PAXMAN

Treatment
Operation Guide

Training Manual

UKROW

Issue 1 03/2025

Paxman cooling times

For a comprehensive list of the Post Cooling Times please refer to the Scalp Cooling Guide: Efficacy, Data and Cooling Times.

View our **Scalp Cooling Guide: Efficacy, Data and Cooling Times**

In the absence of clinical data and non inclusion in this guide, please use the standard 90 minutes post cooling time for all other drug regimens or speak to Paxman.

Paxman cooling times

DRUG REGIMENS	STAGE 1 Minimum recommended pre-cooling time	STAGE 2 Infusion time	STAGE 3 Minimum recommended post-infusion cooling time
All Regimens (Monotherapy and Combination therapies with the exception of the below)	**30 minutes** **45 mins for Thick Voluminous Hair**	Time to infuse drugs	**90 minutes**
Paclitaxel Weekly (Taxol Monotherapy)	**30 minutes** **45 mins for Thick Voluminous Hair**	Time to infuse drugs	**60 minutes**
Docetaxel (Taxotere Monotherapy)	**30 minutes** **45 mins for Thick Voluminous Hair**	Time to infuse drugs	**20 minutes**

For a comprehensive list of the Post Cooling Times please refer to the Scalp Cooling Guide: Efficacy, Data and Cooling Times or the hard copy at your location.

Switching on the device & operational check

The following checks should be performed before switching on the Paxman Scalp Cooling System.

- [ ] Check the power cable is firmly inserted into the back of the machine
- [ ] Check the plug is inserted into a wall socket and socket is **switched on**


Fig 3.1

- Switch on the system by pressing the power switch located at the rear of the machine. The switch will illuminate green (Fig 3.1).
- After 30 seconds, the touchscreen display will show the startup screen (Fig 3.2).
- The refrigeration system will begin reducing the temperature of the coolant which can take up to 30 minutes. During this time the engineering screen is accessible for fault diagnosis.
- Once the coolant has reached operating temperature the system will move onto the main screen (Fig 3.3).

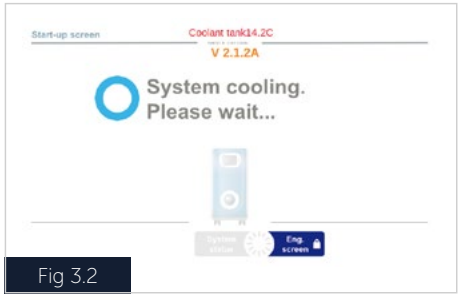


Fig 3.2

Software version

- The touch screen will briefly show the software version when the startup screen is displayed (Fig 3.2).

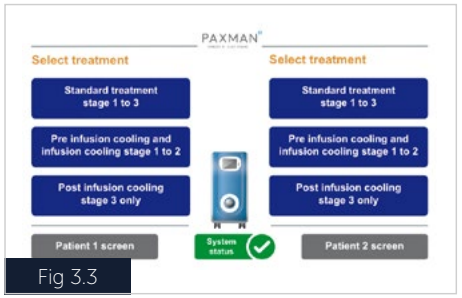


Fig 3.3

Information

It will take approximately 30 minutes for the Paxman Scalp Cooling System to cool down to the operating temperature

How to fit a patient for a cap

There are 3 key points to consider to ensure that a patient is provided with the correct size of cooling cap for them, which is crucial for the best possible hair retention when scalp cooling.

It is recommended to allow time for the pre-consultation appointment prior to the commencement of chemotherapy treatment for the fitting of the correct cap size.

Selection of cap size should always be performed with the cap cover removed.

There are **3 key areas** to consider when measuring a patient for a cap;

Cap not to Small

Ensure the cap is not too small – it is important that top of the cap is touching the crown of the patient's head and that there is no bounce to avoid crown hair loss. Also, if any amount of force is required to push the cap down on the head, this is also an indication that the cap is too small. This could be both painful for the patient and the cap could rise up away from the scalp during treatment.

