

**Shearwell
Data**

Livestock Systems

Heatwave[®] Handbook



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CONTENTS OF HEATWAVE® BOX

The Heatwave® Milk Warmer is a versatile tool that can be used to feed a variety of young stock such as lambs, calves and kids. The interchangeable plates and teats can be attached to suit any species depending on the time of year and can also be stored away in a compact box when not in use.

- A** 1 Storage box / milk store
- B** 1 Heatwave® Milk Warmer
- C** 2 Plastic Stokbord® teat bars - pre drilled 9mm
- D** 10 Cable ties for feeding panels
- E** 2 Inlet tubes (1.2m) comes with:
 - Plastic push fit connector
 - Metal weight with yellow filter
 - Bubble pump for priming and cleaning
- F** 2 Outlet tubes (1.2m) comes with:
 - Plastic push fit connector
 - Non return valves
 - Y connector
- G** 4 White calf teats and 4 red lamb teats
- H** 4 Teat bayonet fittings and screws
- I** 1 Box of cleaning tablets (UK only)

Contents list for Australia and New Zealand can be found on page 15



FOR SPARE PARTS & OPTIONAL EXTRAS

Visit our website www.shearwell.co.uk/heatwave-spares
or call 01643 841611

Australia and New Zealand customers please see page 15

SAFETY

- Always disconnect the Heatwave® from the main supply when carrying out maintenance work.
- Use of a power breaker/circuit breaker is recommended.
- Check any extension cable is rated 2.5kW or above.
- Never switch on the Heatwave® without submerging the internal coils in water.
- The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- Children should not play with the appliance.
- This appliance is intended for use under a roof in a farm yard. It is not intended for use in a farmhouse.
- Clean the appliance daily according to instructions. It should not be immersed in water for cleaning.
- Wear goggles and gloves when carrying out cleaning procedure.
- Check the temperature of the milk exiting the teat by squirting some onto the back of your hand. It should feel warm to the touch. If the milk feels cold or is too hot, please check that the machine is set up correctly before using. If the problem persists, please contact us for advice.
- Empty the tank before moving the appliance.
- Do not operate if the power cord becomes damaged or cracked. If the external cable or cord is damaged it shall be exclusively replaced by the manufacturer, a service agent or a suitably qualified person in order to avoid a hazard.
- Protect from frost.

SPECIFICATION & WARRANTY

- Water tank capacity - 25L
- Number of independent milk lines - 2
- Number of suckler teats - 4
- Heating element - 2.2kW
- Power supply - 240 v
- Capacity - **Up to 30 calves or 50 lambs/kids**
- Safety cut out switches - 1
- The thermostat in the Heatwave® Milk Warmer is pre-set to heat water at 38-50°C.

Warranty

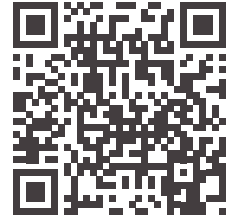
The Heatwave® Milk Warmer is covered against manufacturing defects, under normal usage conditions for a period of 12 months from purchase.

The warranty is void if the Heatwave® Milk Warmer is misused, not maintained, modified or tampered with.

Defective products returned within this period will be repaired or replaced if deemed defective.

Please note: If you are returning your Heatwave® Milk Warmer it must be in a clean condition, free from any dirt and milk.

CLEANING INSTRUCTIONS



SCAN TO VIEW
CLEANING VIDEO

Any good young stock rearing system will have a good hygiene routine at the top of the list and with the Heatwave®, cleaning the system and pipelines is quick and easy. Clean the pipes daily before the first feed to remove the build-up of fat and protein which can cause bacteria. Wear goggles and gloves when carrying out the cleaning procedure. **Failure to clean the internal blue coils will result in clogged lines and hungry animals!**

