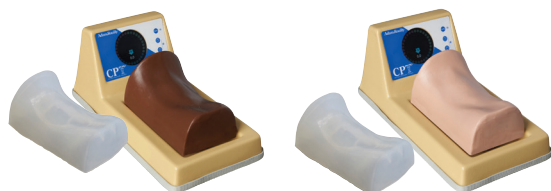


# Adam, Rouilly

SERVING MEDICAL EDUCATION WORLDWIDE

## AR70/AR70-B DIGITAL CRICOID PRESSURE TRAINER®

### Instruction Manual



Thank you for purchasing this **AR70 Digital Cricoid Pressure Trainer®**.

This model was designed by **Dr Osman Abdelatti, Consultant Anaesthetist**. The **Cricoid Pressure Trainer®** has been developed to help facilitate training in the application of the **correct amount of cricoid pressure** (or Sellick Manoeuvre) which is routinely used during emergency and obstetric anaesthesia and ventilation.

Studies have shown that 95% of clinicians were unable to identify the correct amount of force required to occlude the oesophagus and that 87% were incapable of applying the correct amount of force. The Cricoid Pressure Trainer aims to significantly enhance training utilising the device's realistic anatomical structures and instantaneous electronic feedback.

**Please read this instruction manual carefully and retain it for future reference.**

## **Skills**

- Palpation of the throat anatomy and correct identification of landmarks
- Application of the correct cricoid pressure
- Maintenance of the correct amount of cricoid pressure
- Recognition of too little or too much cricoid pressure applied and its implications in patient welfare

## **Features**

- Easy to set up and use
- Internal anatomy offers realistic feeling during palpation of the tracheal rings, cricoid cartilage, cricoid ligament and thyroid cartilage
- A translucent skin covering is also included to aid visual anatomical understanding, whilst a flesh tone skin covering can be used as proficiency is gained and in scenario based simulation
- A full colour digital display offers instantaneous visualisation of the degree of cricoid pressure being applied and whether this is correct or too much or too little
- The unit can be switched into the timer/feedback mode which records how long the correct cricoid pressure was held for and presents an easy to understand graph at the end of the procedure allowing for instant debriefing and discussion
- The digital display can be set to Newtons (N) or Kilograms (Kg)
- Exam mode hides the display of the current applied pressure, helping trainees gain proficiency in application of the correct pressure using muscle memory
- Battery or worldwide mains power compatible

# Safety and Precautions



The trainer contains sensitive electronic parts. Do not store near heat or where it may experience extremes in temperature, humidity or magnetic fields.



Use only the low-voltage power mains adaptor supplied. Use of other adaptors may damage the simulator, and invalidate your guarantee.



Use only 6x AA batteries (not included) in the battery compartment as indicated. Do not attempt to use any other type or size of battery. Other battery sizes may damage the simulator, and invalidate your guarantee.



Do not use the adaptor if the low voltage cable is damaged. The cable cannot be repaired, the adaptor must be replaced.



Do not power down and leave or store the trainer with batteries still installed for prolonged periods. Always remove batteries before storage.



The trainer contains no user serviceable parts. Do not attempt to open or disassemble the trainer. Doing so could cause damage and will invalidate your guarantee.



This simulator is designed to facilitate training in the application of cricoid pressure. The procedures demonstrated in this manual serve as a guide only. Local policies will determine the correct way of performing the procedure.



Re-chargeable batteries may be used to power the trainer. Please note however that the mains adaptor will not re-charge batteries.