Hairline

The cap should cover the whole of the hairline from the front to the back. If a patient has longer hair, please ensure you lift this up so that you can see beneath the hair and to check the cap is covering the hairline. NB: It is not imperative that the hairline in front of the ears is covered.

Caps too large

If the cap is too large there will be a gap at the back above the neck which would fit two hands or in some cases an entire fist. A further indication that a cap is too large is if the cap can be moved easily when placed on the head.

Important

A medium (M) inner silicone cap and a small (S) outer cap cover should be used for any patient considered to be in between the small and medium cap sizes.

Patient Preparation

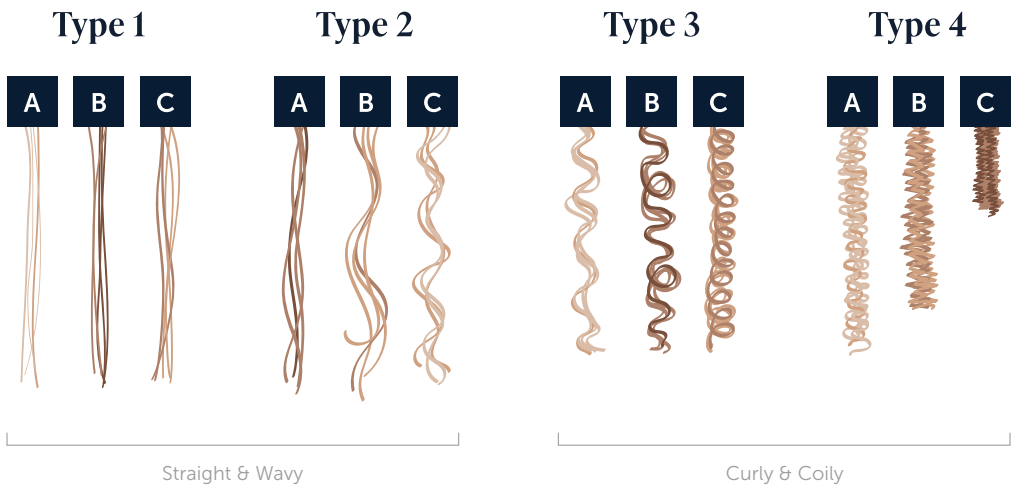
Hair preparation principles – all hair types

It is important that the patient's hair is prepared before the cold cap is put on the patient on treatment day.

By prepping the hair, we are aiming to:

- **Get the hair as flat to the scalp as possible/volume reduction** - This prevents any air pockets that can have insulative properties.
- **Improve conductivity** - Water assists the process of heat transferring away from the scalp
- **Prevent the hair from sticking to the cap for easy removal of the cap after treatment** - Conditioner should be smoothed over the hair.

Hair preparation methods vary between hair type.



View instructional hair preparation and cap fitting videos: www.coldcap.com

Fitting the cap to the patient

Option 1: cap complete with cap cover

Cap cover application

- Remember to outstretch the cap cover before every application – see section 7.1 for full guidance on this.
- Pinch together the edges of the silicone cap (Fig 4.1).
- Insert the pinched cap inside the cap cover (Fig 4.2).
- Pull the silicone cap sides outwards to fill the cap cover (Fig 4.3).
- Pull the cap cover up over the silicone cap so that the cover fully covers the external surface of the silicone cap (Fig 4.4).
- Ensure that there is a snug fit between the cap cover and the silicone cap. (Fig 4.5 - 4.6).

Cap fitting to the patient (including cover)

Please note that all the standard protocols of patient preparation should be carried out before fitting the cap. It is also important to utilise a forehead protector, headband or medical gauze with the cap to prevent direct contact between the silicone cap and bare skin.

