



# BriskHeat<sup>®</sup> NDT Kit for Elevator Inspection

## Instruction Manual



Read and understand this material before operating or servicing these heaters. Failure to understand how to safely operate these heaters could result in an accident causing serious injury or death. These heaters should only be operated by qualified personnel.

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### INTRODUCTION

Thank you for purchasing a BriskHeat<sup>®</sup> NDT kit. This kit is designed specifically for the use with Airbus A320 series elevators and conforms to the A320 elevators specifications (Nov 2006) sent by Airbus and described in Airbus Manual 55-20-07, Method B.



#### SAFETY ALERT SYMBOL

The symbol above is used to call your attention to instructions concerning your personal safety. It points out important safety precautions. It means

**“ATTENTION! Become Alert! Your Personal Safety is involved!”** Read the message that follows and be alert to the possibility of personal injury or death.



Immediate hazards which **WILL** result in severe personal injury or death



Hazards or unsafe practices that **COULD** result in severe personal injury or death



Hazards or unsafe practices that **COULD** result in minor personal injury or property damage

### **SAVE THESE INSTRUCTIONS!**

Additional copies of this manual are available upon request.

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### IMPORTANT SAFETY INSTRUCTIONS

#### **DANGER**

A person who has not read and understood all operating instructions is not qualified to operate this product.

#### **Agency Approvals**



73/23/EC (Low Voltage Directive)  
89/336/EC (EMC Directive)  
Refer to back page of instruction manual for details.

**Approvals valid only when** installed in accordance with all applicable instructions, codes, and regulations.

#### **DANGER**

- Do not immerse heater in liquid.
- Keep volatile or combustible material away from heater when in use.
- Use heater only in approved locations.
- Keep sharp metal objects away from heater.

Failure to observe these warnings may result in electric shock, risk of fire, and personal injury.

#### **WARNING**

##### **End User Must Comply to the Following:**

- 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 and highly recommend following NEC Article 427.
- Final installation / wiring is to be inspected by the authority who has jurisdiction in the area that the heating tape is installed.
- The end-user is responsible for providing a suitable disconnecting device.
- The end-user is responsible for providing a suitable electrical protection device. It is highly recommended that a ground fault circuit breaker is used.

Failure to observe these warnings may result in personal injury or damage to the heater.

#### **CAUTION**

- Never operate heaters without a temperature control device. Failure to use such a device may result in damage to the heated surface, heater failure or personal injury.
- Inspect controller and heater before use.
- Never lift or pull the heater by its lead wires.
- Do not wrap the heater over itself while in operation.
- Your heater should never be mounted free standing in air. Always operate the heater with an appropriate heat sink (device being heated is considered a heat sink).
- Do not operate the heater above its rated temperature value.
- Never cut, punch holes in or otherwise modify the controller or heater.
- Never allow foreign substances to bake on the heater. If spillage of foreign matter occurs, disconnect the heater from the power source and allow it to cool. After cooling, clean the heater with a suitable solvent, such as acetone.
- Fasten heater to device using approved methods only.
- Do not attempt to repair damaged or faulty controllers or heaters.
- Do not crush or apply severe physical stress on controller, heater, or cord assembly.
- Disconnect controller and heater when not in use.
- Never handle the heater while it is in operation.

Failure to observe these warnings may result in minor personal injury or damage to the heater.

### SYSTEM SETTINGS

#### **⚠ WARNING**

Read and understand this entire manual before operating this NDT kit.

#### **⚠ CAUTION**

Read and understand the entire Airbus Manual 55-20-07, Method B before operating this kit.

#### **To Access “System” Window:**

1. Supply electrical power to controller using provided input power lead.
2. Press On/Off switch to On position. Controller will begin to boot up.
3. Once system completes boot up, BriskHeat<sup>®</sup> splash screen appears. Press “System” button located at top of screen.



**NOTE:** The splash screen will only be available for 10 seconds. If it expires, you must turn power Off then On again to access the splash screen.

Here you have the option to change the system date & time or access the administrative settings. In the administrative settings you will be able to change password, calibrate touch screen, calibrate thermocouples, and lock/unlock the change date & time feature.


#### **To Change System Date & Time:**

1. Access “System” window.
2. Touch the date & time field you wish to change. Follow instructions on the screen.




**NOTE:** This feature may be locked and only accessible from the admin settings window. It is recommended that supervisors lock this feature before controller is used. Contact supervisor if password is needed.

3. Touch the  button on the screen then touch the  button to exit .

#### **To Lock/Unlock System Date & Time:**


1. Access “System” window.
2. Access “Admin Settings” by touching the  button on the screen.

**NOTE:** The “Admin Settings” window is password protected. The factory set default password is “bht”. If access to this feature is denied please contact your supervisor. It is recommended that supervisors change the password before controller is used.

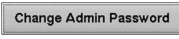
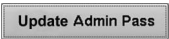

3. Touch  button on screen to lock/unlock system date & time.
4. Touch the  button on screen to save changes. Touch the  button to exit without saving changes.

