Blast Chiller / Freezer
Instruction manual

THERMO*Cool*

Model:
THC-BCF3

Safety Tips

- Position on a flat, stable surface.
- A service agent/qualified technician should carry out installation and any repairs if required. Do not remove any components or service panels on this product.
- Consult Local and National Standards to comply with the following:
  - Health and Safety at Work Legislation
  - Fire Precautions
  - Wiring Regulations
  - Building Regulations
- DO NOT use jet/pressure washers to clean the appliance.
- DO NOT use the appliance outside.
- DO NOT use this appliance to store medical supplies.
- DO NOT use electrical appliances inside the appliance (e.g. heaters, ice cream makers, etc.)
- DO NOT allow oil or fat to come into contact with the plastic components or door seal. Clean immediately if contact occurs.
- Always carry, store and handle the appliance in a vertical position and move by holding the base of the appliance.
- Always switch off and disconnect the power supply to the unit before cleaning.
- Keep all packaging away from children. Dispose of the packaging in accordance with the regulations of local authorities.
- If the power cord is damaged, it must be replaced by an agent or a recommended qualified technician in order to avoid a hazard.
- It is recommended that this appliance is tested on an annual basis to ensure the product remains safe.

- This appliance is not intended for use by persons (including_{AU} children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

Caution Risk of Fire

- Do not store explosive substances such as aerosol cans with a flammable propellant in this appliance.

> **Warning: Keep all ventilation openings clear of obstruction. Unit should not be boxed in without adequate ventilation.**

- **Warning:** Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.
- **Warning:** Do not damage the refrigerant circuit.
- **Warning:** Do not use electrical appliances inside the food storage compartments of the appliance, unless they are the type recommended by the manufacturer.

Product Description

THC-BCF3 Thermocool Blast Chiller / Freezer

Introduction

Please take a few moments to carefully read through this manual. Correct maintenance and operation of this machine will provide the best possible performance from your product.

Installation

1. Remove the appliance from the packaging. Make sure that all protective plastic film and coatings are thoroughly removed from all surfaces.
2. Maintain a distance of 20cm (7 inches) between the unit and walls or other objects for ventilation. **NEVER LOCATE NEXT TO OR NEAR A HEAT SOURCE.**

Operation

Storing Food

To get the best results from your appliance, follow these instructions:
- It is important that food entering the Blast Chiller/Freezer does not exceed a temperature of 90°C.
- It is recommended that metal containers / trays are used as other materials such as plastic or polystyrene containers will act as an insulator and extend blast chilling times.
- Sufficient space must be left between products in order to guarantee a sufficient flow of cold air. Ensure product is not in contact with the internal walls of the unit, and leave sufficient gaps between trays.
- Never obstruct the inlet of the evaporator fans.
- Products that are more difficult to chill because of their composition and size should be placed in the centre of the unit.

- Blast chilling data refers to standard products (low fat content) with a thickness below 50 mm: therefore avoid overlaying products on trays or the insertion of pieces with a much higher thickness, as this will lead to an extension of blast chilling times. Always distribute the product well on the trays and in the case of thick pieces decrease the amount to blast chill.
- Limit the number of times and the duration of time the doors are opened.
- The chiller should be used for storage for short periods only.
- When removing product that has undergone blast chilling/shock freezing, always wear gloves to protect the hands from cold burns.

Introduction

The appliance has the following operational states:

On	•	The appliance is switched on and an operating cycle is running
Standby	•	The appliance is switched on but no operating cycle is running
Off	•	The appliance is not switched on

- If power is interrupted during a timed blast chilling operation, when power is restored, chilling will continue from the time point at which the interruption occurred (with a maximum error of 10 minutes).
- If power is interrupted during a set-temperature blast chilling operation, when power is restored, chilling will start again from the beginning.
- If power is interrupted during a storage operation, when power is restored the storage operation will be reset.
- If power is interrupted while in "stand-by" mode, when power is re- stored, the device will be in the same state.