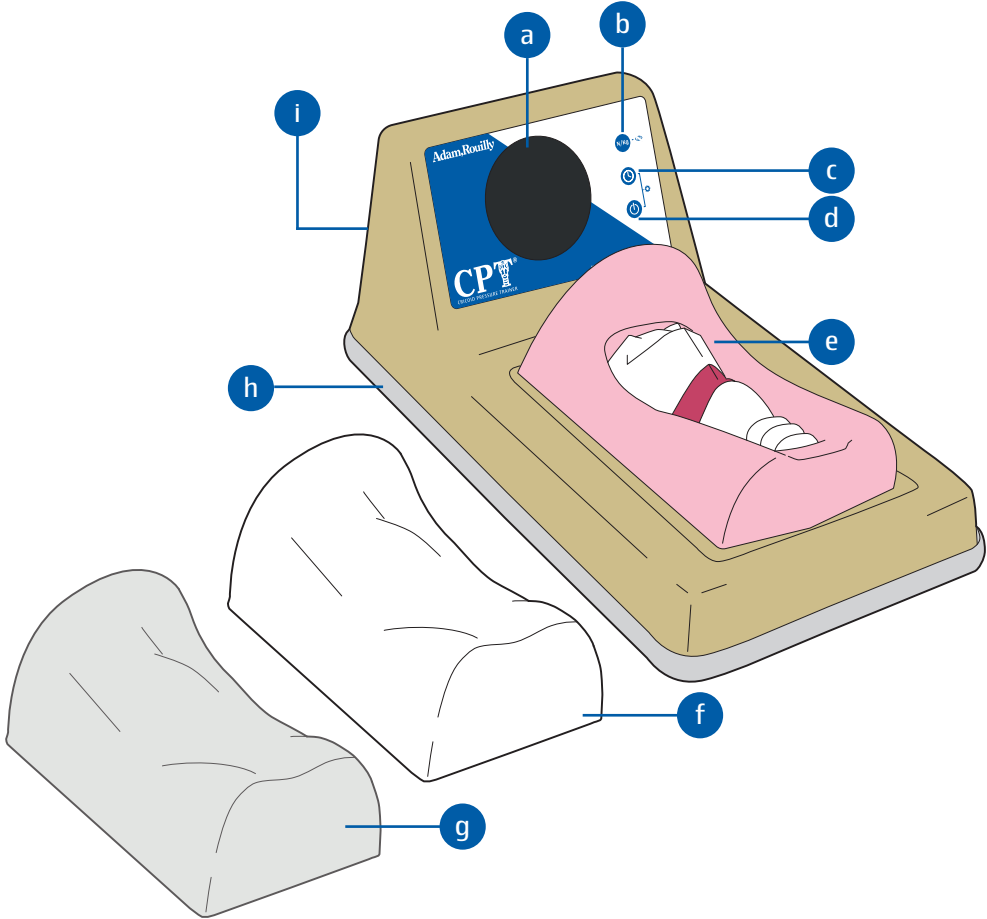







Please treat the simulator with the same care you would a patient.

## Contents

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Parts



- a Digital display
- b Newton/Kilogram Button   
Exam Mode 
- c Timer/Feedback Button 
- d Power Button   
Settings Menu 
- e Internal anatomy



The internal anatomy is fixed and cannot be removed.

- f **M70/3 FLESH TONE SKIN COVERING, WHITE**  
**M70/4 FLESH TONE SKIN COVERING, BLACK**
- g **M70/5 TRANSLUCENT TONE SKIN COVERING**
- h Battery compartment (on base) for 6x AA batteries (not included)
- i Low voltage power jack (at rear)

## Supplied With

Low voltage power adaptor with world plug fixings

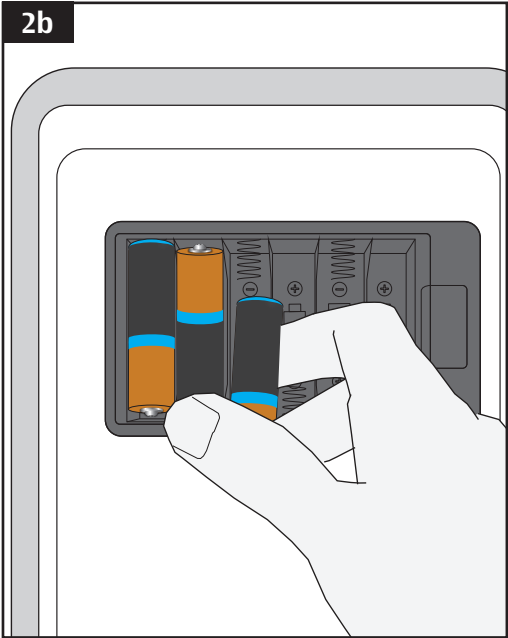
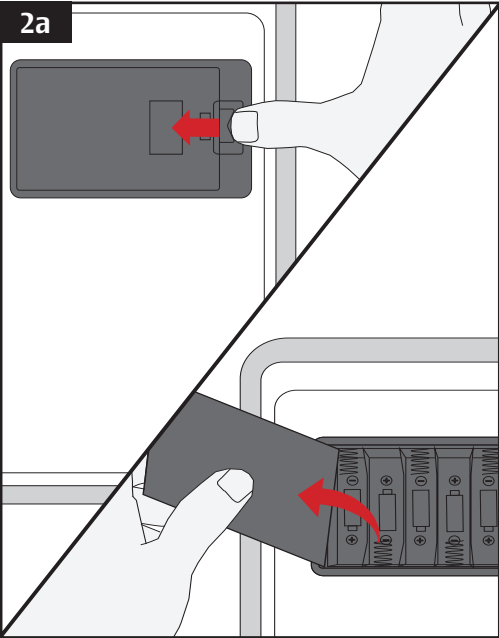
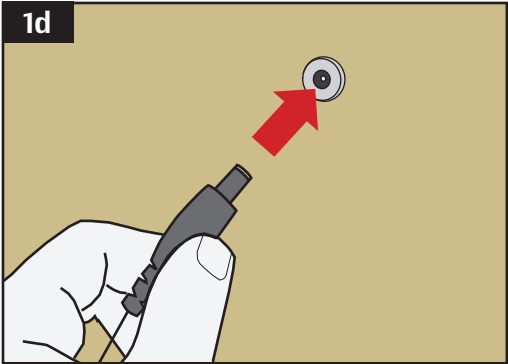
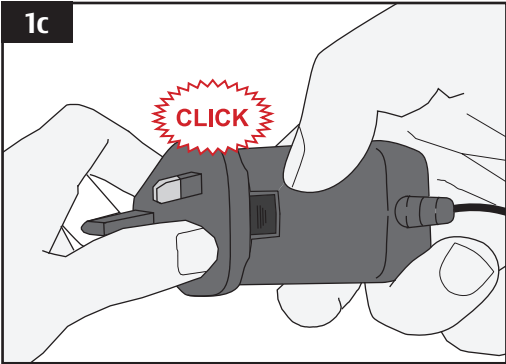
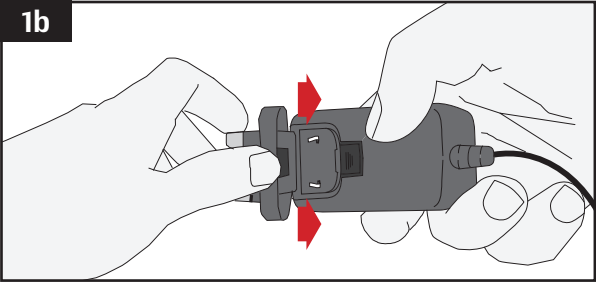
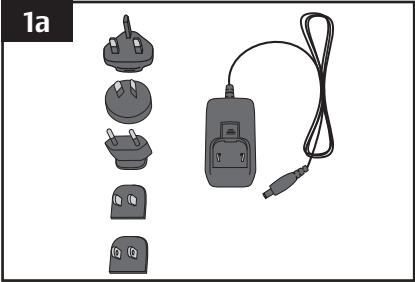


If you require replacement parts please contact our Sales Department, quoting codes where applicable.



