

AIM: To provide guidance on the use of the Thermogard XP for targeted temperature management.

SCOPE: All adult ICUs within Royal Sussex County Hospital and Princess Royal Hospital

Plug in the power of Thermogard & Select SYSTEM

Prepare patient

Place the internal cooling catheter the ICY catheter in the femoral vein using normal Seldinger technique

Place a temperature probe (bladder, oesophageal or rectal in the patient)

Prepare system

Select new patient (download previous patient data if required).

Set target temperature 33-36°C

System will complete a series of self checks. The system set-up screen will then appear.
Dark Grey= OK
Light grey = ignore
Red = Needs attention

Spike 500 ml bag of saline. Insert and Prime the Start-Up Tubing Kit in the Coolgard system (Appendix 1)

Attach temperature probe to T1 at front of machine.

Connect ICY catheter to Start Up Kit using aseptic technique

The main interface screen should now be visible.

Press run, you will then see a yellow warning screen alerting user that only one temperature probe is being used, provided in another capacity the patients core temp is being measured press OK.

Wait for any excess air from the catheter to run into the bag of saline and then put thermal jacket in place. Ensure that flow rate indicator on tubing is turning.

1. INTRODUCTION

The Thermogard XP set up guide is to be used in conjunction with the UHSx ICU management of patients post-cardiac arrest guidelines. Invasive temperature management is also sometimes used in patients with brain injury, for active rewarming of hypothermic patients and for the active cooling of patients with hyperthermia.

Use of invasive temperature management and the target temperature itself are at the discretion of the senior ICU clinicians.

2. PROCESS

	Recommendation (Action)	Justification (Rationale)
1	The Thermogard system can be used for active cooling, active rewarming and temperature control. The cooling catheter can be left in place for up to 4 days after insertion	
2	The orange ports do not provide IV access	They are for cooling circuit only
3	The orange ports should be connected together when cooling is disconnected (e.g. when going to CT scan or Theatre)	To avoid those unfamiliar with using the catheter from trying to use these ports of IV access
4	The cooling saline circulates through the tubing and a balloon on the outside of the (ICY) central line	The cooling saline does not come into direct contact with the patient. In the unlikely event of balloon rupture, the patient may receive up to 500ml of cold sterile saline.
5	The cooling balloon of the catheter should be flushed (with the protective plastic sheath kept in place) prior to insertion.	Tested to prove integrity of the system prior to insertion, and yet deflated to facilitate insertion. If the plastic sheath has been removed, ensure balloon is fully deflated prior to insertion
6	The remaining three ports (brown, white and blue) can be used for IV access and may be treated as any other femoral central venous catheter	
7	Mannitol should not be given through the cooling catheter	Crystals may form due to the low temperature within the catheter lumen
8	Core temperature should be recorded hourly unless contra-indicated. A rectal or pharyngeal probe is ideal, but intermittent tympanic measurement is also acceptable.	This is to monitor for thermistor (cooling equipment) failure

	Recommendation (Action)	Justification (Rationale)
9	Before removing the cooling catheter, the cooling system should be decompressed by using the special syringe on the machine to fully aspirate the cooling balloon, then having both orange ports open and unclamped. Do not remove if they are connected together.	To allow the saline within the cooling system to escape and prevent the catheter damaging the vein on removal
10	There are very occasional reports of balloon rupture. If this occurs, the patient will receive intravenous saline and the volume within the cooling system will drop. Loss of volume within the cooling system should not occur.	There is no automated warning or alarm of volume loss until the cooling liquid is exhausted.
11	The Thermoguard machine is mains use only. It cannot run on internal battery.	
12	The ICY catheter is heparin coated – it must not be used for patients with confirmed HIT	

3. RESOURCES

Zoll e-Learning resources

[Thermogard XP Videos - E-learning - UK - ZOLL - Cardiac Resuscitation Devices](#)

[Temperature Management for Central Venous Catheters \(CVC\) - ZOLL Medical](#)

There is a separate troubleshooting document for the Thermogard, available on ICU microguide

24 hour Contact helpline (technical support)
020 8938 3069

APPENDIX 1.

Thermogard XP tubing set-up



Always check coolant level.



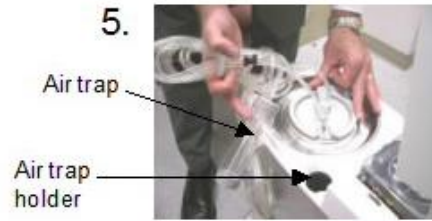
Power switch



Start-Up kit tubing set



Place coil into coolant.



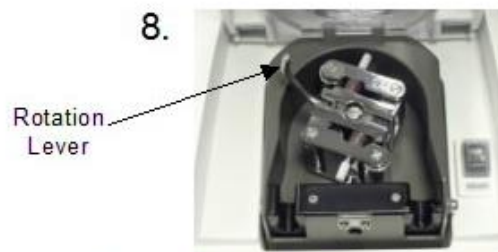
Secure coldwell lid and put air trap in its holder.



