasnadelmatte
Heating Element:	Widerstandsheizleiter mit Schutzleiterumflechtung
Operating Voltage:	230 VAC (+/- 10%)
Operating Temperature:	0-200 °C
Protection class:	SK I (Schutzerdung)
IP-rating:	IP 54
Ambient temperature:	-20 ... 50°C
Length connecting cable:	3,0 m

<u>Type</u>	<u>Drum</u>	<u>Prot. Cl.</u>	<u>Power</u>	<u>Dimensions</u>	<u>Weight</u>
WODH0200-230XC201	200-220 L	I	1200 W	2.100 x 800 mm	8,5 kg
WODH0120-230XC201	120 L	I	650 W	1.800 x 370 mm	3,2 kg
WODH0060-230XC201	60 L	I	450 W	1.400 x 460 mm	3,1 kg
WODH0030-230XC201	30 L	I	280 W	1.170 x 400 mm	2,3 kg
WODH0200-230ZP201	200-220 L	I	2000 W	2.100 x 800 mm	8,5 kg

7.3 Structure (see also illustration 1.1 und 1.2)

The outer jacket (1) of the barrel heater of the WODH series is made of a PTFE-coated glass fibre fabric, which is water-repellent. The fluoropolymer-insulated heating conductor (with protective conductor braiding) is sewn onto the heater. On the outside there is thermal insulation made of glass needle mat with polyester fleece. Robust tension belts (3) and snap fasteners made of polyamide are used for fastening. Four additional fastening hooks with Velcro fasteners prevent slipping.

Drum heater with Kapillarrohrthermostat

They have a safety capillary tube thermostat (5) with a rotary knob, an on/off switch and 2 indicator lights. In addition, a bimetallic limiter is installed to prevent uncontrolled heating if the thermostat fails. The drum heaters are designed in protection class I (standard) protection class I. They are connected to the power supply via a 3.0 m long connecting cable (6).

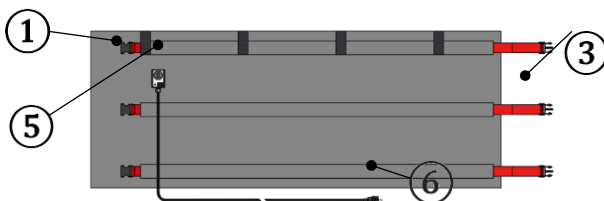


Illustration 1.1: Drum Heater WODH0200-XC (Exterior) with Kapillarrohrthermostat

Drum Heater with cable outlet

They are equipped with a Pt100 sensor and cable outlet (1) for connection to an electronic controller, which can also be ordered in different versions. The drum heaters are designed in protection class I (protective earthing). They are connected to the power supply via a 3.0 m long connecting cable.



Illustration 1.2: Drum Heater WODH0200-ZP (Exterior) with cable outlet

7.4 Assembly

Place the drum heater around the drum and fasten it to the fleece patches with the four fastening hooks to prevent it from slipping off (Figure 1.3). Close the snaps and tighten the pull straps evenly. The drum heater must fit smoothly and without creases on the container.

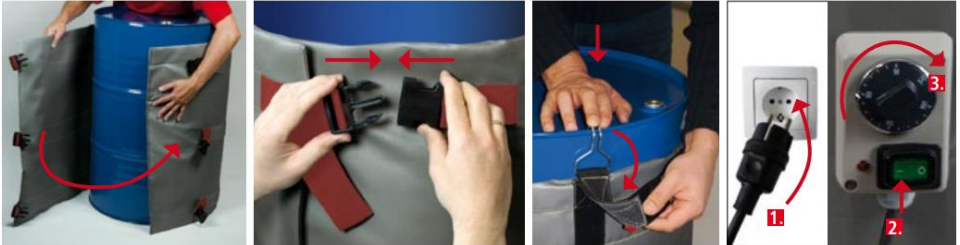


Illustration 1.3

7.5 Inbetriebnahme (Abbildung 1.4)

Connect the drum heater to the power supply via the connecting cable (1) and switch it on at the toggle switch (2) of the thermostat. The green control lamp (3) in the switch will now light up. Set the desired temperature in the range 0 to 200 °C at the rotary knob (4) of the thermostat. The red control lamp (5) now indicates that the drum heater is heating. When the set temperature is reached, the thermostat automatically switches off the heating element. The red control lamp (6) goes out again. As soon as the temperature falls below the set temperature again, the thermostat automatically switches the heating element back on.

