



SPECIALISED REFRIGERATION

Version091017

MANUAL FOR BULK VACCINE FRIDGES REV.0 (TC900E V7)

MODELS: (a) MED1080SD (b) MED900SD (c) MED540HD

PLEASE NOTE: THE VACCINE REFRIGERATOR WILL IMMEDIATELY GO INTO A DEFROST AFTER BEING POWERED ON

Thank you for choosing a Minus 40 Pharmacy Refrigerator. We have supplied you a premium quality product, which incorporates the latest innovations in refrigeration technology. Properly maintained, it will give you many years of reliable service. Please read the following instructions carefully as it contains important information concerning the safety, installation, operation and maintenance of your Refrigerator.



SAFETY

- Always disconnect the appliance from the mains supply before attempting to do any maintenance, cleaning, or moving of the refrigerator.
- In case of appliance failure, disconnect it from the power supply and contact your service technician or supplier for advice.
- If the supply cord is damaged it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid damage to the refrigerator or risk to the user.

Any service performed on these refrigerators within agreed warranty period MUST be reported and approved by Minus40.

Failure to do this will void the standard warranty.



INSTALLATION

Do a visual check of the unit to check for transport damage.

Immediately report any damage to the transporter & supplier of the refrigerator.

- Remove all wrapping and packing material. Remove stacking blocks/pallet underneath the cabinet chassis.
 - Be careful not to damage any of the delicate wiring or pipe-work in the compressor compartment.
- Unpack the front grille and hook it onto the refrigerator base with the louvers facing downwards.
 - Position the cooler out of direct sunlight and as far away as possible from any other sources of heat.
- The maximum ambient temperature in which the cabinet will function is 44 Deg C.
- The cabinet may be built into a furnishing fixture, or have its back to the wall, provided that the front grille is totally unobstructed.
- The cabinet “breaths” through the front grill.
 - If it is blocked up, the cooler will not operate properly and you risk damaging the compressor.
- Level the appliance by rotating the adjustable feet at the corners of the refrigerator.

The cabinet must be perfectly level in order for the door (s) to function properly, use a spirit level to check.

- On hinged door refrigerators the door may be refitted to have its hinges on the left hand side and its handle on the right hand side. **First make sure the cooler is not connected to the electricity supply.** Remove ALL shelves, clips and products from the inside so not to damage the glass door. Then lay the refrigerator on its back. Release the hinge pin nuts. Unscrew the bottom hinge plate and carefully remove the door. Remove the top hinge pin and fit it at the other side. Rotate the door 180°C. Refit the door hinge pins and screw the bottom hinge plate to the opposite side. Lock the bottom hinge pin nut with about 90°C torsion on the torsion bar. Return the cabinet to the upright position.

Do not connect the appliance to the mains supply until you have read the following information.

Minus40 is ISO9001:2008 Certified

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ELECTRICAL CONNECTIONS

- A qualified person in accordance with all local standards and regulations should carry out any electrical alterations to the appliance.
- The power supply should be in accordance with the electrical specifications listed on the rating plate.
 - The rating plate can be located inside the cooler on the **top right hand side**.
- Always ensure that the electrical connection is suitably earthed.
 - **An inadequate electrical installation can result in voltage reduction at the compressor which can cause damage to the motor.**
- If in doubt about any of the electrical matters mentioned above, a **suitably qualified electrician** should be consulted. When all of the electrical requirements have been satisfied, the cooler may be plugged into the mains socket.
- Before replacing the light tubes make sure the appliance is switched off and disconnected from the mains supply. Remove the transparent light covers by pulling outward. Carefully pull off the electrical connections from the tube ends. Replace with new tube with same dimensions and wattage and reconnect electrical push-on terminals. Refit the transparent cover by hooking it back into position. It is recommended to leave the lights switched on at all times (especially in high relative humidity areas). It not only prolongs the lifetime of the light tubes, but also reduces risk of condensation in some areas. From an electrical efficiency and safety point of view, we do not use electric elements to heat up any areas on our products. Some components are specifically situated to utilize their heat transmission.

