

# HOW TO SAFELY REWARM A PATIENT

BAIR HUGGER  
&  
WARMED FLUIDS

# HYPOTHERMIA RISKS

- **Coagulopathy**
- **Haemodynamic instability**
- **Immunosuppression**
- **Shivering => patient discomfort**
  - Increases body's demand for oxygen
- **Cardiac dysfunction**
  - Bradycardia
  - Arrhythmias
- **Altered uptake of medications**


# **BAIR HUGGER**

- **Designed to prevent and treat hypothermia.**
- **The Bair Hugger draws in the surrounding environmental air, filters it, then expels it into the Bair Hugger as warm air.**
- **The blanket distributes this warmed air evenly around the patient.**

# PRECAUTIONS AND MONITORING

- Improper use can cause injury or death.
- Use when patient's temperature drops below 34.
- Monitor temperatures every 10-20 minutes.
- Do not leave vulnerable patients (young children or elderly) alone.
  - Burns and suffocation risk
- Only one blanket to be placed over the Bair Hugger as an anchor. Any more weight can cause thermal *burns* and can *deflate* the blanket.
- Clean the machine and hose but throw away the blanket after patient use.
- Remove Bair Hugger once temperature reaches 36 degrees.

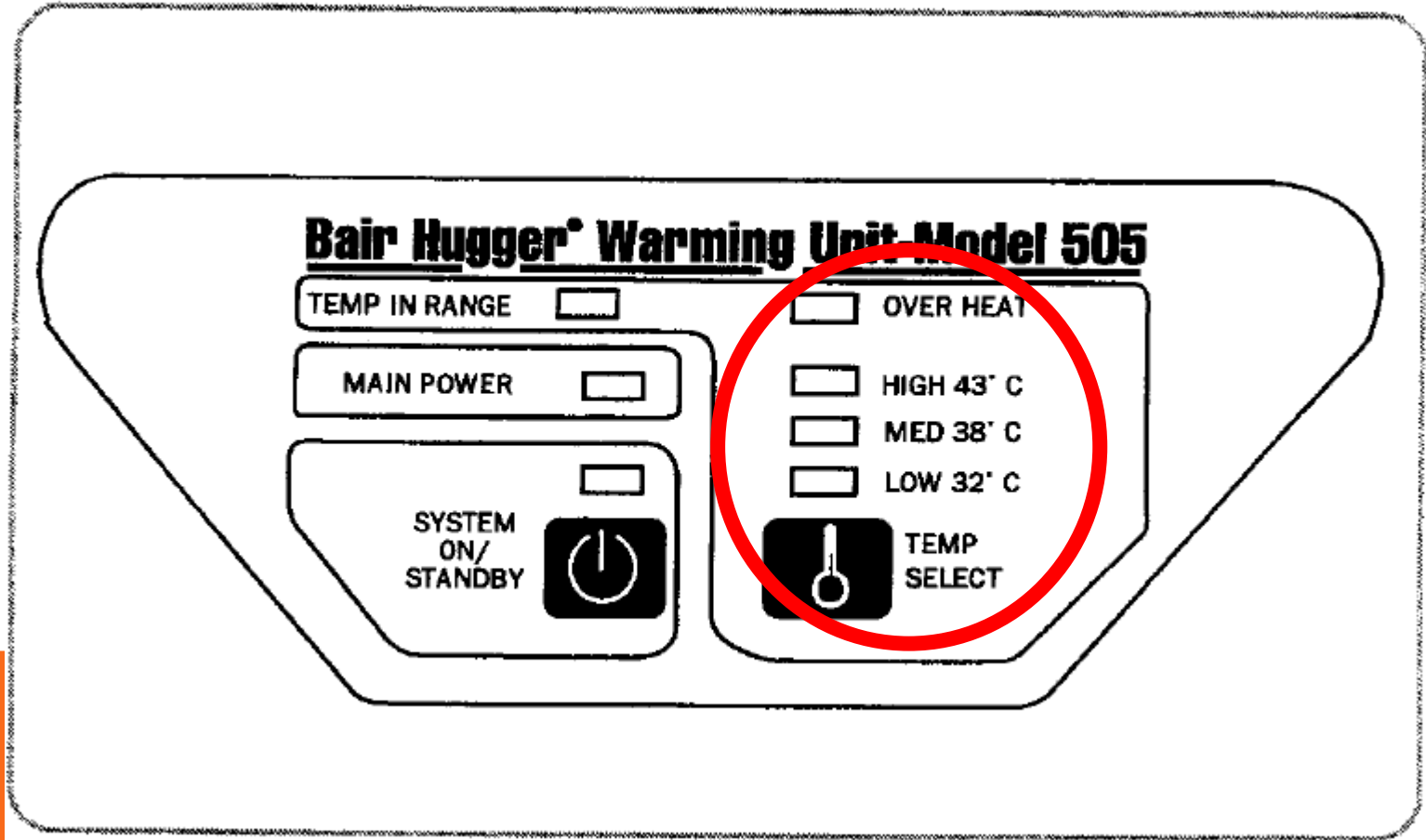
# CONTRAINDICATORS

- Known or existing coagulopathy.
  - Pregnancy
  - Cardiogenic shock
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# SET UP AND OPERATION

1. Place the Bair Hugger on the patient with the perforated side against the patient's skin.
2. Insert the warming hose into the port.
3. Plug the Bair Hugger into a power source.
4. Switch the machine on *AND* select the temperature.
5. Place a blanket over the Bair Hugger.
6. Monitor temperature every 10-20 minutes and adjust the temperature setting accordingly.