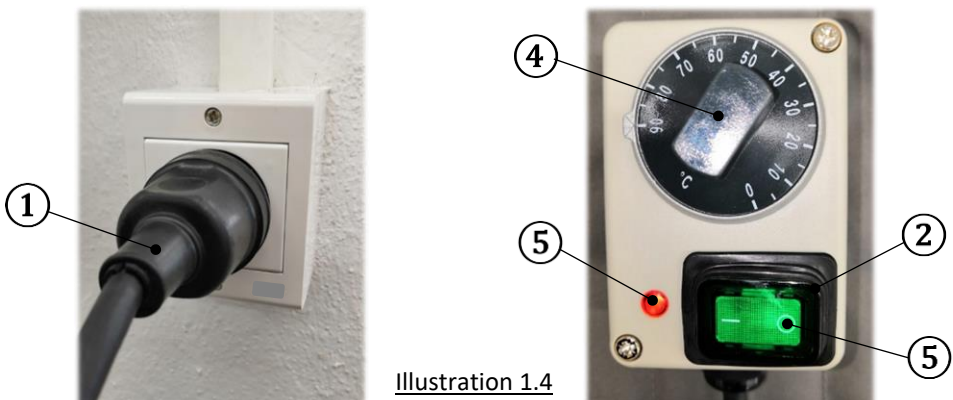


Illustration 1.4

For drum heaters with cable outlet, the temperature regulation is controlled by an electronic regulator. Please refer to the additional operating instructions of the

controllers. Monitor the heating process and the behaviour of the ingredient. If necessary, open the lid or bung holes of the barrel so that the barrel does not expand inadmissibly due to a pressure build-up during heating. If liquid escapes, shut down the barrel heater immediately.

8. Drum Heater WODS

8.1 Designated use and applications

Fassheizer der Serie WODS sind zur Erwärmung bis max. 120 °C von Metallfässern **in non-explosive areas** bestimmt:

8.2 Technical Data

Outer cover:	silikonbeschichtete Glasfasermatte
Heating Element:	PFA-beschichteter Heizleiter
Operating Voltage:	230 VAC (+/- 10%)
Operating Temperature:	0-120 °C
Protection class:	SK II (protective insulation)
IP-rating:	IP 40
Ambient temperature	-20 ... 50°C
Length connecting cable:	3,0 m

Type	Drum	Prot. Cl.	Power	Dimensions	Weight
WODSH200-230XC120	200-220 L	I	1.500 W	1.665 x 180 mm	1,7 kg
WODSL200-230XC120	200-220 L	I	1.000 W	1.665 x 180 mm	1,7 kg
WODSL120-230XC120	120 L	I	800 W	1.300 x 125 mm	1,2 kg
WODSL060-230XC120	60 L	I	500 W	940 x 125 mm	1,0 kg
WODSL030-230XC120	30 L	I	300 W	800 x 125 mm	0,9 kg

8.3 Structure (see also illustration 1.1)

The heating jacket (1) of the WODS drum heaters consists of silicone-coated glass fibre mat and PFA-coated heating conductor, which is laid in the width of the entire heating jacket. By means of hooks and tension springs (2) the barrel heater can be fastened quickly and easily. The silicone coating prevents slipping.

The drum heaters have a safety capillary tube thermostat (3) with a rotary knob, an on/off switch and 2 indicator lights. In addition, a bimetallic limiter is installed which prevents uncontrolled heating in the event of a thermostat failure. The drum heaters are designed in protection class II (insulated). They are connected to the power supply over a 3.0 m long connecting cable (4).

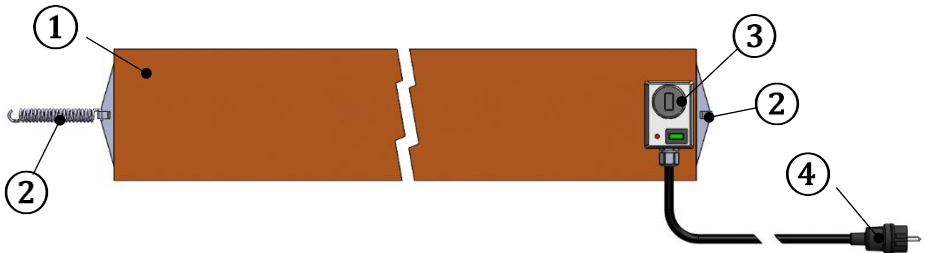


Illustration 1.1: Drum Heater WODS (Exterior)

8.4 Installation

Place the barrel heater around the barrel and fasten the two ends to the hooks using the tension spring (see figure 1.2). Align it in such a way that it lies against the barrel without gaps over the entire heating surface and has a direct, good contact with the barrel surface.



Illustration 1.2

8.5 Operation (Illustration 1.5)

Connect the container heater to the power supply via the connecting cable (1) and switch it on at the toggle switch (2) of the thermostat. The green indicator light (3) in the switch will now light up. Set the desired temperature in the range 0 to 90 °C at the rotary knob (4) of the thermostat. The red control lamp (5) now indicates that the container heater is heating. When the set temperature is reached, the thermostat automatically switches off the heating element. The red control lamp (5) goes out again. As soon as the temperature falls below the set temperature again, the thermostat automatically switches the heating element on again.