IMPORTANT! CLEAN THE HEATWAVE® DAILY



1. Have two containers ready, one with clean cold water & the other with warm diluted cleaning solution.



2. Remove the tubes to the teats and lie them on the ground.



3. Move the tubes from the milk into the cold water. Squeeze the hand pumps.



4. Send water through the system to flush out all the milk. Keep pumping until the water runs clear.



5. Move the tubes into the cleaner & pump the solution until you see it coming through the other end.



6. Move the tubes back into the cold water & pump to rinse all the cleaner out of the milk lines.



7. Empty and clean out the cold milk storage daily. Ensure that no straw or debris is able to get into the tank.



8. Reconnect the tubes to the teats and now you are ready to start again with fresh milk.



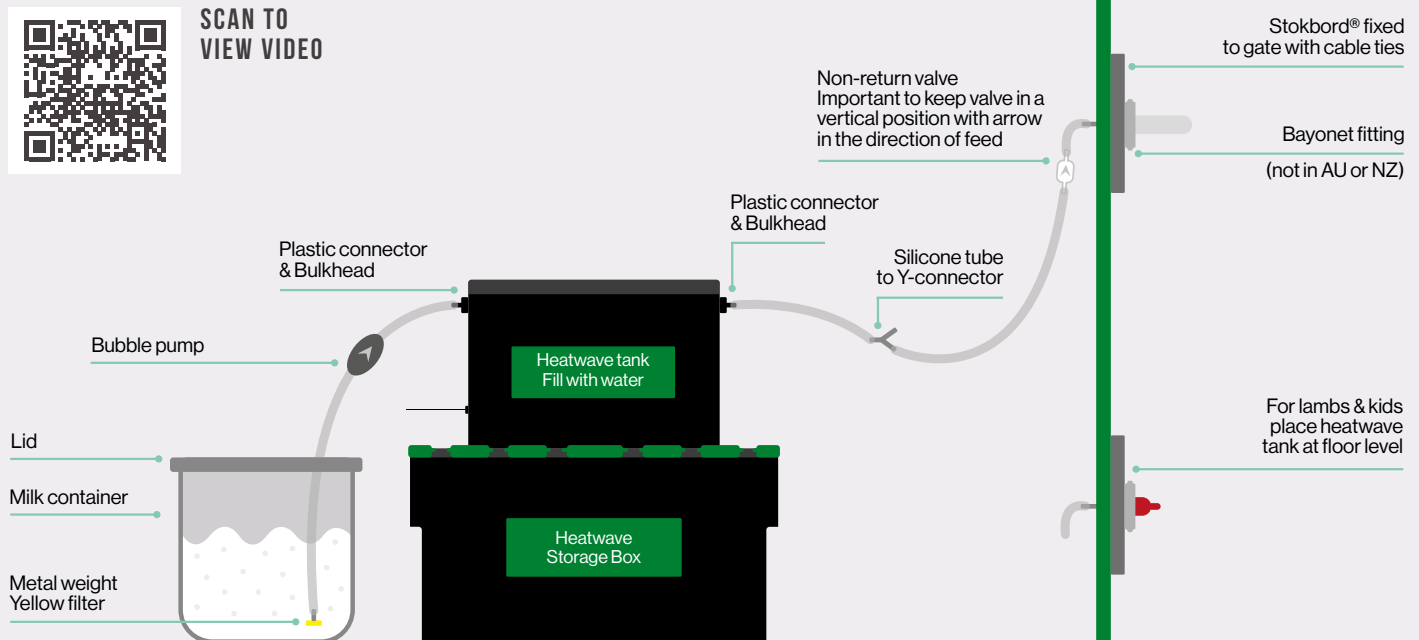
9. Refill the cold milk storage with fresh milk. Put both tubes back into the milk. Job done!

Top Tips!

- Water alone will not break up the build-up of fat and protein, always use the cleaning tablets diluted in warm water to clean the lines.
- Never use hot water to flush the lines as it will damage essential parts inside the Heatwave®.
- Milk powder must be well mixed or the lumps will cause blockages and build-up in the pipe lines.
- Clean out the cold milk storage daily and ensure that no straw or debris is able to get into the tank.
- **NEVER** mix new milk with old.

