

⚠ WARNING

Read and understand this material before operating or servicing this Jacket heater. Failure to understand how to safely operate this heater could result in an accident causing serious injury or death. This heater should only be operated by qualified personnel. A person who has not read and understood all installation instructions is not qualified to install this product.



INTRODUCTION

Thank you for purchasing a Blue Ink Co. Ltd Jacket Drum /IBC Heater. Your heater is designed to provide a long and efficient service life with function, reliability, and safety in mind. For additional information concerning this, or other Blue Ink Co. Ltd products, please contact at : info@blueink.co.uk

IMPORTANT SAFETY INSTRUCTIONS

⚠ DANGER	Approvals: this product has been designed in compliance with Low Voltage Directive (LVD) 2006/95/EC, and it must be installed in accordance with all local applicable instructions, codes, and regulations.
⚠ CAUTION	Never handle the heater while it is in operation; always disconnect the heater from the power source and allow it to cool prior to handling.
	Inspect heater before use.
	Never operate heater without a temperature control device.
	Do not wrap the heater over itself
	If spillage of foreign matter onto heater occurs, disconnect from power source and clean after heater has been allowed to cool.
	Never operate a heater without an appropriate heat sink (device being heated is considered a heat sink).
	Do not operate heater above rated temperature value.
	Fasten heater to device using approved methods only.
	Do not repair damaged or faulty heaters.
	Do not crush or apply severe physical stress on heater fabric or electronic control housing.
	Disconnect heater when not in use.
	Use specified sized heater with same sized drum or IBC. Do not use for other applications.
⚠ DANGER	Do not immerse heater in liquid. If used outdoor or indoor, it must be protected from dust, rain, snow, ice and liquid spillage.
	Keep volatile or combustible material away from heater when in use.
	Use heater only in approved locations.
	Do not use in hazardous areas. This equipment is not explosion proof
	Keep sharp metal objects away from heater.
⚠ WARNING	Only qualified personnel are allowed to connect electrical wiring.
	Disconnect all supply power at the source before making any power connections.
	All electrical wiring must follow local electrical codes

Blue Ink 9VJ Insulated Jacket Drum Heaters Instruction and installation Manual (English) P2

INSTALLATION

CHECKING PRIOR TO INSTALLATION

1. Check for any visible damage to the heater. Do not use it prior a careful inspection by professional electrician if rips or punctures on the surface are found.
2. Verify that the surface of the container that must be heated is free from all sharp edges, weld splatter, rust, oil, etc. Remove any asperities and contamination before use
3. Check that the desired placement of the heater will not cause damage to the heater through impact shock, vibration, ambient temperature, mishandling, or by neighboring moving parts.
4. Confirm that voltage of heater is appropriate for power supply. Never use on a different voltage than specified on the heater.
5. Confirm that power of heater and temperature adjustment range are appropriate for container material.
6. Confirm heater maximum exposure temperature rating is suitable for environment. The temperature of the internal heating element may run up to 25% higher than the external surface of the heater. Use extreme caution for applications that require a process temperature near the maximum exposure temperature rating (120°C/250°F) of the jacket heater.
7. Confirm that heater maximum exposure temperature rating is suitable for the process temperature, and heated liquid. Never use these heaters in any explosion or flammable hazard areas
8. Do not connect to AC power until all installation steps are completed.

INSTALLATION OF HEATER

1. Wrap the heater around the drum or IBC. The jacket heater must cover the whole surface.

2. Extend the buckles attached to the straps to the right length. Hook them on the opposite side clip.



3. Tighten straps enough to press the jacket heater on the container on its full surface



4. On steel drums, try to put at least on strap upside on rib, this will avoid the jacket heater to slip






5. Verify there are no gaps between the heater and the drum, good thermal contact is essential.



6. Do not overlap the heater onto itself or another heater.

CONNECTING HEATER TO POWER SUPPLY

Blue Ink 9VJ Insulated Jacket Drum Heaters Instruction and installation Manual (English) P3