- Lift the front part of the cap cover up so that the silicone cap is visible.
- Fit the cap to the patient's head whilst standing directly in front of them to ensure the cap is on straight. Align the front of the silicone cap with the hairline and around the ears (Fig 4.8).
- Lower the front of the cap cover once the cap is in the right position (Fig 4.9).
- Keep one hand on top of the cap cover and then with the other hand pull down and smooth down the cap cover. This will eliminate any tenting. Don't be afraid to pull hard but do not use two hands at once, as this will be unnecessarily uncomfortable for the patient and will only move the inner silicone cap from side to side. (Fig 4.13)
- Fully tighten the chin strap to set the cap in position and activate the bungee chords. (Fig 4.16)
- Pull tight on the bungee cord at the back of the cap and lock in place utilising the bungee cord toggle. (Fig 4.18)
- Loosen of the chin strap to ensure a more comfortable fit – the patient should be able to talk and eat! (Fig 4.19)
- Fix the velcro tab at the back of the cap inside the cap cover to ensure the cap tail coolant lines are protected. (Fig 4.20)
- Finally, apply the all important lacing technique as per the below instructions.


Fig 4.1


Fig 4.2


Fig 4.3


Fig 4.4


Fig 4.5


Fig 4.6


Fig 4.8

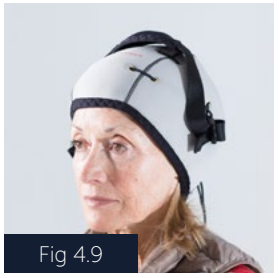


Fig 4.9

Fitting the cap to the patient

Option 2: fitting the cap excluding the cap cover

Remember to outstretch the cap cover before every application – see section 7.1 for full guidance on this.

Please note that all the standard protocols of patient preparation should be carried out before fitting the cap. It is also important to utilise forehead protector, headband or medical gauze with the cap to prevent direct contact between the silicone cap and bare skin.

- Standing in front of the patient, fit the required inner silicone cap to the patients head. Line the front of the silicon cap up with the hairline and around the ears. (Fig 4.10)
- Turn the cap cover inside out
- With the Paxman logo to the front, line the front of the edge of the cap cover up to the edge of the silicon cap with one hand and then place the other inside the cap on the top of the head like a spider. (Fig 4.11)
- Roll down the cap cover ensuring all the inner silicone cap is totally covered. (Fig 4.12)
- Keep one hand on top of the cap cover and then with the other hand pull down and smooth down the cap cover. This will eliminate any tenting. Don't be afraid to pull hard but do not use two hands at once, as this will be unnecessarily uncomfortable for the patient and will only move the inner silicone cap from side to side. (Fig 4.13)
- Fully tighten the chin strap to set the cap in position and activate the bungee chords. (Fig 4.16)
- Pull tight on the bungee cord at the back of the cap and lock in place utilising the bungee cord toggle. (Fig 4.18)
- Loosen of the chin strap to ensure a more comfortable fit – the patient should be able to talk and eat! (Fig 4.19)
- Fix the velcro tab at the back of the cap inside the cap cover to ensure the cap tail coolant lines are protected. (Fig 4.20)
- Finally, apply the all important lacing technique as per the below instructions.