**Scan the QR code to access the product video.**  
**<https://youtu.be/mY6diaVPBxo>**

Before Use



## Using the Included Power Adaptor

Ensure the work area is clean and dry.

Place the trainer on a stable, flat surface.

**1a**

Before first use select the appropriate plug fixing for your local mains supply from those included.

**1b**

Insert the plug fixing into the adaptor with the large catch at the base of the adaptor.

**1c**

Align the small rectangular groove on the top of the fixing and press this into the adaptor so that it clicks into the spring lug.

**1d**

Plug the low voltage cable from the adaptor into the power jack at the rear of the simulator.

**The simulator is now ready for use.**

## Using Battery Power

Alternatively, the trainer may be powered by 6x AA batteries (not included).



Use only 6x AA batteries (not included) in the battery compartment as indicated. Do not attempt to use any other type or size of battery. Other battery sizes may damage the simulator, and invalidate your guarantee.



Do not power down and leave or store the trainer with batteries still installed for prolonged periods. Always remove batteries before storage.



Re-chargeable batteries may be used to power the trainer. Please note however that the mains adaptor will not re-charge batteries.

**2a**

Open the battery compartment at the base of the simulator using the tab on the compartment door.

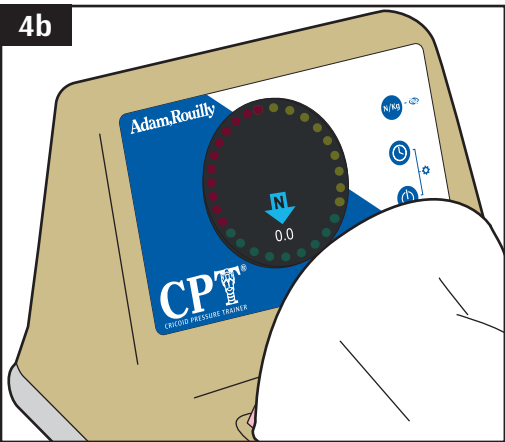
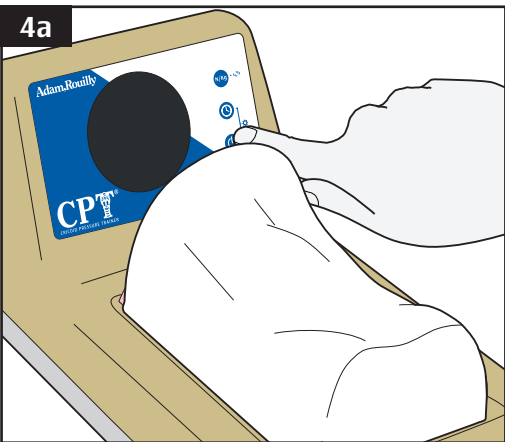
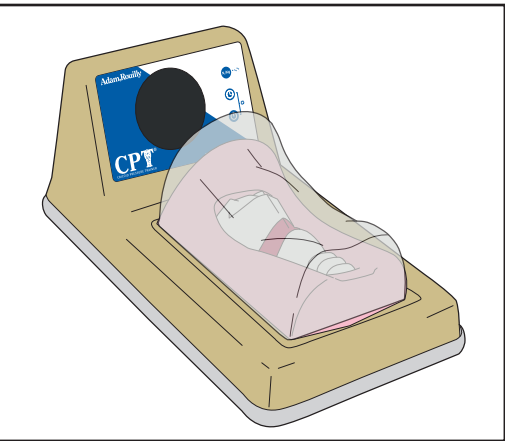
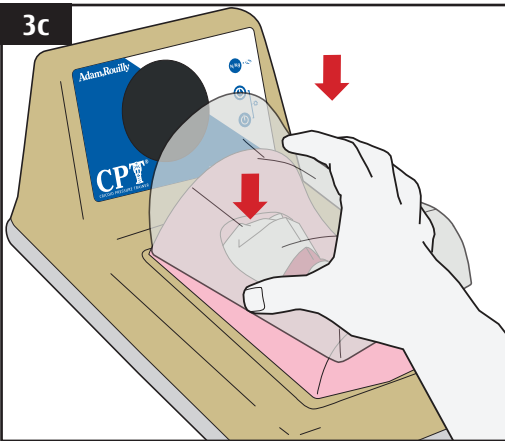
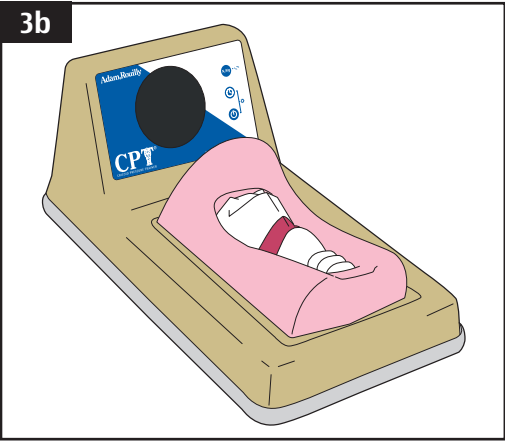
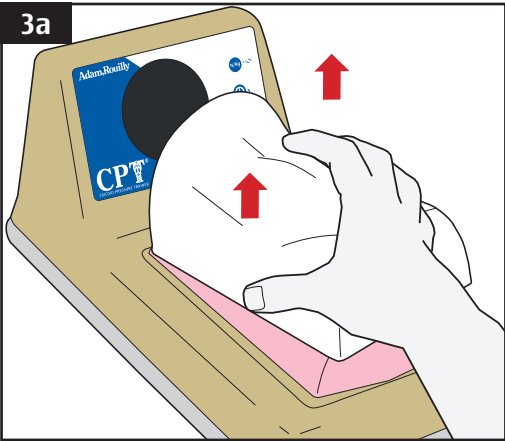
**2b**