For container heaters with 2 heating zones, start up one or both heating zones depending on the level of the contents.



Structure 2.5

Monitor the heating process and the behaviour of the ingredient. If necessary, open the screw cap of the canister so that it does not expand inadmissibly due to pressure build-up during heating. In case of liquid leakage, shut down the container heater immediately.

9. Drum Heater WODB

9.1 Designated use and application

WODB series drum heaters (drum bottom heaters) are designed for heating up to max. 150 °C of metal drums **in non-explosive areas**:

9.2 Technical Data

Case:	Stahlblech
Heating Element:	Silikonheizmatte
Operating voltage:	230 VAC (+/- 10%)
Operating Temperature:	0-150 °C
Protection class:	SK II (Schutzisoliert)
IP-rating:	IP 40
Ambient temperature	-20 ... 50°C
Length connecting cable:	2,0 m

<u>Type</u>	<u>Fass</u>	<u>Schutzkl.</u>	<u>Power</u>	<u>Dimensions</u>	<u>Weight</u>
WODBH200-230XC150	200-220 L I		900 W	550 x 110 mm	14,0 kg

9.3 Structure (see also illustration 1.1)

WODB series drum heaters have a 2 mm thick sheet metal (1) as housing and a temperature resistant coating. The heating follows over a silicone heating mat, which ensures an even distribution of the heat. Integrated insulation prevents the floor from heating up.

The drum heaters have a thermostat (2) with a rotary knob, an on/off switch and 2 control lamps. The drum heaters are designed in protection class II (protective insulation). They are connected to the power supply via a 2.0 m long connecting cable (3).

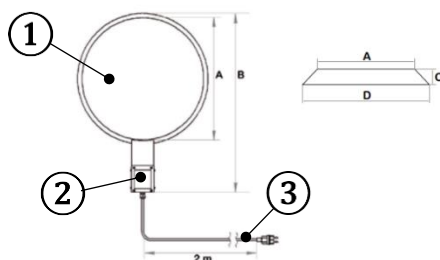


Illustration 1.1: Drum Heater WODB

9.4 Montage

Place the metal drum to be heated on the WODB drum floor heater without damaging it or its connecting cable. Ensure that the barrel is securely positioned on the barrel bottom heater. Make sure that the surface of the barrel is protected against contact during the heating operation to avoid burns. In order to save energy, we recommend using a suitable insulating jacket and insulating cover.

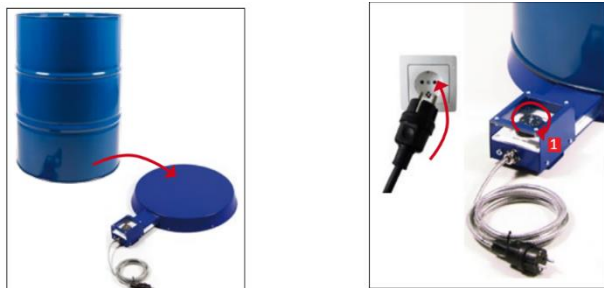


Illustration 1.2

9.5 Operation (Illustration 1.5)

Connect the canister heater to the power supply via the connecting cable (1) and switch it on at the toggle switch (2) of the thermostat. The green indicator light (3) located in the switch now lights up. Set the desired temperature in the range 0 to 90 °C at the rotary knob (4) of the thermostat. The red control lamp (5) now indicates that the canister heater is heating. When the set temperature is reached, the thermostat automatically switches off the heating element. The red control lamp (5) goes out again. As soon as the temperature falls below the set temperature again, the thermostat automatically switches the heating element on again.

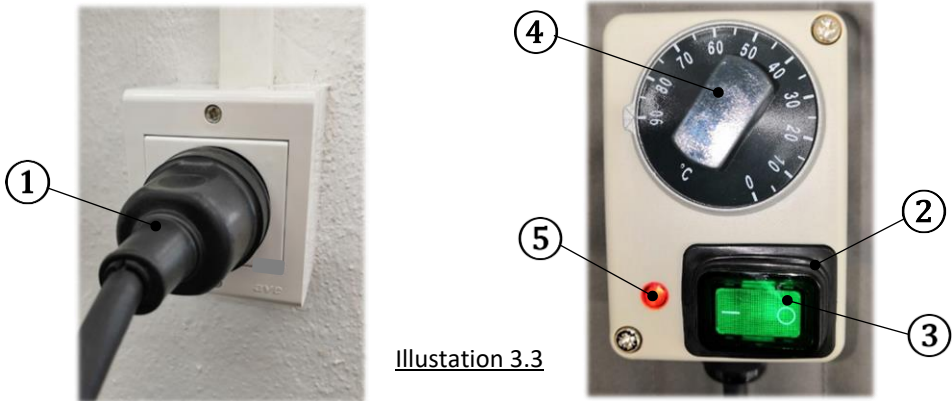


Illustration 3.3

Monitor the heating process and the behavior of the ingredient. If necessary, open the bunghole of the canister so that it does not expand inadmissibly due to a pressure build-up during heating. In case of liquid leakage, shut down the canister heater immediately.