Fig 4.10


Fig 4.11

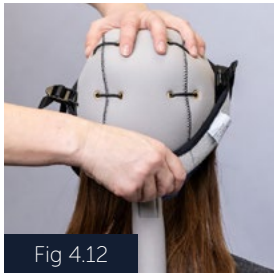


Fig 4.12

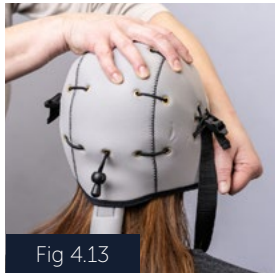


Fig 4.13


Fig 4.14


Fig 4.15


Fig 4.16

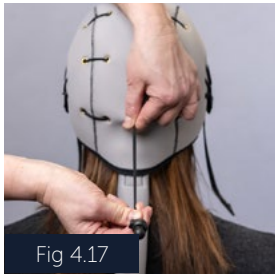


Fig 4.17


Fig 4.18


Fig 4.19

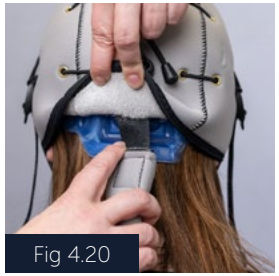
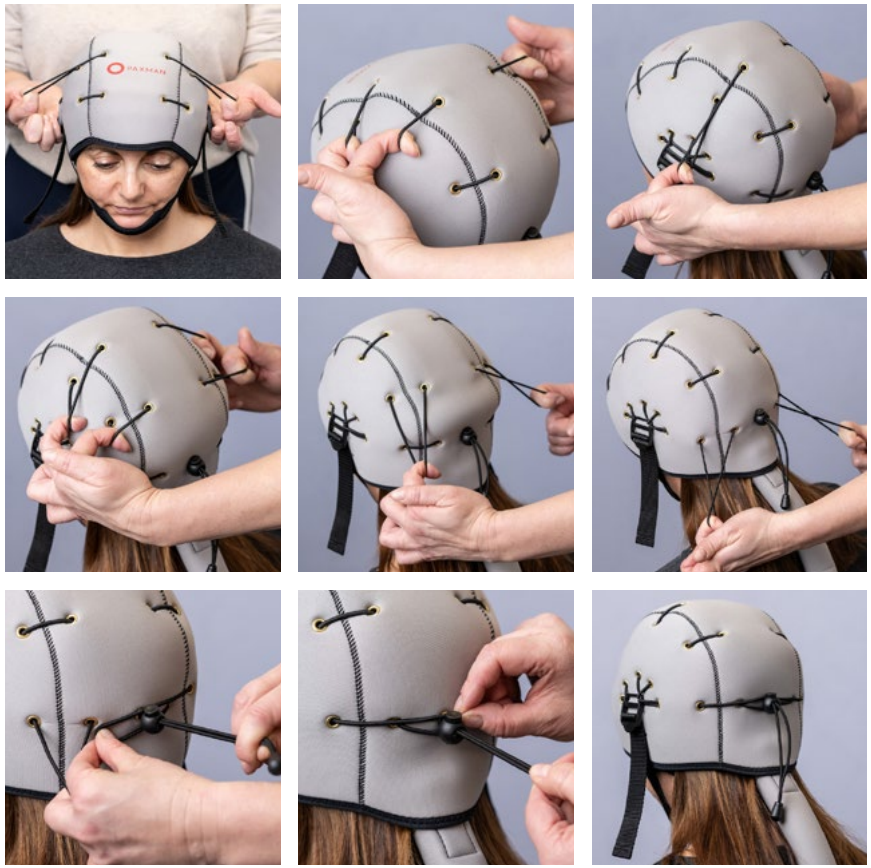


Fig 4.20

Fitting the cap to the patient

Lacing technique

- Standing behind the patient,starting with the **second set** at the front of the cap, pull the bungee cords at each side out and down (so they look like bunny ears).
- Whilst still holding this set, then take the next set and pull out and down, then let go of the first set.
- Repeat this 4 times until you reach the final set.
- With the remaining bungee cord from the final set, cross this over the toggle at the back on each side to secure in place.



Fitting the cap to the patient

What are the important things to note to ensure the best fit?

1. The inner cap has consistent all over contact with the scalp.
2. Inner cap & outer cap are positioned centrally on the head.
3. The bungee cords and the chin strap are tightened – but not so tight that the patient cannot speak, eat or drink.
4. If a patient is having a cap fitted for them, the person fitting the cap must stand in front of the patient for best visibility.
5. Before fitting the cap cover for either method, ensure it is turned inside out and loosen those bungee cords, to ensure the cover isn't distorted before fitting.
6. Keep one hand on top of the cap to pull down and smooth the cap cover. Don't be afraid to pull hard, do not use two hands at once!
7. Use the lacing technique to achieve a better fit.