HEATWAVE[®] FOR CALVES

Assembly diagram for Calves



Setting up the Heatwave[®] for calves

- Place the Heatwave[®] on a plinth so milk travels at 'calf level'. Use any container for the milk, allowing 10-12 L/calf over 24 hrs (max 20L/older calf). A lid will prevent contamination.
- Use the cable ties to connect the feeder panels to the pen and use mesh or board to prevent calves chewing the silicone pipes.
- Mix up cold milk powder.
- Fill the Heatwave[®] with water to cover the coils **BEFORE PLUGGING IN**.
- Set up the pipes as indicated in the diagram. Trim the pipes to a convenient length with non-return valves hanging VERTICALLY.
- If using an extension cable make sure it's rated to 2.5kW or above. Keep plugs dry.
- Plug in. Switch on. Set the thermostat on MAX. It takes around 30 minutes for the water temperature to stabilise.
- Water in the tank should reach around 50°C (122°F) max.
- Use the bubble pump to prime the system by pumping milk from the reservoir. Pump the milk to the back of the teat by hand until fully primed.

Calf accommodation for ad-lib group rearing:

Pay attention to dry bedding and adequate drainage. Offer ad-lib water and fresh starter feed from day 3. **The machine will feed up to 30 calves.** Calves should be matched for age, weight and aggression.

Teat height needs to promote natural suckling, so around 60cm (24in) high is usually a comfortable height. It may need adjustment as bedding builds up.

HEATWAVE[®] FOR CALVES

Before using the Heatwave[®]:

Feed colostrum at 10% of body weight in the first 6 hours of life i.e. 4 litres for a 40kg calf. Continue twice a day (minimum 2x2 litres) for 3 to 5 days individually, before group penning. Ideally, using a teat similar to the ones on the Heatwave[®]. Move to the group pen when they recognise the teat and are feeding vigorously.

Do not feed colostrum or transition milk through a Heatwave[®].

Feed warm milk to each calf before introduction to the group pen, then while their stomach is full, allow them access to ad-lib milk and allow them to restrict themselves.

When introducing young calves, it is best to prime the Heatwave[®] lines with milk first. Use the bubble pump to prime the system by pumping milk from the reservoir. Pump the milk to the back of the teat by hand until fully primed.

If there are less than 8 calves on the Heatwave[®] only use one line and blank off one outlet from the Y connector using a short piece of silicone tube folded and tied to keep air tight.

As each calf comes to the teat and feeds without help, mark with a wax marker while feeding. You only need to help those calves without a mark, and stir them up once or twice a day, to remind them where the teat is. They will generally suck your finger long enough to bring them over to the teat.

Calves soon learn that the feed is available all the time and feed little and often. If they do gorge on the first introduction, their muck may be loose for a day, but this is only a transient nutritional scour, and the calf should not appear ill in any other way, and will not have an abnormal temperature.

Milk or milk powder?

Do not feed colostrum or transition milk through the Heatwave[®].

If using raw milk, ideally use clean fresh cool milk from the bulk tank.

Mastitic/high cell count milk. This milk may contain high levels of bacteria which will multiply and sour the milk quickly. If you are forced to feed this milk to calves consider the following:

- 1** Is it cool? If you can't put it through a milk cooler then consider cooling with blocks of ice contained in a plastic drum. Freeze water in a 5L jerry can. Drop the whole can containing ice into a 20L barrel of whole milk. A ratio of 5L ice to 20L of milk will drop the temperature rapidly. Wash the ice blocks, re freeze and re use.
- 2** Add an acidifier. The Shearwell Milk Preservative 10kg tub treats 2500L of milk. Add it to fresh milk and it will drop the pH causing the bacteria to stabilise for 24hrs. (Will not work on gone off milk.) Available from: Shearwell.co.uk/heatwave-spares
- 3** Make sure the reservoir is washed out daily with detergent and hypochlorite or a combination product recommended for parlour washing. Heatwave[®] cleaning tablets (UK only) are available from: Shearwell.co.uk/heatwave-spares
- 4** If the milk has clots in it, sieve any clots using a 'bucket filter' available from: Shearwell.co.uk/heatwave-spares

HEATWAVE® FOR CALVES



SCAN TO VIEW
CLEANING VIDEO

Follow the manufacturer's mixing instructions for milk powder. Request an instant version which mixes tepid / cold. One with a lower pH keeps better.

