



Dairymac Superthaw™ Flip Lid

Instruction Booklet

Part Numbers:

18500F Dairymac Superthaw™ Flip Lid - 220vac/12vdc with UK 3 Pin Plug and 12 Volt Vehicle Lead

18501F Dairymac Superthaw™ Flip Lid - 220vac/12vdc with Euro 2 Pin Plug and 12 Volt Vehicle Lead

18502F Dairymac Superthaw™ Flip Lid - 120vac/12vdc with US 2 Pin Plug and 12 Volt Vehicle Lead

18601G Dairymac Superthaw Spare AI Gun Warmer Lid (Optional)



Flip Lid



AI Gun Warmer Lid (Optional)



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Voltage Rating		100-240Vac, 50/60Hz. 12VDC
Power Rating		20W
Dimensions	Height	240mm
	Width	120mm
	Depth	190mm

CE compliance Part A

PRODUCT

Dairymac Superthaw™

MANUFACTURER

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RELEVANT STANDARDS

Electromagnetic Compatibility (EMC)
Low Voltage Directive

DESCRIPTION OF PRODUCT

The unit comprises a water heater and timer. The heater temperature is adjustable between 20°C and 40°C. The timer is adjustable from one to ten minutes in 1 minute or 1 second increments. The combined heater and timer provide a system where frozen Semen Straws may be placed in the heater for a specific time and temperature. After removal from the water bath the AI Gun Warmer compartment may be used to pre-heat AI Guns or keep prepared AI Guns at a constant temperature. (AI Gunwarmer Unit only) The Stainless Steel Liner is fully insulated to retain heat for short periods if not connected to a power source.

The AI Gun Warmer Tube may be removed and the Lid used to seal the Cap if this function is not required.

The unit may be powered by 110-230v A.C. or 12v D.C and is designed to be left on for long periods of time, however if not in use it is best to disconnect from power source.

OPERATING INSTRUCTIONS:**Setup:**

Unpack the Dairymac *Superthaw*™ carefully and check that all parts are present.

Fill the Dairymac *Superthaw*™ with clean tap water, to roughly 2.5cm / 1" from the top.

If using mains power, place the unit on a bench or table at waist height in a cool dry area. Assemble the mains Power Cable and Switch Mode Power Supply and push the 2.1mm plug directly into the socket on the back of the Dairymac *Superthaw*™.

Switch on the mains power, the unit will beep to indicate heating has started and the display will indicate 'Lo'.

If using the 12 volt lead – repeat the procedure above, but make sure the device is secure in the vehicle.

Wait for thaw device to heat up to the factory pre-set temperature of 36 °C/96.8 °F.

Your water temperature when you started determines the exact warm up time approximately 1.10°C /20°F per minute.

10°C/50°F water temp to 36°C/96.8°F = approx. 20 min.

15°C/60°F water temp to 36°C/ 96.8°F = approx. 15 min.

21°C/70°F water temp to 36°C/ 96.8°F = approx. 13 min.

26°C/80°F water temp to 36°C/ 96.8°F = approx. 8 min.

The actual water temperature is constantly displayed on the LED.

Agitate the water by taking the basket and moving it up and down several times to assure water temperature is consistent through the water bath. This is particularly important if the system is not used for more than 16 hours as hot water rises within the water bath. It is good practise to stir the water a few minutes before each use to allow the water temperature to even out.

Keep the water level topped and do not switch on the device without first adding water as this may damage the device and is not covered under warranty.

Keep the water clean and replace the water periodically to maintain good hygiene.

Thawing Bull Semen:

It is very important that bull semen is thawed consistently at the right temperature and then kept at a constant temperature prior to insertion into the female.

You should always consult your semen provider as to their actual recommendations:

- Normal and Sexed Semen are typically thawed at 35-37°C (95-98°F) for 30-45 seconds

Handling Semen Straws and AI Gun Warmer Compartment:

Exercise extreme caution when working with frozen Semen Straws and Nitrogen Containers. Always use appropriate tweezers to transfer the straws, once the straw is thawed, insert immediately into the pre heated AI Gun. The AI Gun Warmer compartment may be used to keep the Gun warm for a several minutes – it is not intended for long term storage of thawed straws.

Operation:

Both the Temperature and the Countdown Timer adjustments are made using the keypad and LED display.

When the unit is powered and switched on then the heater will heat up to the set temperature. When the temperature is below 20°C the display will indicate 'Lo' and in the event of over temperature (above 40°C) the display will indicate 'Hi'. Between these two temperatures the display will indicate the current temperature. At any time the timer may be started by pressing the green start timer button (printed with the ∇ icon). While the timer is running, the remaining time is displayed on the LED display. Once the timer has finished a beep will sound and the display will revert back to indicating current temperature.

Setting the temperature:

Press the set temperature button (button printed with the thermometer icon). The display now indicates the current temperature setting. This may be adjusted using the buttons marked + to increase or – to decrease the temperature setting. To complete setting press the temperature button once more.