Forehead protection

There are a number of ways in which you can protect the forehead;

1. Paxman Forehead Protector – A specific adhesive protector positioned on the forehead.
2. Elasticated cotton headband – positioned on the forehead, below the hair line and below each ear.
3. Cotton rounds or gauze – push up inside the cap after it has been fitted.

Continuing or starting scalp cooling with significant hair loss

When do you need to use a theatre/surgical cap?

You only need to use the theatre cap if you have exposed scalp. If your hair has thinned but there aren't specific areas of hair loss, you won't need a theatre cap.

How to use a theatre/surgical cap

Prepare your hair as shown in the hair preparation How-to video, then place the theatre/surgical cap over your head so that it is positioned correctly for the inner cooling cap to fit on top. The material of the disposable cap is thick enough to provide protection to any exposed scalp and make the scalp cooling more tolerable, but not thick enough to compromise the cooling process.

If you have patchy hair loss and you still have hair that is long enough, you can arrange your hair over the exposed scalp once it is dampened and conditioner is added. This is a simple but effective way of protecting exposed scalp without additional items. As long as any exposed scalp is protected, it is completely safe to continue to scalp cool.

No cap required

Cap required

Stages of scalp cooling treatment and system operational options

Stages of scalp cooling treatment

Stage 1

Pre-Infusion Cooling; this is the time that the patient wears the cap before the chemotherapy infusion, to ensure the scalp is at the required temperature before infusion starts.

Stage 2

Infusion cooling; this is the time the patient continues to wear the cap during their chemotherapy infusion.

Stage 3

Post Infusion Cooling; this is the time that the patient continues to wear the cap following the chemotherapy infusion, ensuring that the scalp remains at the required temperature while the chemotherapy drugs are at their most potent in the patient's body.

System operational options

Option 1

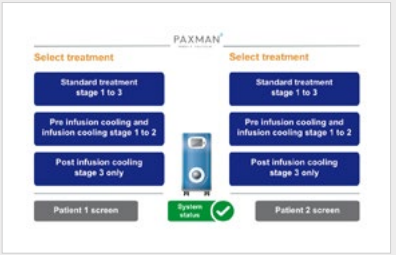
Stage 1 through to Stage 3 – select this treatment type option if the patient is to remain in the same infusion chair throughout their whole scalp cooling treatment.

Option 2

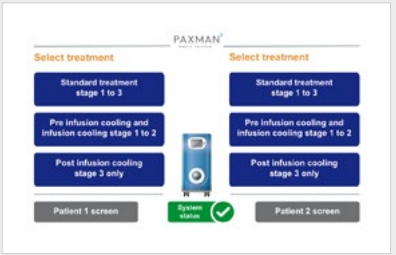
Stage 1 and Stage 2 Only – select this option if the patient is to be moved from the infusion chair to a post cooling area and/or system for stage 3.

Option 3

Is Stage 3 Only – select this treatment type after the patient has been moved to commence Stage 3 Post Infusion Cooling only.



Please note the 'Home Screen' on the Paxman Scalp Cooling System. It has operational options for both Patient 1 and Patient 2.



A single patient system will only have the operational options on the left-hand side and a 'Patient Summary' on the right.

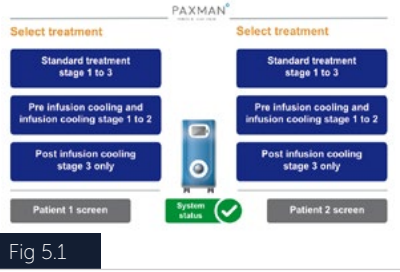


Fig 5.1

The treatment stage 1 to stage 3

Stage 1 Pre-infusion cooling

- To start pre-infusion cooling press the Continue button (Fig 5.5). This will activate the pump and start the flow of coolant through the cap. The cap will inflate slightly and the temperature of the cap will start to decrease. It will start to feel cold quite quickly. For the first 10 minutes the patient may experience some cold discomfort, but this will pass when the patient acclimatises to the cooling sensation.
- A countdown timer will be activated depicting the time remaining for Stage 1 (Fig 5.6). The duration of Stage 1 cooling is standardized at 30 minutes. **Extend Stage 1 Cooling for patients with thick hair.**
- There is an option to extend the Stage 1 cooling time by 15 minutes for patients with thick hair. The nurse will advise the patient if this is necessary.
- If required, extended cooling is achieved by pressing the Extend button.
- Upon completion of Stage 1 pre-infusion cooling the screen will indicate cooling complete (Fig 5.7).

