

## Dewar Storage Tanks & On-Demand Boil-Off Pressure

Our Dewar-style LN<sub>2</sub> storage tanks are **expertly engineered** for maximum thermal insulation and long-term cold retention. By design, they **minimize unwanted boil-off** when sealed, making them ideal for retaining liquid nitrogen over extended periods.

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### Natural Boil-Off Operation

#### • Passive Pressure Build-Up

When you **open the gas valve** to the fogger inlet, ambient heat entering through the tank neck and dip tube will naturally vaporize a small amount of LN<sub>2</sub>.

#### • Warmed-Head Assembly

Our custom head features a **fin-ned aluminum heat-exchanger** around the outlet port. As nitrogen vapor passes through, it picks up heat from the fins—further accelerating boil-off in the headspace without any electric heater.

#### • Adjustable Flow Control

The fogger-inlet valve is **not an all-or-nothing** on/off device. You can **throttle the nitrogen flow** from 0–100% to fine-tune fog density and gas consumption.

**Typical working pressure** in normal room conditions: **0.3 – 0.5 bar (4–7 psi)** in **5–10 minutes**, sufficient to drive the fogger at its standard settings.

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## Optional Pressure-Assist Pumps

If you need to **accelerate headspace pressurization**—for example, for rapid start-up or cooler environments—we offer two **plug-and-play** pump accessories:

### 1. Foot Pump

- Simple pedal-action pump
- Generates up to **5–8 psi** of positive pressure
- No power source required

### 2. Battery-Operated Air Pump

- USB-rechargeable diaphragm pump
- Delivers a steady **4–8 psi** at up to **20 L/min** flow
- Quiet, portable, with built-in check valve and (on select models) digital pressure control

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## How the Design & Accessories Enhance Performance

### 1. Heat-Exchanger Head

The premium head assembly passively warms incoming and outgoing gas, **boosting natural vaporization** without extra power.

### 2. Controlled Nitrogen Flow

The adjustable fogger valve lets you dial in exactly the right gas volume for any application—**no need to run wide open**.

### 3. Pressure & Thermal Boost

Our pump accessories not only **raise headspace pressure** quickly but also **inject warm ambient air** to sustain higher boil-off rates under heavy fogger demand.

**Result:** Faster start-up, more consistent fog density, and on-demand pressure tuning—**outperforming previous LN<sub>2</sub> foggers and competitive systems** without compromising storage efficiency.

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**Safety Note:** Always ensure your Dewar's built-in relief valve is in place and set below **1 bar (14.5 psi)**. Operate pumps only on the dedicated gas-inlet fitting, and never exceed the tank or fogger's maximum rated pressure.