Install 6x AA batteries (not included) as indicated in the battery compartment.

Refit the compartment door.

**The simulator is now ready for use.**

Before Use





## Using the Skin Coverings or Internal Anatomy

The skin coverings enhance blind training and allow for more realistic simulation, whilst the translucent skin or anatomy on its own enhances anatomical understanding.



**The simulator self-calibrates every time it powers on. We recommend swapping skins before powering on the simulator, or switching it off before swapping to another skin or using the anatomy on its own.**

**3a**

With the trainer switched off, grip both sides of the skin covering and lift gently away from the internal anatomy.

**3b**

If the simulator is to be used without a skin covering, it may now be powered on as in step **4a** below.

**3c**

If a different skin is to be used, simply locate this over the internal anatomy and push it gently to ensure a good fit. The simulator may now be powered on as in step **4a** below.



**The skin coverings are delicate items and should be treated with care. Do not fold or attempt to cut the skin. Do not mark the skin with permanent marker or ball point pens - these cannot be removed.**



**The internal anatomy is fixed and cannot be removed.**

## Powering On

Ensure the work area is clean and dry. Place the simulator on a stable, flat surface.

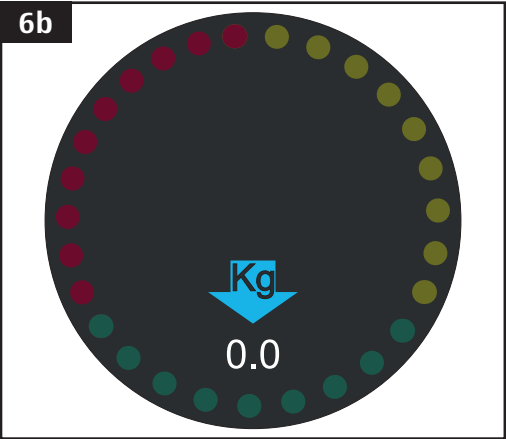
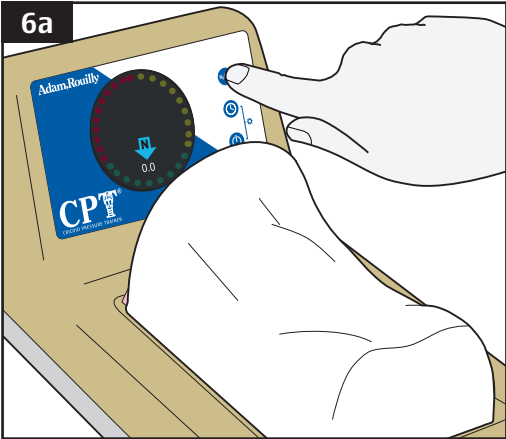
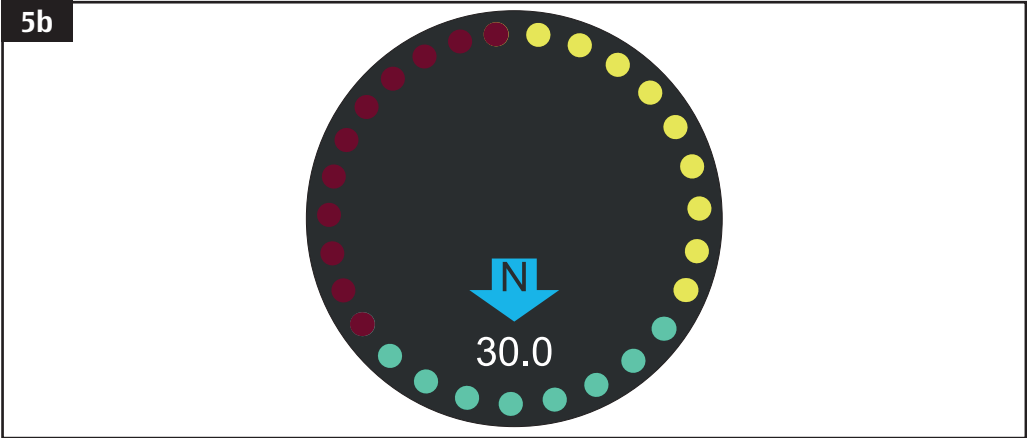
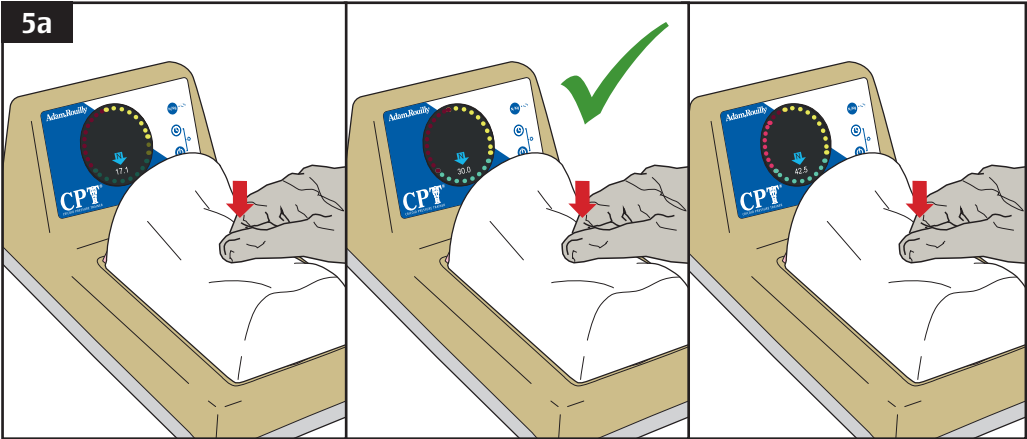
**4a**