OPERATING INSTRUCTIONS

- When loading the Refrigerator, always ensure that you do not block the internal air vents and always allow space for the cold air to circulate around the contents and the inside of the cooler.
 - On sliding door models, a small catch allows the doors to be clipped open during loading or cleaning. The catch can be found at the top of the right hand door. When you have finished always reset the catch to allow the doors to close automatically. The Refrigerator is designed to automatically evaporate the condensate water in the compressor compartment.

CLEANING

- Before carrying out any cleaning please **ensure that the refrigerator has been disconnected from the electricity supply**. The refrigerator should be cleaned periodically with a non-abrasive cleaner and soft cloth. Do not use any detergents or abrasive powders. A damp cloth may be used provided that all surfaces are polished dry afterwards.
- On sliding door models, the doors may be removed by adopting the following procedure. Move the right door to the open position. Lift the door slightly and tilt the bottom of the door towards you. Move the door back to the closed position and gently lift it off its runners at the top. Refitting is the reverse of the above procedure.

  **PLEASE READ AND FOLLOW THE INSTRUCTIONS FOR CLEANING YOUR CONDENSER ON LAST PAGE**

  **PLEASE FILL IN: “VACCINE REFRIGERATOR CONDENSER CLEANING SCHEDULE”.**

MAINTENANCE

- Before carrying out any maintenance or repair work, please ensure that the cooler has been disconnected from the mains supply.
 - To maintain maximum operating efficiency and to prolong the life of your cooler, the condenser must be cleaned **regularly** (at least once every **2** months).
 - In dusty environments, cleaning should be done more frequently. The condenser looks like a radiator and it is located behind the bottom front grille. To remove the grille, lift each end slightly and then pull towards you. The condenser will be easily visible and can be identified by the large fan that is attached to it. Carefully clean the air intake side (left side) of the condenser with a soft brush so that all the dust is removed. The suction pipe of a vacuum cleaner is ideal for the job. Please note that the condenser is a delicate component.
 - Never use a sharp object to clear obstructions because you risk a gas leak which will be expensive to repair.
- IN THE EVENT OF NOT USING THE REFRIGERATOR FOR EXTENDED PERIODS**
- Disconnect from the power supply.



MAINTENANCE CONTINUING Remove all the products from the storage compartment.

- Thoroughly clean the cabinet inside and out. Leave the door(s) slightly open so that ambient air can circulate freely in and out of the refrigerator.

TROUBLE SHOOTING – REFRIGERATOR NOT COOLING

Note: some models have only one evaporator fan motor.

Symptom	Check
Fridge does not run and the controller and the fans does not work and the lights are off.	<ul style="list-style-type: none"> ✓ Make sure the fridge is plugged in ✓ Check for a tripped circuit breaker
Fridge does not run, but the controller is on.	<ul style="list-style-type: none"> ✓ Check the temperature setting on the controller ✓ Clean the condenser coils ✓ Unplug the freezer, wait two hours and plug it in. If you hear it running, a problem is causing the compressor to overheat ✓ Check if the evaporator fan is running ✓ Listen if the compressor ever runs. If not the compressor might be faulty.
Fridge is not cold enough	<ul style="list-style-type: none"> ✓ Check the temperature setting ✓ Assure that there is enough room for air flow in the fridge. ✓ Check if the evaporator coil is iced-up, and if it is put the unit in a manual defrost as noted under MANUAL DEFROST. ✓ Check for air flow restrictions in front and at the back of the grille. ✓ Clean the condenser coils ✓ Check the door seal
Fridge is too cold	<ul style="list-style-type: none"> ✓ Check the temperature setting
Fridge is noisy	<p>NOTE: Soft hissing and popping is normal.</p> <ul style="list-style-type: none"> ✓ Check that the fridge is level ✓ Check the drain pan ✓ Check the condenser fan (1) ✓ Check the evaporator fan (2)
Fridge runs continuously	<ul style="list-style-type: none"> ✓ Clean the condenser coils (1) ✓ Check the door seals

IN THE EVENT OF A BREAKDOWN

Disconnect the refrigerator from the power supply. Contact your supplier for advice.