Store the milk cold. Do not be tempted to feed a 'weaker' dilution as they simply drink more milk and produce more urine!

Prevent gorging by never letting the calves run out of milk.

IMPORTANT! CLEAN THE HEATWAVE® DAILY

See cleaning instructions on page 5 or view the video by scanning the QR code above.

Weaning

The calf should double its birth-weight before weaning, monitor with scales or a weigh band. The method depends on the equipment available. If you have previously used teated buckets, these could be used for weaning.

Method 1

Draft any animals which have doubled their birth-weight, and are 6-8 weeks old into a separate pen, and put on a once a day 3 litre feed, then 2, then 1 litre, so the concentration remains the same but the volume is reduced over 7 days.

Remove the milk completely once calves are ruminating and eating a minimum of 1.5kg of cake per head. Provide ad-lib fresh water to stimulate feed intake and rumen development.

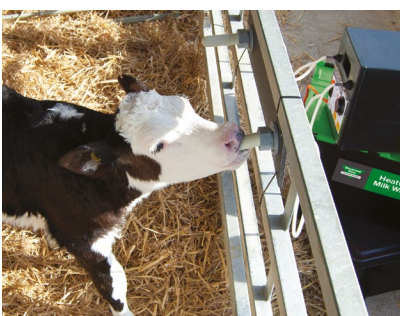
Method 2

Alternatively, if the calves are all similar size and ready for weaning as a group, turn down the heat on the Heatwave® and place the inlet tubes in COLD water for 12 hours at night. Put back onto warm milk via the Heatwave® during the day. Increase the amount of time they have access to water and wean over 7-10 days, until they are totally on cold water and dry feed.

DO NOT LET THE TEAT RUN DRY, or they will chew the teats!

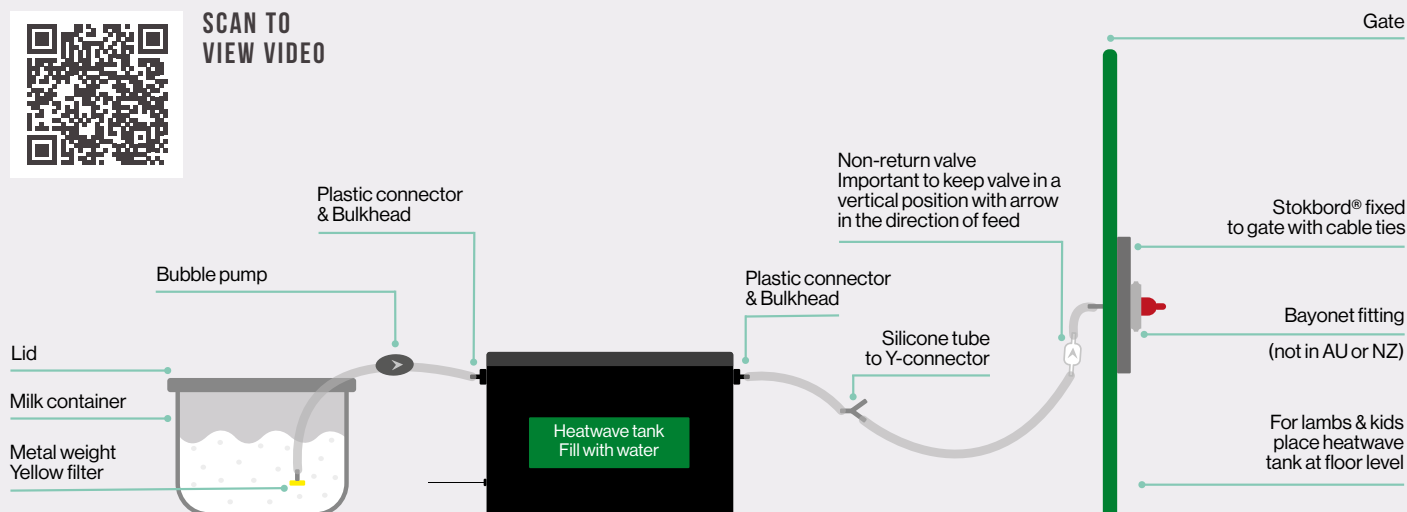
At this stage remove the teats from the pen and let them settle onto ad-lib cake and water before removing to adult accommodation. By 10-12 weeks they should be eating 3 kg of dry feed and ad-lib straw/hay and fresh water.