Note: The system will continue to circulate the coolant through the cap continuously during all Stages 1 to 3. Coolant circulation will be terminated when the yes button is pressed in response to the end treatment prompt. This process ensures that scalp cooling is not compromised or disrupted due to any delays being incurred between treatment stages.

Stage 2 Infusion cooling

- Chemotherapy infusion can now commence. The scalp is at optimum temperature to help prevent chemotherapy-induced alopecia.
- The User should press the Continue button and commence with the chemotherapy infusion. The screen will now show (Fig 5.8).
- When all the chemotherapy agents have been infused, the infusion complete button should be pressed (Fig 5.8).
- Stage 2 is now complete.

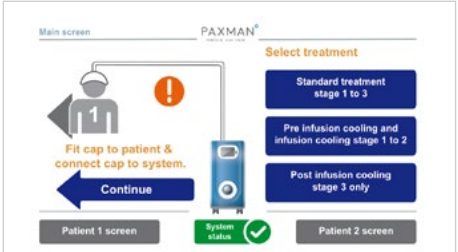


Fig 5.5

Fig 5.6

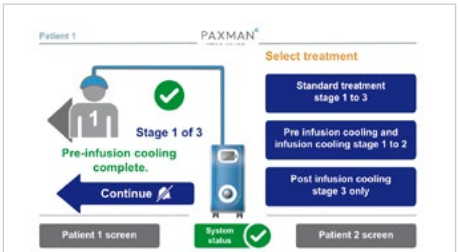


Fig 5.7

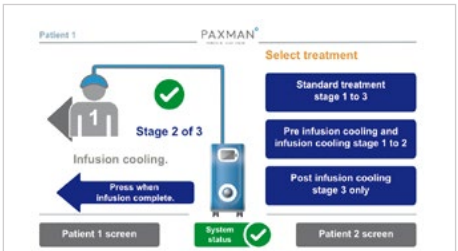


Fig 5.8

The treatment stage 1 to stage 3

Stage 3 Post infusion cooling

Option 1 with timer

- Post Infusion Cooling can be carried out with or without a timer (Fig 5.9).
- Pressing the Set Timer button on the screen brings up the screen shown in Fig 5.10.
- Select the Hour and/or minute display when highlighted and then use the arrows to set.
- Press Start to begin the timer.
- For more information on post-infusion cooling times, please refer to the Scalp Cooling Guide: Efficacy, Data & Cooling Times.

Option 2 without timer

- Press the 'Without Timer' button on the screen.
- This will now show the 'Time Elapsed' (Fig 5.11).
- For more information on post-infusion cooling times, please refer to the Scalp Cooling Guide: Efficacy, Data & Cooling Times.

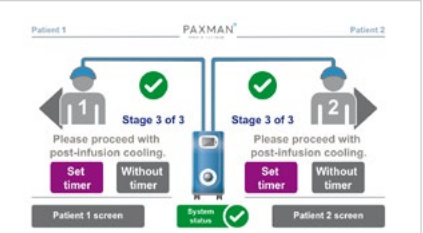


Fig 5.9

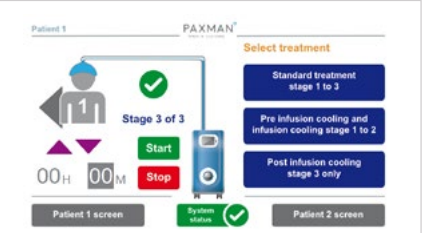


Fig 5.10

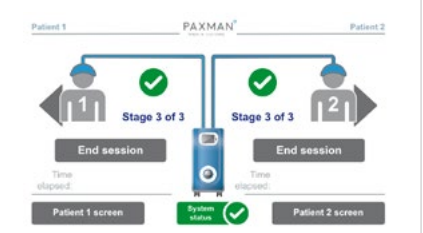


Fig 5.11

The treatment stage 1 to stage 3

Patient summary screen

The Patient Summary Screen advises which treatment stages are ‘pending’ and which have ‘completed’ (Fig 5.12-5.13).