1. The heater is designed to work at a specific voltage. Refer to identification label located on the heater for rated voltage and wattage.	
⚠ DANGER	2. Connecting the heater to a voltage higher than specified will destroy its jacket by overheating and will destroy the electronic temperature control. This could induce heater ignition and a fire hazard
⚠ WARNING	3. Failure to operate the heater at its rated voltage could cause damage to the heater, surface being heated, or contents of drum or IBC. All electrical connections must be made by qualified personnel and in accordance with all local codes and regulations. Power supply must be shut off when the heater is not in use.
4. Open the electronic control box With a screw driver, remove the electronic control box cover screws (4 pcs). There are small holes at the corners of the cover to put security seals.	
5. Remove the connection block electrical protection to have access to the screws	
6. Connect the power supply cord to the connector. This connector is suited for cables from 1.5 to 6mm ² (AWG16 to AWG 10). This housing is equipped with a PG16 cable gland. The power cable consists of three color-coded conductors, black, white, and green (US) or brown, blue and yellow green (Europe). The black (brown) wire should be connected to L1 (Phase). The white (Blue) wire should be connected to N1 (Neutral). The green (yellow green) wire should be connected to earth ground. The power connections must be adequately rated to electrically support the voltage and amperage of the heater. Cord style to be used is specified by local regulation. Follow all local electrical codes for proper electrical connections. After wires connection, screw on again the connector cover and the housing cover. The cable gland must be correctly screwed on the cable to avoid it to slip	
7. End User Must Comply to the Following: -Final installation / wiring must be inspected by the authority who has jurisdiction in the area that the heater is installed -The end-user is responsible for providing a suitable main disconnecting device at the electricity supply end of the connecting cable. The on-off switch located on the side of the electronic control box is not a main disconnecting device -Properly sized circuit breakers must be used - It is highly recommended that a ground fault circuit breaker is used.	

ADJUSTMENT OF TEMPERATURE SET-POINT AND OTHER PARAMETERS

Blue Ink 9VJ Insulated Jacket Drum Heaters Instruction and installation Manual (English) P4

1. Functions

This jacket heater is equipped with a mini-sized and integrated intelligent controller, with the following functions: Temperature Display/ Temperature Control/ Value Storing/ Self Testing. Power supply must be connected to adjust temperature and parameters. Set values are automatically stored when the power is switched off.

There is a main on-off switch located at the side of the housing. This on-off switch can be used to switch off the power to the heater and electronic control when the jacket heater must be switched off.



- 1: LED Digital display
- 2: set point and parameters adjustment
- 3: °C display or °F display
- 4: Alarm display
- 5: heating or cooling relay output display



⚠ WARNING

The electronic temperature control will start the heating process immediately when it is connected to electrical power supply. Heating is not stopped during the set point adjustment process. The set point value that is set after individual testing of each jacket heater in the Blue Ink factory is 20°C.

2. Set point temperature adjustment

When the plastic box cover is removed:

-Press **SET** button, the set temperature is displayed.

-Press or to modify and store the displayed value, The values can be increased

or reduced rapidly by pressing button

or button for more than 2 seconds. If no more button is pressed within 6 seconds, the ambient temperature will be displayed.

-Press **SET** button to exit the adjustment and display the ambient temperature. (To set temperature adjustment range limits: see parameters E1 and E2)



3. Other parameters setup

Press **SET** button and hold for 6 seconds to enter the parameter setup mode while E1 flashes.

Press **SET** again button to select sequentially the parameters: E1, E2, E3, E4, E5, C1, C2

Press or button, the value of parameter will be displayed and can be modified and stored.

If no more button is pressed within 6 seconds, it will return to normal operation mode.



Parameter	Function	Set range	Default
E1	Lower set point limit	-45°C (-41°F) ~ Set temp.	-35°C (-31°F)
E2	Higher set point limit	Set temp. ~ 120°C (248°F)	90°C (194°F)
E3	Temp. hysteresis	0.1 ~ 30°C (0.2 ~ 54°F)	4°C (7°F)

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E4	Start delay time	0~10 Minutes	0 Minute
E5	Offset on ambient temp.	-20~20°C (-35~36°F)	0
C1	Temperature unit	0=°C 1=°F	0
C2	Control mode	0= refrigeration, 1= Heating	0

⚠ WARNING

“Heating” mode is mandatory in this application. If not set when you receive the product, set control mode C2 to 1



Heating mode: ok



Cooling mode : reset mode C2 to 1

4. Decimal point

There is a decimal point when displayed values are less than 100.



5. Resume factory default settings:

Press button for 1 second and then press button simultaneously for 6 seconds, the display flashes, all parameters will be resumed as same as factory defaults. After 6 seconds, it returns to the normal operation.

6. How to lock and unlock parameters (access in normal operating mode) :

The factory default setting is “OFF”: parameters are locked, no changes in parameters are allowed, it is just possible to adjust temperature set point.

-To unlock parameters: press button and hold for 6 seconds (OFF is displayed) until “ON” is displayed

-To lock parameters: press button and hold for 6 seconds (ON is displayed) until “OFF” is displayed.

6-Heating LED display:

During heating, the LED is on; when set point has been reached the LED is off.

If a starting delay has been set (parameters E4), during the delay, the LED flashes.

Refrigerating LED: not used in this application



Close the electronic control housing cover and secure using the 4 screws. Put new security seals if requested



⚠ WARNING

1 .If used on container that is not full, the container surface located on the empty section will be overheated. This can overheat gas surrounding the product you are heating over its flash point. This temperature overshoot may also destroy the jacket.