Setting the timer:

Press the set timer button (button printed with the clock icon). The display now indicates the current timer setting. This may be adjusted using the buttons marked + to increase or – to decrease the timer setting. Minutes and seconds are set independently; the illuminated decimal point indicates which of the two parameters are currently being set. To switch between setting minutes and seconds press the alarm button. To complete setting press the timer button once more.

Errors:

Errors are displayed as numeric values preceded by the letter E.

Error 1 – EEPROM write error, indicates malfunction of the microprocessor.

Error 2 – Thermistor error, indicates the thermistor is faulty or not connected.

Error 3 – Indicates other problems with temperature measurement.

Error 4 – Indicates the unit has gone over temperature (40°C).

Error 5 – The temperature has not increased as expected, indicating that the heating element is faulty or not connected.

After an error has been addressed the unit must be powered off and on again.

Care of your Dairymac Superthaw™:

Please locate the unit in a safe dry area and protect the Switch Mode Power Supply from moisture, ideally suspended off the floor. Descale the Stainless Steel water bath periodically to prevent the build-up of lime scale that could damage the device or the impair thaw performance.

When not in use, disconnect from the power source, wash out with hot soapy water, dry and store in a safe place.

It is important to test the thaw temperature periodically with a suitable commercial thermometer to check the calibration.

For Service or Repair - Please return unit to your dealer or direct to Dairymac Limited.

Warranty:

Your Dairymac Superthaw™ is covered by a 2 year parts and labour warranty from date of purchase.

Liability is limited to the replacement value of the thaw flask.

Under no circumstances will Dairymac Limited be held responsible for the value of any Semen or Embryos used in the Dairymac Superthaw™.

Safety:

The unit contains a thermal cut out switch to protect the device from damage due to excessive heat over 71.06°C with water present and 63.31°C with no water present.

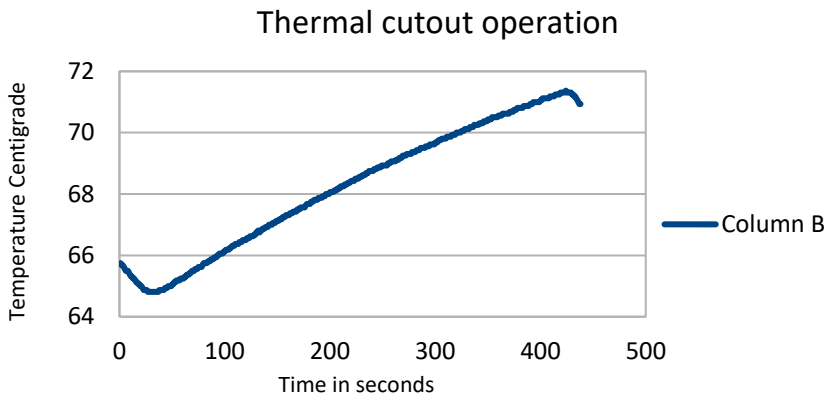
Thermistor open circuit:

Results in error condition 2. E2 is displayed and heater turned off.

Thermistor short circuit:

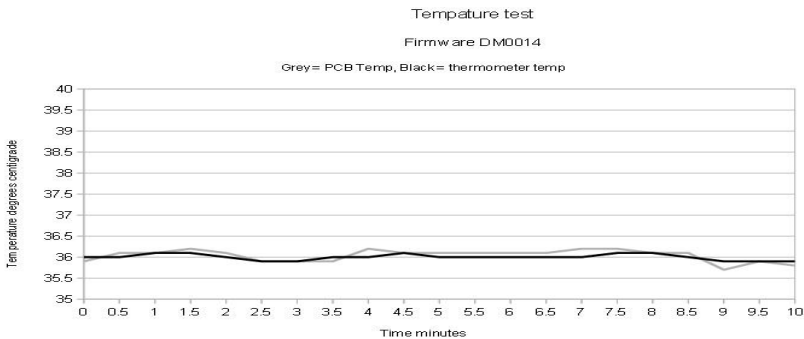
Results in high temperature display (Hi) and heater is turned off

Graph indicating thermal cut out operation



Temperature Test:

The graph demonstrates the accuracy of temperature controller compared with a commercial and medical thermometer. The target temperature is 36°C. The grey and black are water and thermometer traces respectively.



CE Label

Electronic Temperature Controlled Heater/Timer

Model: Dairymac Superthaw™ 18500F-15005F



Input: 100-240Vac, 50/60Hz. 12Vdc

Power: 20W

Temperature Range: 0 to 40°C

Serial Number:

CE/Low Voltage Directive Statement



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01/08/2023

TECHNICAL FILE

Part: Dairymac Superthaw™

CE / LOW VOLTAGE DIRECTIVE STATEMENT.

The equipment was designed with due consideration to the current regulations for CE marking and the Low Voltage Directive.

The design includes various components with CE approvals and where appropriate technical data sheets have been supplied.

Copies of schematic drawings showing the parts on the PCB are available.

Copies of PCB artworks showing low voltage clearances are available.

Yours sincerely,

Dairymac Limited