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› [U.S. Solid](#) /

› [U.S. Solid 500ml Liquid Nitrogen Sprayer \(Model USS-LNS00001\) Instruction Manual](#)

U.S. Solid USS-LNS00001

U.S. Solid 500ml Liquid Nitrogen Sprayer (Model USS-LNS00001) Instruction Manual

Brand: U.S. Solid | Model: USS-LNS00001

1. INTRODUCTION

This manual provides essential instructions for the safe and effective operation, maintenance, and troubleshooting of your U.S. Solid 500ml Liquid Nitrogen (LN2) Sprayer. Please read this manual thoroughly before using the device to ensure proper handling and to prevent injury or damage.

The U.S. Solid Liquid Nitrogen Sprayer is designed for controlled application of liquid nitrogen in various settings. It features a lightweight aluminum alloy canister and comes with 9 specialized freeze heads for diverse applications.

2. SAFETY INFORMATION

WARNING: Liquid Nitrogen (LN2) is extremely cold (-196°C / -320°F) and can cause severe frostbite or cryogenic burns upon contact with skin or eyes. Always handle LN2 with extreme caution and wear appropriate personal protective equipment (PPE).

- Always wear cryogenic protective gloves, a face shield or safety glasses, and long-sleeved clothing when handling liquid nitrogen or operating the sprayer.
- Use in a well-ventilated area to prevent oxygen displacement, which can lead to asphyxiation. LN2 rapidly vaporizes into gaseous nitrogen, which is an inert gas.
- Do not store liquid nitrogen in sealed containers, as pressure buildup can cause an explosion. This sprayer is not designed for prolonged storage of LN2.
- Avoid direct contact of LN2 with skin, eyes, or clothing. If contact occurs, immediately flush the affected area with lukewarm water and seek medical attention.
- Keep the sprayer upright during transport and operation to prevent spills.
- Ensure the sprayer is empty and depressurized before attempting any maintenance or cleaning.
- This product does not come with liquid nitrogen. LN2 must be purchased separately from a qualified supplier.

3. PACKAGE CONTENTS

Verify that all items are present and undamaged upon unpacking:

- U.S. Solid 500ml Liquid Nitrogen Sprayer Unit
- 9 Freeze Heads (8 without holes, 1 with a hole)
- Storage Case (if included with your purchase)
- Instruction Manual (this document)



Image 1: The U.S. Solid 500ml Liquid Nitrogen Sprayer with its included 9 freeze heads. The sprayer is a stainless steel cylinder with a handle and a long, curved nozzle. The freeze heads are small, metallic attachments.

4. COMPONENTS OVERVIEW

Familiarize yourself with the main parts of the sprayer:

- **Main Vessel:** The insulated container for liquid nitrogen.

- **Lid/Cap:** Seals the vessel and contains the internal mechanism for dispensing.
- **Nozzle Assembly:** The long, curved tube through which LN2 is dispensed.
- **Flow Control Switch:** A small knob on the lid that regulates LN2 flow when rotated.
- **Handle:** For carrying and holding the sprayer during use.
- **Freeze Heads:** Various attachments for precise application.



Image 2: A close-up view of the top section of the sprayer, showing the black lid, the curved nozzle, and the small flow control switch.



Image 3: The nine distinct metallic freeze heads, varying in shape and size, designed for different application patterns.

5. SETUP

- 1. Prepare the Area:** Ensure you are in a well-ventilated space. Have all necessary PPE (cryogenic gloves, face shield/safety glasses, long sleeves) readily available and worn.
- 2. Inspect the Sprayer:** Before each use, visually inspect the sprayer for any signs of damage, cracks, or loose components. Ensure the lid screws on securely.
- 3. Fill with Liquid Nitrogen:**
 - Carefully unscrew the lid from the main vessel.
 - Using a suitable LN₂ transfer device (e.g., a funnel designed for cryogenic liquids), slowly pour liquid nitrogen into the sprayer vessel. Do not overfill. The maximum capacity is 500ml.
 - Once filled, carefully screw the lid back onto the vessel, ensuring it is tight but do not overtighten or hold the steel pipe to rotate the lid.
- 4. Attach Freeze Head:** Select the appropriate freeze head for your application. Screw it onto the end of the nozzle assembly until secure.

6. OPERATING INSTRUCTIONS

Always wear appropriate PPE during operation.

1. **Positioning:** Hold the sprayer by its handle, keeping it upright. Point the nozzle away from yourself and others.
2. **Initiate Flow:** The sprayer does not have a trigger button. To begin dispensing LN2, slowly rotate the flow control switch on the lid. Rotating it clockwise typically increases the flow, and counter-clockwise decreases it.
3. **Application:** Direct the stream of liquid nitrogen or the contact tip of the freeze head to the target area. Maintain a safe distance if spraying directly.
4. **Stop Flow:** To stop dispensing, rotate the flow control switch back to its closed position.
5. **Post-Use:** After use, allow any remaining LN2 to evaporate in a well-ventilated area. Do not store the sprayer with LN2 for extended periods (storage time is typically 12-20 hours depending on ambient temperature).

7. MAINTENANCE

Proper maintenance ensures the longevity and safe operation of your sprayer.

- **Cleaning:** After all liquid nitrogen has evaporated, the sprayer can be wiped clean with a damp cloth. Ensure all components are dry before reassembly or storage. Do not immerse the entire unit in water.
- **Inspection:** Regularly inspect the lid, nozzle, and freeze heads for any blockages, wear, or damage. Replace any damaged parts immediately.
- **Storage:** Store the empty and clean sprayer in its protective case (if applicable) in a dry, cool place, away from direct sunlight and extreme temperatures.



Image 4: The liquid nitrogen sprayer neatly placed within its custom-fitted protective carrying case, which features foam padding for secure storage.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
No LN2 flow or very weak flow	Flow control switch is closed. Sprayer is empty or nearly empty. Nozzle or freeze head is clogged.	Rotate the flow control switch to open. Refill the sprayer with LN2. Remove and clean the nozzle/freeze head.
LN2 leaks from the lid area	Lid not screwed on tightly. Damaged lid or seal.	Ensure the lid is securely tightened. Inspect the lid and seal for damage; replace if necessary.

Problem	Possible Cause	Solution
Sprayer does not hold LN2 for expected duration	<p>Not designed for long-term storage.</p> <p>Ambient temperature is high.</p> <p>Lid not sealed properly.</p>	<p>This unit is for application, not storage (0.5 to 1 day holding time).</p> <p>Use in a cooler environment if possible.</p> <p>Ensure lid is tightly sealed.</p>

9. SPECIFICATIONS

Feature	Detail
Brand	U.S. Solid
Model Number	USS-LNS00001
Capacity	0.5 Liters (500ml / 16 oz.)
Vessel Diameter	3.15 inches (80mm)
Vessel Height	8.27 inches (210mm)
Empty Weight	0.57 kg (approx. 1.5 lbs)
Freeze Heads Included	9 (8 without hole, 1 with hole)
Material	Aluminum Alloy (interior canister)
Static Holding Time	Not designed for prolonged storage (0.5 to 1 day, or 12-20 hours depending on ambient temperature)

10. WARRANTY AND SUPPORT

For warranty information, technical support, or to inquire about replacement parts, please contact U.S. Solid customer service. Refer to the product packaging or the official U.S. Solid website for the most current contact details.

Manufacturer: U.S. Solid

Website: www.ussolid.com

Email: service@ussolid.com