Turn On
1. Ensure the power switch is set to [O] and turn on at the socket.
2. Switch on the Power [I]. This will place the unit in standby whilst waiting for the cycle to be selected.

Insert the food probe

- Before selecting which cycle to use, the probe must be inserted into the food. This allows the internal temperature of the food to be measured.
- It is important that the probe is correctly connected to the unit.

> ⚠ **Note: To prevent bacterial contamination or contamination of any other biological nature, the needle probe must be disinfected after use.**

Control Panel
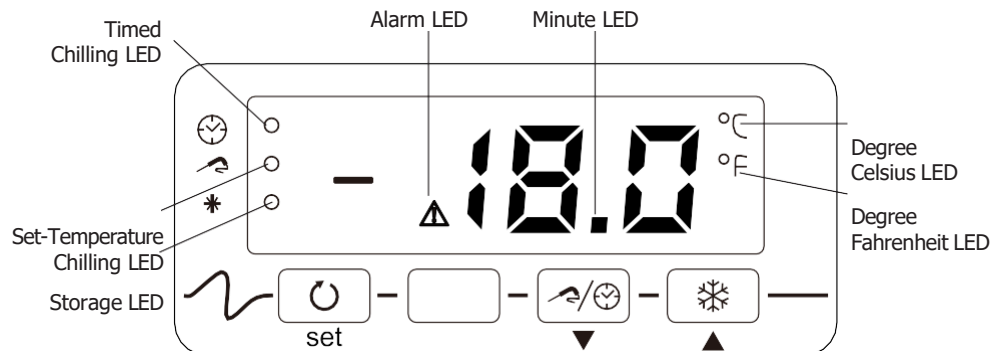
In the "on" state, during normal operation, the display shows:
- the amount of time remaining for a timed blast chilling operation, if this is ongoing
- the temperature measured by the pin probe if a set-temperature chilling operation is ongoing
- the temperature of the cabinet, if storage is ongoing.

In "stand-by" mode, during normal operation, the display shows the temperature of the cabinet for ½ second every 3 seconds.

Signals

LED	Message
🕐	Timed Chilling LED • If on and the LED ❄ is off, a timed chilling operation is ongoing • If on and the LED ❄ is also on, a post timed-chilling storage operation is ongoing • If flashing, a timed chilling and storage cycle will have been selected
🔖	Set-temperature chilling LED • If on and the LED is off, a set-temperature chilling storage operation is ongoing • If on and the LED is also on, a post set-temperature chilling storage operation will be ongoing • If flashing, a set temperature chilling and storage cycle will have been selected

| LED	Message
(pin probe icon)	• If it is on for ½ second every 3 seconds, the test to verify correct pin probe insertion will be ongoing • If flashing and the LED (clock) is on, then the test to verify correct pin probe insertion will have had a negative outcome and the cycle will have been started in timed mode • If flashing and the LED ⚠ is on, the chilling stage will have had a negative outcome and so this will continue • If flashing and the LEDs ❄ and ⚠ are on, the chilling stage will have had a negative outcome, the device will have switched to storage mode and this will be ongoing
❄	Storage LED • If on, a storage operation will be ongoing • If flashing then the operational set point will be being modified while a storage operation is ongoing
⚠	Alarm LED • If on, an alarm is ongoing
°C	Degree Celsius LED • If on the unit of measurement for temperature is degrees Celsius
°F	Degree Fahrenheit LED • If on the unit of measurement for temperature is degrees Fahrenheit
Decimal Point	Minute LED • If flashing, the unit of measurement of magnitude displayed is the minute
d	• Defrosting or drip draining is ongoing

Operational Cycles

The device has the following operational cycles:
• Timed positive chilling and storage
• Timed negative chilling and storage
• Set-temperature positive chilling and storage
• Set-temperature negative chilling and storage.