At 12 weeks they are ready for the next stage i.e. introducing grass, hay, silage, etc depending on their final destination. Consult your feed advisor for a feed plan at this stage.



HEATWAVE® FOR LAMBS & KIDS

Assembly diagram for Lambs & Kids



Accommodation should be clean, dry and well ventilated.

The Heatwave® Milk Warmer will feed up to 50 lambs/kids. One teat will serve 10-12 lambs and the initial teat height will be 30-38cm (12-15in). This may need adjustment later as the bedding builds up.

Setting up the Heatwave® for lambs & kids

- Place the Heatwave® on the ground or on a piece of insulated board. No plinth is needed.
- The reservoir and Heatwave® will be outside the pen.
- Use the cable ties to connect the feeder panels to the pen and use mesh or board to prevent lambs from chewing the silicone pipes.
- The storage box holds 56L or use any plastic container with a lid as a milk reservoir.
- Mix up cold milk powder.
- Fill the Heatwave® with water to cover the coils **BEFORE PLUGGING IN.**
- Set up pipes as indicated in the diagram above. Trim the pipes to a convenient length with non-return valves hanging VERTICALLY.
- If using an extension cable make sure it's rated for 2.5kW or above. Keep plugs dry.
- Plug in. Switch on. Set the thermostat on Max. It takes around 30 minutes for the water temperature to stabilise. Water in the tank should reach around 50°C (122°F) max.
- Use the bubble pump to prime the system by pumping milk from the reservoir. Pump the milk to the back of the teat by hand until fully primed.

HEATWAVE[®] FOR LAMBS & KIDS



Introducing lambs

Lambs should receive colostrum at birth. Either leave on the ewe for 24hrs, or feed 50ml/kg bodyweight per feed. Feed through a teated bottle for as long as possible, and gradually replace with mixed milk powder by bottle.

Individuals vary but most lambs can be left under a heat lamp to get warm and hungry for 6 hours, and then introduced to the warm milk via ad-lib teat. For best results try to introduce before day 3. Older lambs can be difficult to train, we suggest training them to a bottle before putting in a group. Lambs with a poor sucking technique will chew the teats.

Fresh dry feed, water and straw or stalky hay should be available from day 3.

Weaning

Keep a record of birth-dates and wean lambs abruptly at 35 days old, when they are 2.5 times birth weight and eating 250g of dry starter feed. Make sure they always have access to **FRESH** forage, feed and water. Weaning abruptly is the best way to avoid digestive upsets associated with gradual weaning.

Daily routine

Wash the milk reservoir, internal blue coils and silicone lines daily with detergent/steriliser and then rinse with water. Keep teats clean and replace when necessary.

IMPORTANT! CLEAN THE HEATWAVE[®] DAILY

See cleaning instructions on page 5 or view the video by scanning the QR code below.



SCAN TO VIEW
CLEANING VIDEO

FAQS

1 Can I feed lambs and calves using one Heatwave®?

Yes. It is recommended that you can feed up to 15 calves *and* 25 lambs using one Heatwave®.

For more information please contact your local Shearwell representative.
See page 15 for details.

2 How long does it take to clean out?

Regular cleaning takes 5 minutes or less. Always have two containers ready, one with cold water and the other with the diluted cleaning solution to make life easy. See cleaning instructions on page 5.

3 The milk at the teat end is too cool.

The distance from the Heatwave® to the back of the teat needs to be as short as possible as a small amount of cold milk lies behind the teat. Turn off the electric and check the water temperature in the tank. It should be around 38-45°C.

