

ADVENTURE TOGETHER

Winterization Basics

Understand the goal first - then follow the procedure for your specific van

IMPORTANT DISCLAIMER

This is an owner-created educational guide explaining basic winterization concepts. Exact steps can vary by model, model year, individual build, plumbing layout, heating system, filters, toilet type and owner modifications. It is not an official Noovo or component-manufacturer winterization procedure. Always use the instructions for YOUR van and installed equipment.

What are we actually trying to do?

Water expands when it freezes. Winterizing is about preventing enough water from being trapped in a vulnerable, confined space that freezing expansion can crack or damage a fitting, housing, valve, pump, filter, fixture or other component.

DRAIN IT → CLEAR IT → PROTECT IT

1 DRAIN IT

Remove the bulk of the water from tanks and the parts of the system designed to drain.

Think of it as: Empty the big containers first.

2 CLEAR IT

Clear the plumbing enough that water is not trapped under pressure in vulnerable places. Every last drop does not need to disappear from flexible water lines.

Think of it as: Create room for freezing water to expand safely.

3 PROTECT IT

Protect the areas that may still hold water - for example drains, traps, filter housings or other components - using the method appropriate for your build.

Think of it as: Pay attention to the places water can hide.

THE KEY IDEA

Winterized does not mean perfectly dry. A few droplets in a flexible line are very different from a closed fitting or component full of water with nowhere for expansion to go.

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Three Winter Situations

Winterizing is different depending on how you plan to use the van

1. Full winterization - van stored or water system off

Use this approach when the van may sit in freezing temperatures and you do not plan to use the plumbing. The basic goal is to drain the system, clear vulnerable lines/components, protect the gray-water side and leave the van ready for storage.

- **Water system:** Drain the fresh tank and gray tank; address hot and cold plumbing and installed water-heating equipment.
- **Heating:** You do not need to rely on cabin heat to protect a properly winterized plumbing system.
- **Interior:** Remove food and liquids that could freeze or spoil; leave the refrigerator slightly open for ventilation during long storage if appropriate.
- **Battery / chassis:** Follow the battery and chassis manufacturers' storage recommendations rather than one universal rule.

2. Winter use - plumbing winterized / no water system

This is a practical option for traveling or camping in cold weather while leaving the van plumbing winterized. Carry separate drinking/cooking water and use a toilet solution that does not require the van plumbing, if needed.

- **Benefit:** You can heat and use the living space without depending on the plumbing system to remain above freezing.
- **Remember:** Do not accidentally refill or pressurize a winterized water system until you are ready to de-winterize it.

3. Full winter use - water system operating

Some owners continue using all water systems in freezing weather. This requires active freeze protection and more attention because the plumbing is no longer protected simply by being drained.

- **Heat:** Keep the interior and any vulnerable plumbing areas warm enough for your particular build.
- **Tank / line heaters:** Use them if installed and required by the build; verify they are actually operating.
- **Power:** Cold-weather heating and tank protection can increase electrical or fuel use.
- **Monitoring:** Watch weather forecasts and inspect exposed or vulnerable plumbing during prolonged cold.

Adventure Together perspective

There is no prize for keeping the water system active in deep cold. If conditions make you uncomfortable, winterizing the plumbing and carrying separate water is a perfectly reasonable way to travel.

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Follow the Water

These are the places to think about before a freeze

FRESH-WATER TANK

Drain the stored fresh water using the drain provided for your build.

Think of it as: Start with the largest volume of water.

WATER PUMP + STRAINER

Know where the pump and any pump strainer are. They can retain water even after the tank is drained.

Think of it as: Small housings can matter more than a few drops in a long flexible line.

HOT + COLD WATER LINES

Open or clear both sides of faucets and showers using the method appropriate for the build.

Think of it as: Two pathways feed each mixing fixture.

FAUCETS + SHOWER / SPRAY PORTS

Indoor and exterior fixtures can contain small chambers, valves and fittings.

Think of it as: Every endpoint counts.

HOT-WATER / HYDRONIC EQUIPMENT

Follow the exact winterization instructions for the installed system. Tank-style, tankless and hydronic systems can be very different.

Think of it as: This is where generic RV instructions can be wrong.

FILTERS + FILTER HOUSINGS

Some filters or housings need to be removed, drained or bypassed.

Think of it as: A cup can stay full even when the tank is empty.

GRAY TANK + DRAINS

Empty the gray tank, then protect the drain side in the way you choose for your system.

Think of it as: The wastewater side can also freeze.

LOW-POINT DRAINS - IF INSTALLED

Some vans have low-point drains; some do not. If your plumbing is routed differently, there may be no traditional low-point drains.

Think of it as: Use what exists on YOUR build, not what another RV has.

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Clearing & Protecting the Plumbing

Two common approaches - and what we personally do

Compressed air / blow-out method

After draining, regulated compressed air can be used on systems designed for it to clear most water from the hot and cold lines and fixtures. The goal is not bone-dry plumbing. It is to leave vulnerable areas unpressurized and without a damaging pocket of trapped water.

If your van has a blow-out or external-water connection

Use the connection and pressure limit specified for your build. These vans do not necessarily have a traditional RV city-water hookup, so do not assume another RV's connection point applies to yours.

Pink RV/marine antifreeze method

Some RV owners pump non-toxic pink RV/marine plumbing antifreeze through the fresh-water lines and water pump. That is a common RV method, but it is not the method we personally use in our van.