> ⚠ **Set-temperature cycles are preceded by a test step in order to check correct insertion of the pin probe (→ "Test To Check Correct Pin Probe Insertion")**

To re-start using the same settings as the last cycle run:
• ensure that the device is in "stand-by" mode, that no procedures are running and that another cycle has not been selected
• press ⭘ for 2 seconds. The display will show the label of the last cycle run
• press ⭘ within 60 seconds: in the case of a timed cycle, the display will show the duration of the blast chilling step (in minutes) or in the case of a set-temperature cycle, the set target temperature
• press ❄ or ⤴/🕒 within 15 seconds to change the value (the setting re- mains active until another cycle is selected, when the value r1, r2, r3 or r4 is restored)
• press ⭘ within 15 seconds and the cycle will be activated

Timed Positive Blast Chilling And Storage Cycle

| To start the cycle:	- ensure the device is in "stand-by" mode and no procedures are running - press [⌁/⏲] to select "PoS" and ensure the LED [⏲] is flashing - press [⏻] within 15 seconds: the display will show the duration of the blast chilling step (in minutes) - press [❄] or [⌁/⏲] within 15 seconds to change the value (the setting remains active until another cycle is selected, when the value assigned by parameter r1 is restored) - press [⏻]: after 2 minutes, the appliance will run timed positive blast chilling and storage cycle
During chilling:	- the display shows the residual chilling time remaining - the LED [⏲] is on - parameter r1 sets the chilling time duration - parameter r7 sets the operational set point - press [⌁/⏲] several times to: - display the message "PoS" - display the cabinet temperature - exit the procedure, or leave for 15 seconds
Once the chilling period has elapsed:	- the device switches to storage mode - the display shows the message "End" - the buzzer sounds for the period of time set by parameter AA - press any key to mute the buzzer; press once more to cancel the message "End"
During storage:	- the display shows the cabinet temperature - the LEDs [⏲] and [❄] are on - the parameter r9 sets the operational set point - press [⌁/⏲] several times to: - display the message "PoS" - exit the procedure, or leave for 15 seconds.
To interrupt the cycle:	press [⏻] for 2 seconds

## Timed Negative Chilling And Storage Cycle

To start the cycle:	- ensure the device is in "stand-by" mode and no procedures are running - press [⌁/⏲] to select "nEg" and ensure the LED [⏲] is flashing - press [⏻] within 15 seconds: the display will show the duration of the blast chilling step (in minutes) - press [❄] or [⌁/⏲] within 15 seconds to change the value (the setting remains active until another cycle is selected, when the value assigned by parameter r2 is restored) - press [⏻]: after 2 minutes, the appliance will run timed negative chilling and storage cycle

During chilling:	• the display shows the residual chilling time remaining
	• the LED ⊘ is on
	• parameter r2 sets the chilling time duration
	• parameter r8 sets the operational set point
	• press ⊘/⊘ several times to:
	  - display the message "nEg"
	  - display the cabinet temperature
	  - exit the procedure, or leave for 15 seconds

Once the chilling period has elapsed:	• the device switches to storage mode • the display shows the message "End" • the buzzer sounds for the period of time set by parameter AA • press any key to mute the buzzer; press once more to cancel the message "End"

During storage:	• the display shows the cabinet temperature
	• the LEDs ⊘ and ✳ are on
	• the parameter rA sets the operational set point
	• press ⊘/⊘ several times to:
	  - display the message "nEg"
	  - exit the procedure, or leave for 15 seconds.

To interrupt the cycle:	• press ⟳ for 2 seconds

Set-Temperature Positive Blast Chilling And Storage Cycle

Prior to starting the cycle:	• A test is run in order to check correct pin probe insertion
	  - if the outcome of the test is positive, the cycle will be started
	  - if the outcome of the test is negative, the cycle will be started in timed mode.