How to increase the temperature on the Heatwave® Milk Warmer



- 1) First, unplug from the mains electric.
- 2) Pull and wiggle the knob on the front panel that controls the temperature until it comes off. You may need some grips if it is difficult.
- 3) Inside the knob are a series of numbers and in one section is a peg. Note the number it is located in then prise it out with a small screwdriver or knife,

taking care not to lose the peg in the straw as it flips out.

- 4) Move the peg 1 section to the right, then push the knob back on the spindle taking care to line up the flat face on the spindle with the flat section on the knob. If that is not hot enough, move the peg again one more segment to the right.

4 Can I feed first colostrum via the Heatwave®?

No. It will clog the lines.

FAQS

5 The milk at the teat end is too hot.

Turn down the temp on the knob. If you have less than 10 animals sucking 4 teats the milk could be lying in the pipe for too long. Reduce to one line and 2 teats (or one teat) for small numbers. i.e. use half the machine.

6 There's air getting in the line.

Check the most likely causes:

1) Check there are no small holes in the silicone tubes where they have been chewed, they are not easy to spot but will allow air in and milk to drain back to the bucket. If lambs can reach the tubes they will put holes in the pipes. Use wire netting or mesh to stop lambs/calves reaching the milk lines. NB Cats & rats can be a problem!

2) Check the connectors are pushed in correctly. Once they are in correctly, **leave them there** all season, don't remove them when washing.

3) Non Return Valve. (NRV) Check they are hanging vertically and the correct way in the line. Arrow points in the direction of flow. Check for holes in the casing. You can fit a syringe with water (no needle) into the end of the NRV and block the other end with your finger and apply gentle pressure to the syringe. If water comes out of the case, replace the NRV.

Also check there is no debris in the NRV by flushing water back through both ways. If there is one problem line, swap the NRV onto the other line and see if it is cured.

Other points to check.

Are the teats in good condition, no holes allowing air back into the line? Replace if necessary.

If lambs run out of milk they will chew the teats very quickly.

Check there are no blockages on the yellow filters.

Check that the inlet pipe is covered with milk and can't draw air.

If the connectors are pushed fully into the Heatwave® and you can still see that air is getting in the line as it goes through the Heatwave®, there could be damage to the O ring seal in the push fit assembly units. These can easily be replaced if necessary, search 'Bulkhead fitting' on: Shearwell.co.uk/heatwave-spares

7 There's nothing coming through the teat.

Check for blockages caused by straw, flies, lumpy milk. Check non-return valves. Check the blue heat exchange pipes aren't blocked.

Blocked Heatwave® exchange pipes

The first milk (colostrum) will clog the lines. Do not feed colostrum through the Heatwave®. Blocked pipes can result from hygiene problems, caused by cleaning issues or milk quality.

FAQS

If the blue pipes are almost blocked, pump warm cleaning solution and leave it in the pipes overnight. Rattle the blue heat exchange coil before flushing with water. If pipes are completely blocked they will need replacing with new. Please email sales@shearwell.co.uk or call 01643 841611 for new pipes and instructions for changing them.

Air lines have sometimes been successfully used to blow congealed milk through the line followed by soaking in warm cleaning solution overnight. Occasionally it is the milk quality that is causing a problem, especially if there is a small number of animals on the Heatwave® and they favour one outlet leaving the other line to block. Where this occurs, use only one line and possibly only one teat so the milk is not left in the line too long.

Where whole milk is used, it should be cooled first, either through a plate cooler or from a bulk tank. Warm milk with high cell count will go stale very quickly, especially in warm weather. A milk preservative should also be used to prolong the life of the milk, e.g. potassium sorbate. Whole milk should be sieved to remove clots and organic matter before use and **colostrum and transition milk should not be used at all**. Never mix old milk and new milk together. All utensils that come into contact with milk and buckets used to transport milk should be cleaned and sanitised every day.

Changing a coil/push-fit assembly on a Heatwave® Milk Warmer.

Unplug the Heatwave® and empty the water.

Unscrew the black nut of the push-fit assembly on the outlets of the tank and release the blue tube from the nut by pressing the collar inwards on that end of the push fit assembly.

