Labconco 7740030

Labconco FreeZone 1 Liter Benchtop Freeze Dry System 7740030 User Manual

Model: 7740030

1. Introduction

This manual provides essential instructions for the safe and efficient operation, setup, and maintenance of the Labconco FreeZone 1 Liter Benchtop Freeze Dry System, Model 7740030. This system is designed for light aqueous sample loads and personal use. It is important to note that this model is not suitable for use with samples containing acetonitrile.



Image 1: The Labconco FreeZone 1 Liter Benchtop Freeze Dry System, Model 7740030, showing its compact design suitable for laboratory benchtops.

2. Safety Information

Always adhere to standard laboratory safety practices when operating this equipment. Failure to follow safety guidelines may result in personal injury or damage to the instrument.

- **Electrical Safety:** Ensure the system is connected to a properly grounded 230V, 50Hz power supply. Do not operate with damaged power cords.
- **Sample Compatibility:** This system is not designed for samples containing acetonitrile. Using incompatible samples may cause damage or create hazardous conditions.
- **Ventilation:** Ensure adequate ventilation around the unit to prevent overheating of the refrigeration system.
- **Personal Protective Equipment (PPE):** Wear appropriate PPE, such as safety glasses and gloves, when handling samples and operating the freeze dryer.
- **Maintenance:** Disconnect power before performing any maintenance or cleaning procedures.

3. Package Contents

The Labconco FreeZone 1 Liter Benchtop Freeze Dry System (Model 7740030) includes the following components:

- FreeZone 1 Liter Benchtop Freeze Dry System main unit
- Collector drain hose
- 3 feet of 3/4 inch ID vacuum hose
- 2 hose clamps

Required Accessories (Not Included):

- Vacuum pump
- Drying accessory
- Freeze dry glassware

4. Setup

Proper setup is crucial for optimal performance and safety.

1. **Placement:** Place the FreeZone system on a stable, level benchtop. Ensure sufficient clearance around the unit for ventilation. Its compact design allows it to fit in tight spaces.
2. **Electrical Connection:** Connect the power cord to a dedicated 230V, 50Hz grounded electrical outlet.
3. **Vacuum Pump Connection:**
    - Connect one end of the supplied 3/4 inch ID vacuum hose to the vacuum port on the FreeZone system. Secure with a hose clamp.
    - Connect the other end of the vacuum hose to the inlet of your external vacuum pump. Secure with the second hose clamp.
    - Ensure the vacuum pump is appropriate for freeze-drying applications and is properly maintained (e.g., oil level checked).
4. **Drying Accessory and Glassware:** Attach your chosen drying accessory and freeze dry glassware to the 3-inch diameter accessory attachment port on the system. Ensure all connections are secure and airtight.



Image 2: The Labconco FreeZone system shown with a separate vacuum pump and drying accessory, typically mounted on a laboratory cart for convenience.

5. Operating Instructions

Follow these steps for effective freeze-drying:

1. **Power On:** Locate the power switch on the unit and turn it to the 'ON' position.
2. **System Start-up:** The system features a one-button automatic refrigeration and vacuum start-up. Press the designated start button. The collector will begin to cool, and the vacuum pump will initiate. Manual override switches are available if needed.
3. **Monitor LCD Display:** The LCD will display set-up and operating parameters, including the total number of hours since the refrigeration and vacuum systems were last serviced. Monitor these readings during operation.
4. **Loading Samples:** Once the collector reaches its operating temperature and the vacuum is established, carefully attach your pre-frozen samples in their glassware to the drying accessory ports. Ensure a good seal.
5. **Freeze-Drying Process:** The system will begin to sublimate ice from your samples, collecting it on the PTFE-coated stainless steel collector coil. The system can remove a maximum of 1 liter of water in 24 hours.

6. **Defrosting:** The collector can hold up to 1 liter of ice before defrosting is necessary. When the ice capacity is reached or drying is complete, follow the defrosting procedure outlined in the Maintenance section.
7. **Collector Drain:** Utilize the collector drain hose to remove melted ice after defrosting.



Image 3: A laboratory professional demonstrating the process of attaching a sample flask to the Labconco FreeZone freeze dryer.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your FreeZone system.

- **Cleaning:** Regularly clean the exterior of the unit with a mild detergent and a soft cloth. Avoid abrasive cleaners.
- **Defrosting Procedure:**
    a. Turn off the vacuum pump and allow the system to warm up, or use a manual defrost function if available.
    b. Once the ice on the collector coil has melted, use the collector drain hose to remove the water into a suitable container.
    c. Wipe the collector chamber dry before the next use.
- **Vacuum Pump Maintenance:** Refer to your vacuum pump's instruction manual for specific maintenance requirements, such as oil changes and filter replacements.
- **Service Monitoring:** Pay attention to the service hours displayed on the LCD. Schedule professional servicing

for the refrigeration and vacuum systems as recommended by Labconco or when indicated by the display.

7. Troubleshooting

This section addresses common issues you might encounter. For problems not listed here, contact Labconco technical support.

Problem	Possible Cause	Solution
System does not power on	No power supply; power cord disconnected; faulty power switch.	Check power outlet and connections. Ensure power switch is 'ON'.
Collector not cooling	Refrigeration system issue; insufficient ventilation.	Ensure adequate ventilation. If problem persists, contact service.
Vacuum not pulling down	Loose hose connections; vacuum pump issue; leaks in glassware/accessory.	Check all hose connections and clamps. Inspect glassware for cracks. Verify vacuum pump operation.
Poor freeze-drying performance	Overloaded collector (too much ice); insufficient vacuum; samples not properly pre-frozen.	Defrost collector if full. Check vacuum. Ensure samples are fully frozen before loading.

8. Specifications

Feature	Detail
Model Number	7740030
Capacity (Ice)	1 Liter before defrosting
Water Removal Rate	Maximum 1 Liter in 24 hours
Refrigeration System	1/4 hp, CFC-free
Collector Temperature	-50°C (-58°F)
Electrical Requirements	230V, 50Hz
Exterior Construction	Epoxy-coated steel and brushed stainless steel
Collector Coil	Upright PTFE-coated stainless steel
Accessory Port Diameter	3 inches
Vacuum Hose (Included)	3 feet of 3/4 inch ID

9. Warranty and Support

For warranty information, technical assistance, or to order replacement parts, please contact Labconco customer service directly. Refer to the official Labconco website or your purchase documentation for specific warranty terms and contact details.

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