On a single patient Paxman Scalp Cooling System this remains on the screen at all times on the right hand side as per above (Fig 5.14).

On a dual patient Paxman Scalp Cooling System to access the Summary Page you must press the Patient 1 Screen or Patient 2 Screen dependant on which side the patient is being treated on (Fig 5.14).

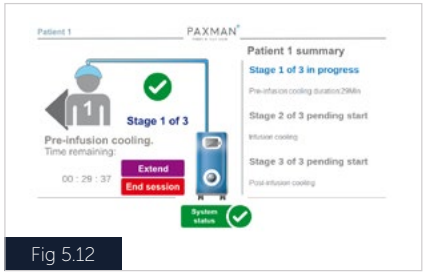


Fig 5.12

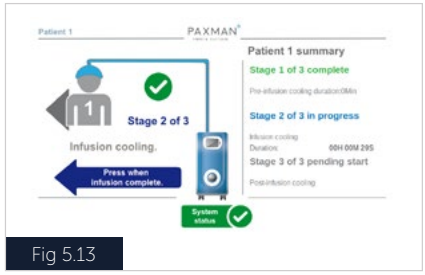


Fig 5.13

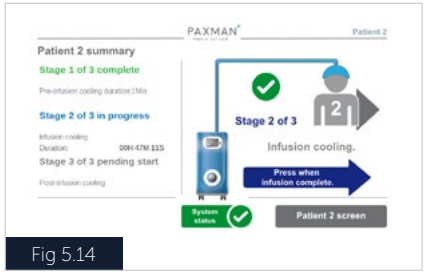


Fig 5.14

Temporary disconnection/bathroom breaks

Scalp cooling may be temporarily interrupted for patient bathroom visits. This involves disconnecting the cooling cap from the coolant line. The patient is then free to visit the bathroom while wearing the cooling cap.

- Disconnect the cap from the coolant line following the procedure in section 4.5 for disconnecting the couplings.
- An orange exclamation symbol Connect cap will appear (Fig 5.15).
- If the cap is not connected within 8 minutes a no flow warning symbol No flow will appear (Fig 5.16), and flash between connect cap and no flow and a buzzer will sound to alert the user or patient.
- When ready, reconnect the cooling cap, making sure that an audible ‘click’ is heard.

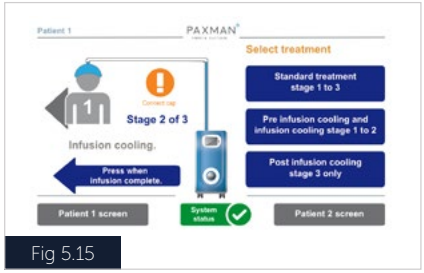


Fig 5.15

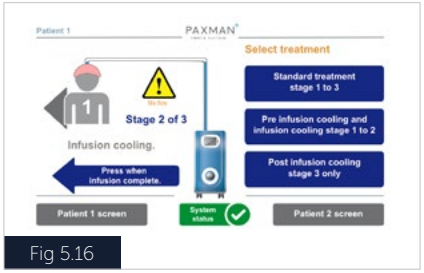


Fig 5.16

Coolant top up

It is important that an adequate level of coolant is maintained within the device to ensure successful operation of the device. There are two level sensors in the coolant tank. One that monitors when the coolant has dropped below the higher level and one that monitors when the coolant has dropped below the lower level. When coolant drops below the higher level then the user is alerted to top-up the coolant level. When the coolant drops below the lower level the device will shut down and the user is advised to consult a service engineer.