Press and hold the power button  briefly until the digital display illuminates.

**4b**

The simulator is ready for use when the default cricoid pressure readout screen is displayed.

During Use





This simulator is designed to facilitate training in the application of cricoid pressure. The procedures demonstrated in this manual serve as a guide only. Local policies will determine the correct way of performing the procedure.

## Instant Readout During Cricoid Pressure Application

**5a**

With the simulator powered on, whenever cricoid pressure is applied the display will give an instantaneous readout of the force being applied.

**5b**

Force applied is displayed numerically in Newtons (N) by default and clockwise in colour coded dot increments:

See **6a** for changing the numerical to Kilograms (Kg)

Pressure Applied Approx.	Dot Colour	Description
0 - 24.9N	Yellow	Too little cricoid pressure
25 - 30N	Green	Correct cricoid pressure (30N) ✓
30.3 - 50N	Red	Too much cricoid pressure

The training focus is on the application of the correct cricoid pressure by maintaining readouts in the **green zone**. This has been pre-set at, or around, **30N**.

- **Safe Minimum** (where the green zone starts),
- **Safe Maximum** (where the green zone ends, correct cricoid pressure) and
- **Dial Maximum** (the maximum pressure indicated at the end of the red zone)


**NB Local guidelines and policies will determine the correct values for Safe Minimum, Safe Maximum and Dial Maximum settings.**

Safe Minimum, Safe Maximum and Dial Maximum settings can be altered in the settings menu, see **11a** page 17 onwards.

## Newton/Kilogram Unit Display

By default, the simulator will display applied cricoid pressure in Newtons (N) but this can be altered to display in Kilograms (Kg).

**6a**

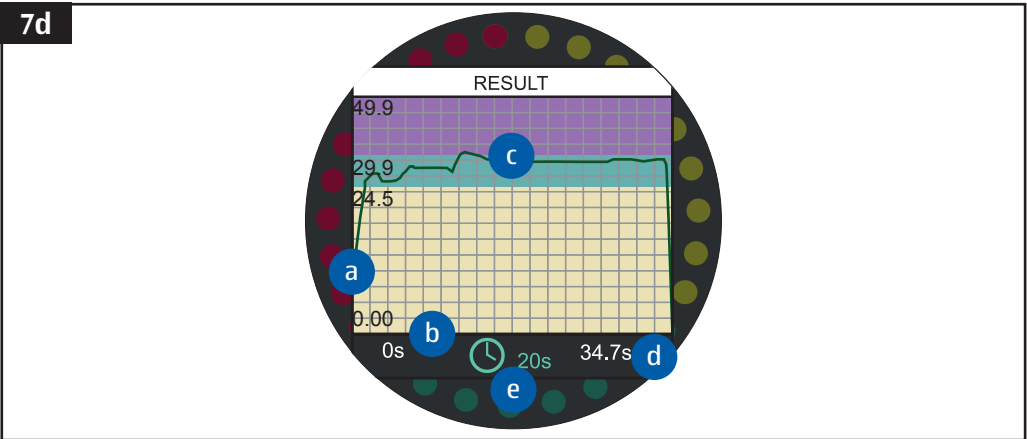
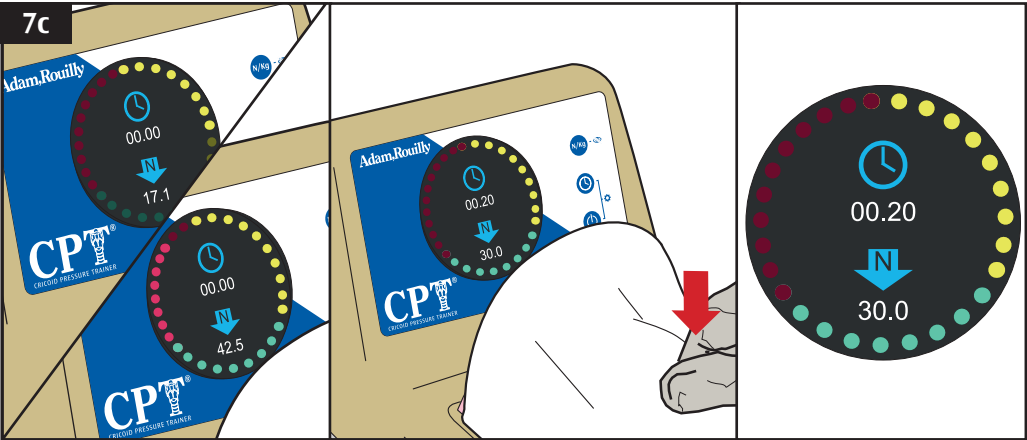
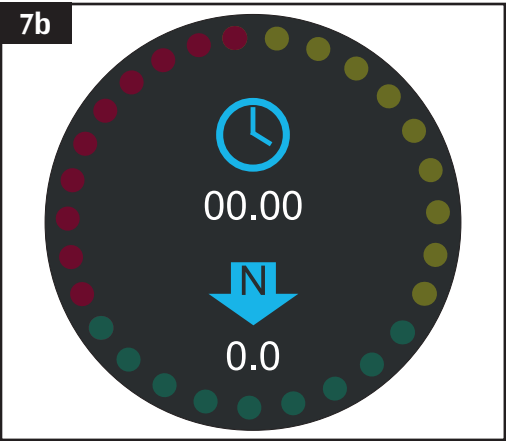
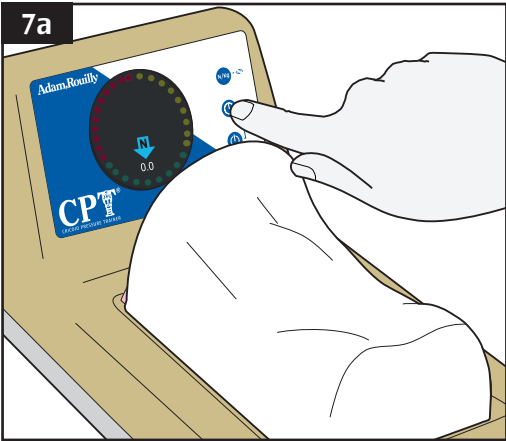
With the simulator powered on and before application of cricoid pressure, press the N/Kg button  to change the display unit.