⚠ WARNING

2.If the operating temperature is within 10°C (20°F) of the maximum exposure temperature of the jacket heater or if the temperature sensor/ controller is controlling a process remote to the heater, an additional high-limit temperature cut-out sensor/controller or thermostat is required to protect the heater. Consult Blue Ink for additional information

Blue Ink 9VJ Insulated Jacket Drum Heaters Instruction and installation Manual (English) P6

TROUBLESHOOTING GUIDE

Please read this guide prior to contacting Blue Ink Co. Ltd Manufacturing Co., Inc. This guide is designed to answer the most commonly asked questions. If you are unable to identify the problem or need additional assistance, please contact us at: infoblueink@ultimheat.com




PROBLEM	SOLUTION(S)																																																
No heat or insufficient heat	<p>Verify heater is connected (plugged) to the proper voltage. The identification label displays the heater’s voltage requirement. If the voltage is correct, disconnect the power supply and check the resistance reading. Checking the resistance reading will determine if there is an open circuit in heater. Disconnect the belt connector and measure the resistance with an ohmmeter between connection block terminals L2 and N2. The correct readings are given in the table below.</p> <p>Resistance checking on heaters with remote electronic temperature control</p> <table><tr><th colspan="3">Ohms Chart</th></tr><tr><th>Watts</th><th>Ohms 115V, +/-5%</th><th>Ohms 230V, +/-5%</th></tr><tr><td>200</td><td>66,1</td><td>265</td></tr><tr><td>300</td><td>44,1</td><td>176</td></tr><tr><td>400</td><td>33,1</td><td>132</td></tr><tr><td>500</td><td>26,5</td><td>106</td></tr><tr><td>600</td><td>22,0</td><td>88,2</td></tr><tr><td>700</td><td>18,9</td><td>75,6</td></tr><tr><td>800</td><td>16,5</td><td>66,1</td></tr><tr><td>900</td><td>14,7</td><td>58,8</td></tr><tr><td>1000</td><td>13,2</td><td>52,9</td></tr><tr><td>1100</td><td>12,0</td><td>48,1</td></tr><tr><td>1200</td><td>11,0</td><td>44,1</td></tr><tr><td>1300</td><td>10,2</td><td>40,7</td></tr><tr><td>1400</td><td>9,4</td><td>37,8</td></tr><tr><td>1500</td><td>8,8</td><td>35,3</td></tr></table>  	Ohms Chart			Watts	Ohms 115V, +/-5%	Ohms 230V, +/-5%	200	66,1	265	300	44,1	176	400	33,1	132	500	26,5	106	600	22,0	88,2	700	18,9	75,6	800	16,5	66,1	900	14,7	58,8	1000	13,2	52,9	1100	12,0	48,1	1200	11,0	44,1	1300	10,2	40,7	1400	9,4	37,8	1500	8,8	35,3
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Circuit breaker is tripping	Make sure the circuit breaker is capable of handling the amp requirement of the heater. The identification label displays the heater’s amperage requirement. If the circuit breaker is correctly sized, examine heater and cord for any damage. If cord or heater insulation is damaged, replace it with original manufacturer spare parts.																																																
The heater does not fit the container	Confirm that the heater provided was designed to fit around your specified container.																																																
Liquids or chemicals have lightly spilled on exterior or interior of the jacket	Apply any general household cleaner using a clean cloth. Do not immerse.																																																
No display on electronic control, and no heating	Verify that the electronic control box is connected to the proper voltage. If the power is correctly connected, check the fuse and replace it if it is blown.																																																
“HH” displayed on controller readout	Temperature sensor is short circuited or overheated (more than 120°C /248°F). Disconnect the power supply, check the sensor wires to see if there is a short circuit due to insulation damage (Same process as heater resistance measurement, but connect leads to terminals B and C, standard resistance reading at ambient temperature should be about 5.9 K ohms at 20°) If damage is found, repair the wires with shrink sleeve or Kapton tape. If the NTC sensor itself is short circuited, replace it using a manufacturer original spare part (Ask for replacement instruction manual)																																																

WARRANTY INFORMATION

Blue Ink Co. Ltd, Bangkok, (Thailand), manufacturer of this jacket heater, warrants to the original purchaser for the period of eighteen (18) months from date of shipment or twelve (12) months from date of installation, whichever comes first. This warranty is limited to the replacement of the product found defective and not misused. Contact us at infoblueink@ultimheat.com for complete details about warranty application..

SAFETY ALERT SYMBOLS MEANING

These symbols are used in this document to call your attention to instructions concerning your personal safety. They point out important safety precautions. Read the message that follows the symbol and be alert to the possibility of personal injury or death

 DANGER	 WARNING	 CAUTION
Immediate hazards which will result in severe personal injury or death	Hazards or unsafe practices which could result in severe personal injury or death	Hazards or unsafe practices which could result in minor personal injury or property damage.