To start the cycle:	• ensure the device is in "stand-by" mode and no procedures are running • press ⊘/⊘ to select "PoS" and ensure the LED 🔱 is flashing • press ✳ or ⊘/⊘ within 15 seconds to change the value (the setting remains active until another cycle is selected, when the value assigned by parameter r3 is restored) • press ⟳ : after 2 minutes, the appliance will run set-temperature positive blast chilling and storage cycle

During chilling:	• the display shows the temperature measured by the pin probe
	• the LED is on
	• the parameter r3 sets the blast chilling endpoint temperature
	• the parameter r5 sets the maximum chilling time duration
	• the parameter r7 sets the operational set point
	• press ⊘/⊘ several times to:
	  - display the maximum residual chilling time remaining
	  - display the message "PoS"
	  - display the flashing cabinet temperature
	  - exit the procedure, or leave for 15 seconds

If the temperature measured by the pin probe reaches the chilling endpoint temperature prior to expiry of the maximum chilling time duration:	• the device will switch to storage mode • the display will show the message "End" • the buzzer will sound for the period of time set by parameter AA • press any key to mute the buzzer; press once more to cancel the message "End"
If the temperature measured by the pin probe does not reach the chilling endpoint temperature prior to expiry of the maximum chilling time duration:	• chilling will continue • the LED ⟋⟍ will flash and the LED ⚠ will be on • the buzzer will sound • press ⟲/⊙ several times to: - mute the buzzer - display the time elapsed since the maximum chilling time expired - display the cabinet temperature - display the message "PoS" - exit the procedure, or leave for 15 seconds
When the temperature measured by the pin probe reaches the chilling endpoint temperature:	• the device switches to storage mode • the LED ⟋⟍ will continue to flash and the LED ⚠ will stay on • the display will show the message "End" • the buzzer will sound for the period of time set by parameter AA • press any key to mute the buzzer; press once more to cancel the message "End"
During storage:	• the display shows the cabinet temperature • if chilling had a positive outcome, the LEDs ⟋⟍ and ✳ will be on; if chilling had a negative outcome, the LEDs ✳ and ⚠ will be on and the LED ⟋⟍ will flash. • the parameter r9 sets the operational set point • press ⟲/⊙ several times to: - display the message "PoS" - exit the procedure, or leave for 15 seconds
To interrupt the cycle:	• press ⏻ for 2 seconds

Set-Temperature Negative Chilling And Storage Cycle

Prior to starting the cycle:	• A test is run in order to check correct pin probe insertion - if the outcome of the test is positive, the cycle will be started - if the outcome of the test is negative, the cycle will be started in timed mode

To start the cycle:	• ensure the device is in "stand-by" mode and no procedures are running
	• press [↷/☺] to select "nEg" and ensure the LED ⤳ is flashing
	• press [❄] or [↷/☺] within 15 seconds: the display will show the blast chilling end-point temperature
	• press [❄] or [↷/☺] within 15 seconds to change the value (the setting remains active until another cycle is selected, when the value assigned by parameter r4 is restored)
	• press [⟳]: after 2 minutes, the appliance will run set-temperature negative chilling and storage cycle
During chilling:	• the display shows the temperature measured by the pin probe
	• the LED ⤳ is on
	• the parameter r4 sets the chilling endpoint temperature
	• the parameter r6 sets the maximum chilling time duration
	• the parameter r8 sets the operational set point
	• press [↷/☺] several times to:
	- display the maximum residual chilling time remaining
	- display the message "nEg"
	- display the flashing cabinet temperature
	- exit the procedure, or leave for 15 seconds
If the temperature measured by the pin probe reaches the chilling endpoint temperature prior to expiry of the maximum chilling time duration:	• the device will switch to storage mode
	• the display will show the message "End"
	• the buzzer will sound for the period of time set by parameter AA
	• press any key to mute the buzzer; press once more to cancel the message "End"
If the temperature measured by the pin probe does not reach the chilling endpoint temperature prior to expiry of the maximum chilling time duration:	• chilling will continue
	• the LED ⤳ will flash and the LED ⚠ will be on
	• the buzzer will sound
	• press [↷/☺] several times to:
	- mute the buzzer
	- display the time elapsed since the maximum chilling time expired
	- display the cabinet temperature
	- display the message "nEg"
	- exit the procedure, or leave for 15 seconds
If the temperature measured by the pin probe reaches the chilling endpoint temperature:	• the device switches to storage mode
	• the LED ⤳ will continue to flash and the LED ⚠ will continue to stay on
	• the display will show the message "End"
	• the buzzer will sound for the period of time set by parameter AA
	• press any key to mute the buzzer; press once more to cancel the message "End"