**6b**

The blue arrow indicator will change to display "Kg" and the simulator will retain the setting after powering off.

To change again, press the N/Kg button.


During Use



## Timer/Feedback Mode

The Timer/Feedback mode records one complete procedure and the amount of time the correct cricoid pressure was held for. This is presented in a graph when cricoid pressure is released, for instant debriefing and analysis.

**7a**

With the simulator powered on and before application of cricoid pressure, press the timer button  to activate Timer/Feedback Mode.

**7b**

The timer and clock symbols are displayed as shown and application of cricoid pressure can start.

**7c**

Cricoid pressure is indicated immediately. Timing starts only when the correct cricoid pressure is maintained in the green zone. Deviations above (red zone) or below (yellow zone) the correct pressure will reset the timer back to 00:00.

**7d**

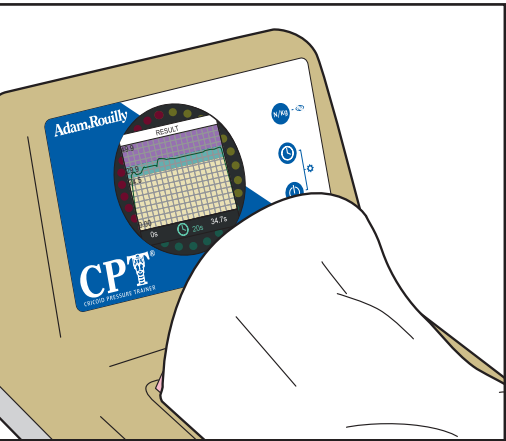
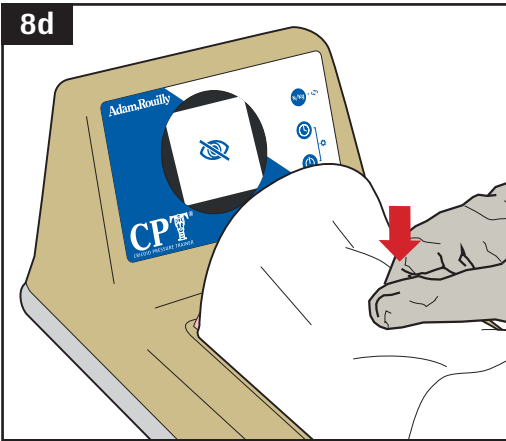
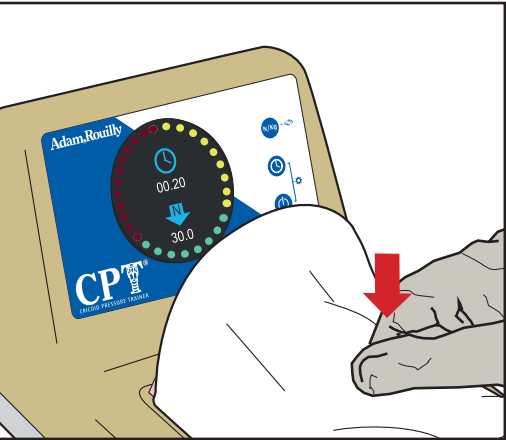
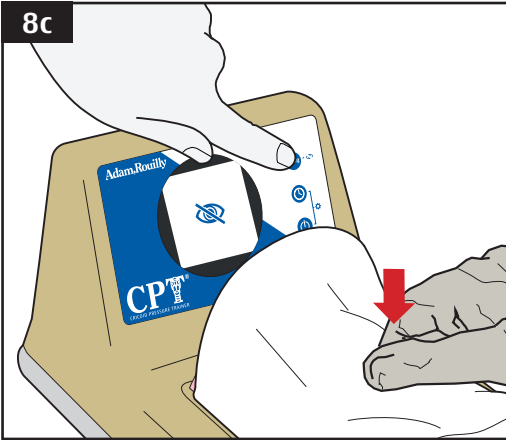
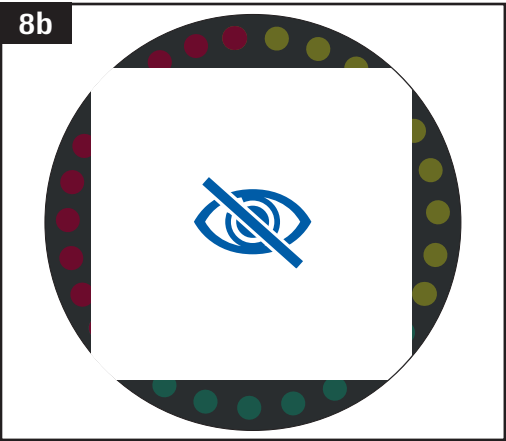
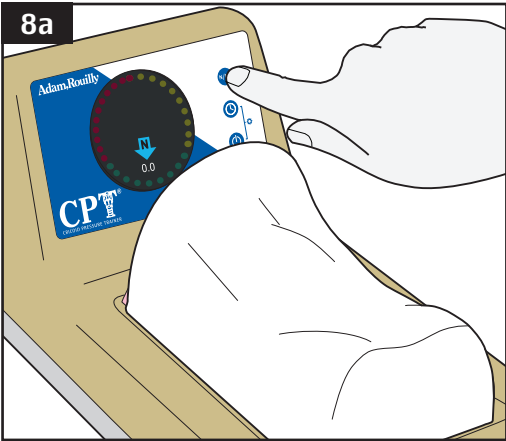
When no more pressure is applied, the display will show a feedback graph of the procedure which may be interpreted as follows:

- a** Pressure Axis (in N or Kg dependent upon setting)
- b** Time Axis (in seconds)
- c** Time/Pressure plot line showing pressure applied through yellow, green and red zones across the total time of the procedure
- d** Total procedure time (from first pressure application until release)
- e** Total time in green zone (correct cricoid pressure)

To clear the graph, **press any button**

**The simulator is now ready for use again.**


During Use



## Exam Mode

The Exam Mode temporarily hides the instant pressure readout to allow for enhanced training as proficiency in the procedure is gained. It is particularly effective for blind training when used with the Timer/Feedback Mode, since the feedback graph will still display at the end of the procedure.

**8a**

With the simulator powered on, at any point **before** or **during** a procedure, press and hold the N/Kg button  to activate Exam Mode.

**8b**

When activated, the default cricoid pressure readout screen is concealed by the Exam Mode symbol, as shown.

**8c**

Press the N/Kg button  briefly to deactivate Exam Mode.

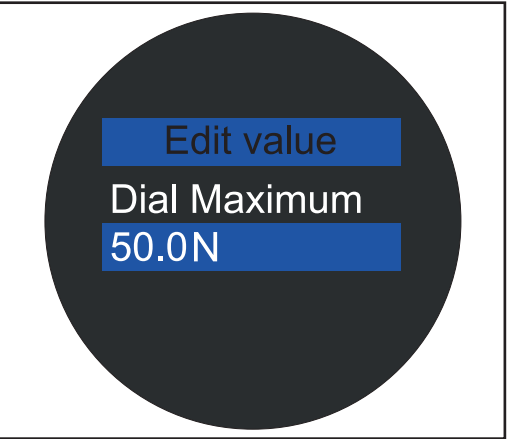
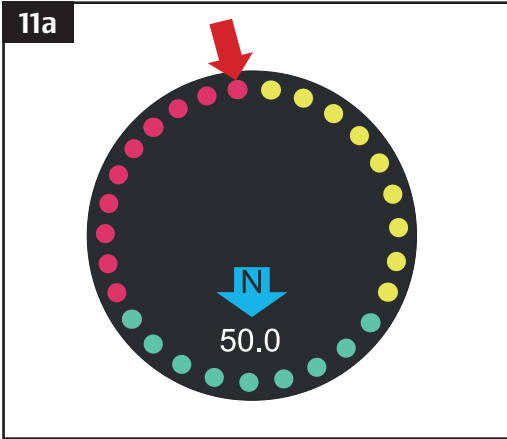
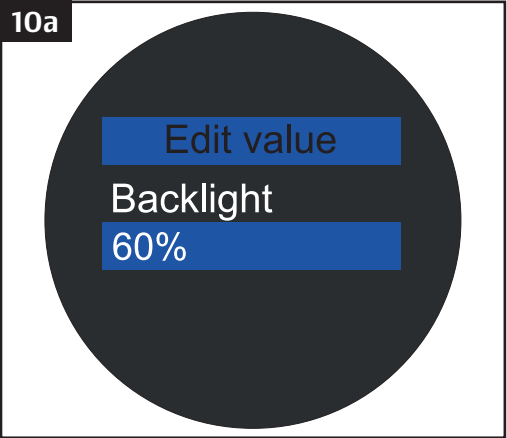
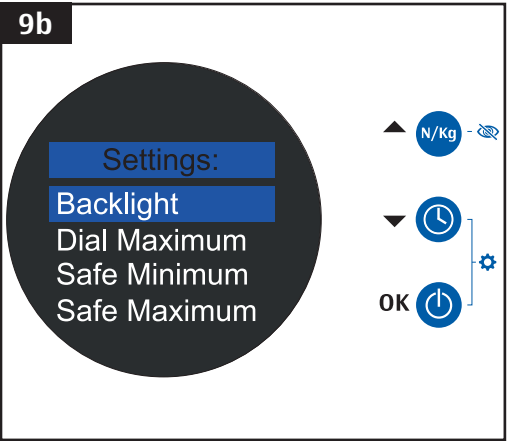
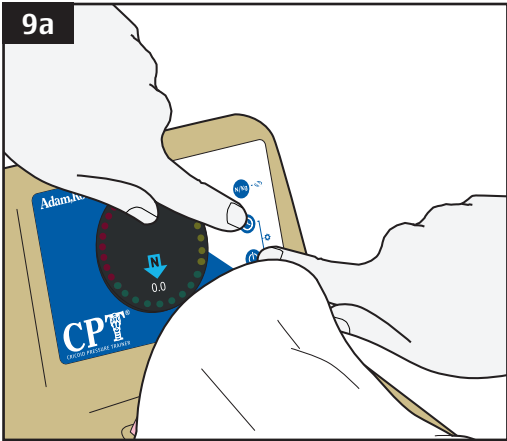
If cricoid pressure is being applied, the screen will revert to displaying the pressure.