# ADJUSTING HEAT SETTING




# FLUID WARMERS


- **Designed to warm intravenous fluids.**
  - Fluids or blood.
- **Closely monitor the infusion site during rapid infusions.**



# 3M RANGER

- Heats fluid up to between 33-41 degrees Celsius in 2 minutes.
  - If using to rewarm through a central venous catheter ensure the catheter tip is not in direct contact with the heart.
  - Can deliver 500mls of fluid per minute.
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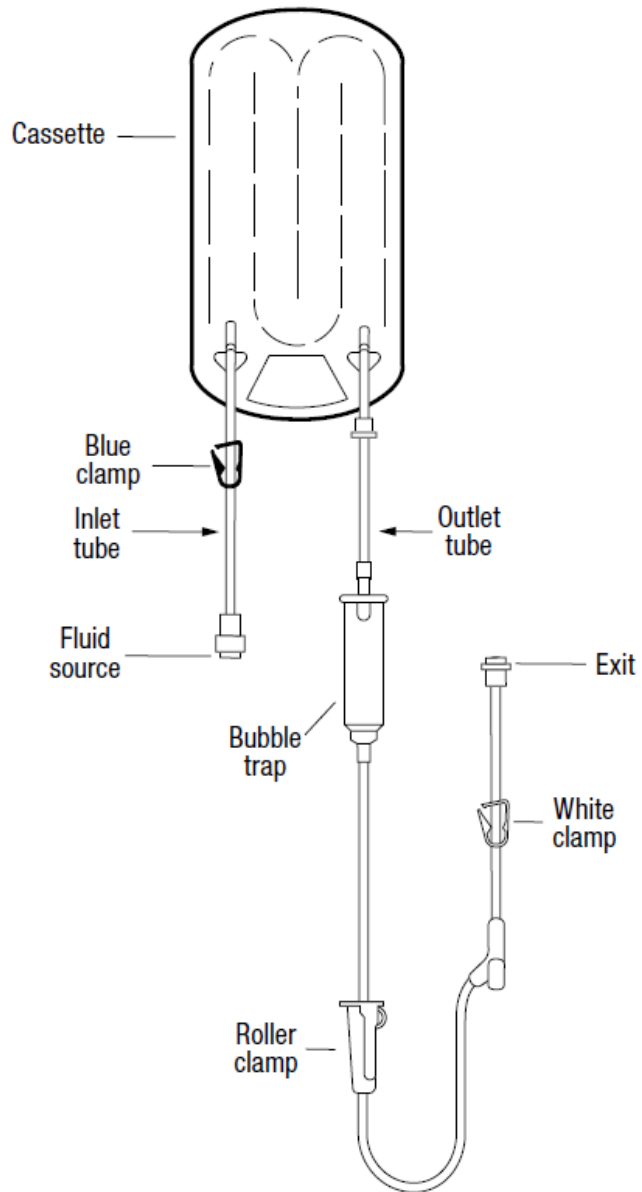
# 3M RANGER INSTRUCTIONS

1. Attach Ranger to an IV pole.
  2. Slide the cassette into the unit.
  3. Prime the warming set.
  4. Place the bubble trap in the holder.
  5. Plug the power cord in a power source and turn the unit on. Takes 2minutes to heat to 41 degrees Celsius.
  6. Begin infusion.
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# 3M RANGER VIDEO

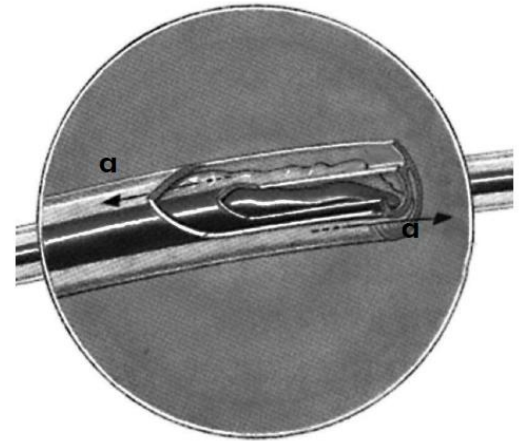
<https://www.youtube.com/watch?v=rBeKRgh2SA8>

# 3M RANGER CASSETTE



# HOTLINE FLUID WARMER

- The hotline fluid warming system surrounds the intravenous line to heat the fluid to a maximum of 40 degrees Celsius.
- Uses gravity flow rates.



# SET UP AND OPERATION


1. Screw the Hotline to an IV pole.
2. Ensure the reservoir is filled between in the minimum and maximum levels.
3. Plug the Hotline unit into a power source.
4. Plug in the twin-tube connector into the side of the Hotline.
5. Turn power on.
6. Inspect the patient-end to ensure fluid is running with no bubbles.
7. Connect IV fluids and administration set to the Hotline fluid warming set.
8. Prime the IV administration set an the extension set.
9. Connect distal end of the Hotline to the patient IV line.
10. Wait till the display screen shows a temperature of 39 degrees Celsius before use.
11. Adjust flow rate using roller clamp.

# HOTLINE FLUID WARMER VIDEO

<https://www.youtube.com/watch?v=3RIs61Wmy00>



# PRECAUTIONS AND MONITORING

- Not to be used to warm platelets, Fresh Frozen plasma or granulocyte suspensions.
  - Not to be used near X-Rays or MRI due to magnetic fields.
  - Keep air vents on the bottom and back of device clear.
  - Do not use with volumetric pumps or hand pumps as it can compromise the integrity of the gas vent.
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# REFERENCES

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