Open lid of roller pump.




Undo the tubing bundle containing the spike. The large section of tubing goes into the roller pump.



Manually rotate the pump into this position to facilitate loading of tubing.




9. 

Prime switch

Side of tubing with flange fits into the slot on the right side of the roller pump housing.

Load tubing into pump.

10. 

After spiking the saline bag, lift out the air trap from its holder and turn it upside down. Press and hold down the Prime Switch until the air trap and tubing are completely full of saline. (This will take approximately 2 minutes.)

11. 

Final configuration of the CoolGard 3000. Note that the coolant lid is rotated so that the tubing exits from a 3:00 o'clock position.

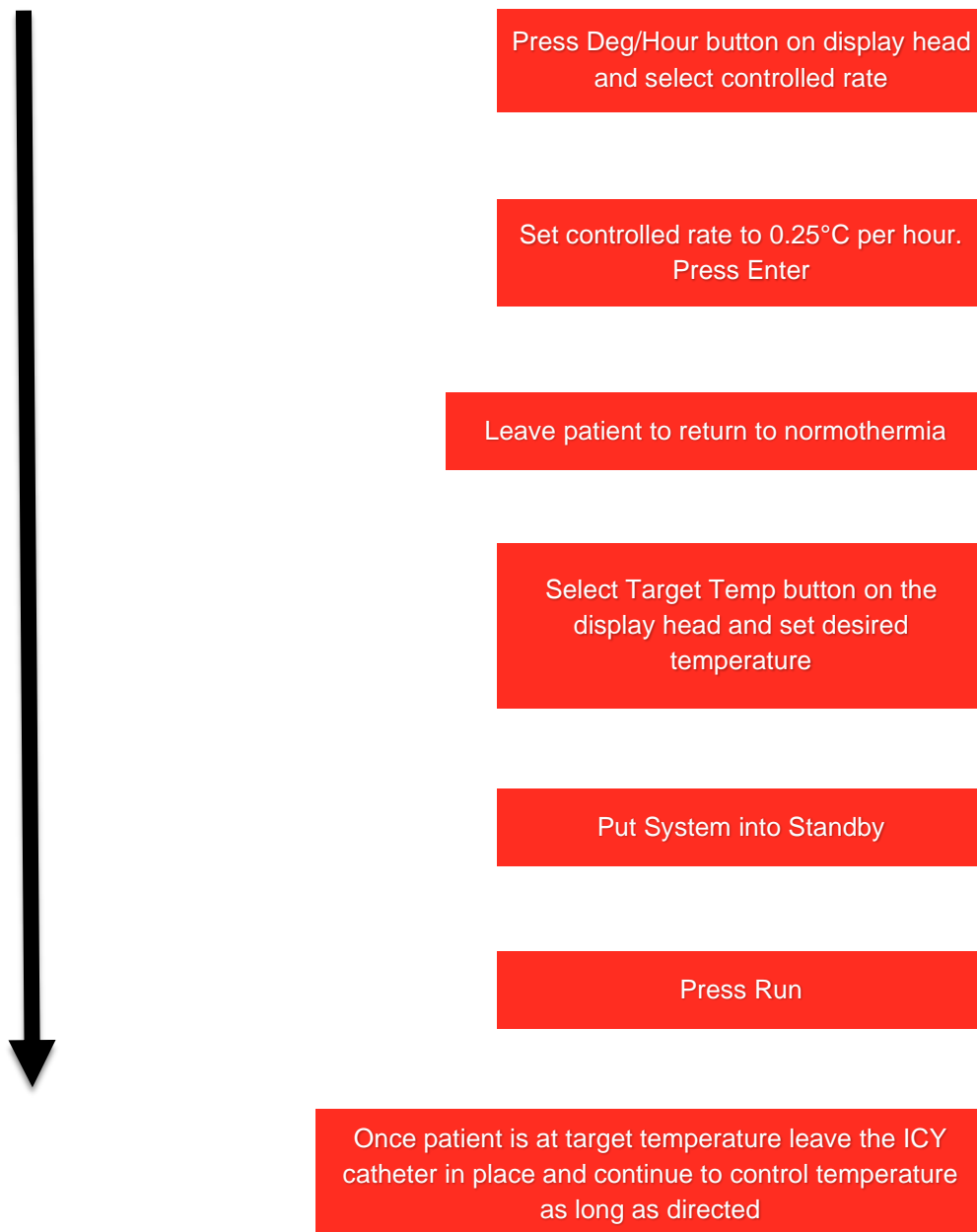


Caution: Limited by law for sale by or on the order of a physician.

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APPENDIX 2:

Rewarming to normothermia



The use of this guideline is subject to professional judgement and accountability. This guideline has been prepared carefully and in good faith for use within the Departments of Critical Care at Royal Sussex County Hospital and Princess Royal Hospital. The decision to implement this guideline is at the discretion of the on-call critical care consultant in conjunction with appropriate critical care medical / nursing staff.