



PREVENTIVE MAINTENANCE SUVA Freezers

Your equipment has been thoroughly tested and calibrated before shipment. Regular preventive maintenance is important to keep your unit functioning properly. The operator should perform routine cleaning and maintenance on a regular basis. For maximum performance and efficiency, it is recommended that the unit be checked and calibrated periodically by a qualified service technician.

The following is a condensed list of preventive maintenance requirements. See the specified section of the instruction manual for further details.

VWR Scientific Products has qualified service technicians, using NIST traceable instruments, available in many areas. For more information on Preventive Maintenance or Extended Warranties, please contact us at the number below.

Cleaning and calibration adjustment intervals are dependent upon use, environmental conditions and accuracy required.

Tips:

- Fill an upright by starting at the bottom near the probe and add racks to one shelf at a time. Allow freezer to recover to setpoint between shelves.
- Fill a chest by starting at the left side near the probe. Filling with room temperature racks will result in a long pull-down time.
- Fill unit with frozen product to help overall performance; frozen water jugs, for example.

•Millcreek Road, Box 649 •Marietta, Ohio 45750 USA •740-373-4763
•USA and Canada 888-213-1790 •Telefax: 740-373-4189 •email: service@thermoforma.com

Preventive Maintenance for 5400 Series Freezers

Refer to Manual Section	Action	Monthly	Yearly	Every 2 Years
--	Verify ambient temperature, <90°F	<input checked="" type="checkbox"/>		
--	* Adjust door handle for firm latching, as needed	<input checked="" type="checkbox"/>		
Figure 1-4 probe location 4.5	Check and clean probe and cover, gaskets, hinges and doors of ice and snow.	<input checked="" type="checkbox"/>		
			<i>More frequent cleaning may be required, depending on use and environmental conditions.</i>	
4.2	Check air filter. Clean or replace as needed	<input checked="" type="checkbox"/>		
2.7	Check alarm back-up battery.	<input checked="" type="checkbox"/>		** Replace
--	Check condenser fan motor for unusual motor noise or vibration.		<input checked="" type="checkbox"/>	
--	* Verify and document calibration, at the minimum, annually.		<input checked="" type="checkbox"/>	
4.3	* Clean condenser compartment and wipe off condenser		<input checked="" type="checkbox"/>	

* Qualified service technicians only

** Dispose of properly, according to all state and federal regulations.

Section 4 - Routine Maintenance

4.1 Cleaning the Cabinet Exterior



Avoid the excessive use of water around the control area due to the risk of electrical shock. Damage to the controls may also result.

Wipe down the freezer exterior using soap and water and a general use laboratory disinfectant. Rinse thoroughly with clean water and dry with a soft cloth.

4.2 Cleaning the Air Filter (minimum of twice a year*)

1. Locate the grilles on the front of the unit. See Figure 1-2. Grasp the corner of the grille and gently pull to remove.
2. Remove the filter material and wash, using water and a mild detergent.
3. Dry by pressing between two towels.
4. Install the filter back into the grille and attach the grille.

* Depending upon environmental conditions, the filter may need to be cleaned or replaced more frequently. If the filter becomes torn or excessively dirty, a replacement can be purchased from Thermo Forma. See the exploded parts list, Section 7, for filter part number. A filter kit (set of 5) part number 195521 is also available.

4.3 Cleaning the Condenser (minimum of twice a year*)

1. Locate the grilles on the bottom front of the unit. See Figure 1-2. Grasp the corner of the grille and gently pull to remove.
2. Using a vacuum cleaner, exercising care to not damage the condenser fins, clean the condenser.
3. Install the grille.

* Depending upon environmental conditions, the condenser may need to be cleaned more frequently.

4.4 Defrosting the Chamber

1. Remove all product and place it in another freezer.
2. Turn the unit off and disconnect it from the power source.
3. Deactivate the Performance Monitor. Refer to Section 4.8.
4. Open all of the doors and place towels on the chamber floor.
5. Allow the frost to melt and become loose.
6. Remove the frost with a soft cloth.
7. After defrosting is complete, clean the interior with a non-chloride detergent. Rinse thoroughly with clean water and dry with a soft cloth.
8. Plug unit in and turn power switch on.
9. Allow the freezer to operate empty overnight before reloading the product.