**NOTE:** Changes to system date & time can also be changed in this screen.

### **To Change Password:**

1. Access “System” window.
2. Access “Admin Settings” by touching the  button on the screen.



**NOTE:** The “Admin Settings” window is password protected. The factory set default password is “bht”. If access to this feature is denied please contact your supervisor. It is recommended that supervisors change the password before controller is used.

3. Touch the  button. Follow instructions on the screen.
4. Touch the  button to save new password then touch the  button to exit the screen.

### **System Calibration Instructions:**

**NOTE:** Touch screen and Thermocouples are factory calibrated. Follow these calibration procedures only if calibration is needed.

### **To Calibrate the touch screen:**

1. Access “System” window.
2. Access “Admin Settings” by touching the  button on the screen.
3. Touch the  button. Follow the instructions on the screen.

**NOTE:** Use finger-tip to touch target points on screen. System will automatically reboot when completed.

### **To Calibrate Thermocouples:**

1. Contact BriskHeat® factory for calibration assistance. BriskHeat® recommends thermocouples be calibrated every 2 years.

### INSTALLATION INSTRUCTIONS

#### Prior to installation:

1. Check for suspected damage like rips, punctures, etc. to the heating blanket, controller, and leads.
2. Verify surface to be heated is free from all sharp edges, weld splatter, corrosion, oil, etc. Surface must be clean prior to applying heating blanket.
3. Check that the desired placement of the blanket will not cause damage to the blanket through impact shock, vibration, ambient temperature, or by neighboring moving parts.

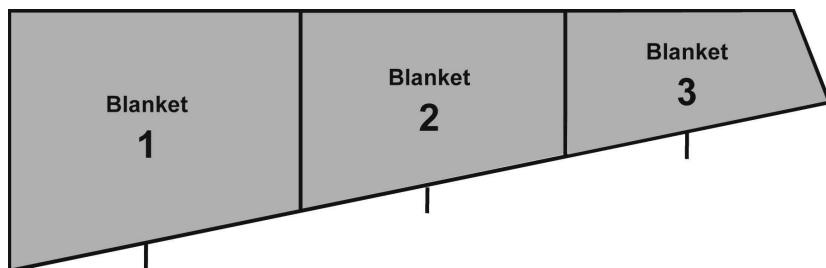
#### **⚠ CAUTION**

The heaters must NOT be operated without some form of temperature control.

#### Installation:

1. Install the three BriskHeat<sup>®</sup> NDT kit heating blankets on the elevator.

**NOTE:** Each blanket is designed to fit a specific portion of the elevator. Refer to diagram below for placement. Follow all installation instructions according to Airbus Manual 55-20-07, Method B.



2. Ground controller to aircraft elevator using provided grounding wire.
3. Supply electrical power to controller from an approved electrical source using provided input power lead.

### OPERATING INSTRUCTIONS

#### CAUTION

The heating blankets must be plugged into specific receptacles for satisfactory operation of controller and blankets. Read all operating instructions carefully before using this kit.

1. Press On/Off switch to On position. Controller will begin to boot up.
2. Begin by plugging "Blanket 1" into controller receptacle "A". Refer to diagram on page 9.



3. Touch the button on screen to begin heating blanket 1.
4. Program heating cycle begins running. The status will continue to update throughout the cycle and an estimated completion timer will begin counting down. Timer automatically recalculates once final dwell/soak point is reached.

**NOTE:** If controller senses blanket temperature is above 60°C the program will not start. An audible horn will sound.

5. When the program cycle has completed, timer reaches 00:00 and an audible alarm will sound. Immediately unplug "Blanket 1" from receptacle "A".
6. Plug "Blanket 2" into controller receptacle "A" and "Blanket 3" into controller receptacle "B". Refer to diagram on page 9.



7. Touch the button on screen to begin heating blankets 2 and 3.
8. Program heating cycle begins running. The status will continue to update throughout the cycle and an estimated completion timer will begin counting down. Timer automatically recalculates once final dwell/soak point is reached.

**NOTE:** If controller senses either blanket is above 60°C or the difference in temperature between both blankets varies greater than 5°C the program will not start. An audible horn will sound.


9. When the program cycle has completed, timer reaches 00:00 and an audible alarm will sound.

**NOTE:** If at any time during the heating cycle the actual blanket temperature deviates more than 5°C from the programmed cycle an audible alarm will sound. The program will continue to run.

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**NOTE:** If at any time during the heating cycle the actual blanket temperature deviates more than 10°C from the programmed cycle the program will automatically abort.

10. Refer to Airbus Manual 55-20-07, Method B for all inspection instructions.


11. To end or abort program at any time press the  button.

### **Saving Data:**


You may want to save data from the heating cycle once inspection is completed.

Once program has completed a “Save/Close” screen will appear.