If changing a coil, put your hand inside the tank and snip the cable tie on the inside where the coil is attached to the cross members.

Remove the old coil.

Place the new coil in the tank and separate the coils over the cross members, 5 coils at the heater element end and 6 coils at the other end, securing with cable ties. This is best done with a small pair of hands!

Push the coil outwards away from the heating element.

Moisten the end of the blue tube before inserting into the push-fit assembly, push the tube until it stops.

Screw up the two black nuts again with the blue tube inserted. (The blue tube will rotate in the push-fit assembly if moistened first.)

It is also best to moisten the metal or plastic connectors that fit into the other end of the push fit assembly to ensure a good seal.

Fill with water, and switch on.

How to remove the connectors

An open ended 8mm spanner (not provided) can be used to push in the collet on the push-fit assembly units to help release the connectors.



FAQS

8 The machine isn't working at all.

If you are running the machine on an extension cable, check the kW rating matches the machine, 2.5kW or above.

Reset the secondary cut-out. See below:

Heater not working, but the power light is on

The secondary cut-out is an added safety device in case the primary thermostat ever fails. If the Heatwave® is dropped, knocked over, or turned on without water in the unit, this secondary cut-out will trip out and stop the unit over-heating. It is similar to the cut-out on an immersion heater.

If the secondary cut-out has tripped out, the red power light remains on but the orange heater light will not come on and the water will not heat up even when the temperature is turned up to maximum.

To reset the secondary cut-out

First unplug the Heatwave® from the mains electric supply. There is a small rubber grommet just below the temperature knob on the front metal control panel that can be pulled out and a small screwdriver can be inserted to gently push the switch back in.



9 The milk is going stale too quickly.

Always store cool milk, or cool the bulk supply by dropping an ice pack into the reservoir. Freeze 5L quantities of ice in bags or jerry cans so you have them ready.

In very hot weather refill every 12 hours and/or add a preservative like potassium sorbate or our Shearwell Milk Preservative available from: Shearwell.co.uk/heatwave-spares

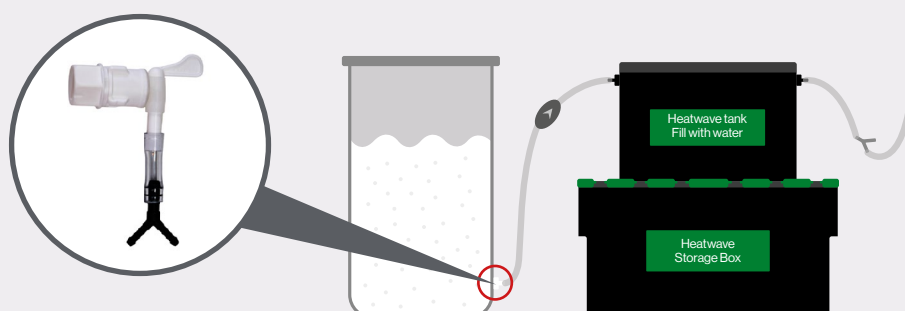
Select a 'long life' milk replacer. These have an acidifier added and have a lower pH.

Never mix new milk with old.

10 How do I connect the Heatwave® to a barrel tap?

A barrel tap and Y connector is available from: Shearwell.co.uk/heatwave-spares

Attach the inlet tube to the Y connector on the barrel tap.



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Contents of Heatwave® in Australia and New Zealand:

- 1 Storage box / milk store
- 1 Heatwave® Milk Warmer
- 2 Plastic 6mm Stokbord® teat bars
- 2 Inlet tubes (1.2m) comes with:
 - Plastic push fit connector
 - Metal weight with yellow filter
 - Bubble pump for priming and cleaning
- 2 Outlet tubes (1.2m) comes with:
 - Plastic push fit connector
 - Non return valves
 - Y connector
- 4 Excal calf teats and 4 excal lamb teats
- 14 Cable ties for feeding panels
- 1 Cleaning Brush



Heatwave® spares are available.

**Shearwell
Data**

Livestock Systems

IMPORTANT

**FILL TANK
WITH WATER
BEFORE
SWITCHING
THE UNIT ON**