

WITH THE RANGER BLOOD/FLUID WARMING SYSTEM, MAINTENANCE IS:

QUICK AND SIMPLE



RANGER BLOOD/FLUID WARMING SYSTEM:

ONE CLEANING TOOL.
QUICK AND SIMPLE MAINTENANCE.

If you've ever used a water bath blood/fluid warmer, you're familiar with the maintenance protocol for changing and disinfecting the water bath. So, could you find a better way to spend your time and money?

WE THOUGHT SO.

FOOTNOTES

- 1 Maintenance comparison does not include preventive maintenance of testing alarms and verifying temperatures which are common to all blood/fluid warmers as required by AABB.
- 2 The maintenance protocols were taken from the product literature; however, for additional information on the maintenance steps, necessary equipment, etc. see the applicable product literature.
- 3 For each water bath disposable used, the average water bath loses approximately 90 ml of solution. So, even if a maintenance biocide solution is used, the water bath needs to be continuously refilled with the precise concentration.
- 4 Maintenance steps are a representation of the actual steps required to maintain a water bath fluid warmer using a 0.3% hydrogen peroxide solution. The frequency of changing/disinfecting water bath solution will increase if using sterile distilled water and 35% isopropyl alcohol solution. Please see manufacturers protocol for more information.



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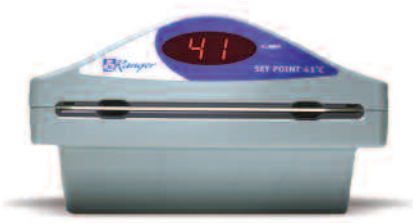
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YOUR TIME YOUR BUDGET

FLUID WARMING SYSTEM MAINTENANCE COMPARISON



THE RANGER® SYSTEM WITH SMARTHEAT®
TECHNOLOGY SAVES YOU TIME AND MONEY



SMARTHEAT TECHNOLOGY VS. WATER BATH TECHNOLOGY

SYSTEM MAINTENANCE COMPARISON^{1,4}

RANGER SYSTEM

AS NEEDED OR ACCORDING TO INSTITUTIONAL PROTOCOL

External Cleaning

Wipe down with mild detergent, water and soft cloth as needed.

Clean Warming Plates

1. Unplug the unit.
2. Unfold cleaning tool provided.
3. Wet foam pads with nonabrasive cleaning solution.
4. Insert tool from back of unit and pull tool all the way to front.
5. Rinse the tool with water and repeat three times. Discard tool.

Required Equipment

- Ranger cleaning tool
- Nonabrasive cleaning solution

IT'S THAT SIMPLE.

STANDARD VOLUME WATER BATH SYSTEM²

AS NEEDED OR ACCORDING TO INSTITUTIONAL PROTOCOL

External Cleaning

The outside of the warming unit must be cleaned as needed.

Fluid Reservoir Fluid Level Maintenance³

During the 12-month period, any solution lost from the reservoir through the disposable must be topped off with a specific hydrogen peroxide/distilled water solution.

MONTHLY

O-Ring seals must be lubricated

A small amount of silicone grease must be applied to the O-rings.

Required Equipment

- Silicone grease
- Cotton swab

ANNUALLY

Change Water Bath Solution A specific concentration of 0.3% hydrogen peroxide/distilled water solution must be prepared for the reservoir.

1. Empty solution in reservoir.
2. Fill the reservoir with hydrogen peroxide/distilled water solution.
3. Insert a disposable set into the fluid warmer.
4. Turn the unit on and let the solution circulate for 30 minutes to disinfect.
5. Switch the unit off and empty the reservoir. Discard the disposable according to institutional protocol.
6. Refill the reservoir with hydrogen peroxide/distilled water solution. The water bath blood and fluid warmer is now ready for use.

Required Equipment

- Sink or container to drain water bath reservoir
- Mixing bottles for hydrogen peroxide/distilled water solution
- Distilled water
- Hydrogen peroxide
- Disposable set

O-Rings must be changed (annually or as needed)

1. Remove socket head screws with a hex wrench.
2. Remove the interface block, being careful not to damage the micro-switch lever.
3. Remove the old O-rings.
4. Clean sockets.
5. Apply silicone grease to two new O-rings and install into the sockets.
6. Reassemble.

Required Equipment

- Hex wrench
- Cotton swabs
- Silicone grease
- New O-rings

HIGH VOLUME WATER BATH SYSTEM²

AS NEEDED OR ACCORDING TO INSTITUTIONAL PROTOCOL

External Cleaning

The outside of the warming unit must be cleaned as needed.

Fluid Reservoir Fluid Level Maintenance³

During the 12-month period, any solution lost from the reservoir through the disposable must be topped off with a specific hydrogen peroxide/distilled water solution.

MONTHLY

O-Ring seals must be lubricated

A small amount of silicone grease must be applied to the O-rings.

Required Equipment

- Silicone grease
- Cotton swab

ANNUALLY

Change Water Bath Solution A specific concentration of 0.3% hydrogen peroxide/distilled water solution must be prepared for the reservoir.

1. Empty solution in reservoir.
2. Fill the reservoir with hydrogen peroxide/distilled water solution.
3. Insert a disposable set into the fluid warmer.
4. Turn the unit on and let the solution circulate for 30 minutes to disinfect.
5. Switch the unit off and empty the reservoir. Discard the disposable according to institutional protocol.
6. Refill the reservoir with hydrogen peroxide/distilled water solution. The high volume water bath fluid warmer is now ready for use.

Required Equipment

- Sink or container to drain water bath reservoir
- Mixing bottles for hydrogen peroxide/distilled water solution
- Distilled water
- Hydrogen peroxide
- Disposable set

O-Rings must be changed (annually or as needed)

1. Remove the O-rings.
2. Lubricate new O-rings.
3. Replace and reassemble.

Required Equipment

- Needle nose pliers or screwdriver
- Silicone grease
- New O-rings

The fan filter must be cleaned

1. Remove the fan guard from warming unit.
2. Clean filter.
3. Replace fan guard and filter.