1. To save data, insert USB flash drive (thumb drive) into USB port on controller.

2. Touch  button on screen to access “Save” screen.

**NOTE:** File names cannot be changed. File names will automatically contain number of blankets used, date, and time.

3. Select desired file to save and touch the  button to save data. Press again to safely exit “Save” screen and remove USB flash drive (thumb drive) from controller.

### **10:00 Minute Timer:**

You may use the 10:00 minute timer feature to assist with the inspection process.

The timer operates completely independent of the heat cycle program.

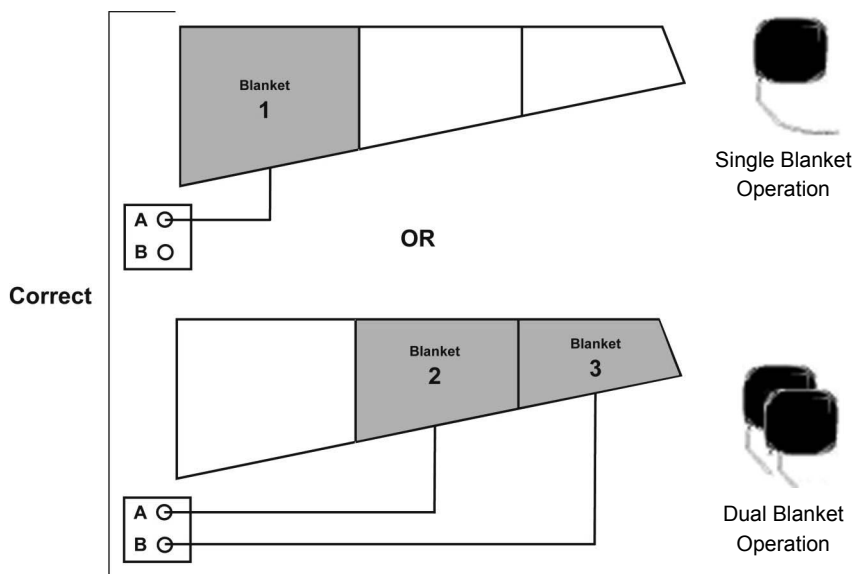
Activate this feature by pressing the  button.

Time will automatically begin counting down from 10:00 minutes. Pressing the button again will stop the timer. When pressed again, the timer will reset and automatically restart counting down from 10:00 minutes. An audible horn will sound signaling when timer count down has completed.

If controller or blankets do not operate as described, refer to troubleshooting guide found in this instruction manual for additional assistance.



### Heater Blanket to Controller - Correct Install Diagram:



### **⚠ CAUTION**

This diagram illustrates the correct installation configurations of BriskHeat<sup>®</sup> heating blankets and the NDT controller receptacles. All other possible configurations are considered to be incorrect.

**TROUBLESHOOTING GUIDE**

Please read this guide prior to contacting BriskHeat®. 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 your local distributor / representative or BriskHeat® at **1-800-848-7673, 614-294-3376, or bhtsales1@briskheat.com.**

| <b>PROBLEM</b>  | <b>SOLUTION(S)</b>   |
|---|--|
| Controller does not turn on   | Verify that the circuit breaker has not tripped.   |
| Program heating cycle does not start, no temperature reading, and audible horn sounds | <p>Using ohm meter perform heater blanket thermocouple function check procedure.</p> <p>Using an ohm meter, check continuity between pins 1+3 of the heater to see if there is a resistance reading.</p> <ul style="list-style-type: none"><li>• If continuity is found and blanket still does not heat, contact factory for further assistance.</li></ul> |
| Circuit breaker is tripping   | <p>Validate that the circuit breaker is capable of handling the amp requirement of heater. The identification label located on the power cord displays the heater's amperage requirement.</p> <p>Examine heater and cord for any damage.</p> <p>Check to see if there is a resistance reading between power leads and the ground lead.</p>                 |
| Program aborts due to temperature deviation   | Heater is not heating at the expected rate likely due to ambient conditions. Increase insulation over heaters.   |

## HEATER BLANKET THERMOCOUPLE FUNCTION CHECK PROCEDURE

Each heating blanket has two internal thermocouples. The blanket will function properly if at least one thermocouple is in good working condition. If neither thermocouple is in good working condition the blanket must be replaced before the elevator inspection can be performed.

Follow these instructions to test the condition of each thermocouple and determine whether or not the blanket is acceptable for use.

### **To test thermocouple 1:**

1. Using an ohm meter check for continuity between pins 6 and 7 on the blanket's plug.

**NOTE:** Pins are numbered and easily identifiable by markings located on plug near pins.

2. If there is continuity present, the thermocouple is in good working condition and the blanket can be used to perform the inspection.

3. If there is no continuity present, check thermocouple 2.

### **To test thermocouple 2:**

1. Using an ohm meter check for continuity between pins 8 and 9 on the blanket's plug.

2. If there is continuity present, the thermocouple is in good working condition and the blanket can be used to perform the inspection.

3. If there is no continuity present in both thermocouple 1 and thermocouple 2 the blanket is not in good working condition and must be replaced before the inspection can be performed.



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