During storage:	• the display shows the cabinet temperature
	• if chilling had a positive outcome, the LEDs 🔩 and ❄ will be on; if chilling had a negative outcome, the LEDs ❄ and ⚠ will be on and the LED 🔩 will flash.
	• the parameter rA sets the operational set point
	• press ⟲/🕐 several times to:
	  - display the message "nEg"
	  - exit the procedure, or leave for 15 seconds

To interrupt the cycle:	• press ⏻ for 2 seconds

Test To Check Correct Pin Probe Insertion

> ⚠ • **Set-temperature cycles are preceded by a test step in order to check correct pin probe insertion.**
> • **If power is interrupted during the test, when power is restored, the test will start again from the beginning.**

The test has two stages:
• if the outcome of the first stage is positive, the second will not be run
• if the outcome of the first stage is negative, the second will be run.

• The outcome of the first stage is positive if "the temperature measured by the pin probe - the temperature of the cabinet" is greater than the value set by parameter rc at least 3 times out of 5 (the comparison is made every 10 s); if parameter rc is set to 0, neither the first nor second stages will be run.
• The outcome of the second stage is positive if the difference "temperature measured by the pin probe - temperature of the cabinet" is greater by at least 1ºC/1ºF (with respect to the previous comparison) at least 6 times out of 8 (the comparison is made every "rd/8 s")

If the outcome of the test is positive:
• the cycle will be activated
• the cycle will be started in timed mode
• the LED 🔩 will flash

Setting The Configuration Parameters

The parameters are arranged on two levels.

To access the first level:	• ensure the device is in "stand-by" mode and no procedures are running • press ❄ and ⟲/🕐 for 4 s: the display will show "PA"
To access the second level:	• access the first level • press ❄ or ⟲/🕐 to select "PA" • press ⏻ • press ❄ or ⟲/🕐 within 15 s to set "-19" • press ⏻ or leave for 15 s • press ❄ and ⟲/🕐 for 4 s: the display will show "CA1"

To select a parameter	• press ❄ or ⏱
To modify a parameter:	• press ⟳ • press ❄ or ⏱ within 15 s • press ⟳ or leave for 15 s
To exit the procedure	• press ❄ and ⏱ for 4 s , or leave for 60 s
Note: Interrupt the power supply after altering the parameters.	

Cleaning, Care & Maintenance

- Switch off and disconnect from the power supply before cleaning.
- Clean the interior of the appliance as often as possible.
- Do not use abrasive cleaning agents. These can leave harmful residues.
- Clean the door seal with water only.
- Always wipe dry after cleaning.
- Do not allow water used in cleaning to run through the drain hole into the evaporation pan.
- Take care when cleaning the rear of the appliance. Sharp edges can cut.
- An agent or qualified technician must carry out repairs if required.

Cleaning the condenser

- Periodically cleaning the condenser can extend the life of the appliance.
- It is recommend that an agent or qualified technician clean the condenser.

Cleaning the water pan

- The water pan is located underneath the evaporator at the back of the unit.
- To remove it for cleaning, simply slide out when necessary.