**8d**

During Exam Mode if Timer/Feedback mode is activated, the simulator will present the feedback graph at the end of the procedure when no more pressure is applied.

Press any button to clear the graph. Exam Mode will remain active until it is deactivated.

Settings







## Settings Menu


The simulator has a number of settings which can be altered.  
To access the Settings Menu:


**9a**

With the simulator powered on, and before application of cricoid pressure, press **both** the timer button  and the power button  simultaneously

**9b**

The settings main menu will display as shown.

Use the N/Kg button  to move up ▲ or increase a value

Use the timer button  to move down ▼ or decrease a value

Use the power button  to enter **OK** or confirm a value

To **exit** the settings menu return to the main menu and wait for a brief moment - the simulator will return to the default cricoid pressure readout screen.

## Backlight

**10a**

The display brightness can be adjusted as required.



Increasing backlight display brightness will increase power consumption, which could affect battery performance when using battery power.

The backlight setting can be adjusted from 5- 100%

Press the power button to confirm the value and return to the settings main menu.

**Factory Default: 60%**

## Dial Maximum

**11a**

The maximum pressure indicated in the red zone on the display can be adjusted.



Settings are displayed in either Newtons (N) or Kilograms (Kg) as selected using the N/Kg button. See **6a** for details.

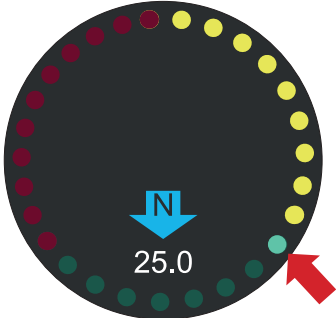
The dial maximum can be adjusted from 5.0N (0.50kg) to 80.0N (8kg)

Press the power button to confirm the value and return to the settings main menu.

**Factory setting: 50.0N (5kg)**

Settings (Continued)

12a




Edit value

Safe Minimum

25.0N

13a




Edit value

Safe Maximum

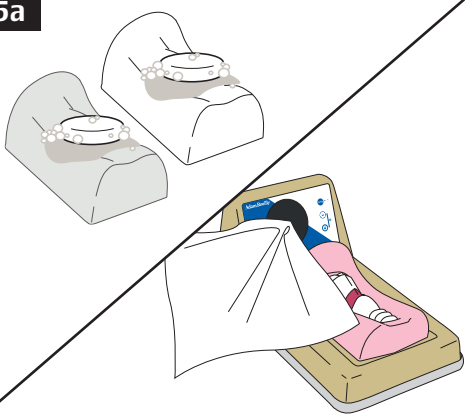
30.0N

Cleaning and Storage

14a



15a



## Safe Minimum

**12a**

The minimum pressure indicated in the green “safe” zone on the display can be adjusted.



Settings are displayed in either Newtons (N) or Kilograms (Kg) as selected using the N/Kg button. See **6a** for details.

The safe minimum can be adjusted from 5.0N (0.509kg) to 80.0N (8kg)

Press the power button to confirm the value and return to the settings main menu.

**Factory setting: 25.0N (2.5kg)**

## Safe Maximum

**13a**

The maximum pressure indicated in the green “safe” zone on the display can be adjusted.



Settings are displayed in either Newtons (N) or Kilograms (Kg) as selected using the N/Kg button. See **6a** for details.

The safe maximum can be adjusted from 5.0N (0.509kg) to 80.0N (8kg)

Press the power button to confirm the value and return to the settings main menu.

**Factory setting: 30.0N (3.0kg)**

## Storage

**14a**

Store the model appropriately when not in use.



The trainer contains sensitive electronic parts. Do not store near heat or where it may experience extremes in temperature, humidity or magnetic fields.



Do not power down and leave or store the trainer with batteries still installed for prolonged periods. Always remove batteries before storage.

## Cleaning

**15a**

The **skin coverings** may be wiped with a soft sponge using a mild detergent solution.

The **outer shell and anatomy** may be wiped with a **soft dry cloth**.

## 2 Year Guarantee



All products manufactured by Adam,Rouilly are covered by our full 2 Year Guarantee. This guarantee applies to models which have been used correctly and covers durability and functionality.

# Adam,Rouilly

As part of our policy of continual product development, the specification of products may alter without prior notice.

Adam,Rouilly has over 100 year's experience in providing quality medical models and simulators.

Should you require any further information please contact our Sales Department who will be pleased to help with your enquiry.

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