What we personally do

OUR PREFERENCE

We drain and clear the fresh-water side and do NOT put pink antifreeze into our fresh-water tank or run it through our water pump. We use pink RV/marine antifreeze only on the gray-water side, including the drains/traps and gray tank as appropriate. This is our preference - not a universal instruction for every build.

Other owners and other builds may use a different method. The important part is understanding what components must be protected and following the procedure appropriate for the installed equipment.

Important

Use only RV/marine antifreeze intended for potable-water plumbing when an RV procedure calls for it. Never substitute automotive engine antifreeze.

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A Basic Winterization Road Map

A concept checklist - not a model-specific valve-by-valve procedure

1

KNOW YOUR BUILD

Before cold weather, identify the winterization instructions for your model/model year and the water-heating, filter and toilet equipment actually installed.

2

TURN OFF / DISCONNECT WATER INPUTS

Turn off the water pump while preparing to drain. Disconnect any external water connection if your build has one.

3

EMPTY THE TANKS

Drain the fresh-water tank and gray tank at appropriate locations. Follow a separate procedure for any toilet or black-water system if applicable.

4

OPEN THE WATER PATHS

Open hot and cold fixtures and use the designated drains/valves for your build so the bulk water can leave the plumbing.

5

ADDRESS THE WATER-HEATING SYSTEM

Follow the exact instructions for the installed hot-water or hydronic system. Do not assume a conventional RV water-heater bypass/drain procedure applies.

6

CLEAR THE FRESH-WATER LINES

Use the drain/blow-out approach appropriate for your van. Remember hot and cold sides plus all faucets, shower heads and exterior fixtures.

7

PROTECT THE GRAY-WATER SIDE

Empty the gray tank and protect drains/traps. Our preference is pink RV/marine antifreeze on the gray-water side only.

8

CHECK THE SMALL COMPONENTS

Pump strainers, filters, housings, spray ports and add-on plumbing can retain water. Owner modifications can create additional freeze points.

9

LEAVE IT IN THE CORRECT WINTERIZED STATE

Confirm valves, caps, drains and power switches are left as required for your build, and make yourself a note/photo so spring de-winterization is easier.

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Beyond the Water Lines

Useful cold-weather and storage reminders from our earlier guide

Before winter arrives

- ✓ **Heating system:** Test the heater before you truly need it. Verify intake/exhaust areas are clear and the thermostat works.
- ✓ **Tires:** Check pressure as temperatures drop. Cold air lowers tire pressure.
- ✓ **Windshield fluid:** Use washer fluid rated for the temperatures you expect.
- ✓ **Doors / windows:** Inspect seals for gaps or water intrusion.
- ✓ **Emergency gear:** Carry cold-weather basics appropriate for your route: warm layers/blankets, traction gear, flashlight, charging capability, food and water.

If the van will be stored

- ✓ **Interior:** Clean out food and liquids; reduce moisture and ventilation issues.
- ✓ **Refrigerator:** Leaving the refrigerator door slightly open can help prevent odors/mildew when it is off.
- ✓ **Battery:** Use the storage guidance for your specific lithium battery/BMS. Cold-temperature charging limits differ by battery system.
- ✓ **Chassis:** Follow the chassis manufacturer's long-term storage recommendations for fuel, starting/driving intervals and tire care.
- ✓ **Rodents:** Inspect for entry points and use a prevention strategy you are comfortable with; avoid methods that could damage wiring or create a hazard.

If you are actively camping in winter

- ✓ **Condensation:** Ventilate intentionally. Cooking, breathing and wet clothing can create substantial interior moisture.
- ✓ **Power use:** Heaters, tank heaters and other cold-weather loads can increase energy use; watch battery state of charge.
- ✓ **Driving:** Slow down for snow/ice and use tire chains or traction devices when required and appropriate for your tires/chassis.
- ✓ **Toilets:** Cassette, portable, dry-flush and plumbed toilets all have different winter needs. If the plumbing is winterized, use a toilet approach that does not reintroduce water into the system.

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Why One Checklist Cannot Fit Every Van

The goal stays the same even when the hardware changes

Even vans with the same model name can differ because of model year, production changes, optional equipment, service changes or owner modifications. The older Adventure Together guide also reflected this reality with notes about low-point drains, heaters, tank protection and different winter-use scenarios.

- ✓ **Valves and drains:** Locations and arrangements can differ, and some builds may not have a traditional low-point drain.
- ✓ **Water-heating equipment:** Hydronic, tankless and tank-style systems do not necessarily winterize the same way.
- ✓ **External water connections:** A traditional RV city-water inlet may not exist. Use an external/blow-out connection only if your build has one and the procedure specifies it.
- ✓ **Filters:** Filter housings can hold water and may need separate treatment.
- ✓ **Toilet system:** Cassette, portable, dry-flush and plumbed toilets each change the winterization picture.
- ✓ **Owner additions:** Added filters, faucets, exterior showers, pumps or plumbing create additional places to inspect.

ADVENTURE TOGETHER TAKEAWAY

You do not need to memorize every valve to understand winterization. Understand the goal: remove the bulk water, make sure vulnerable components are not left full and trapped, protect the drain/gray-water side, and then follow the exact procedure for YOUR van.

Before you call it done

Ask yourself: Where could water still be confined? Did I address hot and cold lines, water-heating equipment, filters/strainers, fixtures and the gray-water side? Do I know what needs to be changed back before using the water system again?

If you cannot identify a component, drain or valve on your particular build, check the manufacturer documentation or ask a qualified RV technician rather than guessing.