Alarms

Code	Message	Remedies	Consequences
AL	Minimum temperature alarm	• Check the cabinet temperature • Check parameters A1 and A2	The device will continue to function normally
AH	Maximum temperature alarm	• Check the cabinet temperature • Check parameters A3 and A4	The device will continue to function normally
id	Micro-port input alarm (only in "stand-by" mode and if parameter i0 is set to 0 or 1)	• Check the causes which activated the input • Check parameters i0 and i1	The outcome set by parameter i0
iA	Compressor protection input alarm (only if parameter i0 is set to 2)	• Check the causes which activated the input • Check parameters i0 and i1	The compressor will be shut down
Note: When the cause that triggered the alarm has been resolved, the device restores normal operation.			

Internal Diagnostics

Code	Message	Remedies	Consequences
Pr1	Cabinet probe error	• See P0 parameter • Check probe integrity • Check probe-device connection • Check the cabinet temperature	Consequences if the error occurs while in "stand-by" mode: • If parameter C11 is set to 0, it will not be possible to start any of the cycles • If parameter C11 is set to 1, the pin probe will function as the cabinet probe and only timed cycles will be allowed to start
			Consequences if the error occurs during a timed chilling operation: • If parameter C11 is set to 0, the cycle will be interrupted • If parameter C11 is set to 1, the pin probe will function as the cabinet probe and the chilling operation will continue
			Consequences if the error occurs during a set-temperature chilling operation: • If parameter C11 is set to 0, the cycle will be interrupted • If parameter C11 is set to 1, the pin probe will function as both the cabinet probe and pin probe and the chilling operation will continue
			Consequences if the error occurs during a storage operation: • Parameter C11 is set to 0, the compressor activity will depend on parameters C4, C5 and C6 • If parameter C11 is set to 1, the pin probe will function as the cabinet probe and the storage operation will continue
Pr2	Pin probe error	• The same as for the previous case, but in relation to the pin probe	Consequences if the error occurs while in "stand-by" mode: • Only timed operation cycles will be allowed to start
			Consequences if the error occurs during a timed chilling operation: • Chilling will continue
			Consequences if the error occurs during a set-temperature chilling operation: • Chilling will continue in timed mode
			Consequences if the error occurs during storage mode: • Storage will continue

Troubleshooting

Fault	Probable Cause	Solution
The appliance is not working	The unit is not switched on	Check the unit is plugged in correctly and switched on
	Plug and lead are damaged	Call agent or qualified Technician
	Fuse in the plug has blown	Replace the fuse
	Power supply	Check power supply
	Internal wiring fault	Call agent or qualified Technician

Fault	Probable Cause	Solution
The appliance is leaking water	The appliance is not properly levelled	Adjust the screw feet to level the appliance (if applicable)
	The discharge outlet is blocked	Clear the discharge outlet
	Movement of water to the drain is obstructed	Clear the floor of the appliance (if applicable)
	The water container is damaged	Call an agent or qualified Technician
The appliance is unusually loud	The appliance has not been installed in a level or stable position	Check installation position and change if necessary
	Loose nut/screw	Check and tighten all nuts and screws

Technical Specifications

Model	Voltage	Power	Current	Capacity	Dimensions H x W x D	Refrigerant	Weight (kg)
THC-BCF3	220-240V~ 50Hz	500W	4.0A	3 x GN2/3	410 x 660 x 650	R290 150g	42

Electrical Wiring

The plug is to be connected to a suitable mains socket.

This appliance is wired as follows:

- Live wire (coloured brown) to terminal marked L
- Neutral wire (coloured blue) to terminal marked N
- Earth wire (coloured green/yellow) to terminal marked E

The appliances must be earthed.

If in doubt consult a qualified electrician.

Electrical isolation points must be kept clear of any obstructions. In the event of any emergency disconnection being required they must be readily accessible.

Compliance

The product must not be disposed of as household waste. To help prevent possible harm to human health and/or the environment, the product must be disposed of in an approved and environmentally safe recycling process. For further information on how to dispose of this product correctly, contact the product supplier, or the local authority responsible for waste disposal in your area.