TEMPERATURE CONTROL

Minus40 vaccine refrigerators regulates air temperature to control the product (vaccine) temperature.

The running temperature of the refrigerators is factory pre-set at a range between 2°C to 8°C air temperature. It

is factory pre-set with a **built-in defrost sequence of 10 minutes every 3 Hours** to remove ice build-up from the evaporator coil. **During these defrost cycles air temperature can exceed 8°C for a short time, but product**

temperature will remain in the safe vaccine temperature range between 2°C to 8°C.

FOR FRIDGE TEMPERATURE MONITORING ADVICE PLEASE SEE THE LINK BELOW:

<http://www.minus40.co.za/wp-content/uploads/2016/11/Fridge-temperature-monitoring-advice.pdf>

Avoid setting the controller too cold.

If you do, you risk freezing up the evaporator, blocking the airflow and eventually a subsequent malfunction of the system. The refrigeration system needs to cycle (temperatures above 0 Deg C) to be able to defrost automatically.

Switch on temperature (5°C) is 2 degrees above set (switch off; 3°C) temperature.

- 1. SET POINT: 3°C**

Minus 40 Vaccine refrigerator

Condenser cleaning schedule

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Jan																															
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Dec																															

Clean the condenser (Radiator) with a vacuum cleaner or soft brush.

Check the condenser monthly

If there is dirt or fluff on the condenser clean as above

Mark the chart above with a cross on the DAYS that the condenser is cleaned



SPECIALISED REFRIGERATION

MEDICAL

Instructions for Cleaning the Condenser on your Minus 40 MED/VAC Unit:

In common with most commercial refrigeration, the condenser on your Minus 40 unit must be kept clean and free of dust at all times, allowing unrestricted air flow through the fins. The function of the condenser is to dissipate the heat that has been taken from inside the cabinet. It is recommended that you check the condenser every three months to ensure peak efficiency. If the condenser is not kept clean, the compressor will be forced to run longer, meaning higher energy bills, shortened compressor life and less effective cooling. In the worst case it will cause premature compressor failure. The warranty on the cooler is invalidated by a dirty condenser. To clean the condenser, please take careful note of the following instructions and procedure:

Step 1
Unplug the cooler from the mains electricity supply



Step 2
Remove the bottom grille underneath the glass doors. Simply lift the grille slightly and pull away from the retaining lugs. No tools are necessary. **Caution:** some pipework and components may be very hot to the touch and there is a risk of burning the skin.



Step 3
Locate the condenser. It has an appearance similar to a car radiator and is to be found next to and attached to the fan.



Step 4
One side of the condenser may have a build up of dust and debris. It should never look as bad as this example! If it looks as bad as this, the cooler will be running at less than 50% efficiency and will be heading for the refrigeration equivalent of a heart attack.



Step 5
Take a soft brush and clean the fins. **Caution:** The condenser is a very delicate component and it is easily damaged. Be careful not to bend the fins. Never poke anything through them. Never use water. Only use a soft brush. Do not use a wire brush or a stiff brush.



Step 6
Ideally use a vacuum to clear away the debris. If no vacuum is available, then please carefully brush away and remove the debris. At the same time, check the rest of the compressor compartment for foreign objects, such as wrappers, bottle tops etc., and remove them carefully.



Step 7
Ensure all tools have been removed and then refit the grille.



Step 8
Plug back in to the mains electricity supply. Log the date of cleaning and make a diary note to clean it again in 2-3 months or sooner if a very dusty environment.

Always use Genuine Minus 40 parts.

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