4.5 Cleaning the Door Gasket (minimum monthly*)

Using a soft cloth, remove any frost build-up from the gasket and door(s).

*The door gasket may need to be cleaned more frequently if dirt or excessive frost build-up prevents the door from closing properly.

4.6 Cleaning the Vacuum Relief Port (minimum monthly*)

Using a soft cloth, remove any frost build-up from the vacuum relief, located in the front left corner of the chamber. See Figure 1-4 and 1-5.



The vacuum relief port contains a small heating element. If the freezer is not disconnected from the electrical supply or turned off at the power switch, the heating element will continue to operate and may cause injury to personnel cleaning the freezer chamber.

*The vacuum relief port may need to be cleaned more frequently if dirt or excessive frost buildup prevents the door from closing properly.

4.7 Replacing the Battery



The Battery % Charge may not indicate the full number of hours of monitor backup power. The % of charge can vary depending on the age, usage and condition of the battery. For a consistent and dependable charge, replace the battery every 2 years. Replacement batteries must be rechargeable and are available from VWR Service at Forma. Refer to the parts list for stock number and description of the replacement batteries. Dispose of the used batteries in a safe manner and in accordance with good environmental practices.

1. Turn off power switch or disconnect the line cord from the receptacle.
2. To gain access to the battery, remove the grill on the front of the freezer. The grill is attached to the freezer by friction plugs on each of the four corners and is readily pulled off. The battery is rectangular in shape, located on the front left corner of the compressor compartment and is secured in place by four screws.
3. Unplug the battery.
4. Remove the four screws securing the battery.
5. Remove the old battery, install the new battery and secure.
6. Reconnect the battery (red to positive and black to negative).
7. Install the grill and turn the unit on.

4.8 Deactivating the Performance Monitor

1. Turn off the power switch and unplug the unit from the AC power supply.
2. Press the UP arrow and the %Battery Charge simultaneously. A "1" will be displayed. If "1" is not displayed, repeat the step.
3. Enter the access code and press Enter and "Cal" will be displayed.
4. Press the DOWN arrow. The Performance Monitor will be placed in a sleep mode, saving the battery charge.

4.9 Preparing the Unit for Storage

Defrost the unit as described in Section 4.4. This will prepare the unit for storage.



The Performance monitor must be deactivated as described in Section 4.8 to prevent the battery from becoming completely discharged during storage.

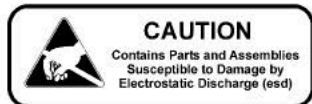
Section 5 - Service

5.1 Servicing the Refrigeration System



Service must only be performed by service personnel who are qualified to repair cascade refrigeration systems. Always use standard safety practices when servicing the equipment.

Before opening the refrigeration system, use the troubleshooting chart to check out the electrical system. Electrical schematics and refrigeration drawings with parts are included with this manual.



Refer to the troubleshooting chart on the following page.

5.2 Troubleshooting Chart

Symptom	Possible Cause
No Power Light on Monitor	<ul style="list-style-type: none"> • Power line cord disconnected or not properly installed • External power circuit breaker tripped/open • Main power switch OFF • Bad connection between temp control and Performance monitor • Fuse open on temp control board
Chamber Temperature Deviates from Set Point	<ul style="list-style-type: none"> • Too much warm product added • Door open too long • Inadequate air circulation • Calibration • Dirty condenser • High ambient temperature
Too Much Frost Build-Up	<ul style="list-style-type: none"> • Leaking or damaged door gasket • Door out of alignment
Freezer not Being Refrigerated (unit is receiving power)	<ul style="list-style-type: none"> • Compressor thermal overload open • Loss of refrigerant in either system • Defective compressor(s) • Defective temp control • Defective high pressure cut-off
Display Problems in General	<ul style="list-style-type: none"> • Defective temp control board • Bad connection between control and monitor board
Condenser Hot Light On	<ul style="list-style-type: none"> • Clogged air filter • Clogged condenser • Fan failure • High ambient temperature
Cannot Open Door After Recent Door Opening	<ul style="list-style-type: none"> • See Section 4.6 - Cleaning the Vacuum Relief Port