Low coolant

- When the coolant drops below the high-level sensor an action box (Fig 7.10), will appear on the screen. The device will continue to operate normally. However the action screen will remain until the OK acknowledgment button is pressed. Once the OK button is pressed, the screen will return to normal.
- The device will continue to function normally until:
  - Either the device is switched off.
  - Or the coolant level drops below the lower level
- The system should be topped off after patient treatment has been completed.

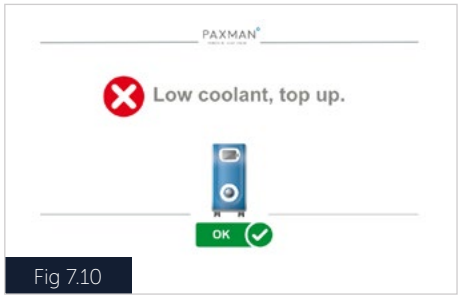


Fig 7.10

Fig 7.11

Switched off

If the device is switched off, it will remember it had low coolant. When it is switched on again it will not function, and it will display the warning screen (Fig 7.11).

Note the OK acknowledgement button is now disabled (Fig 7.11).

Adding 1lt of coolant following the process below will return the device to its normal status.

Fig 7.12

Coolant falls below lower level

The screen shown in Fig 7.12 is displayed. Call a Service Engineer.

Topping up the coolant level

The ‘Coolant Top Up Valve’ can be located at the back of the device Fig 7.13. This has a non return valve to minimize spillage. This should be unclipped to attach the 1 litre Bag or Cube (Fig 7.14 & 7.15)

The 1 litre Bag or cube had a membrane on the top of the dispenser. Push the bag/cube dispenser into the Top Up Valve until you hear it click to break the membrane and securely connect to the valve.

Lift the Bag/cube in the upwards position and the coolant will automiatically flow into the device. (Fig 7.16 & Fig 7.17)

When the dispenser is empty, turn the top up point back to its original position with the valve pointing down whilst leaving the dispenser connected. Allow any residual coolant to flow back into the dispenser before removing it. This will close the valve and seal the device.

Secure the valve in its original position in the clip.


Fig 7.13


Fig 7.14

Fig 7.15


Fig 7.16


Fig 7.17

Coolant spillage

Should spillage of coolant occur wipe affected area with a disposable cloth or absorbent paper and place in a suitable waste container. Wash affected area with soap and water or a suitable floor cleaner. The product is biodegradable and no special handling is required.

Disposal

Coolant can be disposed of by following the manufacturer’s instructions detailed in the Materials Safety Data Sheets or returned to Paxman for disposal.

Material Safety Data Sheet

The manufacturer’s material safety data sheet is provided in the IFU. This product is NOT classified as dangerous or hazardous under EC criteria and is deemed completely safe for use in its intended purpose.

Information

The device can be topped up with coolant when it is switched on or when it is switched off

Scalp Cooling Guide - Training Manual

For Full instructions please use the ‘Scalp Cooling Guide - Training Manual’

Module 01

Paxman story

Paxman is a family company. The Paxman Scalp Cooling System exists because of Sue – Our Original Pioneer

Sue was the wife of our founder Glenn, and mum to Curtis, Claire, our Director of Global Training, Richard, our CEO, and James. She is the heart and motivation behind everything that happens at Paxman.

Module 02

How scalp cooling works

Previously, it was thought that vasoconstriction was the only mechanism in which scalp cooling reduced the cytotoxicity of chemotherapy drugs, however further in vitro experiments have revealed other protective effects – such as reduced drug uptake, reduced metabolic activity, and reduced rate of hair follicle cell division.

Module 02

Efficacy of scalp cooling

The efficacy of scalp cooling varies based on a series of factors, with drug regimen being the primary influence.

On average, there is a 56% chance of patients retaining half of their hair with scalp cooling.