9. Troubleshooting Guide

Please read this manual before contacting us. This guide is designed to answer the most frequently asked questions.

If you are unable to identify the problem or need additional assistance, please contact your dealer or our service at Tel. +49-6221-364656 / service@winkler.org

<u>PROBLEM</u>	<u>SOLUTION(S)</u>
Heater does not fit	Make sure the heater is designated for your container. Measure its height and circumference and compare it to the dimensions of the heater in the technical data.
Heater does not heat	Make sure that the heater is connected to a suitable power supply. The type label shows the rated voltage of the heater. When the toggle switch is in the "ON" position, the green warning light must be on. If the red indicator light does not light up when the knob is fully turned, this indicates a defective thermostat.
Circuit breaker trips	Check that the circuit breaker is suitable for the rated current of the heater. The type label shows the rated power. Examine the heater and connection cable for damage that indicates a short circuit in the heater.
Light contamination the outside / inside	Use a clean cloth with household cleaner to wipe off the contamination. The cleaner must not contain any solvents or abrasives.

If it is determined or suspected that safe operation is no longer possible, the heater must be taken out of service and secured against unintentional startup. This includes the clear marking.

This case occurs,

- if the heater has visible damage (e.g. the outer jacket),
- when the heater stops heating,
- if the heater has suffered an overload of any kind exceeding its permissible limits (for example, due to storage, transport, installation, commissioning, operating conditions etc.).

10. Maintenance Instructions

Maintenance and servicing should be carried out at regular intervals in accordance with the standards mentioned under "Safety instructions" and the regulations applicable to the application and the provisions applicable to the application. The function of the heating element, thermostat and limiter must be checked and documented at least once a year.

The inspection must be carried out after the heater has cooled down to ambient temperature and has been disconnected from the power supply. The heater should not have any cuts, cracks or stitches. The insulation of the connection cable must not have any visible damage. The heater should not have any accumulations of dirt, oil, grease or foreign bodies. Warnings and rating plates should be undamaged and clearly legible.

Heaters where the heating cable is visible have been damaged or overheated.

They must be taken out of operation immediately and may no longer be used.

10.1 Repair

Modifications or changes to the heater may affect the function. Repairs may only be carried out by qualified personnel or by Winkler. Only original spare parts and accessories may be used.

**Do not try to repair a damaged heater yourself!
Instead, send it to our service department.**

10.2 Return

For returns, we ask you to always decontaminate the heater before, to confirm this in writing and to attach it to the heater as information. If you require a decontamination confirmation, please contact us.

11. Warranty Information

Winkler warrants to the original purchaser of the product for a period of eighteen (18) months from the date of shipment or twelve (12) months from the date of installation, whichever is earlier.

Winkler's obligation and exclusive remedies under this warranty are limited to repair or replacement, as determined by Winkler, those parts of the product that prove defective after being reviewed by Winkler. Details can be found in our terms and conditions under www.winkler.org

12. Disposal

Environmental information for industrial customers within the EU:

The WEEE Directive 2012/19/EU aims to prevent waste from electrical and electronic equipment and to reduce such waste through re-use, recycling and other forms of recovery.



The symbol indicates that the product should be disposed of separately from regular commercial / household waste. It is your responsibility to dispose of this product only through the legally prescribed disposal routes or the appropriate collection points designated by the government or local authorities.

Proper disposal and recycling help prevent potential negative consequences for the environment and human health. If you need more information about how to dispose of your old equipment, contact your local or municipal waste disposal service or the dealer from whom you purchased the product.

EU-Declaration of Conformity

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Product Group: Drum Heaters

Series/articles: **WODL... / WODH... / WODS... / WODB...**

Directives: **EU-Directive 2014/35/EU** (low voltage directive)
EU-Directive 2014/30/EU (electromagnetic compatibility)
EU-Directive 2011/65/EU (RoHS directive)

We hereby declare under our sole responsibility, that the design and construction of the product described above as well as the products we have placed on the market are in compliance with the essential health and safety requirements of the above-mentioned EU-Directives.

Further applied standards and technical specifications:

EN 60519-1:2011 (VDE 0721-1) Safety in electrical heating systems
EN 60519-2:2006 (VDE 0721-2) Safety in electrical heating systems

Any modification of the product not agreed with us will turn this declaration invalid.



Heidelberg, den 17.3.2019

Andreas Zenner
CEO

Notizen